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EDITOR'S NOTE

The Special Issue no. 2 of *Studia Philosophiae Christianae* 56(2020) features articles originally published in the Polish language in this journal in the years 2000-2018, most of which were written by philosophers who are or were associated with the academic milieu of the Institute of Philosophy at the Cardinal Stefan Wyszyński University in Warsaw. Publishing a selection of translated works by the mentioned authors is aimed at disseminating their research findings in the field of classical philosophy and, in particular, its continuation within the current of the broadly understood Christian philosophy, addressing the range of problems of theoretical and practical philosophy.

This issue features articles within the thematic scope belonging to the: philosophy of science, philosophy of nature, ethics and political philosophy. It is a collection of works representative of the issues addressed by the aforementioned philosophers in these research areas. Their publication is intended to offer to the international philosophical community an insight into the philosophical views developed by the authors of these articles and draw attention to those of their aspects which appear to be of particular import and which could provide ideas for further research and discussion.

The translation of the published texts was rendered possible by the financial support received under the Science Dissemination Activities programme [Polish: Działalność Upowszechniająca Naukę – DUN] (No. 676/P-DUN/2019 of 2 April 2019) financed by the Ministry of Science and Higher Education. This programme applies to implementation of tasks supporting the development of Polish science by disseminating, promoting and popularizing the results of research and development, innovation and inventions, including on an international scale, as well as tasks related to the maintenance of resources of great importance for science and its heritage.

To standardize the structure and form of the published translations, minor changes were introduced in the layout of selected texts and footnotes. At some points, footnotes and bibliographies were supplemented or corrected. Minor corrections were also introduced due to the necessity of adjusting the source articles to their translation into English.

We would like to express our gratitude to the authors of the published articles for making their translation possible. We would like to address our special thanks to: Prof. Jan Krokos, Prof. Grzegorz Bugajak (†2020) and Michał Latawiec, Ph.D. and GROY Translations company for their help in preparing this special issue.

Adam Świeżyński
Editor in Chief

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MIECZYSŁAW LUBAŃSKI

CONSERVATIVE AND PROGRESSIVE COMPONENTS IN SCIENCE*

Abstract. The development of science, proceeding at a higher and higher speed, leads to the creation of new concepts, theories, and ideas. They constitute a progressive component of science. However, scientific development does not mean that everything that was accepted earlier has to be given up. New elements may be acquired and exist together with the old ones. Such old elements constitute a conservative component of science. That is why modern science shows itself as a wholeness constituted by the above-mentioned components.

Keywords: science; history of science; development

1. INTRODUCTION

Science is developing faster and faster. No field of research remains unchanged; it is constantly developing, and new fields of knowledge are emerging. Examples of such scientific disciplines include, among others, general systems theory, cybernetics, information theory, automata theory, computer science etc. Experience shows that an individual researcher is not able to remember the results obtained from even one specific field of science forever. This is due to the fact that hundreds of new concepts, theories and ideas are created all the time. This naturally leads to the question related to the essential characteristics of science, in particular, of whether progress tells us to reject

* This article was originally published in Polish as: M. Lubański, *Składowa zachowawcza i postępowa w nauce*, Studia Philosophiae Christianae 36(2000)2, 125-136. The translation of the article into English was financed by the Ministry of Science and Higher Education of the Republic of Poland as part of the activities promoting science – Decision No. 676/P-DUN/2019 of 2 April 2019. Translation made by GROY Translations.

everything that is old and not present, or whether there are certain elements that have become lasting achievements of science. The aim of this article is to present and discuss the above-mentioned issue.

2. EXTERNAL CHARACTERISTICS OF THE DEVELOPMENT OF SCIENCE

The development of science is often associated with an increase in the number of publications appearing in a particular field of research. The appearance of the printed book contributed to a wider dissemination of scientific achievements, which , in turn, led to the need for making continuous publications. History recorded that the first scientific journals started to be published in the second half of the 17th century. Namely, in January 1665, *Journal des Scavans* was printed, and then *The Philosophical Transactions of the Royal Society of London* in March of that year. Quite a significant development of scientific periodicals took place in the second half of the 18th century. In the next century, three groups of journals were formed: general, semi-general and specialist journals. Around 1830 the number of journals reached 300. This number was considered to be critical; this means that no scholar was able to read all the papers published[1]. Therefore, the need for journals that would review publications (books and scientific articles) appearing in a specific field of knowledge emerged naturally. The first journal of this kind was *Chemisches Zentralblatt* which was published for the first time in 1830. And here history repeated itself as well. New review journals dedicated to specific fields or disciplines of knowledge began to emerge. Their number was gradually increasing. Another critical point was reached around 1950. The number of review journals reached 300. It will not be a mistake if we say that nowadays every important field of research has its own review journal. The number of different types of journals is constantly growing. And that

1 J. Ratajewski, *Wstęp do informacji naukowej,* Katowice 1973, 19; M. Uklejska, *Zarys rozwoju nauki i jej organizacji,* Część II: *Czasy nowożytne,* Warszawa 1963, 244; D. J. de Solla Price, *Węzłowe problemy historii nauki,* transl. H. Krahelska, Warszawa 1965, 99.

is where the "problem of information" occurs. In short, the problem concerns having quick access to valuable information.

This is where theoretical science is linked to information technology, which is incomparably more efficient in finding new information that we need than it was possible in the past. At the same time, there is a suggestion to use the so called information model of science that shows how important the information element is in scientific development, which helps us better understand the very essence of science.

Let us recall that according to the above-mentioned model, science is a complex, self-organized system the development of which is controlled by information streams. Therefore, if science, as a system, is enriched with new information, it means it is being developed; the lack of new information, on the other hand, prevents science from developing, i.e. leads to its stagnation[2].

If scientific publications are treated as carriers of information, their growth will be an indication of scientific development. Due to the relatively young age of science, in the modern sense of this term, we are dealing with an exponential increase in publications. This applies to both the macroscale, i.e. when it comes to a specific scientific discipline, and the microscale – when it comes to a particular direction of research in the discipline in question. From a theoretical point of view, the development of science may – and even should – follow the exponential curve. In practice, however, this is unrealistic for a variety of reasons such as, for instance, the emergence of new fields of research, as a result of which scientists abandon older research, increasing costs of more and more specialized research, and unpredictable occurrence of external factors (wars, epidemics, etc.). Therefore, it is assumed that the development of science is exponential to a certain point; then it reaches a stage characterized by a logistic curve that has an asymptote parallel to the timeline. Usually, the situation occurring here is determined by saying that the exponential curve evolves into a logistic curve if the so-called damping factors occur. As far as the logistic

2 W. W. Nalimow, Z. M. Mulczenko, *Naukometria,* transl. S. Zasada, Warszawa 1971, 6, 10.

curve is concerned, there is the so-called inflection point, i.e. the point at which the rate of scientific development ceases to grow and begins to slow down because the logistic curve goes towards its asymptote[3].

We will not analyze in detail at which point of development a particular scientific discipline is right now. It is not the purpose of this article. We only point out to the huge development of scientific literature, which proves that science does not stand still. To put it briefly, it should be said that science is developing in all directions. It is worth reminding at this point that forty years ago, the then stage of science was called Big Science as opposed to the previous one, known as Little Science. The use of such terms was justified by the fact that scientists living at that time represented from 60% to 90% of all the scientists who had ever lived before. This estimation seems to be true also at the moment. Moreover, scientific achievements of the current generation of scientists represent at least 80% of all the achievements ever made. Therefore, science is fully modern within the proper meaning of the last term. It can be called Big Science, which, however, is only seen as a transitional stage leading to a new period, which should most appropriately be called New Science[4].

Given the above, the development of science is undoubtedly a fact, which immediately leads us to the concept of progress in science. But, what does progress in science really mean? What is it? Let us discuss this issue now.

3. PROGRESS IN SCIENCE

Research experience shows that progress in science can manifest itself in many ways. It includes the achievement of greater precision of specialist concepts functioning in a given research discipline or direction. It may also involve encompassing several specific creations with a single formal form; modern algebra, which has highlighted the variety and richness of mathematical systems for the first time,

3 Ibid, 17-18.

4 D. J. de Solla Price, *Węzłowe problemy historii nauki*, op. cit., 36-37.

is a good example[5]. It may also involve the development of a new field of research, which has emerged as the final result of reflections on a technical invention. The theory of information has to be mentioned at this point. Its origins should be associated with the invention of electric telegraph by S. B. F. Morse in 1832. The theoretical reflection on the relationship between the speed of telegraphing and the number of current values used resulted in creating the concept of the capacity of information; this in turn led to the concept of the quantities of information. As a result, C. E. Shannon described the research conducted in this field for more than one hundred years, in his paper entitled *A mathematical theory of communication,* which was published in 1948. It is interesting that the title of the above-mentioned publication, which was a mathematical theory of communication, i.e. communication between people, was changed into the theory of information. The new title was rather exaggerated. Shannon's paper was that of a telecommunications engineer. And telecommunications engineers are not interested in the content of transmitted information, but in a purely technical matter, namely faithful transmission of signals so that the recipient, especially the one located far away from the sender, receives them without distortions.

After presenting these rather general remarks, let us take a closer look at one particular example, which, as it may be assumed, indicates the progress achieved, i.e. the concept of infinity. Although its origins go back to antiquity, it is still used today. For this purpose, let us consider the following four concepts of an infinite set:

(A) An infinite set is a set to which a new element can always be added from the outside. A set which has no elements that can be added from the outside is finite and complete[6].

(B) An infinite set is a set that is larger than every finite set, i.e. every finite set is part of an infinite set[7].

5 G. Birkhoff, S. Mac Lane, *Przegląd algebry współczesnej,* transl. A. Ehrenfeucht, A. W. Mostowski, Warszawa 1966, 9.

6 Arystoteles, *Fizyka*, transl. K. Leśniak, Warszawa 1968, 88n (206b-207a).

7 B. Bolzano, *Paradoxes of Infinity*, transl. F. Prihonsky, Yale University Press, New Haven 1950, 4.

(Z) A set is called finite if it is equinumerous to a set of natural numbers {1, 2,..., n} for certain natural n. Otherwise, the set is said to be infinite[8].

(D) According to Dedekind, a set is called infinite if it contains a specific subset that is equinumerous to it[9].

It is not difficult to notice that, according to statement (A), the infinite nature of a set consists in its infinity, in having no limit, boundary, or end. It is not possible to reach the limit, boundary or end of the set. There is always something else. And so on. If we come across the limit of a given set, it means that the set in question is finite. In other words, if a set exists within its limits, then it is a finite set. If a set can be continuously extended, it does not exist within its finite limits, so (as an infinite set) it is something possible, potential. Therefore, it may be said that the term "set" within the meaning presented in statement (A) attributes actual existence only to finite sets and potential existence only to infinite sets. Consequently, the statement proclaiming the potentiality of infinity would be, strictly speaking, not a thesis, but a definition.

It should be noted at this point that the above reasoning cannot be regarded as entirely precise. It uses an intuitive, common understanding of the terms: limit of a set, boundary of a set, end of a set. Today, we distinguish between these terms and have precise definitions. It is therefore possible to formulate comments on statement (A) in precise terms. However, we do not do this just because we do not assume that the reader-philosopher has an adequate amount of information in the field of general topology, where the concepts considered are precisely defined. Although largely intuitive, the reasoning presented seems to be fundamentally correct and at the same time sufficient for our goal.

The modern concept of the infinite set is expressed by statements (Z) and (D). If the choice is taken for granted, it is possible to demonstrate their equivalence. Therefore, statement (Z) is equivalent to statement (D).

8 This is the generally accepted definition today.

9 This term was proposed by R. Dedekind (1831-1916).

It is easy to see that statement (B) assigns actual existence to infinite sets. As we remember, statement (A) only ascribes potential existence to these sets. Consequently, proposal (B) can be considered as wider and more general than proposal (A).

It is also evident that the modern understanding of infinite sets refers to statement (B). It is therefore a continuation of the concept defined in (B). The fact that proposal (A) was rejected and that the modern thought refers to proposal (B) is an example of the undeniable progress that has been made in science (as far as the problem in question is concerned). The scientific thought has taken an important step forward by supporting statement (B). The concept of infinity, which takes the above-mentioned statement as its starting point, is a "more perfect" concept than the concept of infinity presented in statement (A).

It should also be mentioned that the history of development of scientific research shows us that practical applications are born of purely scientific research, called basic research, conducted out of sheer cognitive curiosity. For example, in 1934 Cleeton and Williams studied the vibrations of the nitrogen atom in a molecule of ammonia. At the time, nobody needed it, neither was it useful for anything. But that is what led to the concept of the first maser. Thanks to the fact that some scientists conducted research on fluorescence and phosphorescence of chromium ions, a ruby laser was invented. Ruby is a mineral in which chromium ions are dispersed and produce fluorescence, which was the subject of research carried out by the aforementioned scientists. The results obtained led to the transformation of the entire global telecommunications system. This example shows us that it is worth supporting completely impractical research for practical purposes[10]. Given the above, it is possible to say that the technical and technological development is a sign of both development and progress in science.

This leads us to the question concerning the permanent elements in science, brought up in the introduction. Does progress in science exist together with the accumulation of knowledge and the preservation of at least some elements in it? Let us proceed to consider this matter.

10 A. H. Piekara, *Nowe oblicze optyki*, Warszawa 1968, 35.

4. PERMANENT ELEMENTS IN SCIENCE

It seems most appropriate to address the problem we are interested in from a (let us call it) objective and historical point of view. We agreed that science is developing and that it is progressing in many different aspects. The question arises whether it is possible to indicate such scientific achievements that do not become obsolete and that constitute an integral and permanent part of modern science, in a convincing way, but without going into specialist details available only to specific individuals. Yes, in fact, it is possible to give a positive answer to the question raised and at the same time comply with the requirements of "availability" and "universality".

Let us first consider a very old field of knowledge, namely geometry. Its origins date back to very ancient times. The geometry system developed at that time is now called Euclidean geometry. It is taught in primary and secondary school. This geometry system was the only system known until the first quarter of the 19th century. In short, two systems of non-Euclidean geometry, i.e. elliptic geometry and hyperbolic geometry, were created later. Each of these three geometries does not contradict itself, but every two of them are mutually exclusive. The number of geometries increased from one to three, but it did not result in Euclidean geometry becoming outdated; it has retained its full scientific value until this day. Such development of geometry has enabled us to see its "essence" more broadly and better understand its "nature", which manifests itself not in one but in three forms. The progress made in geometry did not erase previous achievements and, as a result, did not exclude permanent elements from the geometry being developed.

Similarly, the differential and integral calculus of a function of one variable did not become obsolete once its generalizations relating to different abstract spaces had been created. What is more, if the said calculus did not exist for one variable, its generalizations would not have appeared. That is why, the calculus in question is not only a lasting achievement of the mathematical analysis, but also a starting point for future generalizations.

When the notion of fuzzy sets[11] was introduced, the classical definition of a set developed by Cantor, or the set theory based on this definition, did not become obsolete and the above-mentioned theory continues to be the fundamental branch of modern mathematics.

It is possible to give any number of such examples in this field due to the fact that mathematics is considered to be a typical branch of science where achievements are clearly accumulated.

Moreover, it seems that the situation is similar in other fields of knowledge. Another example is physics, which was extended with the quantum theory, relativity theory, and quantum mechanics in the 20th century. Such development did not however invalidate previous achievements of physics, which were and still are appreciated by the entire scientific community. Classical mechanics, statics of rigid bodies – these are simple examples of branches of physics that have both permanent theoretical values and numerous practical applications. The theory of evolution did not invalidate previous achievements in botany and zoology. In science, which is understood as a process and therefore considered to be *in statu nascendi,* incorrect suggestions and ideas may (and indeed do) appear. But later, new correct suggestions and ideas are put forward and accepted by the scientific community; finally, they become part of science as its lasting achievement. This issue is associated with Kuhn's concept of paradigm and its shift during the development of science.

However, this issue will not be discussed in detail, as it does not seem to be relevant to the question brought up in the article. We believe it is enough to mention the fact, which is general, yet recorded by history, that both truth and falsity belong to the history of science. Therefore, science is always a history of truth and error[12].

Every scientist working in a particular discipline knows from his or her own experience that his or her discipline is a history of progress. However, it cannot be forgotten that an error, or overcoming it, makes

11 L. A. Zadeh, *Fuzzy sets*, Information and Control 8(1965), 338-353.

12 J. Mittelstrass, *Vom Nutzen des Irrtums in der Wissenschaft*, Naturwissenschaften 84(1997), 291; W. Ross Ashby, *Wstęp do cybernetyki,* transl. B. Osuchowska, A. Gosiewski, Warszawa 1963, 19.

it possible to discover the truth, or to understand where it may be found. For this reason, an error belongs not only to the history of the error, but also to the history of progress in science. This is well illustrated by the distinction between the context of discovery and the context of justification. It better explains the issue related to the existence of progressive and permanent (retained, accumulated) components in scientific development. As shown, it not only does not exclude lasting scientific achievements but gradually increases their number.

5. DIFFERENTIATION OF SCIENCE AND ITS UNITY

Experience shows that the development of science is associated with an increase in the number of disciplines, specializations and their diversification. New, narrower specializations, which are almost hermetically separated from one another, are created and as a result, scientists stop understanding one another. This state of modern science seemed to be unavoidable. However, it turned out that this does not have to be like this at all. Cybernetics is an example of the branch of science which departed from this pattern. It proposed a common terminology for different types of research subjects, which had been considered to be completely different and impossible to compare until then[13].

It can be shown on the example of cerebellar reflex and servomechanism. In the past they were considered to belong to separate and independent specializations, but cybernetics showed that the formal pattern is the same in each of these examples. After all, we already have a common language that can be used in many, very different areas of knowledge, such as, for instance, physiology, electronic circuits, and nervous system. The existence of permanent factors in science, which aim at creating elements integrating knowledge, has to be acknowledge at this point . This leads us to the issue of the unification of knowledge. Let us take a closer look at it.

Figuratively speaking, modern science, may be compared to a large net with a lot of meshes of different sizes. Some of them are divided

13 Ibid, 19.

into smaller meshes, others are joined by completely new meshes. The former give a deeper view of the original mesh, while the latter broaden the area of interest of science. The said net consists of a number of levels. The first level is followed by a higher level which is its scientific reflection. Science understood as a net develops in all directions. As a result, the number of higher levels may be increased, and issues may become more complex and subtle. The net in question also constitutes a certain whole. Experience shows that it is gradually becoming more and more coherent. This seems to be due to the fact that no issue is ever fully exhausted[14]. Of course, it can be solved at a given stage of scientific development, but it does not mean that it has been completely exhausted. The analysis of any scientific issue, as well as its solution, clearly indicates that it is connected with a number of other issues. The is always a network of connections between them. "Atomic" issues, issues completely separated from one another or issues that are, so to speak, absolute in themselves do not exist.

Science seen in this way is characterized by diversity, dynamism and lack of precisely defined boundaries between different disciplines or specializations. It seems that its dynamic nature determines its other features and leads to its further differentiation. Despite the fact that the number of scientific disciplines is constantly increasing, a trend towards the integration of science has emerged. Usually, this idea is presented using three levels or degrees[15].

The uniformity of science is considered to be the lowest level. It is understood as a coherent, harmonized whole, something similar to a mosaic picture. Individual elements differ to some extent, but they form an indivisible composition. The unifying factor can be seen from a higher point of view, as if from the "outside". It can be called meta-eye[16].

The integration of science is the second, higher level of its unification. It should be understood as some kind of connection between various

14 G. Polya, *Jak to rozwiązać? Nowy aspekt metody matematycznej,* transl. L. Kubik, Warszawa 1964, 35.

15 M. Lubański, S. W. Ślaga, *Aspekt systemowy problemu jedności nauki,* Studia Philosophiae Christianae 15(1979)1, 140, 142-144, 149.

16 Ibid, 149.

fields of science that consists in complementing the research methods of one discipline with the research methods of other disciplines, i.e. in the "interpenetration of various fields of science". The genetic dependence existing between scientific disciplines should also be taken into account due to the fact that it undoubtedly leads to the integration of science. Moreover, there is also the phenomenon of cross-disciplinarity, also known as interdisciplinarity or more correctly transdisciplinarity, and the complementarity of disciplines in various forms and aspects. Overlapping scientific disciplines may be considered as a real manifestation of the tendency of modern science to integrate[17].

The unity of science may be observed when various correlations (such as e.g. causal, functional, and teleological correlations etc.) occurring between any kind of phenomena are taken into account. In this case, it is necessary to adopt some basic epistemological unity which is not only not affected by various detailed research methods, but which is – or at least should be – reflected by such methods[18].

The above-mentioned three levels of integration of modern science show it as a rich, complex system that aims at achieving unity combined with diversity. Today we understand better that unity does not have to exclude diversity. They can both complement each other.

6. CONCLUSIONS

The above discussion on science allows us to advance a thesis that progress in science exists together with conservatism. After all, not everything that is new is automatically scientifically valuable and therefore progressive in the best sense of the word. Similarly, not everything that is old is indisputable or impossible to be eliminated. Both must pass through the social control carried out by scientists in order to be approved and accepted as a solid scientific achievement. History shows that science preserves certain achievements and, at

17 Ibid, 150, 152.
18 Ibid, 152, 153.

the same time, accepts and absorbs new elements. The new version of a scientific theory includes the results obtained in the past, which have stood the test of time.

Conservatism and progressiveness seem to be polar opposites in the development of science. Perhaps they reflect the features of a man who is both progressive and conservative. These qualities are reflected in science, the development of which does not involve rejecting everything that was achieved in the past. Innovation is combined with conservatism.

We have seen that progress in science is made in various forms, just like permanent elements in science are developed in many ways. The two components of science, i.e. progressive and conservative ones, exist together and emerge during its continuous development. Because science is always *in statu fieri*.

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MIECZYSŁAW BOMBIK

THE NEW EXPERIMENTALISM AND THE VALUE OF EXPERIMENTAL JUSTIFICATION IN EMPIRICAL SCIENCES*

Abstract. This article briefly presents and characterizes a relatively young (nineteen-nineties) trend in methodology, the theory of science – and philosophy, called "the new experimentalism". The fundamental problem is determined by the question about the value of the new experimentalism and experimental grounds of scientific knowledge in empirical sciences. In the first part of the article, the previous (old) experimentalism is presented. First of all, the history of the experimental method is outlined and the definitions of experiment, object, phenomenon, and of the carried out and analyzed observation are provided. It is shown why the main proposition of experimentalists – "determining a fact based on sensory experience" is fallacious. The second part describes the way in which the representatives of the new experimentalism try to identify and characterize those factors of an experiment that guarantee the objectivity of its result; demonstrate that results are not only determined by psychological, historical, sociological or economic factors but also that they exist in nature as real objects and events. A correct and reliable analysis of the experiment and its results may – according to the new experimentalists – contribute to this conclusion. Therefore, the important role and value of the experimental foundation of social activity in general, and in particular, for the natural sciences, is rightly noted.

Keywords: new experimentalism; natural sciences; scientific cognition; theory

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1. INTRODUCTION

R. Ackermann is considered to be the founding father of the new trend in the contemporary theory and methodology of the empirical sciences that was started at the beginning of the nineteen nineties[1]. This trend, as I. Hacking emphasizes[2], attempts to demonstrate that the experiment-based natural theories cannot be entirely reduced, as the opponents of the value of experiment for scientific cognition propose, to a subjective point of view, to psychological, historical or socio-economic determinants. The new experimentalism points to such properties, elements or moments of experimental research that allow considering experimental results as objectively existing facts, and not as just creations determined by a previous adoption of a theory in the framework of which an experiment is conducted and interpreted.

As for the so-called scientific revolutions which, as noted by T. S. Kuhn and the advocates of the trend initiated by him in the methodology and theory of natural sciences, entirely change the previous paradigm of science – which in consequence means advocating the absence of continuity in its advancement – the new experimentalism argues that progress in science is possible primarily due to the constant, gradual expansion and enhancement of scientific cognition. Thus, he refers to the idea of cumulative progress in science – which is strongly criticized by some, and rejected by others.

2. THE PREVIOUS ("OLD") EXPERIMENTALISM

The very name "new experimentalism" suggests that before the emergence of this trend, there must have been some other, "old" experimentalism, which is now being replaced or significantly mod-

1 Cf. R. Ackermann, *The New Experimentalism*, British Journal of the Philosophy of Science 40(1989), 185–190.

2 I. Hacking, *Einfuerung in die Philosophie der Naturwissenschaften*, Philipp Reclam, Stuttgard 1996, 10. In this *Introductory Topics in the Philosophy of Natural Science* Hacking also presents the pioneering achievements of the representatives of the new experimentalism.

ified by the new variety. This visible opposition of names "forces" one to – even briefly – characterize the fundamental assumptions, concepts and main elements of the historical experimentalism and the method related to it.

2.1. EXPERIMENT

From the very beginning of the empirical sciences, experiment was an instance of exceptional methodological importance. Combined with observation and measurement, experiment was the most adequate way of justifying the propositions of these sciences, providing arguments for generalizations made, verifying, or alternatively falsifying hypotheses, or assigning them with a new methodological status, i.e. raising them to the rank of scientific laws. The systematic use of experiment as the fundamental method of research – along with observation and measurement – is one of the most characteristic features of modern natural sciences.

Etymologically, the word *experiment* is derived from Latin, where *experimentum,* as dictionaries state, is: an attempt, experience, way of recognizing the truth, long deftness for warfare, the ability, proficiency acquired through experience, result, examination, an object of examination, evidence. The common meaning of *experiment* is the attempt to implement an idea, especially an innovative one in order to try it out in practice, another term for a search for a new solution through trial.

Based on a number of different terms or definitions of *experiment* found in the methodological literature, the following description seems to be the most fundamental and at the same time the most universal: *Experiment is the artificial creation of objects or phenomena for observation and conducting such an observation*. Another general description is: *Experiment is any verification of a causal hypothesis by examining contrasting situations in which the factors that are suspected to have influence are subject to control*. A more detailed description, functioning primarily in physics and chemistry, has the following form: *Experiment is a procedure which involves changing some factor*

(alternatively some factors) in the examined situation in order to verify the hypothesis concerning the consequences of these changes in conditions in which other factors suspected to have effect are subject to control. Obviously, the greater the extent of such control, the more experimental procedure deserves to be considered as correct[3].

Taking into account the results of an experimental procedure, the following types of experiment are distinguished: positive experiment, negative experiment, and the so-called *experimentum crucis*. A positive experiment confirms the formulated hypothesis by increasing its probability, but it never provides a final justification for it. A negative experiment completely disproves the tested hypothesis. *Experimentum crucis*, or crucial or critical experiment, is to be, according to the idea of F. Bacon, the proponent of this idea, such an experiment, by means of which one of the two competing and heretofore equally acceptable hypotheses, is confirmed and the other one disproved. In the literature, apart from other types of experiments, one can find a distinction of the so-called thought experiment in which changes to the situation are introduced only in thought and the consequences of such changes are predicted. The fundamental difference between a thought experiment and the other three types mentioned above is that the conclusions based on a thought experiment are merely a conjecture leading at the most to the idea of a hypothesis, while in the first three types, the results of a real cognitive procedure prove or disprove a hypothesis[4].

Experimental methods first emerged and were developed in physics and chemistry, becoming the basis for the advancement of these sciences, then they were passed to all fields of natural sciences, and since the twentieth century, they have also played an increasingly important role in various humanist disciplines, especially in the behavioural sciences. The developing practice of experimental research in individual sciences is accompanied by theoretical and

3 Cf. J. Such, *Eksperyment*, in: *Filozofia a nauka*, ed. Z. Cackowski, Ossolineum – PAN, Wrocław – Warszawa – Kraków – Gdańsk – Łódź 1987, 120–122.

4 Ibid, 124-129.

methodological reflection on the experiment as a scientific method. The first program of extensive use of experiment as an inductive generalization tool was developed in the 16th century by F. Bacon. In the 18th century, J. d'Alembert announced that experiment to be the foundation of cognition in physico-chemical sciences. The role and place of experimentation in the inquiry of the empirical sciences was investigated by J. Herschel, W. Whewell, A. Comte and positivists. In developing his famous methods (canons) of induction, which were to serve as a model of reasoning based on elimination induction and the use of experimentation in a research procedure, J. S. Mill generalized the whole practice of experimental research and methodological issues related to it. Since then, this issue has become the subject of constant inquiry by the methodologists of individual empirical sciences[5].

Analysis of the content of the above-mentioned fundamental and general definition of experiment: *Experiment is the artificial creation of objects or phenomena in order to observe them and to carry out this observation* indicates that the definiens of this real definition predicates that the characteristic of an experiment is the "artificial creation of objects or phenomena", without defining more closely how to understand *object*, *phenomenon* and *observation*, treating these expressions as intuitively understandable. The compound name: "artificial production" denotes all those objects and phenomena that do not occur in nature by themselves. In order for them to exist or to appear, a proper interference of a human experimenter is needed. The definition of an experiment formulated in this way is a normal definition and meets the condition of translatability, i.e. the word experiment can be eliminated from every linguistic context containing the word experiment, and replaced with the indicated definiens. In addition, if not only qualitative observation but also quantitative observation, combined with measurement, is involved, then the definition quoted includes, although very generally, the relationship of the experiment with observation and measurement.

5 Cf. Ibid, 129-131.

2.2. OBJECT – PHENOMENON – OBSERVATION

Semantic problems with the definition of experiment only begin when we want to establish more closely and precisely the meanings of the words that are part of its definiens: *object*, *phenomenon*, *observation*.

In the philosophical and scientific literature, there have been many attempts to answer the question what an object is. These answers are therefore aimed at determining the meaning of the name *object*. The most general concept of the object is defined by W. Nowicki as follows: "by object we shall mean someone or something that can be thought of, and therefore said or written about, regardless of whether this someone or this something exists or existed in reality, or was only conceived by us"[6]. In the definition of an experiment, it is not so much about the object in general as about the type of objects, namely a concrete (real) object. This is because only a concrete object, as opposed to an abstract object, can be artificially produced, observed and measured, as the definition of experiment postulates.

Although the issue of which objects should be classified as concrete and which as abstract, have been widely considered and discussed in philosophy, no clear-cut conclusions have been reached in this regard. In natural science textbooks and relevant literature on the philosophy of science, one can currently point to three widespread, but not identical, designations of a concrete object. Concrete objects are: (1) physical objects and persons; (2) objects occupying a specific place in space and time; (3) objects occupying a specific place in space and time and characterized by inertia. Comparing the quoted phrases, it is not difficult to notice that the first and the third, as opposed to the second, do not consider physical fields, for example, electromagnetic or gravitational field, as concrete objects. The second phrase considers all events, for example, *explosion*, *solar eclipse*, *accident*, *process*, *fire*, etc., to be concrete objects, although it

6 W. Nowicki, *Podstawy terminologii*, Ossolineum – PAN, Wrocław – Warszawa – Kraków –Gdańsk – Łódź 1986, 20.

seems right to believe, as Nowicki claims, that e.g. in the case of a house fire, the burning house is a concrete object, while *fire* is only the state of the house. Nowicki puts forward the following postulate for a demarcation line between concrete objects and abstracts: "we will consider as *concrete* any object that is either matter (animate or inanimate) or any part or form of it, or a physical field or any part or form of it. We will consider as an *abstract*, on the other hand, any object thought of by man which is neither matter, nor field, nor any part or form of them"[7]. This conventional postulate does not resolve in an authoritative and final way the dispute over concretes and abstracts but is only a proposal to facilitate the ordering of the issues in the considerations of scientific terminology.

Phenomenon is a term used in the theory of science and philosophy in many different but related meanings. In the modern theory of science, its fundamental meaning (meaning in the narrower sense) can be defined as follows: *we call a phenomenon everything that is the object of sensory or mental perception*. This general statement is most often extended by adding that it is any empirical fact that is subject to observation by the available methods and means, or the totality of the characteristics and correlations of the objects under consideration, constituting the starting point of research and scientific cognition, thus formulating a broader meaning of the term. Such meanings of *phenomenon* occur in the works of, among others, F. Bacon, Galileo Galilei, R. Descartes, G. Leibniz and I. Newton. In the philosophical meaning assigned by I. Kant and spread by Kantianists and neo-Kantianists, *a phenomenon is an object of possible experience.* Only a phenomenon (phenomena) is (are) accessible to our cognition as opposed to the unknowable "things in themselves" (noumena). Kant's definition of a phenomenon is the foundation of the classical version of phenomenalism, a philosophical trend according to which the scope of human cognition is limited to phenomena that are contrasted with transcendental reality in relation to the subject of cognition. Transcendental reality includes beings that

7 Ibid, 22.

exist independently of man and are beyond the limits of his experience. There are three basic proposals (and many modifications of these proposals) for solving the problem of being which is different from phenomena, put forward by representatives of different versions of phenomenalism: (1) rejecting the existence of this kind of being; (2) recognizing its existence while stating that it is unknowable; (3) considering the question about the existence of being which is different from phenomena as unresolvable[8].

Observation in a popular-psychological sense is: *perceiving objects or phenomena in order to reach an answer to the question posed*. Thus, observation differs from simple *perception* in that with this second type of cognitive activity we do not ask the question that we want to answer. The basic methodological meaning of the term *observation* is obtained by limiting the scope of the name *perception*, emphasizing that it is not about whatever perception, but only about perception which is *systematic* and *planned*. Thus: *Observation is the planned and systematic perception of objects or phenomena in order to reach an answer to the question posed.* Observation in this sense is one of the essential methods of research in the natural sciences. Observation is often put in opposition to experimentation. In observation, the researcher limits himself to observing what is happening without his interference, and in the experiment, he changes or creates new conditions of the examined phenomenon, although, in the practice of scientific inquiry, the borderline between the two methods cannot be determined precisely.

The method of observation is determined by the type of the object or phenomenon being examined and the situation in which the observation is carried out. However, three basic features of correct observation can be pointed out – *planning*, *regularity* and *selectivity*. Planning concerns the order of observation, regularity is about certain intervals, and selectivity is the selection of those facts and characteristics of the objects that are important for solving the cog-

8 More about the phenomenon, cf., among others: M. Hempoliński, *Empiryzm*, in: *Filozofia a nauka*, op. cit., 150-150; Z. Cackowski, *Fenomenalizm*, in: Ibid, 161-169.

nitive problem. The correctness of the course of observation and the accuracy of its results depend primarily on: (1) quality of the observed data – e.g. their structure, degree of complexity, dynamics of development, etc.; (2) conditions in which the observation is carried out – e.g. distance, lighting, interfering factors, etc.; (3) the observer – his/her motivation, mental characteristics, knowledge of the observed material, individual interpretations made during the observation process, etc. The accuracy and scientific significance of the observation results, in turn, depends on the instruments available to the observer, on the way of recording and interpreting their indications. The ways of recording information obtained through observation are becoming increasingly complex with the development of science. In natural sciences, increasingly objective techniques are used to record the observed material, e.g. film, tape recorder, oscillograph, electroencephalograph, etc., as well as instruments increasing the limited possibilities of cognitive receptors, e.g. microscope, telescope, various types of amplifiers. Convenient conditions for increasing the objectivity of observations are provided by the possibility of multiple repetitions of observations by different researchers, at different times, to verify the hypotheses proposed based on observations made in experimental studies and to check by re-observation the validity of the conclusions drawn from them. However, in no science can the influence of the individual characteristics of an observer on the course of observation be completely eliminated. Thus, the main methodological problem when using observation as a research method in science comes down to attempts to ensure the objectivity of methodological observation and its results[9].

2.3. "NAIVE" EXPERIMENTALISM

On the basis of intuitive and uncritically assumed concepts of *experiment*, *experience*, *object*, *observation*, *measurement*, a methodo-

9 About observation, its types, the difference between observation and experimentation, cf., among others, Z. Cackowski, *Obserwacja*, in: *Filozofia a nauka*, op. cit., 433–444.

logical trend called *experimentalism* forms in the theory of empirical sciences which maintains that on the basis of the testimony of our senses, and above all through observation, empirical facts are established, on the basis of which scientific cognition, that is, "knowledge based on facts" is built. In light of the accusations made against this methodological trend, primarily by psychologists, historians, sociologists and theorists of science, one should probably speak of "naive" experimentalism here. Experimentalism referred to the views of modern methodologists: Bacon, Herschel, Whewell, Mill, and it updated and modified these views as research methods in natural sciences improved, to reach its apogee in the period of neopositivism, or logical empiricism, that is, in the nineteen-thirties and nineteen-forties. One of the basic points of the neo-positivist program was the postulate that *all knowledge of the world must be based on experience.* Of course, the level of "naivety" of 20th-century experimentalism was lower than in the 18th or 19th century, but its methodological correctness, as critics have demonstrated, left a lot to be desired.

Moreover, the experimentalists were aware of the imperfection of human senses in terms of cognition as indicated by the shortcomings and fallacies of numerous observation results, but nevertheless, numerous correct observation results, e.g. the reading of indications of measuring instruments or counting of voice signals of various types of meters, were supposed to justify their position that *facts are established based on the testimony of the senses*. A critical analysis of the said position leads to the conclusion that the provided verbalization of it is at least a great simplification if there is any degree of its acceptance at all. First of all, it should be noted that natural sciences are not about whatever facts, but only about important and relevant facts. This conclusion raises the question – which facts are relevant to science. The answer to this question depends on the level of theoretical development of a given discipline.

2.4. SIGNIFICANT FACTS

In the world around us, there are many different processes that often overlap, condition or integrate with one another in a complex way. For example, a leaf falling from a tree is subject, as any material body, to the law of gravity, but the place of its contact with the ground is also determined by the resistance of the air, the force of the wind, the state of the rotting process to which it is subject, etc. An exact description of these processes is not possible with even the most meticulous observation. Observations of leaves falling from trees will therefore not confirm Galileo's theory of free-falling objects. This simple example teaches us that in order to obtain facts that are significant for the identification and characterization of processes that are important in nature, facts that constitute the fundament of the natural sciences, it is often not enough to make a simple observation but the intentional intervention of the observer is necessary, consisting of, broadly speaking, isolating the examined process and eliminating the effects of other processes co-occurring with the examined one, it is therefore necessary to conduct an experiment. Although this position seemed trivially obvious from the beginning of conscious use of the empirical method in science, it was only in recent decades that theorists and philosophers of science have undertaken a relevant inquiry into the nature and role of experimentation in science[10].

Obtaining important (significant) experimental results in a given field is, as the history of experimental research shows, not an easy undertaking. It often took months and years before a significant experiment could be conducted. An account of the enormity of theoretical and practical difficulties that an experimental physicist has to overcome is provided by Chalmers who describes his own experiment from the 1960s, which was intended to provide new information about the energy level of molecules. The experiment involved releasing electrons with a low energy potential from the

10 Cf. A. F. Chalmers, *Wege der Wissernschaft (Einfuerung in die Wissenschaftstheorie)*, Springer – Verlag, Berlin – Heidelberg 2001, 25–26.

molecules and calculating the amount of energy that electrons lose during this process. A detailed analysis of the conducted experiment leads to the following findings, which the author generalizes to all experimental procedures of this kind.

2.5. RULES OF THE EXPERIMENTAL PROCEDURE

(1) Experimental results which are intended to be the fundament of a given science, cannot be obtained only from simple sensory perception. They are the result of properly planned and precisely organized action and their confirmation is largely based on the knowledge and practical skills of the experimenters, which in turn depend on the state of current technological capabilities and the scale of errors always inherent in such procedures.

(2) The assessment of the scientific and practical value of experimental results is also not easy. It is considered pertinent only if the results can be interpreted as confirming the solution to the problem formulated if the experiment was theoretically well prepared, its course was subject to appropriate control and factors whose presence may have distorted the obtained results were eliminated.

(3) Ensuring appropriate conditions for the proper course of an experiment and elimination of elements interfering with this process or distorting its results are possible based on appropriate knowledge in this regard. This knowledge is to indicate what kind of disturbances can occur and how they can be eliminated. Thus, there is a significant relationship between the experimentally established facts and the theory on which the experiment is based. If this knowledge is insufficient, for example, if it is insufficient or fallacious, then the facts obtained are simply pseudo-facts. A consequence of this interconnection between experimental results and the knowledge within which the experiment was carried out - which is always only probable – is that also the results can never be taken as absolutely certain.

(4) Experimental results may become obsolete due to: (a) the emergence of new, better, more precise technologies; (b) the de-

velopment of knowledge in the light of which the original idea of the construction and organization of the experiment has changed fundamentally or has been significantly modified; (c) theoretical change in the original qualification of the obtained results of an experiment – it turned out that the established facts are not relevant or as momentous as it was previously thought[11].

2.6. HISTORICAL EXAMPLES

These findings are, according to Chalmers, strongly confirmed by the history of the development of the experimental method[12]. The German physicist H. Hertz conducted a series of experiments in the 1980s to learn about the nature of cathode rays. This is the kind of light that appears inside a glass tube, filled with a gas of not very high pressure, in the form of a "thread of light" connecting the anode with the cathode. The result of these experiments was the conclusion that cathode rays are not a stream of electrically charged particles. In support of his position, Hertz points out that the rays under investigation do not deflect when an electric field directed perpendicularly to the direction of their propagation acts on them, although this is how particles with an electric charge should behave. The conclusion of Hertz's experiment today is considered false, and his experiments are considered to be incorrect. Twenty years later, Thomson's research has shown that cathode rays manifest exactly the same deflection in the electromagnetic field as streams of electrically charged particles, and Thomson has measured the ratio between charge and mass of the particles. What enabled Thomson to reject the of Hertz's experimental results was: (1) improved technology of experimentation; and (2) a better understanding of the complexities of the various processes involved in the whole phenomenon.

Electrons of which of cathode rays consist, can ionize the gas molecules in the tube, i.e., deprive them of one or more electrons

11 Ibid, 26-28.

12 About the changes in the understanding of the empirical foundation of science and the development of the experimental method based on the analysis of historical examples, cf. Ibid, 28-32.

and thus cause them to convert from electrically neutral to positively charged molecules. The ions formed in this way can be accumulated on the metal plates of the equipment and during the experiment, they can produce small additional electric fields. It is likely that these fields prevented Hertz from obtaining the deflection of the cathode rays, which Thomson not only obtained but also measured the angle of their deflection, depending on the charge and mass of electrically charged particles. The improvement of the methodology of conducting the experiment consisted primarily in extending the operating time of special gas suction pumps (the pumps worked for many days), subjecting the entire equipment to long heating at high temperatures and thus removing the remaining gas adhering to the pipe surface in some places and using better-quality electrodes. However, false conclusions of Hertz's experiment do not undermine his authority as one of the best experimenters of that time. Based on his theoretical knowledge and the technical solutions at his disposal, the results of his experiment were correct. And the theoretical and technological modifications or advancement of knowledge, changing the evaluation of previously obtained experimental results, are unpredictable.

Another example is the generation by Hertz of radio waves in 1888. Radio waves, which were a new kind of phenomena in nature, could still be evoked and studied, moreover, they had this scientifically significant consequence that they confirmed C. Maxwell's electromagnetic theory, formulated in the mid-1860s, from which they could theoretically be derived. Most of Hertz's experimental results in this field have survived the test of time and are also of great importance today. However, some of them as well as their interpretations had to be modified, changed or rejected. These facts are examples of the fact that experimental results have to be constantly monitored, checked and improved.

Hertz was able, thanks to his equipment, to produce standing radio waves and measure their length and propagation rate. The results of his experiments indicated that radio waves of greater length propagate faster in the air than in wires, and faster in relation to

light, while Maxwell's theory predicted that their propagation rate should be equal to that of light, regardless of what environment they propagate in, whether in the air or a wire. The reason for the incorrect measurement was the inappropriate conditions under which the measurement was taken, which, in any case, was presumed by Hertz. Long radio waves bounced off the walls of the laboratory where they were measured, they superimposed, and this led to serious measurement errors. In these conditions, only shorter waves could be measured. The experiment and the measurement of long radio waves a few years later, under better and appropriate conditions, confirmed the theoretical predictions that the speed of propagation of waves is equal to the speed of light.

Problems related to the measurement of radio wavelengths teach us that the results of experiments should not only be an adequate description of what has been discovered but should also be significant from a theoretical point of view, i.e. that they should answer questions that are theoretically important in a given field. And the assessment of when a question is important and to what extent a specific experimental procedure can be the right way to obtain the correct answer depends primarily on the theoretical ideas and practical possibilities of their implementation. The existence of competing theories pertaining to electromagnetic phenomena and predictions formulated on the basis of one of them, namely Maxwell's theory that radio waves should propagate at a speed equal to the speed of light, made Hertz's attempts to measure the speed of radio waves particularly momentous. The understanding of the phenomenon of the reflection of waves led to a proper evaluation of the conditions in which the experiment was conducted. The relatively small space limited by the walls of a laboratory which reflected the waves was unsuitable for this kind of measurements. A change in the measurement conditions soon yielded correct results. The rejection of the results of radio waveform propagation rate measurement conducted by Hertz has nothing to do with the problem of human perception accuracy. Hertz closely observed the course of the experiment, controlled and recorded the phenomena taking place, recorded the indications of the instruments.

His findings are objective in the sense that anyone who would like to repeat the procedure used by him, will obtain similar results. Thus, the problems related to the findings of Hertz's experiment cannot be reduced to the inaccuracy of observation or the impossibility of repeating the experiment, but to the improper organization of the experimental procedure. No observations, also if they were even more careful, could replace the necessary condition for the success of the experiment in this case, which was a larger space for the propagation of the measured waves than the laboratory area that Hertz had at his disposal for the measurements.

2.7. RESULTS OF AN EXPERIMENT AND THEORY

The described examples aptly illustrate how much the acceptance of experimental results depends on the theory within which the experiment is carried out and how radically their evaluations can change due to the development of scientific cognition. A good illustration of the indicated state of affairs may be the observation concerning the increase in the value of the significance of radio waves for scientific cognition since their discovery by Hertz. At that time, one of the many electromagnetic theories was the theory proposed by J. C. Maxwell, who elaborated on the basic ideas of M. Faraday and understood electrical and magnetic phenomena as mechanical states of a substance called ether, permeating everything in the world. This theory assumed – unlike the theories competing with it, claiming that electrical and magnetic phenomena interact from a distance without the mediation of ether – that radio waves travel at the speed of light. The results of Hertz's experimental research, and especially the possibility of generating electromagnetic waves, which is of lasting importance in the development of physics, could be interpreted by him and his contemporaries as evidence of the existence of ether. Twenty years later, in the light of Einstein's theory of relativity, the ether hypothesis was rejected. Still, however, these results are considered to confirm the revised form of Maxwell's theory, which gives up accepting the ether hypothesis and treats electric and magnetic fields as independent phenomena (beings).

Another example, convincingly illustrating the dependence of experimental results and their interpretation on the theoretical context in which they arise, are molecular weight measurements carried out by chemists in the second half of the 19th century. In the light of the atomic theory of chemical bonds, the chemists of the time assign fundamental importance to the molecular weight measurement. This mainly concerns theories that favoured Proust's hypothesis that the hydrogen atom is the basic element from which other atoms are built. This conviction allowed to expect that the molecular weights, calculated in relation to the hydrogen atom, are expressed as integers. However, accurate measurements of molecular masses carried out by leading 19th-century chemists proved to be worthless in the light of theoretical chemistry when it was discovered that the basic elements of matter occurring in nature are a mixture of isotopes, and knowledge of their mutual weight proportion is of no theoretical significance. F. Soddy, in his brief commentary on this episode of the development of chemistry, compares the fate of a group of outstanding chemists of the 19th century to a tragedy. Their achievements, which were considered by our contemporaries, not without reason, as the peak of precision measurements which were extremely time-consuming and hard-fought with enormous work, turned out – at least from the present perspective – to be as uninteresting and meaningless as, for example, determining the average weight of a collection of bottles, some of which are completely and others only partially filled with liquid.

In this case, the experimental results were also rejected not because of inaccuracies or observation errors as such, i.e. not because of a lack of objectivity of cognition. These results were considered to be "the pinnacle of scientific measurement precision" and undoubtedly modern chemists would have obtained similar results if they wanted to repeat those procedures. The correctness of the experimental procedure for the scientific meaning of the experiment, the scientific applicability of the obtained results is a necessary but not sufficient condition. The above-mentioned examples clearly characterize the properties and characteristics of the experimental procedure and its results, which

can provide the basis and starting point for scientific cognition in physics, chemistry and other empirical disciplines. Experiments must always be based on the results of the latest experiments. Obsolete results must be constantly modified, changed, rejected as inadequate or fallacious and replaced by better ones. Modification or rejection of the findings of previous experiments can occur for at least four reasons: (1) the sources of possible interference and the irregularities of the experimental process were not eliminated to a sufficient extent; (2) the measurements were based on imprecise or outdated methods; (3) it was noticed that the conducted experiment did not lead to the solution of the problem posed; (4) the problem which the experiment solved has lost its importance – it has become irrelevant. Although these four methodological postulates more or less intuitively guide everyday experimental practice, they have been, and are, weakened or even abolished by certain philosophical assumptions, especially those that state that experimental results, which are the foundation of the cognition of empirical sciences, can and must be unquestionably certain. Moreover, a detailed analysis of the provided examples shows that the relative cognitive status of any experimental results has nothing to do with the psychological issues of human perception[13].

2.8. THE STATUS OF SCIENTIFIC COGNITION

Establishing that experimental results are not simply given with absolute certainty, that they are dependent on the theory that they are supposed to verify, that they are often burdened with errors and

13 The following source material was the basis on which Chalmers based his analysis of historical examples: H. Hertz, *Gesammelte Werke*, vol. II: *Untersuchungen ueber die Ausbreitung der elektrischen Kraft*, Bahrt, Leipzig 1894; W. Thomson, P. G. Tait, *Handbuch der theoretischen Physik*, Vieweg, Braunschweig 1879; J. C. Maxwell, *The Kinetic Theory of Gases*, Nature 16(1877), 245–246; Idem, *Illustrations of the Dynamical Theory of Gases*, in: *The Scientific Papers of James Clerk Maxwell*, 2 volumes, ed. W. D. Niven, Dover, New York 1965; I. Lakatos, *Falsifikation und die Methodologie wissenschaftlicher Forschungsprogramme*, in: *Kritik und Erkenntnisfortschritt*, ed. I. Lakatos, A. Musgrave, Vieweg, Wiesbaden 1974.

therefore require constant verification, poses a serious challenge to the belief that scientific cognition has a special status because it is based in a convincing way on experience. If it is true that the experimental foundation of science is, as shown, cognitively imperfect to such an extent, then the knowledge based on experience will be burdened with errors and flawed at least to the same extent, and will therefore require constant verification. Besides, the establishment of the cognitive status of an experiment in a scientific procedure complicates the allegation of a vicious circle in argumentation, which in this case is a circular form of semantic *petitio principii*. If the evaluation of the accuracy, correctness and appropriateness of the course of the experiment and its results is carried out within the framework of a given theory, and at the same time these results are to be a confirmation of this theory, then the existence of the vicious circle seems obvious. Science does not seem to be able to work out experimental criteria for determining which of two or more competing theories is true. Often the same experimental results are invoked by representatives of competing theories, interpreting them accordingly. Thus, in the first place, the fundamental question that arises is whether the indicated *petitio principii* can be overcome in an experimental justification.

An illustration of circular experimental justification can be an experiment conducted by a group of physics students as part of practical classes under the direction of Chalmers. The experiment was to demonstrate that the number of revolutions of an electric coil placed between the poles of a horseshoe magnet is directly proportional to the intensity of the current flowing through the coil in a given time. The experiment confirmed this hypothesis, but a thorough analysis of the whole procedure showed that the confirming result was unconsciously assumed in the construction of the equipment used. The example shows that a vicious circle can appear in the reasoning based on an experiment, but at the same time it indicates that not every experiment has to be burdened with such an error. In general, it can be stated: *any experimental procedure is undertaken in order to confirm some hypothesis or theory which is obtained by correctly reading and interpreting the indications of the relevant instruments*; *however, the theories being tested cannot be identical*

to those underlying the construction of the experimental tools. The indicated postulate outlines the framework preliminary conditions for designing and organizing any experimental research.

Another position concerning the dependence of experimental results on the theories they confirm is as follows: no matter how strongly and to what extent the experiment is controlled by the theory being tested, there are always certain factors to support the view that the results of an experiment are not only determined by the theory being tested but are also determined by the non-theoretical elements of the actual reality. If the experimental equipment has been constructed, for example, the switch lever of the built-in electrical circuit breaker has been closed, a signal will appear on the screen or will not appear, the beam will be deflected or not, the ammeter pointer will move or will not react. One cannot, therefore, "make" the results correspond to theories. The real structure of the world, the physical properties of nature made the deflection of cathode rays not appear in Hertz's experiments, while this phenomenon occurred in Thomson's modified experiment. It was the differences in the construction (organization) of the experiments of both physicists that led to these experimentally different results, not the differences in the theories on which the experiments were based.

The fundamental thesis of the presented position can be formulated as follows: *because the results of experiments are more determined by the elements of the real world than by theoretical structures, these results may be criteria for the truthfulness of theory*. However, this does not mean that scientifically valuable results of experiments are readily available, that they are not burdened with errors, that their usefulness and rank are simply given and immediately visible. Nevertheless, the effort to properly and reliably test scientific theories through experimentation is a rational and relevant undertaking; moreover, the history of science provides many examples where this was made complete with what today is called scientific discoveries or successes[14].

14 Two fundamental positions on the interpretation of the relationships between theory and experimentation results, cf. A. F. Chalmers, *Wege der Wissernschaft*, op. cit., 33–34.

3. OBJECTIVITY OF THE RESULTS OF AN EXPERIMENT ACCORDING TO THE NEW EXPERIMENTALISM

What the representatives of the new experimentalism are trying to do is identify, describe and characterize those elements of the experimental procedure that ensure the objectivity of experimental results, i.e. decide that these results cannot be interpreted solely in subjective categories as the results of psychological, historical, sociological and economic conditions, but that they are the result of interactions taking place in the existing natural world. And as Chalmers shows[15], the prototype of the electric motor constructed by Faraday and the emergence of new, theoretically neutral electromagnetic phenomena associated with its functioning posed a great challenge for the then young science of electricity. The existing electromagnetic theories tried to describe and explain these phenomena. Discrediting the value of Faraday's experimental results by stating that all experiments are flawed can be easily overruled. Faraday described the experimental device in detail and attached to the description instructions, according to which anyone – especially his contemporary theoretical opponents – was able to construct a similarly functioning version of the electric motor. Some unsuccessful attempts were neither a surprise nor something important, as they were the result of insufficiently strict observance of the instructions. And although the theoretical explanation of engine operation, accepted today, differs significantly from the explanations given by Faraday and Ampere, it is true that under normal conditions, i.e. the conditions described in the original instruction, the engine will work also today. It also seems unlikely that future advances in the development of electromagnetic theories will cause the engine to stop working. On the grounds of the above, it can therefore be argued that such phenomena produced as a result of controlled experiments are not the result of cognitive errors and that they really and permanently exist in the natural world. If *scientific progress* is understood as an accumulation of such permanent

15 Cf. Ibid, 156-159.

phenomena, it is achieved on this path regardless of the different theories, interpretations and meanings of the concept.

The second example strengthening the position of the representatives of new experimentalism can be, for example, certain episodes from Hertz's biography, described by J. Buchwald[16] in his detailed study of his scientific career. Hertz's ambition, in a certain period of his life, was an explicit "hunt" for new experimental discoveries. However, some of his "discoveries" in the field of electromagnetism did not enjoy widespread acceptance. This was because, as the representative of the new experimentalism argues, Hertz was a supporter of Helmholtz's electromagnetic theory, which was then one of many existing theories (e.g. Weber's theory, Maxwell's theory) and the results of his experimental research could be assessed and justified in the light of the acceptance of Helmholtz's entire theory, i.e., they were not objectively existing phenomena of the real world, but only artefacts produced by the theory. The situation has changed radically since Hertz began to experimentally generate radio waves. Their real existence could be demonstrated regardless of any theory on which the experimental device which produced them in a controllable way was based. Therefore, according to the new experimentalists, the objectivity of the obtained results of the experiment is supported by their controllable production, and their description and evaluation independent of any theory.

How, for example, when observing through a microscope, we can determine whether we are dealing with an observed real object or just an artefact, is convincingly illustrated by Hacking[17]. A grid of small squares was engraved on glass, and then it was reduced photographically to such an extent that it is no longer visible to the naked eye. When observed under an electronic microscope, it becomes clear and legible. This, as emphasized by Hacking, is a decisive argument for the fact that microscopic magnification is au-

16 J. Buchwald, *The Creation of Scientific Effects*, University of Chicago Press, Chicago 1989.

17 I. Haking, *Einfuerung in die Philosophie der Naturwissenschaften*, op. cit., 309ff.

thentic (it is not a delusion) and that it is independent *of the theory of* microscope construction. A biologist now observes, for example, red blood cells placed in an experimentally appropriate way on the grid. He sees certain bodies with a relatively high density inside the cell and asks himself whether these bodies are really blood elements or artefacts produced by the microscope. He initially assumes that they are structures artificially created by the microscope, marking accordingly the cells in which they appeared. He then observes the examined biological material through a fluorescence microscope, i.e. a microscope operating based on completely different principles than the electron microscope. The image is identical in the sense that the same objects appeared in the same places in the grid. The comparative analysis of the images obtained in this way is a sufficient and sufficiently strong argument for the conviction that the objects observed are blood cells rather than artefacts. The possibility for microscopes built on theoretically different principles to produce identical "facts" is, as Hacking stresses, most unlikely. The reality of the existence of the object observed with a microscope is supported by the fact that when adopting this position one does not have to refer to the knowledge concerning the functioning of these research instruments or to the theory of their construction.

3.1. FUNDAMENTAL METHODOLOGICAL POSTULATE

Deborah Mayo[18] is one of the philosophers of science in general, and theoretically leading representatives of new experimentalism. She tries to describe, extremely rigorously in methodological terms, the way in which a statement justified by an experiment (experience) can be considered credible. The general postulate, which is the foundation and at the same time the starting point of her considerations, can be formulated as follows: *a statement (proposition) can only be considered as experience-based if the various (possibly all) possibilities*

18 D. Mayo, *Error and the Growth of Experimental Knowledge*, University of Chicago Press, Chicago 1996.

of overturning (falsifying) it are examined and *eliminated*. In other words: *a certain statement can only be claimed to be derived from experience (derived experimentally) if it has undergone a thorough revision in the course of an experimental procedure, in the sense that its acceptance would be impossible if the statement was false.* The following research situation may illustrate this kind of revision. Let us suppose that the re-check of Snell's refraction law showed that more accurate measurements of the angles of incidence and refraction of the light ray showed a certain range of possible measurement errors. Let us further suppose that the measurements burdened with these errors still confirm this law. Mayo asks whether this revision of the measurements could have resulted in the claim that this law is experimentally confirmed. And she answers in the negative, arguing that because of the measurement inaccuracies (errors), the law would pass the experimental revision even if it were false, and another law that would not be much different from Snell's law, would be true.

Mayo's position is illustrated by Chalmers[19] who uses experiments conducted by students as part of practical classes conducted by him. The students were to perform a series of not very accurate measurements concerning the re-confirmation of Snell's law. Then they were to check some formulations of the refraction law from the antiquity and the Middle Ages, which were alternative to Snell's law. It turned out that these alternative "laws" passed the measurement test as a result of a too wide range of systematic measurement errors associated with this method of measurement. The illustration clearly shows that the students' experiments did not meet the conditions for a thorough revision of Snell's law. This law would pass experimental measurements even if it was false; moreover, the historical alternatives turned out to be "true".

Another illustration of Mayo's methodological position may be the analysis of the following situation. In the morning I drank two cups of strong coffee and in the afternoon I felt a distinct headache. Has the sentence "Morning coffee caused my headache" been (experimentally) confirmed by this observation? The answer to this

19 A. F. Chalmers, *Wege der Wissernschaft*, op. cit., 159.

question, according to Mayo, is obviously "No!". A positive response would require the elimination of all other – in this case very different – causes that might have caused my headaches. If there is a real causal link between coffee drinking and my headache, the controllable tests (experiments) would have to eliminate all other possible causes of this state of affairs. *The experiment, therefore, confirms the statement only if other possible ways of confirming it did not occur (were eliminated) and it would be most unlikely for the statement that passed the experimental test not to be true*.

3.2. EXTENSION OF THE METHODOLOGICAL POSTULATE

Mayo's methodological position on the assessment of the cognitive value of an experiment in the justification of propositions, statements and, above all, theories, formulated within the natural sciences, is to be broadened and deepened first of all by the cognitive analysis of the so-called „*tacking*–paradox". Let us assume that Newton's theory T has been confirmed through careful observation of a comet's movement. Care was taken to eliminate situations that could lead to observation errors, such as gravity forces of the nearby planets, the slowing down of the comet's movement as a result of the resistance of the Earth's atmosphere through which the comet passes, etc. Let us now construct theory T' in such a way that we add the proposition "Emeralds are green" to Newton's theory T and ask: can theory T' be confirmed by observation? If we assume that a certain prognostic proposition p confirms a theory when it is a consequence of this theory and is experimentally positively verified, then theory T' is, contrary to our intuition, confirmed by observations from which it can be concluded that the proposition "Emeralds are green" is true. All the theories constructed similarly to theory T' will be confirmed in this way. According to Mayo, however, theory T' is not actually confirmed and the paradox has been removed. Mayo argues as follows: based on the assumption of eliminating all possible sources of error, it can be argued that the actual trajectory of the comet could not have been compatible with Newton's theory if that theory had not been true. The truthful-

ness of theory T' cannot be argued in this way because the probability that the comet's trajectory will correspond to Newton's predictions will remain unchanged if, for example, some emeralds were blue; and then theory T' would be false. Theory T' cannot be confirmed by this dubious experiment because various possibilities that could falsify the proposition "emeralds are green" have not been explored. Observations of the comet are a strong test for theory T, but not for theory T'.

Using similar reasoning, Mayo reviews the theoretical considerations leading to conclusions that transcend the boundaries of experimental research. Specifically, this pertains to the revision of A. Einstein's predictions about the behaviour of a light beam in the gravitational field which was carried out by A. Eddington. Eddington used a solar eclipse to check the relative position of stars when their light on its way to Earth was passing near the Sun and compared it with the positions that could be determined when the stars were at a considerable distance from the Sun. The differences were visible. A detailed analysis of the experiment also called the "solar eclipse" experiment, led Mayo to the conclusion that Einstein's law of gravitation, which can be derived from the general theory of relativity, is confirmed by the experiment, while the general theory of relativity is not. In support of this conclusion, Mayo uses the following argument: if one assumes that the results of the solar eclipse experiment strengthen the general theory of relativity, it is necessary to show that obtaining these results would be most improbable if the general theory of relativity was false. It must therefore be possible to eliminate false relationships between the theory and the results obtained. This is impossible in this case because there is a class of theories trying to describe the correlations between time and space and they all assume the existence of Einstein's law of gravitation and thus the phenomenon related to the solar eclipse. Thus, if any of the theories alternative to Einstein's theory were true, the same results would be predicted for the eclipse experiment. Consequently, these results do not constitute an experimental test for the general theory of relativity, since they are unable to resolve the alternative between it and other existing theories. The claim that the solar eclipse experiment confirms the general theory of relativity exceeds experimental results and thus is not justified.

The situation changes when one takes into account a claim limited as to the scope, i.e. the indicated law of gravitation, which is already confirmed by the results of the eclipse experiment. However, before these observations can be considered to justify this theory, other possible causes leading to the same observational results must be eliminated. Only then can it be concluded that the observed changes in the relative positions of stars only occur when Einstein's law of gravitation applies. Mayo proceeds to demonstrate in detail how alternative formulations in relation to Einstein's theory can be rejected on the basis of such reasoning. For example, the classical Newtonian alternative, based on the assumption that gravitation is inversely proportional to the square of the distance between the photons and the Sun and assuming that photons have mass. Einstein's law of gravitation has been subject to strong verification on the basis of the eclipse experiment – negative results would lead not only to its rejection but also to the rejection of the general theory of relativity, since the falsification of the consequences of this theory, which the law represents, would also be a falsification of the whole theory.

The new experimentalists, generally speaking, are looking for ways to confirm the truthfulness of the cognition gained in science and often entangled in very complex and complicated theories. Mayo's research work harmonizes well with this aspiration. According to this position, as demonstrated, experimental generalizations can be strongly verified. The increment of scientific cognition (scientific advancement) is understood by the representatives of the new experimentalism as the accumulation (aggregation) and an increase in the number of such generalizations (laws)[20].

3.3. THE POSITIVE FUNCTION OF AN UNSUCCESSFUL EXPERIMENT

Experimental results, according to the new experimentalism, confirm true statements, because if a given statement is false, certain

20 For more on the analyses carried out and conclusions reached by Mayo, cf. A. F. Chalmers, *Wege der Wissernschaft*, op. cit., 159-162.

experimental results would be most unlikely to obtain. In addition, Mayo emphasizes and analyses the positive cognitive function of an experiment which is unsuccessful or was conducted in an incorrect way, stating that the experiment teaches "learning from mistakes". The experiment, therefore, plays a double role in this approach. It is used to detect an error in a previously accepted proposition, i.e. it serves to falsify a claim, but at the same time, it determines certain previously unknown phenomena (positive role). This positive role of experiments leading to wrong results is illustrated by Mayo's modification of Kuhn's concept of "normal science". When asked why astrology was not classified as a scientific discipline, Popper answers: because its claims are not falsifiable. Kuhn, on the other hand, believes that astrology was and is falsifiable; in the 16th and 17th centuries, when astrology was acceptable, astrologers made verifiable predictions, many of which proved to be false. Today, on the basis of scientific theories, one can also make predictions, and some predictions turn out to be false. The difference between astrology and scientific theories is, according to Kuhn, the fact that science can "learn" from falsification, while astrology cannot. In science, there is a tradition of "solving puzzles", and this tradition is lacking in astrology. Science can do more than just falsify, it can also "overcome falsifications", that is, replace falsified propositions with other, cognitively valuable ones. In this perspective, one can speak of a kind of irony with regard to Popper, who captured his contribution to science with words: "we learn by our mistakes". His methodological programme failed, however, because he was satisfied with finding errors, falsifying, and was unable to complement this negative aspect of scientific procedure with a positive aspect, i.e. he did not teach how to overcome errors – falsifications.

Mayo advocates Kuhn's methodological program of understanding and practicing science, putting a sign of equality between his "normal science" and experiment-based science, pointing, for example, to two episodes from the history of science that illustrate the positive impact of detected errors on the further development of scientific cognition. First, he refers to the commonly known difficulties that arose in the

mid-nineteenth century before Newton's theory which described the movements of planets orbiting the Sun as a result of the observed anomalies in the orbit of Uranus. The positive side of the problem was, says Mayo, the discovery of the causes of these interpretative difficulties, which, as we know, led to the discovery the planet Neptune which was not known before. The second example is Hertz's experimental work on cathode rays which led him to the conclusion that these rays are not deflected when they are exposed to an electric field. The error of this conclusion was shown in an experiment – as has already been mentioned – by Thomson when he took into account the existence of the phenomenon of gas ionization in the discharge tube, caused by photons. This phenomenon led to the accumulation of ions on electrodes and the generation of small electric fields. By increasing the gas pressure inside the tube and improving the construction of the electrodes, Thomson discovered the impact of small electric fields on cathode rays, which escaped Hertz's attention. In addition, Thomson gained new knowledge about the phenomena of ionization and the formation of electric charges in space. In conjunction with the conducted experiments on cathode ray deflection, Thomson's experiments pointed to obstacles that need to be removed in order to achieve the expected effect – cathode ray deflection. Thomson's experiments were not only a correction to Hertz's experiments, but turned out to be important in themselves. The phenomenon of gas ionization induced in such a way has become fundamental for the study of electrically active particles in the so-called Willson cloud chamber. Thus, detailed knowledge of the phenomena occurring during the construction and use of a particular cognitive apparatus, says Mayo, made Thomson learn from the mistakes of his predecessors and his own mistakes.

In addition to modifying Kuhn's concept of normal knowledge by extending its scope to experimental practice, Mayo further states that the ability to discover and correct errors through experimentation is already sufficient to trigger or at least initiate scientific revolutions, a thesis that clearly goes beyond the mechanisms of the formation of revolutions described by Kuhn. Mayo sees a good argumentation for her claim in a certain interpretation of Brownian

motion, which J. Perrin tested in his experiments at the end of the first decade of the 20th century. These experiments have established beyond any doubt that these movements are irregular. These findings, combined with the observational data that the change in particle density distribution is dependent on their height, led Perrin to the conclusion that Brownian particle movements are incompatible with the second law of thermodynamics, and at the same time correspond exactly to the predictions of the hypothetical gas theory. Similarly, Mayo goes on to argue, the experimental research of the radiation of perfectly black bodies, radioactive decay of atoms and photoelectric phenomena forced a revolutionary abandonment of classical physics and laid the foundations, in the first decades of the 20th century, for a new quantum theory[21].

4. CONCLUSIONS: THE ACHIEVEMENTS AND PERSPECTIVES OF THE NEW EXPERIMENTALISM

Thus the new experimentalism indirectly rejects the accusation that experimental results, dependent on (forced by) theories and paradigms, cannot constitute a legitimate instance for the determination of the truthfulness of empirical theories. The validation of this role as a "referee" for an experiment comes from the constant critical analysis of experimental practice and the use of research equipment (instruments), leading to the elimination of errors, to consideration of counter-problems and modification of problems. Empirical scientific theories can only be modified or altered by experimental research to the extent that the results of the experiments are independent of these theories. One can talk about the rationality of scientific revolutions only if they are forced by experimental results. The perspective of formulating empirical science, all the theories and paradigms of which depend only on speculative assumptions,

21 On the positive and negative role of experimentation, on the understanding of Kuhn's "normal science" as an experiment-based science, on the extension of Kuhn's concept of "scientific revolutions", cf. A. F. Chalmers, *Wege der Wissernschaft*, op. cit., 162–163.

is absurd. This kind of science would lose contact with the reality it wants to describe and explain, and experiment is the most characteristic feature of this contact.

The new experimentalism shows how experimental phenomena and results can be justified with the use of numerous and various strategies, e.g.: practical interpretations, formulation and solving of counter-problems, elimination or control of errors, etc., in order to demonstrate their autonomy, their independence from individual or complex theories, their existence. It makes an important contribution to the understanding of the notion of progress in science as increment (expansion) of experimental cognition: *the best scientific theories are those that have survived a rigorous experimental test*, with the rigorous experimental test being understood as the possibility of rejecting a claim when it is false. It can demonstrate how an experiment can be a criterion for comparing different theories and how it can trigger revolutions in science. Careful analysis of the elements of the experimental procedure serves to check theoretical reasoning and provides a basis for discriminating between what is based on experience and what must be called speculation.

The new experimentalism wants to bring the philosophy of science into the path of facts and proposes a useful correction of some of its, too theoretical, assumptions. However, it does not provide a definitive and holistic answer to the question about the nature of science. This is because an experiment is not absolutely independent of theory. Undoubtedly, it has its own dynamics of development and progress, but similarly, theories also have its own dynamics. The representatives of new experimentalism are right when they claim that it is a mistake to see every experiment as an attempt to answer questions that arise on the basis of a given theory, and not to appreciate at all, or to insufficiently appreciate, the specificity (independent of theory) of the experiment. For example, Galileo was not checking any theory concerning the moons of Jupiter when he directed his telescope to the sky. Since then, many unknown astronomical phenomena have been discovered in a similar way thanks to new instruments and technologies. On the other hand, it is an unde-

niable fact that theories to a large extent and in a wide scope set the direction for the experimental work and the path to discovering new phenomena. The predictions of Einstein's general theory of relativity were, as we know, the motivation for Eddington's solar eclipse research. Einstein's theoretical contribution to the kinetic theory of gases prompted Perrin to study Brownian motion within a certain range. On the basis of theoretical aspects, the question arose as to whether the frequencies of polarizing changes in dielectric media have a magnetic character, prompting Hertz to start a series of experimental investigations, culminating in the generation of radio waves. The same thing happened with Aragos' discovery of a bright spot in the middle of a darkened glass as a result of an experiment testing Fresnel's wave theory of light.

Whether or not, and regardless of to what extent, an experiment is oriented by some theory, representatives of new experimentalism assess the independence of experimental knowledge from theory. Undoubtedly, Mayo's contribution to such an evaluation of experimental results is significant; her guidance on the use of individual elimination techniques and different kinds of error statistics is particularly valuable. She introduces the concept of an experiment "of the same type", which, on the basis of random control of individual experiments, which are elements of a certain group of them (experiments of the same type), can be assigned a high degree of probability of results. However, the question arises as to how to understand, or how to correctly construct the concept "type of experiment"? Experiments, as we know, can be distinguished in different ways: according to the time they are carried out, according to the place (different laboratories), according to the use of different tools (instruments), etc. A general answer to this question could be a postulate that by "type of experiment" we mean a set of experiments whose essential features are similar. The determination of essential characteristics of an experiment must be, in turn, carried out in relation to the contemporary state of science in a given field; thus, they will change as knowledge is changed, modified, or improved. For example, Galileo conducted a series of experiments from which he

concluded that acceleration is constant due to gravity. Let us agree that he was also convinced that there was little possibility of data appearing that would be against his thesis. From the present point of view, we know that Galileo's conviction that his thesis is highly probable would be weakened if he carried out his experiments below sea level. If, however, in this kind of experiments, one assumes, as Galileo did, that the tendency for heavy objects to fall is their absolute property, which all objects possess for the sole reason that they are material objects, it is not easy to see that the height above sea level is important in this case and that Galileo's experiments, designed to provide a random control of the acceleration of the fall of bodies, were not representative. The determination of what can be considered as "similar types of experiments" will therefore always depend on a certain theoretical context.

The theoretical context in which the experiment is always located becomes decisive when stating that the results of the experiment go beyond the specific conditions in which they were obtained. One might see this, e.g. in the argumentation of Mayo, who states that the solar eclipse experiments confirm Einstein's theory on gravity. By taking such position, one indirectly concludes that the results of the solar eclipse experiments are exactly the same as those of Newton or Oliver Lodge, who refer to the mechanism associated with the ether as well as any other alternative theory. This is why, in a commentary to the article written by Dyson and Crommelin, Mayo writes that it seems to be the reason why one is forced to resort to Einstein's theory as the only explanation[22]. So, it is not just a matter of showing that until then and in these conditions, the acceptance of Einstein's theory is reasonable, but the main purpose of the argumentation is to make a statement: in fact, other alternative theories do not exist. Naturally, as Chalmers emphasize, Mayo cannot and does not try to exclude the existence of some not yet formulated modification of Newtonian theory, or a theory based on the existence of the ether, which would be able to provide a satisfactory explanation on the

22 Cf. D. Mayo, *Error and the Growth of Experimental Knowledge*, op. cit., 291.

results of the solar eclipse experiment. In this context, her advocacy of Einstein's theory, as well as her acceptance of other scientific laws and theories, will be based on the Popperian approach claiming that these survived the rigorous attempts to prove them false, unlike their competing alternatives. The only difference between Mayo's and Popper's followers is that she was able to develop a better version of rigorous inspection, a version in which theoretical considerations play an important role not only in the process of falsification but also in the acceptance of the theorem or theory.

Representatives of the new experimentalism are of the opinion that the experimenters have accurate techniques to reach a credible experimental cognition with this way being relatively independent of the theories in which they work, are guided by or are supported by. As far as the truthfulness of this statement is provided, it seems that the methodological deviations of falsificationism can be corrected and at the same time it can be acknowledged as the cumulative aspect of scientific advance understood as the growth (enlargement) of trustworthy experimental cognition. However, if the theoretical assumptions and elements are assigned an important role in the progress and obtaining experiment results, one has to agree with the existence of a certain range of errors in experimental cognition. The new experimentalism cannot in this case indicate how to eliminate theories or theoretical constructions from science (scientific cognition). In the context of these considerations, however, it may be purposeful to note that an important factor in determining the accuracy of Newtonian mechanics in the area of interplanetary travel was mass which, if not taken into account – at a given speed – was an important counter-argument to Newton's theory of relativity. Undoubtedly, theories have "their own life" in science. The principles of quantum mechanics widely used in science, for example, to improve the electron microscope or to obtain energy, are much more than just a generalization of specific experiments. Thus, the questions arise: what kind of a "peculiar life of theory" is it and what is its connection with an experiment? Some representatives of the new experimentalism would like to draw a sharp demarcation line

between well-established experimental cognition on the one hand and theories on the other. Mayo seems to belong to this group when she differentiates between the general theory of relativity and the theory of gravitation experimentally proven by Eddington. Others do not attempt to make this kind of distinction, believing that only experimental laws provide an opportunity to formulate verifiable statements about the world. On the other hand, they consider that theories are some kind of organizational and heuristic structures and not statements about the real world[23].

Many theorists of science and methodologists agree with the claim that the value of a theory is manifested by the extent to which it can withstand radically strict verification. However, there is a considerable number of theories (theorems) in science that undoubtedly do not meet this requirement. In these cases, a significant correspondence between theory and observation can also be established, but only if the failure to meet the formulated postulate is not an argument against these theories.

The normal practice of the empirical sciences is, among other things, that from theories and various, sometimes even questionable assumptions, some kind of predictions are derived. Experimental confirmation of these predictions is considered to be an important confirmation of theories. The reason for the negative result of the confirmation of the predictions, i.e., their contradiction, may be either in the theory itself, or in the auxiliary assumptions, or in the theory and auxiliary assumptions at the same time. Hence, not every falsification of a prediction is an argument for rejecting a theory. As a consequence, it may seem that a verification in which some predictions appear which are contrary to experience, is not strong (radical) enough, but such a theory can obtain significant reinforcement with other confirmations. The following example can be an illustration of this problem, in which N. Thomason was very interested[24]. Coper-

23 On the successes and prospects of new experimentalism cf. A. F. Chalmers, *Wege der Wissernschaft*, op. cit., 164–167.

24 Cf. N. Thomason, *The power of ARCHED Hypotheses: Feyerabend's Galileo as a Closet Rationalist*, British Journal of the Philosophy of Science 45(1994), 255–264; Idem, *1543*

nicus' theory assumes that the planet Venus appears in the form of phases which in a specific way correspond to, and correlate with the phases of the Moon. On this basis, it was assumed that Venus is not permeable to light. Both Copernicus and Galileo considered this assumption to be an open issue. Galileo could use his telescope to confirm the occurrence of phases of the planet Venus according to the assumptions of Copernican theory. Combined with the assumption that Venus is not permeable to light, the result of telescopic observations would be a strong confirmation of the theory and auxiliary assumption. If the phases of the planet Venus could not be observed, the reasons for this could be found both in the theory and in the auxiliary assumption. Such an observation procedure would therefore not be a strong test of the Copernican system.

A similar and relatively frequent situation is encountered when the observations which examine a given theory are ambiguous. In this case, the compatibility of theoretical predictions with the presented observations can confirm both the theory and interpretation of the observations, while a lack of compatibility only indicates the need for some changes or modifications. An example is the use of an electron microscope to observe the dislocation (shift) of atoms in crystal structures. The occurrence of these dislocations, i.e. deviations from the regular arrangement of atoms in crystalline materials, was theoretically predicted in the 1830s. The dislocations provide the crystals with their characteristic durability, extensibility and plasticity. If there was perfect order (perfect regularity) in the crystalline structures, then too much tension of forces would form in the crystal lattice, and these would destroy the known durability and known shapes of crystalline bodies. An improved electronic microscope allowed, twenty years later, to observe the crystalline lattice and dislocations, but it was not yet good enough (the theory of interaction between electrons and observed crystalline samples was still imperfect) to definitely verify the theoretical predictions. It was

– *The Years That Copernicus Didn't Predict the Phases of Venus*, in: *1543 and All That*, ed. A. Corones, G. Freelan, Reidel, Dordrecht 1998.

not until 1956 that J. Menter[25] and P. B. Hirsch[26] constructed an electron microscope that was perfect enough to identify dislocations well. Some ways of the proper interpretation of the complex of microelectronic photographs proposed by them strongly resemble the techniques proposed by the representatives of the new experimentalism when identifying the results of an experiment. This is how, for example, the consequences of practical interventions, such as bending of the crystals, have been observed and determined, which was consistent with the pictures. The pictures showed the crystal lattice and the phenomena of occurrence of such different physical processes as X-ray radiation and electron diffraction. The extent to which these phenomena were compatible leads to the conclusion that in this case theory and observation confirm each other. Menter, for example, used Abbe's theory of microscope construction to take pictures of crystal lattices. He considers the essential correspondence between the prediction and the received images to be a confirmation of both his theory and his interpretation of the images, as an image of the crystal lattice. Hirsch also used his observations which indicate that dislocations are arranged according to the assumptions of current theories to consider them as the confirmation of both the theory and the fact that the images are an image of dislocations.

In all these cases, the conformity of the theory with predictions is an important confirmation of a theory. In other cases, experimental situations were so unspecified and incomprehensible that they allowed for other causes of failure than those that were close to the tested dislocation theory. One can expect, as Chalmers states[27], that the described example of behaviour is the norm of experimental science in general. The methodological characteristics of strong verification postulated by Mayo can be used in the above-mentioned examples. The fundamental question is, is it likely that a false theory can get this

25 J. Menter, *The Direct Study by Electron Microscopy of Crystal Lattices and Their Imperfections*, Proceedings of the Royal Society, A 236(1956), 119–135.

26 P. B. Hirsch, R. W. Horne, M. J. Whelan, *Direct Observation of the Arrangements and Motions of Dislocations in Aluminium*, Philosophical Magazine 1(1956), 677–684.

27 A. F. Chalmers, *Wege der Wissernschaft*, op. cit., 168–169.

kind of strong experimental confirmation? In both cases discussed, Copernicus' theory and the theory of dislocation, a positive answer is extremely unlikely. The methodological postulate of the future, derived from the considerations presented, could be: *all the theories concerning the empirical world should be confirmed by the encounter of theoretical predictions with the widest possible range of strong experimental verification (strong observation)*. The conception proposed by the representatives of the new experimentalism, especially Mayo's proposals for radical checking, are well in harmony with the modern scientific practice[28].

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28 The group of representatives of new experimentalism, apart from the said authors, also includes A. Franklin, *The Neglect of Experiment*, Cambridge University Press, Cambridge 1986; Idem, *Experiment, Right or Wrong*, Cambridge University Press, Cambridge 1990; P. Galison, *How Experiments End,* University of Chicago Press, Chicago 1987; Idem, *Image and Logic: A Material Culture of Physics*, University of Chicago Press, Chicago 1997; D. Gooding, *Experiment and the Making of Meaning: Human Agency in Scientific Observation and Experiment*, Kluwer, Dordrecht 1990.

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MATHEMATICALNESS OR MATHEMATICABILITY OF NATURE?*

Abstract. The notions of "mathematicalness" and "mathematicability" of nature appear in the context of attempts at explaining the effectiveness of mathematics in the description of the world. Mathematicalness of nature means that structures of the world are mathematical. But is this true? Is nature mathematical? In the paper some reasons for mathematicalness of nature are considered. Mathematical analysis is widely used in physics. Its application requires continuity of time and space. There are also different kinds of infinity in the mathematical theories used in physics. This raises the issue: whether the material world is continuous or we "impose" on nature certain properties in order to use convenient mathematical tools. Is mathematics a useful tool, or does it reflect nature? So, is nature mathematical or only mathematicable? The article shows that mathematicalness of nature is only a metaphysical hypothesis.

Keywords: nature; mathematics; science; mathematicalness of nature; mathematicability of nature

1. INTRODUCTION

It is a truism to say that mathematics is successfully used in natural sciences, especially in physics whose theories are generally similar to mathematical theories to the extent that today it is difficult to perceive the boundary where mathematical formalism ends and physics,

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understood as the description of natural phenomena, begins. Also, other natural sciences, although they are not mathematicalised to the same extent as physics, use a variety of mathematical models and theories. In this sense it can also be said that nature is mathematicable, which means that it has properties enabling the application of mathematical formalism in the theories of natural sciences.

The explanation of matematicability of nature is not a trivial issue. This is because we are dealing with the physical, material world, the spatial and temporal reality on the one hand, and with mathematical objects which, apart from their essence, are certainly not material objects immersed in time and space. Why therefore the science about such objects – mathematics – is used for describing and explaining the world of physical objects whose nature is different? There are numerous answers to this question and, as it can easily be seen, they significantly depend on the interpretation of both the essence of mathematics, and the relationship between the theory of nature and the material world, which leads to the domain of controversy in the philosophy of mathematics and the philosophy of science. In this article, I will not dispute with different views in this scope. I will only have a closer look at one issue which arises in the context of the question about the matematicability of nature. Namely, in some explanations of the effectiveness of mathematics in the research on nature, a hypothesis about the "mathematicalness of nature" appears, by which the existence of correspondence between mathematical and natural structures is meant. If nature is mathematical, then explaining the fact of the "unreasonable effectiveness of mathematics"[1] becomes a trivial task. But – is nature mathematical in its essence? In this article I will point out certain difficulties with accepting a positive answer to this question.

2. THE CONCEPT OF THE "MATHEMATICALNESS OF NATURE"

In literature, there are more than one interpretation of the concept of "mathematicalness of nature". Most authors analysing the rela-

1 P. Wigner, *The Unreasonable Effectiveness of Mathematics in the Natural Sciences*, Communications in Pure and Applied Mathematics 13(1960)1, 1–14.

tions between mathematics and the material world, form their own descriptions of this term, which often depend on their scientific discipline. We are therefore dealing with an entire palette of positions, from moderate ones which almost reduce the mathematicalness of nature to its mathematicability, to the most extreme ones which connect the mathematicalness of nature with mathematical platonism[2]. The common core of these different concepts is the belief that mathematicalness is a feature of physical reality which consists in the fact that, as Józef Życiński writes, "there is a puzzling correspondence between natural phenomena and their mathematical description, which is in no way limited to the generalisations of registered observations, but it contains a surplus of information"[3]. This is why "the world is so willing to succumb to mathematised research"[4]. Therefore the question whether or not nature is mathematical, comes down to determining whether correspondence between natural and mathematical objects exists and in what it would consist. Małgorzata Czarnocka lists the following interpretations of the position assuming that nature is mathematical (these interpretations presuppose epistemological realism): "as a similarity of the mathematical and natural universes in question or their subdomains, as gen-identity (universes would be identical but not the same) or quasi-gen-identity as the identity of the structures of nature and mathematical structures, as a specifically precised correspondence between the universe of mathematical objects and natural objects, as the belonging of mathematical entities to nature, that is as the empirical nature of mathematical entities, as the mathematical ontic nature of nature itself (it would consist of mathematical entities and

2 Different views on the problem of the mathematicalness of nature can be found in the collective work *Matematyczność przyrody*, eds. M. Heller, J. Życiński, A. Michalik, OBI, Kraków 1992², with lectures delivered at the symposium *Dlaczego przyroda jest matematyczna? (Why is Nature Mathematical?)*, organized by Centre for Interdisciplinary Studies at the Faculty of Philosophy of the Pontifical Academy of Theology in Kraków.

3 J. Życiński, *Jak rozumieć matematyczność przyrody*, in: *Matematyczność przyrody*, op. cit., 39.

4 M. Heller, *Co to znaczy, że przyroda jest matematyczna?*, in: *Matematyczność przyrody*, op. cit., 14–15.

mathematical structures or objects indistinguishable from mathematical ones)"[5].

Arguments justifying the hypothesis of the mathematicalness of nature[6] can be found in both the history of mathematics and natural sciences, and in research practice of scientists. I will quote three examples to support this hypothesis.

The first example refers to the history of physics. At the turn of 20th century, Max Planck introduced the concept of an elementary quantum of action to propose a formula for radiation of a perfect black body. This was an "almost fabricated"[7] concept, as Grzegorz Białkowski writes. Planck attempted to incorporate this concept into classical physics, but it was, as Planck himself admitted, "stubborn and resistant"[8]. As further advancements in physics have shown, the concept of quantum of action turned out to be extremely prolific and it became the foundation of quantum theory. In this sense, it can be said that it opened up new and unexpected perspectives for physics. The idea of quantum of action has had much more impact than Planck himself expected from it. Planck considered this type of concepts as so-called absolute elements. They are fixed elements of the theory of physics and are preserved even if the entire theory changes[9]. Apart from the quantum of action, Planck considers the laws of conservation of energy, momentum and the principle of minimal action as absolute elements[10]. These absolute elements were for Planck the "signs" of the real physical world, "na-

5 M. Czarnocka, *Matematyczność przyrody w uwikłaniu epistemologicznym*, in: *Nauka w filozofii. Oblicza obecności*, eds. S. Butryn, M. Czarnocka, W. Ługowski, A. Michalska, IFiS PAN, Warszawa 2011, 270.

6 Stanisław Wszołek points to the fact that the thesis about the mathematicalness of nature is a metaphysical hypothesis: S. Wszołek, *Matematyka i metafizyka. Krótki komentarz na temat hipotezy matematyczności świata*, Studia Philosophiae Christianae 46(2010)1, 25–36.

7 G. Białkowski, *Stare i nowe drogi fizyki. Fizyka XX wieku*, Wiedza Powszechna, Warszawa 1982, 24.

8 Ibid.

9 M. Planck, *Nowe drogi poznania fizycznego a filozofia*, ed. S. Butryn, transl. K. Napiórkowski, IFiS PAN, Warszawa 2003, 194, 249.

10 Ibid, 104, 162.

ture ... revealed a certain absolute, a certain actually unchangeable unit"[11]. Such absolute elements are, as demonstrated by Magdalena Filipek, the principles of symmetry which play a significant role in contemporary physics[12]. Absolute elements are identified at the level of the theory of physics. At the same time, they have a relation to natural reality. Thus, it can be concluded that there is a correspondence between the structures of nature and mathematical formulas that capture absolute elements as understood by Planck.

The second example is related to a story told by Olaf Pedersen. As a young physics teacher he taught children about the specific weight of bodies. The "traditional" way of introducing this concept from its definition to experimental determination of the specific weight of metals did not arouse much interest of pupils. So Pedersen came up with the idea to start with measuring the weight and volume of different pieces of lead. Pupils were given two columns of numbers. Then Pedersen suggested that they do something with those numbers. After ineffective attempts to add and multiply the numbers, pupils started dividing them. "And then – a miracle happened – as the result of the operation, each pair of numbers yielded almost the same result. I will never forget the silence which suddenly fell over the classroom", Pedersen writes[13]. Nature revealed one of its properties through a mathematical formula. This experience of pupils can be extended to include the experience of scientists dealing with the usefulness of mathematics in research pertaining to the world. A certain mathematical formula reveals the physical reality, discloses interesting aspects of the physical world.

The third example demonstrates the special connection between the world of physical experiment and mathematics. In maths, so-called

11 Ibid, 181.

12 M. Filipek, *Elementy absolutne w fizyce w kontekście koncepcji trzech światów Maxa Plancka*, in: *Z zagadnień filozofii przyrodoznawstwa i filozofii przyrody*, vol. 20, eds. A. Lemańska, M. Lubański, A. Świeżyński, Wydawnictwo UKSW, Warszawa 2011, 402–433; Idem, *Elementy absolutne w fizyce w kontekście filozofii Maxa Plancka*, Studia Philosophiae Christianae 44(2008)2, 230–237.

13 O. Pedersen, *Wiara chrześcijańska i przemożny urok nauki*, transl. T. Sierotowicz, in: *Stwórca – Wszechświat – Człowiek*, vol. 1, ed. T. Sierotowicz, OBI – Biblos, Tarnów 2006, 78.

quantum algorithms are formulated which can be used for proving mathematical theses by performing a quantum experiment. Such an algorithm is, for example, Shor's algorithm for integer factorisation. If a quantum computer was constructed, this algorithm would enable a quick factorisation of each integer[14]. Thus, traditional mathematical proof can be replaced with physical experiments. The existence of quantum algorithms can then constitute a premise of the argument supporting the relation between mathematical structures and natural reality.

The above examples demonstrate that there are patterns in nature that can be captured with the use of mathematical formulas. But this is an understanding of the mathematicalness in its weakest sense. There is still no explanation why such patterns exist in nature. The mathematicability of nature can be explained with the use of a much stronger hypothesis of the mathematicalness of nature connected with mathematical platonism. Such an extreme version of the mathematicalness of nature is shared by Michał Heller and Józef Życiński. They argue that the foundation of natural reality consists of mathematical structures that are existentially primary in relation to the material world. As Heller notes, "If, for example, two elementary particles collide and produce a cascade of other particles, this happens not because they have some mysterious power and it was just a fortunate coincidence that some mathematical model can aptly … describe this phenomenon, but because these particles are an actualisation of a certain mathematical structure … and they perform exactly what is encoded in that structure. If there was no mathematical structure, there would be no particles"[15]. According to Życiński, it is not concrete things perceived by us, but the relational formal structures that constitute the

14 K. Wójtowicz, *Teoria obliczeń kwantowych – argument w sporze o aprioryczny status matematyki?*, Studia Philosophiae Christianae 45(2009)1, 71–91; Idem, *Empiryczne aspekty dowodów matematycznych*, in: *Światy matematyki. Tworzenie czy odkrywanie?*, eds. I. Bondecka-Krzykowska, J. Pogonowski, Wydawnictwo Naukowe UAM, Poznań 2010, 341–365. It is worth adding that a "typical" algorithm for integer factorisation is extremely time-consuming.

15 M. Heller, *Fizyka i meta-fizyka*, in: *Ponad demarkacją*, eds. W. Kowalski, S. Wszołek, Biblos, Tarnów 2008, 100.

primary level of the physical world[16]; "material particles have dematerialised to become a manifestation of directly unobservable fields whose structure and interactions are described by the mathematical formalism of theory"[17]. Życiński then assumes "the ontic primacy of relations and structures over their physical and biological realisation"[18]. What is hidden behind the concrete objects perceivable with the senses, is the platonic reality that lies at the foundation of physical processes[19]. This platonic reality is defined by Życiński as the "field of rationality". It constituted the "foundation" of natural reality.

3. THE DIFFICULTIES OF THE HYPOTHESIS OF MATHEMATICALNESS OF NATURE

There is a range of arguments supporting the weaker version of the hypothesis about the mathematicalness of nature. But do these arguments support the version adopted by, among others, Heller and Życiński? Are there any data indicating that natural objects are really a realisation of mathematical structures? A prerequisite for applying mathematics is the idealisation or abstraction of a particular fragment of natural reality. Therefore, do mathematical theories used in physics capture the structure of the world, or just our idealised representation of the world? Is mathematics just a useful tool, or do its theories reflect the natural reality? And hence, is nature mathematical, or just mathematicable? The existence of quantum algorithms can be

16 "Along with the advancement of knowledge, the reality of the observed substrate and particles appears to be secondary, and the network of relations and structures described in the language of mathematics seems to be a fundamental and primary reality. These structures can have diverse physical realisations, which does not change the fact that the level of symmetry, invariants and formal relations remains a more primary level of existence" (J. Życiński, *Teizm i filozofia analityczna*, vol. 2, Znak, Kraków 1988, 67).

17 Ibid, 60.

18 M. Heller, J. Życiński, *Wszechświat i filozofia. Szkice z filozofii i historii nauki*, Polskie Towarzystwo Teologiczne, Kraków 1980, 66.

19 J. Życiński, *The rationality field and the laws of nature*, in: *Wyzwania racjonalności. Księdzu Michałowi Hellerowi współpracownicy i uczniowie*, eds. S. Wszołek, R. Janusz, Wydawnictwo WAM – OBI, Kraków 2006, 92.

used to support the mathematicalness of nature in the "weaker" sense, without assuming a platonic perspective. However, mathematicalness of nature remains something mysterious in this approach. The hypothesis of mathematicalness of nature in its extreme version explains why the structures of nature and mathematical structures fit together. However, it is a view that generates more problems than explanations.

3.1. THE PROBLEM OF CHOOSING A MATHEMATICAL THEORY BY A SCIENTIST

A scientist, when formulating a natural-science theory, either perceives that some mathematical theory "fits" to the description of a physical theory, so he chooses it from among the mathematical theories known to him, or formulates a new mathematical formalism, at times without initially sufficient justification in the field of mathematics (as in the case of Dirac delta) and formulates a natural-science theory on its foundation.

It seems that a scientist enjoys a lot of freedom when choosing a mathematical theory. For it happens that the same phenomena can be captured with the use of different mathematical formalisms. This was the case, for example, of formulating the theory of micro-universe. In this case there are different mathematical formalisms, though they are "translatable" one to another. However, it is difficult to determine which of the ontologies of mathematical theories corresponds to the structure of nature. Attempts are also made at developing theories of physics on the basis of mathematical formalisms different than the ones that are generally used in physics, or even eliminating mathematical concepts from the theory of physics[20]. Although these "operations" are performed by philosophers

20 For example, Paweł Zeidler demonstrates the possibilities provided to physics by the so-called alternative set theory or non-standard analysis. These theories determine other "ontologies" of physical theories. P. Zeidler, *Spór o status poznawczy teorii. W obronie antyrealistycznego wizerunku nauki*, Wydawnictwo Naukowe IF UAM, Poznań 1993, 86–103. On the other hand, the best known attempt to eliminate abstract concepts from physics is nominalism (fictionalism) proposed by Hartry Field who attempts to demonstrate that mathematics is not indispensable for physics (in this way

rather than physicists active in the field of developing physics, they nonetheless demonstrate that the choice of a mathematical theory by a scientist is not fully determined. Therefore, does a physicist discover some mathematical structure "embodied" in nature, or does he impose on nature his own conceptual structure enabling him to engage in a dialogue with nature? It seems that there is no clear answer to a question formulated in this way. Undoubtedly, certain phenomena seem to impose a mathematical approach, however this does not apply to all of them.

What is more, if a mathematical theory is to be applied in physics, as a rule, the investigated reality has to be "simplified". For example, in cosmology it is assumed that distribution of matter in the universe is homogeneous, that space is isotropic, that in the entire universe the same laws of physics apply as on Earth. These assumptions make it possible to solve the equations of the general theory of relativity used for the entire universe and construe a cosmological model.

The issue of the selection of a mathematical formalism is to some extent associated with problems concerning the measurement of, and units used for the measurement of a variety of dimensions. On the one hand, it seems that a scientist is completely free to choose the units of measurement. On the other, as pointed out by Grzegorz Białkowski, this choice is determined by the ease of performing calculations and by the possibility for other scientists to verify the results of such measurements[21]. Therefore, some units are

Field attempts to disprove the second assumption of Quine-Putnam's argument for mathematical realism). According to Field, the use of mathematics in physics is motivated by convenience – theories then become simpler. In particular, Field formulates Newton's theory of gravitation as a nominalist theory. Cf. H. Field, *Science without Numbers*, Basil Blackwell, Oxford 1980.

21 "Of course, each researcher could express the results of his measurements in any units, for example measure length with his own feet. However, if this method was applied, the results obtained by him could not be verified by other researchers. What is more, units belonging to such a system as an inch (the width of the human thumb), foot, cubit, mile etc., are in complex arithmetic relations which makes it difficult to effectively apply them. It seems obvious that the decimal metric system is the best choice for the application in some principles adopted in physics which include intersubjective verifiability and the convenience in the use of the calculation apparatus."

more convenient than other. Nonetheless, it is not an argument in favour of the mathematicalness of nature. The choice of the units of measurement is to a great extent conventional.

Before applying a particular mathematical theory, a scientist usually idealises or abstracts the analysed aspects of natural reality. As a consequence, theories of natural science capture the properties of ideal objects, such as a point particle, a perfect gas, a perfect black body that do not exist in natural reality. Newtonian mechanics and the special theory of relativity assume the existence of the inertial reference frame including the entire space. This enabled the formulation of useful theories pertaining to the movement of point particles, despite the fact that such global systems do not exist in nature. However, without this assumption, attempts to formulate a theory of movement yielding accurate predictions ended up in failure[22]. As noticed by Jarosław Mrozek, when analysing Einstein's theory in this scope, we are dealing with a triple relationship: the natural world – theories of physics – mathematics[23]. In this approach, the structures of the natural science are between the structures of nature and the structures of mathematics. Thus, mathematical structures constitute a foundation for idealised abstract models of certain aspects of reality which are the subject matter of theories. But do these models adequately capture the structure of nature? Do they reflect the structure of the world? To provide an affirmative answer to this question, we would have to state that abstraction and idealisation do not oversimplify reality and thus do not "distort" physical structures, which is closely connected with the necessity to adopt a realistic interpretation of natural science theories.

G. Białkowski, *Ciągłość i nieciągłość w fizyce*, Delta (1977)8 (http//www.wiw.pl/delta/ciaglosc.asp), [accessed on: 08/2012].

22 As noted by Jerzy Kowalski-Glikman, "with the use of mathematics, we are able to describe only idealised processes which are simple enough for their mathematical model to be effectively used for obtaining the predictions of the course of such a process" (J. Kowalski-Glikman, *Cena matematyki*, in: *Nauka* w *filozofii. Oblicza obecności*, op. cit., 224).

23 J. Mrozek, *Czy Einstein głosił matematyczność przyrody?*, in: *Nauka* w *filozofii. Oblicza obecności*, op. cit., 266.

A problem which remains unresolved is the question whether a real process affected by unidentifiable factors can be captured mathematically, without abstracting. Difficulties with mathematising complicated processes are particularly evident in the biological sciences which are difficult to mathematise. As noted by Izrael Gelfand, paraphrasing the title of Winger's Article, "unreasonable is the ineffectiveness of mathematics in biology"[24]. In accordance with the thesis of the mathematicalness of nature, mathematical structures correspond with natural structures. It seems, however, that correspondence exists only between the structures appearing in physical models and mathematical structures.

3.2. MATHEMATICALNESS OF NATURE AND THE DETERMINISTIC CHAOS

Problems related to matching mathematical and natural structures are particularly evident in the study of phenomena which involve deterministic chaos. Because, if a phenomenon is really determined and its course is sensitive to the change of initial conditions, then it is practically impossible to distinguish, based on experimental data, the specific function which models a given phenomenon. We can only choose from among the classes of a variety of functions, and this is also done only in an inaccurate way. As Ian Stewart notes, "any theory in the same universality class will do just as well"[25]. Therefore, it is impossible to choose one particular model for describing a phenomenon: models with different parameters, or even completely different models can, within the range of measurement error, model a particular process equally well, or equally improperly. We are also unable to distinguish a situation in which exponentially accumulated measurement errors exist with the model no longer

24 L. Sokołowski, *Parę uwag o matematyczności przyrody*, in: *Nauka w filozofii. Oblicza obecności*, op. cit., 212. The differences between the possibilities to mathematise processes in inorganic and organic nature are also emphasised by M. Czarnocka, *Matematyczność przyrody w uwikłaniu epistemologicznym*, op. cit., 273.

25 I. Stewart, *Czy Bóg gra w kości? Nowa matematyka chaosu*, transl. M. Tempczyk, PWN, Warszawa 1994, 244.

working for this reason from a situation of inadequate model selection, or even inadequate recognition of the phenomenon as occurring in accordance with the deterministic principle.

What is more, some processes can be either approached with the use of deterministic models, or described with the use of statistical methods. Both of the above-mentioned approaches can be equally good for predicting. Sometimes a statistical approach and treating the course of a particular phenomenon as a random phenomenon can be more convenient or mathematically simpler. Thus, the existence of deterministic chaos causes the inability to distinguish between deterministic process (with deterministic chaos) and a random process. The use of mathematics, formulating a mathematical model that would capture the course of a given process does not allow to solve one of the fundamental problems of material reality, namely the issue of its determinateness. Thus, either we are unable to discover the proper mathematical structures lying at the foundations of nature, or such clearly defined structures do not exist. Therefore, as it seems, the discovery of deterministic chaos puts into question the mathematicalness of nature.

3.3. THE PROBLEM OF CONTINUITY AND INFINITY IN NATURE

Another problem is related with the existence in mathematics of certain concepts for which it is impossible to verify whether there is something that corresponds to them in nature. I will consider two of such mathematical concepts: continuity and infinity. In the theories of physics, various mathematical spaces are the "stage" in which events occur. Mathematical analysis, whose use assumes the continuity (completeness) of a given space and time, is a useful tool for investigating different types of changes in these spaces, because defining the concept of a derivative which is crucial for the study of changes is possible for continuous functions defined on complete spaces[26].

26 As noted by G. Białkowski, "Acceleration is a derivative of velocity with respect to time. Derivatives, as it is commonly known, can be calculated only in the area of arguments in which the differentiated function is continuous. This means that we assume, more or less tacitly, that velocity is a continuous function of time. What are the grounds for

I will limit the question about continuity in nature to the case of movement of objects in the physical space. Theories describing movement are Newtonian mechanics, and special and general relativity theories. In these theories, the stages for events are: Euclidean space, Minkowski spacetime, and pseudo-riemannian spacetime respectively. All these spaces are complete – continuous in colloquial language, time is also continuous. But are physical space and time actually continuous? Or is it just the application of mathematical analysis for the study of changes in nature that requires the "continuising" of space and time? Both our common experience and the natural sciences are unable to provide an answer to the question about continuity of space and time. As noted by G. Białkowski, "At the first sight one could claim that we have a direct experience – be it sensory or introspective experience – of the continuity of space and time. ... However, as exemplified by cinema, such a conclusion is not justified since our nervous system itself combines close moments and close points into continuous entities. What is more, research concerning this system (e.g. vision and sight) indicate that it is completely unable to receive or transmit information in a continuous manner. Such an information within a nerve is as if a volley of electrical discharges which is effected only when a stimulus is strong enough. ... Thus, despite the direct experience of continuity we can see that it has nothing to do with what is 'actually' there"[27]. Neither does scientific experience provide any solution to this problem. This is because we do not have adequate measuring equipment to determine whether space and time are actually continuous. Due to measurement errors and the "inertia" of devices, we can only measure "extensive" fragments of space and time. We therefore cannot differentiate between a continuous change and a change occurring step by step in a very short period of time. What is more, as demonstrated by quantum mechanics, our measurements cannot reach below the so-called Planck's threshold. The assumption that time and space are continuous is the condition for the use of mathematical analysis. It is therefore dictated by the type of

this assumption?" (G. Białkowski, *Ciągłość i nieciągłość w fizyce*, op. cit.).

27 Ibid.

mathematical theory used in physics rather than by the discovery of the real nature of time and space. Does therefore complete (continuous) mathematical space capture the character of natural reality, or is it only its approximation enabling the description of certain phenomena?

Physicists use continuous functions, which is, however, related to the mathematical formalism used, and not to the "actual" character of phenomena in nature. Although Białkowski notes that the use of continuous functions finds its justification in the properties of nature since "what guarantees the continuity of velocity in the theoretical apparatus of physics" is the inertia of matter which is a certain resistance of matter "against changes to its state". "It therefore seems that in the matter itself there are 'continuising' mechanisms which prevent stepwise changes in certain physical dimensions"[28]. Nonetheless, the problem of continuity of space, time and changes occurring in nature still exists. The use of a mathematical formalism in which continuity is assumed does not prove that it also applies to the essence of natural reality. Is therefore the elementary level of the world constructed of mathematical structures, or do we have no other choice but to approximate the real structure of nature with their use.

In research concerning the properties of time and space the question that is asked is not only about their continuity, but also about the related possibility of dividing space and time into increasingly smaller bits. In this context, another concept significant for mathematics appears, which is infinity. And again, the questions that can be asked are: can sections of space and time be divided (even potentially) to infinity, are there any infinite dimensions in nature, is the Universe infinite in space or time, can certain activities be performed an infinite number of times, are time and space composed of an infinite number of points, is there an activity that can be performed in a single moment? Attempts to answer these questions have led to a number of paradoxes. It was already in the antiquity that Zeno of Elea formulated several aporias in which infinity appears in the context of the character of the *continuum*, and from his time, many various paradoxes concerning in-

28 Ibid.

finity have been formulated. It is worth emphasising that there are no simple solutions to these paradoxes to explain all the doubts. Paradoxes therefore show that infinity causes problems. This led to claiming that infinity, especially actual infinity, is a contradictory concept. The situation changed with the development of set theory and, in the 20th century, actual infinity found its place in mathematics.

But can infinity be discovered in nature? Common knowledge allows, at best, for the experience of infinity in its potential sense. Neither does scientific experience give the possibility of direct perception of an actually infinite thing. When we carry our measurements, they are always measurements of finite values of parameters - we do not have adequate tools to measure an infinite dimension. However, it is worth adding that animate nature "invented" potential infinity. The duplication of structures, for example of the DNA, and the reproduction of organisms potentially extend life to infinity, provided that there are inexhaustible resources of energy in nature.

Does therefore infinity exist in nature when what we experience is finite; and even potential infinity seems an abstraction from what is finite, albeit very large and practically unattainable for us? Our common and scientific knowledge do not allow us to answer this question. What is the relevance of the above for the issue of mathematicalness of nature? On the one hand, the assumption about continuity of space and time, and their related infinite divisibility, is necessary for the use of mathematical theories (especially differential and integral equations) for describing some natural phenomena. On the other hand, it seems that actual infinity does not exist in nature and, in any case, it cannot be ascertained. What is more, infinities proposed in the theories of physics are problematic to physicists because it is usually difficult to interpret them from a physical perspective.

For example, cosmology has difficulties with infinity. In the so-called standard model of cosmology, a singularity appears in which the density of matter, pressure and temperature have infinite values, which makes no sense from the point of view of physics. According to this model, the (observable) Universe is limited as to time and space, but it "begins" from a singularity about which the theories of physics have nothing to

say. Therefore, the efforts of cosmologists are aimed at removing infinity, especially the infinities pertaining to physical parameters, from the model of the Universe. This is because they are a symptom of a crisis of the theory. Attempts are being made at combining the theory of gravitation with quantum theory because it would enable the description of the initial singularity. But in a variety of formulated concepts, the existence of infinity is also assumed, for example the existence of an infinite number of universes, the eternity of some substrate from which our Universe emerged, the eternal existence of quantum vacuum etc., although the existence of these infinities cannot be proven.

Infinities also appear in quantum theory, for example the infinite-dimensional Hilbert spaces, the theory of which constitutes the foundation for the mathematical formalism of this theory. The model of atom also involves infinity. The idea of the quantisation of energy used for atom leads to a model in which an electron can be simultaneously in an infinite number of places and at an infinite number of energetic levels.

"Inconvenient" infinities also appear in quantum field theories – quantum electrodynamics and quantum chromodynamics. In order to get rid of them from theory, a formal "trick" of renormalisation has been used. However, this is an *ad hoc* procedure without any deeper physical justification.

Therefore, some tension appears between our cognitive possibilities and the theoretical models in which infinities exist. This is why physicists are not fond of infinity. At the same time, infinity naturally appears with the mathematical apparatus. Mathematicians nowadays do not avoid infinity, it can be said that, in a way, they have tamed it. Thus, the situation is that infinity (pertaining to a variety of aspects of nature) is necessary for applying mathematics to the study of nature; at the same time, the demonstration of its existence in nature involves difficulties which have been insurmountable so far. Some infinities are no so much assumed by mathematical formalism, as they appear in solutions to equations in theory. This type of infinities generally cause problems, as it is in the case of the singularity in the model of cosmology. As what a state of "matter" it could be to have an infinite density and temperature?

It seems that potential infinities could be tolerated in nature, and that the existence of actual infinity is an open issue, and a problem from the domain of philosophy rather than the natural sciences: actual infinity cannot be observed, and its occurrence in theory causes problems.

Since there are justified doubts as to continuity of space and time, and as to the existence of infinity in nature, is there actually any correspondence between the structures of nature and structures of mathematics? It is worth adding that when considering these issues one should realise that infinity can appear at two levels: in theories and models, that is in our human theoretical constructs, and in the physical reality whose existence does not depend on us and which we try to understand by formulating scientific theories. If infinity appears in a model, it does not have to automatically mean that such infinities – of space, time, matter, temperature, density, etc. – exist in the Universe as well.

4. CONCLUSIONS

As it seems, the thesis about the mathematicalness of nature is an ontological assumption pertaining to the character of the natural reality and does not stem from the very fact of the application of mathematics in physics. To justify this assumption, it would have to be proven that mathematics captures not just an idealised representation of the natural world, but the actual structure of the world both in the macro- and the micro-scale, and that there is correspondence between natural and mathematical structures. However, it is impossible to demonstrate. The mathematicalness of nature explains the effectiveness of the use of mathematical theories in physics, but the hypothesis itself gives rise to new problems. What is more, adopting the hypothesis of the mathematicalness of nature is connected with ontological assumptions as to the nature of mathematics and the theory of physics. These assumptions also raise a number of objections. Undoubtedly, nature is mathematicable and idealisable, but this does not have to mean that it is mathematical. Thus, the effectiveness of mathematics in the study of nature is a problem which is yet to be solved.

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SOME REMARKS CONCERNING VIRTUALITY*

Abstract. The development of computer sciences has transformed the way of thinking and our perception of the world. To express this new view of the world, a new language is created, which uses such notions as "virtuality", "virtual world", "virtual reality". These words have already worked in our colloquial speech and our thinking. However, they are used in various contexts and have a different meaning. The paper offers some remarks on the problem of the meaning of these notions and draws some consequences of their interpretation.

Keywords: virtuality; reality; IT

1. INTRODUCTION

Science is developing rapidly. The signs of this development include the changes taking place in the scientific language: the appearance of new terms, as well as new meanings assigned to old notions. Therefore, the requirement to specify terms becomes obvious[1]. M. Lubański notes that the consequence of specifying the notions is: making the meaning of the term more precise, which is achieved

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1 M. Lubański proposed such specification in his paper *Uwagi w sprawie precyzowania i porządkowania terminów naukowych*, in: *Między filozofią przyrody a ekofilozofią. W piętnastą rocznicę śmierci Księdza Profesora Kazimierza Kłósaka*, eds. A. Latawiec, G. Bugajak, Wydawnictwo ATK, Warszawa 1999, 55–67.

by defining them and pointing to possible ways of understanding them, i.e. their various meanings[2].

The times we live in are frequently referred to as the era of computerisation, and the people are referred to as the information society. The growth of computerisation entails a change in the way of thinking and perceiving the world. To describe this newly perceived world a new language is created, and new concepts are introduced. The notion of virtuality, the virtual world, virtual reality is becoming increasingly popular. These concepts already exist in our everyday language and thinking. They are used in different contexts as well as with different meanings. The aim of the considerations undertaken is to investigate the content of these concepts and indicate the consequences of their understanding.

2. THE NOTION OF VIRTUALITY

The term "virtual" is commonly used to mean something that is created by computer simulation, something that does not exist in reality, and therefore something unreal, something that is a product of imagination. Thus, in this common understanding, the "virtual world" is a substitute for the natural world. It seems that in this colloquial understanding the "virtual world" is often understood as the unreal world, which is the opposite of reality.

In a common understanding, "virtual reality" is a reality that can exist, can exist, and is created. However, the term "virtual reality" itself is misleading, since if "reality" means something real, and "virtual" means something unreal, then we are dealing with a contradiction – unreal reality. Therefore, it seems appropriate to replace the term "virtual reality" with "virtual world".

In English, however, the term *virtual* means actual, real, proper, potential, apparent[3], while *virtuality* means a feature or virtual state, as well as potentiality, potential existence, existence[4]. The Latin

2 Ibid, 55–56

3 See: *The Kosciuszko Foundation Dictionary English-Polish. Polish-English*, vol. 1, eds. K. Bulas, F. J. Whitfield, New York 1972, 996.

4 http://www.webster-dictionary.org/definition/virtuality.

language leads us to a completely different understanding, as Latin *virtualis* means effective, while *virtus* means power, virtue.

The above-mentioned overview reveals great ambiguity and differences in interpretation of the terms in question.

3. CONTEXTUAL APPROACHES

Another way to understand the meaning of these terms is to trace the contexts in which they appear. Different levels of presence of the terms "virtuality", "virtual world" and "virtual reality" may be distinguished.

3.1. UNIVERSAL APPROACHES

Thus, the terms "virtual reality" and "virtual world" are commonly used interchangeably. These terms appear in statements in everyday speech or artistic expression. In the former case, these terms usually mean "unreal reality", a form of the illusion of reality, or even a lie.

In the latter, both terms are used interchangeably with the term "fictional world". In the world of art, film, or music (including digital), it is possible to notice the creators' desire to achieve a certain ideal or abstract original piece. The creator of this world is limited by the accepted standards of beauty, fashion and workshop. The film, which is usually close to empirical reality, for instance through the use of photographic technique, mixes naturalistic and unrealistic elements. This is the result of using the same measures to reproduce and transform reality[5].

It is worth to notice that the virtual world, which has its source in the real world, constitutes its false image. Moreover, man is the creator of this world. These solutions allow the user to simulate situations similar to the real ones (driving, climbing, shooting, etc.). Man creating reality, and thus creating its fictional character, deprives themselves of the possibility to verify the created world. Fictions are difficult to verify.

5 Cf. A. Hauser, *Filozofia historii sztuki*, PIW, Warszawa 1970, 374.

3.2. TECHNICAL APPROACHES

This group includes IT context, research projects and virtual objects. The IT context has the most significant meaning. It is about the world created by means of computer technology[6]. It is worth to mention that with regard to the IT level, the introduction of the term "virtual reality" in the 1960s is commonly attributed to J. Lanier, a philosopher, IT specialist and musician considered to be a man of the Renaissance. He claims, however, that it is the contribution of the philosopher of art, S. Langer, who in the fifties (i.e. before the modern technology era) spoke about the virtual world using this term as a metaphor. The term "virtual worlds" was also used by the father of computer graphics I. Sutherland to define what a person may see when looking at a computer-generated world with the idea that it is real. It is Lanier's merit to see the difference between the term "virtual world" and "virtual reality". According to him, the world is something that is observed, something that is outside, and reality is the participation of man and other people with the possibility of interaction. Therefore, in his view, the use of the term "virtual world" is shifting towards the term "virtual reality". The author stresses that numerous users prefer the term "virtual world", similarly to I. Sutherland. L. Kruger, on the other hand, uses the term "artificial reality" (1970s), and for Lanier the most appropriate is "virtual reality". Therefore, it should be assumed that for Lanier the difference between these terms is included in the content of the terms "world" and "reality"[7]. Whereas people can only observe the world, the reality is an area of active human activity. Thus, the world is an image of reality and

6 I wrote more broadly on this subject in my paper: A. Latawiec, *Rzeczywistość a świat wirtualny*, in: *Symulacja systemów gospodarczych. Prace Naukowe Instytutu Organizacji i Zarządzania Politechniki Wrocławskiej*, Seria: *Studia i Materiały*, eds. A. Balcerak, E. Radosiński, B. Mielczarek, Wydawnictwo Politechniki Wrocławskiej, Wrocław 2003, 121–131.

7 Cf. interview of 11 February 2002 by M. E. Behr, *Jaron Lanier, "Virtual Reality" Inventor*, PC Magazine (2002), as cited in http://www.extremetech.com/article2/0%2C1558%2C100970%2C00.asp.

reality is a place of interaction between humans and their environment. This remark is extremely important as it shows the awareness of the consequences of placing different content under terms often used interchangeably.

The virtual world is a world supported by various computer software that enables simulating conditions similar to those existing in empirical reality. This world is attractive due to the application of various technical solutions that introduce the computer user into the field of influence of a number of stimuli through the use of virtual helmets, gloves, glasses, etc.[8].

Thus, the virtual reality is understood as a computer simulation of a real or imaginary system allowing to operate within this system in real time. It is a hypothetical three-dimensional world created with the use of a computer[9].

The term "virtual reality" has recently been identified with the term "cyberspace". It derives from the Greek word *kybernetes* – control, manage and English *cyberspace*[10]. This term is used to describe all resources available in computer networks. The media promote a very common and simplified understanding of cyberspace, identifying it with the Internet. In this view, any contact with the Internet means crossing the borders of cyberspace[11].

This term was introduced by W. Gibson in 1984 in the famous fantasy science novel *Neuromancer*[12], to designate a world in which the human body is equipped with various cybernetic extensions that enable it to exchange information with a computer network of global reach. It is a world of a kind of hallucination.

Cyberspace is also an environment of the interaction of different media that enables the creation of different reality. It is an artifi-

8 Cf. e.g. P. Sitarski, *Rozmowa z cyfrowym cieniem. Model komunikacyjny rzeczywistości wirtualnej*, Rabid, Kraków 2002.

9 http://www.webster-dictionary.org/definition/virtual%20reality.

10 Cf. http://www.webster-dictionary.org/definition/cyberspace. In English used interchangeably with the terms: *a computer network*, *Internet*, *Net*.

11 http://www.ws-webstyle.com/cms.php/en/netopedia/cyberkultura/cyberprzestrzen.

12 W. Gibson, *Neuromancer*, transl. P. W. Cholewa, Gollancz, Warszawa 1992.

cial environment created by computer technology and appropriate software. Thus a cyber world without borders is created[13]. It means a communicative space created to establish contacts between users using computer or telephone technology.

The virtual world in this understanding also includes the world of computer games, in which computer graphics, music and all types of supporting devices are of great importance. The technical area of the virtual world is the Internet[14]. Its main advantage is almost unlimited access to all kinds of databases, the ability to quickly, beyond the geographical area, establish contacts with other users of the Internet. In this meaning, the virtual world created by means of the Internet becomes a useful tool for overcoming barriers existing in the real world. Within the Internet, for example, different portals are used, i.e. a kind of multi-topic web portals or one-topic vortals. They provide access to the latest information from various areas. They are equipped with mechanisms for searching files (web pages) on the Internet, i.e. the so-called search engines (e.g. Yahoo, Google, Lycos, and in Poland Onet or Wirtualna Polska).

Another development of the virtual world are the so-called blogs, i.e. online diaries created and shared on the Internet. There is a great variety of them, from typical diaries rich in graphic illustrations, through collections of photographs, to those presenting poetry. Blogs are a place to publish personal thoughts, memories, to present what in the real world does not find interest or audience. They allow to keep full anonymity, and thus encourage the authors to "come out of hiding". Sometimes they include a kind of intellectual exhibitionism. Some authors treat them as an unusual phenomenon, despite this exhibitionistic character, since they are a form of protest against the screaming reality[15]. Blogs inspire comments and discussions.

Chats, which are a kind of simulation of conversation, are even more interactive. These online meetings are engaging, so it is easy to fall into the trap of forgetting that this is a kind of game with variable rules,

13 Cf. http://www.ssi.civ.pl/data/cyberprzestrzen.php.

14 Cf. A. Rothert, *DEMO-NET. Wirtualna projekcja rzeczywistości*, Scholar, Warszawa 2001.

15 Cf. e.g. W. Diduszko, *Samotność w sieci*, Warszawa 2003.

imposed by a group of participants determining the topic, level and culture of speech. This world is created right here and now. It offers an opportunity to hide under a chosen mask. The choice may relate to the self-image: gender, education, etc. A blog or a chat provides an illusion of freedom from any limitations, deluding hope for fulfilment.

It proves that regardless of the content of these terms, a man takes over the role of the creator of the virtual world, virtual reality, or cyberspace. This world is subject to verification as far as its coherence can be established. Research projects seem to be an example of another representation of the "virtual world". The research work, the idea of the conducted experience, the hypotheses made, proposals of solutions, or finally, projects of scientific works have their origin in the mind of the scientist. It also seems that regardless of the scientific branch in which they are implemented, they have their reference to the empirical reality available to the researcher. As an idea they are characterized by potentiality, that is, at least at the stage of the project they are promising to be implemented. Thus, in this area, humans are creators of this reality. They create the conceptual apparatus, develop scientific methods, create science. However, it should be stressed that the content of these projects is related to empirical reality.

Another area of the virtual world associated with the previous one is the area of virtual objects. Among the examples of those reality elements are virtual particles, e.g. transferring interactions between particles of matter (gravitons, photons, gluons, bosons), or quarks[16]. Physical virtual objects also appear in the vacuum "out of nothing" for one trillionth of a second at most and unexpectedly disappear e.g. near the horizon of events of the so-called black holes. All virtual particles are indirectly detected experimentally – they are observed e.g. as a trace in the accelerator. Their existence is predicted within the framework of quantum mechanics. These objects are deprived of the direct aspect of measurability. The reality of virtual objects is a new reality, revealed indirectly in empirics. Therefore, man is its discoverer only in a certain sense.

16 S. W. Hawking, *Krótka historia czasu. Od wielkiego wybuchu do czarnych dziur*, transl. P. Amsterdamski, Alfa, Warszawa 1990, 68–82.

It is worth to emphasize the way the term "vacuum" functions within quantum mechanics. For example, the aforementioned so-called vacuum in the peculiarity connected with the black hole is not a vacuum in its classical understanding. According to S. Bajtlik, "One must therefore wander even further into intergalactic space. There, indeed, there are almost empty spaces – there is only so little matter that in the volume of one cubic meter we find only one hydrogen atom. This is almost a perfect vacuum. Almost, as at these great cosmic distances, this one hydrogen atom is still a lot. Sufficient to observe the light of distant quasars, we notice that it changes, scattered and absorbed by these single atoms"[17]. S. Hawking clarifies that this vacuum cannot be absolute, because then Heisenberg's principle of uncertainty would not be observed. If there was no "nothing" in this area, then both the momentum and the position of the non-existent object would be clearly defined and would be zero[18]. Thus, it can be considered that the vacuum in its contemporary understanding is only potential since the vacuum in an absolute sense does not exist.

3.3. PSYCHOLOGICAL APPROACH

The virtual world is the world of thoughts and images, i.e. the world realized through visualization[19]. The world of imagination is created towards idealization or falsification of reality, i.e. the image of oneself or other people or situations. The world of imagination is a simulated world. Visualization is the ability to use one's imagination, to recall images. Imagination helps to create and reproduce images. It is a function of the psyche, so it concerns both the area of consciousness and the subconsciousness.

Imagination is an ability associated with the sense of sight, hearing, touch or smell inspired by objects or phenomena previously perceived.

17 S. Bajtlik, *Kosmiczny alfabet*, Prószyński i S-ka, Warszawa 2004, 80.

18 S. W. Hawking, *Krótka historia czasu. Od wielkiego wybuchu do czarnych dziur*, op. cit., 105–106.

19 Cf. e.g. F. J. P. Cavallier, *Wizualizacja: od obrazu do działania*, transl. A. Suchańska, Rebis, Poznań 2001.

It occurs by itself under the influence of appropriate perceptive, verbal or imaginative stimuli, as well as consciously under the influence of human activity[20]. This means that we create a picture of situations, phenomena, conversations, feelings, etc. Humans create for themselves a world in which they can relax, arouse or calm their emotions. It is a reality in which they play the role that they determine for themselves.

As J. Wais rightly points out, "our internal biography is as real as our external biography"[21]. They are both different and they form a unity only in a state of equilibrium[22]. Therefore, the inner world of every person is a natural element of their personality. Dreams influence the creation of the virtual world. Dreams are understood as imaginative and deliberate activity aimed at fulfilling desires, aspirations, and intentions related to one's personal or social life[23]. Dreams that arise during sleep with limited brain activity are a special case[24]. They have different degrees of clarity, ranging from very vivid and clear to foggy. They are associated with a reduced sense of reality. They appear on the verge of consciousness and dream. Their content usually includes the fulfilment of desires, expectations with a strong emotional tone[25]. These states, as it can be seen, do not have to have a very strong reference to empirical reality, although they are usually inspired by it. According to C. E. Hill, "dreams reflect real life and are an attempt to incorporate real events into existing memory structures (patterns)"[26]. They are created in the brain, often under the influence of various types of stimuli. They contain a story. They are therefore an example of a virtual world.

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20 *Słownik psychologiczny*, ed. W. Szewczyk, Wiedza Powszechna, Warszawa 1979, 327.

21 J. Wais, *Dwa światy*, ALBO albo. Problemy psychologii i kultury. Pismo interdyscyplinarnych poszukiwań (2003)2, 58.

22 Ibid.

23 *Słownik psychologiczny*, op. cit., 136.

24 On interesting analyzes of the physiology and psychology of dreams see: Z. W. Dudek, *Funkcje marzeń sennych a granice rzeczywistości psychicznej*, ALBO albo. Problemy psychologii i kultury. Pismo interdyscyplinarnych poszukiwań (2003)2, 25–36.

25 *Słownik psychologiczny*, op. cit., 136.

26 C. E. Hill, *Sen w psychoterapii*, transl. M. Kacmajor, Gdańskie Wydawnictwo Psychologiczne, Gdańsk 2000, 19.

In a reality created in such a way, humans can realize themselves, they can act according to their own scenario, they can also experience situations which for various reasons they do not allow to exist in the real world. In virtual space, you can achieve professional success, change your image, love, kill someone – even many times – which is not possible in empirical reality. Therefore, it can be dangerous to get too involved in the virtual world[27].

Psychologists draw attention to the threats to an individual's mental development that may result from considering the virtual world more interesting and attractive than the real world. Such threats are posed already by television. Viewers watching multipart series begin to be cut up about the characters' adventures more than their own family problems. Children watching unrealistic cartoons or playing computer games stop distinguishing fictional situations from the real ones in the yard. They try to transfer them into the world of everyday life, sometimes harming themselves or others. The spread of virtual reality using interaction, as well as interactive television, where you can influence the course of the film's action, can only increase these threats.

When analysing this area of the virtual world, it is easy to see that man is the creator of a new reality which draws patterns from empirical reality. This reality is not subject to objective verification.

3.4. PHILOSOPHICAL APPROACH

The last context of referring to the virtual world can be found in philosophy. It seems that at least two philosophical currents are associated with the issues discussed: Platonic idealism and Aristotelian realism.

Plato was a dualist in the sense that he believed in the existence of two worlds: the world of ideas inaccessible to the senses and the material world. He claimed that perfect beings exist independently of our cognition, they are endless, flawless, while material (real) beings

27 Cf. e.g. S. Juszczyk, *Człowiek w świecie elektronicznych mediów – szanse i zagrożenia (o problemach tworzącego się społeczeństwa informacyjnego)*, Wydawnictwo Uniwersytetu Śląskiego, Katowice 2000.

are dependent on the former, shaped, according to the idea. Only the world of ideas is real. This world is made up of an infinite number of perfect and ideal beings that surpass material beings in their reality. Ideal beings are eternal and exist beyond time. To discover the world of ideas, one must free themselves from their senses. Material reality is an imperfect reflection of the world of ideas[28]. Thus, the world of ideas is indirectly related to material reality. If so, the world of ideas is a kind of virtual world, although it exists independently of man and all material beings. For it is infinite. In this sense, it is a world in which we find a model for empirical reality. If so, the world of ideas exists objectively. And if so, a man cannot be its creator.

While for Plato the most important were ideas, for Aristotle it was concrete. That concrete seems to be a substance. For Aristotle was a realist. He was interested in individual, sensuously learned beings. It can be said that the form for Aristotle was the equivalent of the Platonic idea[29]. Aristotle assumed that the substance form gives the matter its shape. It is the form that constitutes the perfection of being, it has a perfect character. However, it is not the form that is the symbol in this concept of the virtual world, but the prime matter, constituting pure potential. It is characterised by a passive desire for the act, i.e. the potential possibility of taking any form. It seems that in Aristotle's system, the most important thing is this concept of potentiality, i.e. the possibility of updating existence[30]. If we consider that "potential" means "virtual", then in this sense the world proposed by Aristotle is virtual. It all comes down to matter, to potentiality, i.e. to movement. Potentiality is carried by material reality in a way. As such, it is not subject to human creation. Thus, the creator of the virtual world in terms of potentiality, for Aristotle, is nature. Virtual reality is "under control" of the real world.

28 Platon, *Sofista. Polityk*, transl. W. Witwicki, PWN, Warszawa 1956, 60–66.

29 Cf. W. Tatarkiewicz, *Układ pojęć w filozofii Arystotelesa*, PWN, Warszawa 1978, 80; cf. also: M. Heller, *Filozofia świata. Wybrane zagadnienia i kierunki filozofii przyrody*, Znak, Kraków 1992, 41.

30 Cf. Arystoteles, *Metafizyka*, transl. K. Leśniak, PWN, Warszawa 1983, 125–128.

The idea of virtuality can also be found in Leibniz's system. This author adopts a relational concept of time[31] and space[32]. Such an understanding of these concepts results in them being treated not as objects, as in classical physics, but as a result of ordering of phenomena or their consequences. Thus, without the existence of real beings and relations between them, it is impossible to talk about time and space. But it can be said that they only exist in relation to each other, i.e. because of the relations between objects, whether spatial or temporal. This relativity brings with it the idea of virtuality understood as creating an image of the world from abstracted elements of reality – relations between objects, phenomena and events. In this system, the function of creating the virtual world lies in the very possibility of creating relationships. The virtual world, which emerges from philosophical contexts, can only be verified in a logical sense.

4. CONCLUSIONS

If there is some connection between empirical reality and what is hidden under the term "virtual world", "virtual reality", then this empirical reality constitutes a limitation in the creation of everything virtual. This limitation disappears when a new reality is created. Thus, human creates a world where we do not find such a connection, or where reality is falsified.

The above analyses show that the primary source of the virtual world may be an empirical reality or a world of abstract objects (e.g. Plato's ideas, Pythagoras numbers, or general concepts). The secondary source is the world of thought. Its realisation leads in two directions: potentiality and fiction. The virtual world in the sense of potentiality is realised in science (e.g. in research works, in postulated virtual objects). It is subject to verification within the framework of empirical science methodology. The virtual world in the sense

31 Cf. G. W. Leibniz, *Wyznanie wiary filozofa. Rozprawa metafizyczna. Monadologia. Zasady natury i łaski oraz inne pisma filozoficzne*, transl. S. Cichowicz, PWN, Warszawa 1969, 337.

32 Cf. Ibid, 336–337.

of fiction is merely passively received (e.g. painting, literary work) or co-created (e.g. Internet: blogs, chats). In the case of passive reception of the virtual world, it is generally not possible to verify it, unless in confrontation with the applicable canons. On the other hand, in the case of co-creation of the virtual world, it is possible to verify it in terms of its conformity with objective truth.

It follows from the above that concepts so commonly used today, such as virtuality, virtual world, virtual reality, often used interchangeably, carry completely different meanings and contextual content. Therefore, M. Lubański's postulate about the need to specify the terms should be a basic requirement for reliably practicing science.

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FROM SPONTANEOUS GENERATION TO COSMIC ABIOGENESIS. AN ATTEMPT AT SYSTEMATIZATION OF BIOGENESIS THEORIES*

Abstract. The question of the origin of life interested people for centuries. All existing views on this subject can be classified into different areas of our knowledge of the world: natural sciences, philosophy, and theology. Some theories (perhaps the majority) contain more or less explicit elements from all of these areas. Thus, it is helpful to take a closer look at them and to classify all the typical groups of theories about the origins of life. We can in this way stress their mutual connections and clarify their own nature. Nowadays, driving forces of pre-biological chemical evolution and the explanation of the transition from "non-life into life" present a great variety of solutions. The differences between the theories, however, as well as the current controversies in the scientific community (e.g., what was "in the beginning"?; where did prebiotic evolution take place? etc.), will be shown to be of secondary importance in comparison with several much more profound philosophical assumptions underlying the origin-of-life-studies. The attempt to organize and classify different types of theories on the genesis of life allows to take into account different kinds of perspectives (theistic, philosophical and scientific), and to compare them to each other. The most general division between theories is based on a distinction between metaphysical conceptions and scientific ones. Some theories answer the question of the emergence of life in general, whereas others tackle the question of the origin of life on Earth only. Interestingly, two traditional ideas concerning the problem of the origin of life (i.e., spontaneous generation and panspermia) are still at play in contemporary scientific research, albeit in a modified form. In the perspective of contemporary scientific research on the origin of life it seems interesting that two main ideas concerning the problem of the origin of life, spontaneous generation and panspermia, are still present as presuppositions of certain theories but have been modified. Moreover, it is evident that the theistic view of the origin of life (creation) does not have to fall into conflict with contemporary scientific theories. Rather, they are complementary. This article is an extension, explanation and refinement of the proposed scheme of the main types of theories on the origin of life. An attempt to classify various biogenesis theories is also proposed. One of the most important questions that will be addressed concerns the philosophical presumptions of biogenetics still informing current research as well as scientific explanations of the origin of life.

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1. INTRODUCTION

Traces of the oldest attempts to solve the problem of the origin of life can be found in various myths and beliefs. They have also been the subject of reflection in various philosophical and theological systems. The development of pre-scientific and scientific knowledge has led to a huge number of hypotheses and theories, complementary or contradictory, partly confirmed or completely refuted by new facts. Some of them are therefore only of historical value. The development of a strictly scientific search for the origin of life dates back to the early 20th century.

Generally speaking, the beginning of life on Earth can be interpreted and explained as (1) the result of the divine creative act (the concept of creation); (2) the effect of the spontaneous and sudden transformation of non-living matter into living matter (so-called "naive" spontaneous generation); (3) the result of the process of physico-chemical evolution occurring on Earth and/or in space (natural abiogenesis); (4) the transfer to Earth of life previously created in/on other celestial bodies (panspermia). When answering the question about the beginning of life in general, one can also offer a solution referring to the eternal existence of life. This, however, does not really answer the question about biogenesis, but merely states that such a question is pointless, as life has no beginning.

Nowadays, the problem of the origin of life can be considered in both naturalistic and philosophical terms. The naturalistic approach is the basis for a philosophical analysis of the issue. However, the conclusions on this issue can also be dictated by philosophical presuppositions and solutions that are prior to the naturalistic ones.

Contemporary naturalistic theories of the origin of life are created based on the results of specialized research in the field of biology,

chemistry, physics, astrophysics and others. Previous attempts to explain the origin of life have referred to superficial ordinary observation and can only be classified as scientific explanations because of the empirical method applied therein. However, they usually led to false findings and nowadays they remain only a historical testimony to the development of natural sciences and the search for the origin of life[1].

When referring to the history of research on the origin of life, it is worth mentioning that in 1897 Richard Krzymowski (1875-1960)[2], son of a Polish immigrant, who lived in the Swiss town of Winterthur at the time, published an article entitled The essence of *spontaneous generation* (*Das Wesen der Urzeugung*) in the "Die Natur" magazine[3]. In this article, he presented the concept of biogenesis based, among other things, on the idea of prebiological selection of natural and early heterotrophy. Unfortunately, his article has fallen into oblivion. Perhaps, however, in his golden years, Krzymowski enjoyed the satisfaction of witnessing the birth of a scientific discipline dealing with the issue of the origin of life (protobiology), since the first international conference on this topic was held in Moscow in 1957[4]. From then on, a wave of scientific publications on biogenesis began to grow gradually and increasingly. Between 1957 and 2000, more than 150 theories of biogenesis were announced (to date, this number has increased even further)[5].

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1 See: *Wypisy z ewolucjonizmu*, vol. 1: *Powstanie i właściwości żywej materii (Zeszyt 1: Powstanie życia na Ziemi. Część pierwsza: Okres wiary w samorództwo)*, eds. J. Kreiner, S. Skowron, PWN, Warszawa 1957.

2 See: *Neue deutsche Biographie*, vol. 13, Duncker and Humblot, Berlin 1982, 154.

3 R. Krzymowski, *Das Wesen der Urzeugung*, Die Natur 46(1897)19, 221–222 and Die Natur 46(1897)20, 229–232.

4 See: *The Origin of Life on the Earth: Reports on the International Symposium*, ed. A. Oparin, Academy of Sciences of the USSR, Moscow 1957.

5 See: W. Ługowski, *Ile jest teorii powstania życia?*, in: *W poszukiwaniu istoty życia*, eds. G. Bugajak, A. Latawiec, Wydawnictwo UKSW, Warszawa 2005, 111–124; Idem, *Progress or Crisis in the Origin-of-Life Studies? A Philosophical Perspective*, Dialogue and Universalism 18(2008)11–12, 207–218; Idem, *Filozoficzne podstawy teorii biogenezy: kontrowersje rzeczywiste i pozorne*, in: *Filozoficzne i naukowo-przyrodnicze elementy obrazu świata*, vol. 8, eds. A. Lemańska, A. Świeżyński, Wydawnictwo UKSW, Warszawa 2010, 170–190.

This multitude of theories of biogenesis is leading us to attempt to systematise them in some way. The proposal to be presented herein is based on the assumption that philosophical premises (and philosophical implications) play an important role in the construction of the theory of biogenesis[6], and their adequate recognition and characterisation may prove to be important for putting in order and evaluating the multitude of natural theories of the origin of life. In my opinion, each of these theories is also based on one of the two main ideas that have shaped the panorama of past and present views on the origin of life. These ideas include the idea of spontaneous generation and the idea of panspermia. Both of these ideas have evolved over many centuries and have undergone various transformations, however, traces of their presence can also be seen in contemporary, naturalistic proposals for solving the mystery of the origin of life.

2. CLASSIFICATION OF THE TYPES OF CONCEPTS RELATING TO THE ORIGIN OF LIFE

The proposed classification of all concepts concerning the origin of life is primarily historically conditioned, by the chronology of their origins and the relationship to scientific findings on the origin of life. Concepts that were proposed before the emergence of the scientific method in its contemporary understanding or that completely disregard scientific findings can be described as metaphysical concepts (M). And concepts developed based on modern and contemporary natural sciences can be defined as natural (N). At the same time, I assume that none of them is completely free from certain presuppositions and pre-presuppositions

6 Scientists quite often deny any philosophical significance to the scientific research they undertake. However, there can be no doubt as to the importance of the philosophical presuppositions and arguments involved in the examination of the issue of the origin of life. In this case, the philosophy goes back to the very core, the very "raison d'être" of this scientific endeavour. See: I. Fry, *Are the Different Hypotheses on the Emergence of Life as Different as they Seem?*, Biology and Philosophy 10(1995)4, 414. Cf. M. Ruse, *The origin of life: philosophical perspectives*, Journal of Theoretical Biology (1997)187, 473–482.

of a philosophical nature and the philosophical implications that result therefrom. In other words, they contain the natural layer, which is usually the core of the concept, and the philosophical layer, which contains consciously or unconsciously accepted claims of a philosophical nature[7]. The antecedence of metaphysical solutions does not mean that they are not being proposed nowadays as well, for example by supporters of a creationist or *quasi*-creationist vision of the origin of life[8].

From another perspective, the classification of all concepts of the origin of life may occur between the theories that attempt to answer the question of the origin of life on Earth (E) and those that address the issue of the beginning of life in general (U). For these two issues can be treated separately, or it can be considered that the beginning of life on Earth is also the beginning of life in the Universe (in the latter case, we are dealing with another philosophical presupposition).

Once they are superimposed, the two aforementioned fundamental classifications concerning the concept of the origin of life determine the main areas in which the different types of biogenesis concepts can be situated. Thus we have: (1) the area of metaphysical concepts that explain the emergence of life on Earth (M-E); (2) the area of metaphysical concepts explaining the origin of life in the Universe (M-U); (3) the area of naturalistic theories explaining the emergence of life on Earth (N-E); (4) the area of naturalistic theories explaining the origin of life in the Universe (N-U).

7 The most basic pre-presuppositions include an ontological presupposition about the existence of order in nature and an epistemological presupposition about the possibility and ability of the mind to get to know this order. On the other hand, presuppositions adopted by the authors of contemporary theories of the origin of life include, i.a.: a presupposition about the existence of a causal link, in particular the physical and dynamic interdependence of phenomena through which matter reveals its development potential and the pursuit of higher levels of complexity; recognition of the existence of an abiotic period in the history of the Earth; presuppositions on the chemical similarity of the first life forms to the organisms living today; the reductionist presupposition that biological phenomena are an expression of chemical processes and therefore a physico-chemical explanation is sufficient. (See: W. Ługowski, *Philosophical foundations of the theories on the origin of life*, Origins of Life and Evolution of the Biosphere 32(2002)5–6, 517–518).

8 See for example "Rational Design Hypothesis" (B. M. Shiller, *Origin of Life: The 5th Option*, Trafford Publ., Victoria – Crewe 2004).

This classification is not a separable division and allows for the identification of the links that exist between the separated areas and the types of theories of the origin of life located within them. Their detailed discussion should begin with metaphysical concepts, which are the earliest in the history of human thought. This group of views includes the following, respectively: (1) the concept of the pre-existence of life combined with the idea of panspermia (in the so-called "old" version of panspermia); (2) the concept of the creation of life on Earth; (3) earthly spontaneous generation. These concepts fall within the area of concepts relating to the explanation of the origin of life on Earth. And the area of concepts relating to the origin of life, in general, includes: (1) the concept of the eternity of life; (2) concepts on the creation of life (in the Universe); (3) cosmic spontaneous generation[9]. It should be noted here that the concept of the creation of life can explain its existence both in the Universe and only on the Earth itself, depending on where the act of creation is assigned to. Besides, creation must be differentiated into direct creation and indirect creation, according to the traditional theo-

9 The supporters of the concept of pre-existence of life included, among others: C. Flammarion (1842–1925); H. Richter (1808–1876); H. von Helmholtz (1821–1894); W. Thomson (1824–1907) – litopanspermia; S. Arrhenius (1856–1927) – radiopanspermia. The concept of creation was considered and elaborated on by: Saint Basil the Great; Augustine of Hippo; Thomas Aquinas. The concept of the eternity of life was proposed by, among others: Ionian natural philosophers; Anaxagoras; W. Preyer (1841–1897) – theory of potentiality of life; G. Fechner (1801–1887) – space-organic movement; E. Le Roy (1870–1954) – biosphere hypothesis; V. I. Wiernadski (1863–1945) – biosphere and noosphere. Whereas spontaneous generation was supported, among others, by: Aristotle; Titus Lucretius Carus; J. B. van Helmont (1579–1644); A. Kircher (1602–1680); L. Oken (1779–1851); J. C. Ross (1800–1862); F. A. Pouchet (1800–1872); H. Ch. Bastian (1837–1915). We have to distinguish between the primary and secondary spontaneous generation; the secondary spontaneous generation is the 18th-century view according to which living organisms (microorganisms) emerge out of the organic matter that remained from the disintegration of the previously existing living organisms (in accordance with the principle: „corruptio unius est generatio alterius"; see the famous dispute between J. T. Needham and G.-L. de Buffon with L. Spallanzani – J. Farley, *The Spontaneous Generation Controversy from Descartes to Oparin*, Johns Hopkins University Press, Baltimore – London 1977; J. E. Strick, *Sparks of Life. Darwinism and the Victorian Debates over Spontaneous Generation*, Harvard University Press, Cambridge 2002).

logical approach to creation. This distinction is important in order to determine the possibility of reconciling the basic statements of the metaphysical concept of creation with the philosophical layer of contemporary naturalistic concepts, which will be discussed further. It is also worth noting that the views on the pre-existence and/or eternity of life have been the backbone of the authors of some modern and contemporary concepts on the origin of life that clearly indicate certain metaphysical preferences of their authors.

In contrast, naturalistic theories originating in modern and contemporary times in the history of scientific development can be divided, by analogy with the division of metaphysical concepts, into those relating to the problem of the appearance of life on Earth and those relating to the origin of life in general. Chronologically speaking, the first group of concepts can be identified as follows: (1) natural earthly abiogenesis[10]; (2) natural bilinear abiogenesis[11]; (3) pre-existence of life combined with neopanspermia[12]. In the area concerning the origins of life in general, we can place cosmic abiogenesis, similarly to the area mentioned earlier, in the group of naturalistic theories.

10 Examples of such theories include the following: A. Oparin (the theory of coacervates); S. Fox (the theory of microspheres); H. Quastler (the theory of the emergence of biological organisation); C. R. Woese (the theory of atmospheric protocells); A. G. Cairns-Smith (the theory of mineral origins of life); S. Kauffman (the theory of self-organisation of proteins); J. B. Corliss (theory of submarine hot springs); J. Bada (the theory of the frozen ocean); C. de Duve (the theory of thioesters); C. Dobson, V. Vaida, A. Tuck et al. (the theory of atmospheric aerosols). It is worth noting how diverse is the natural layer of these theories.

11 In this case, biogenesis is understood as a process of cosmic-earthly fusion of physical and chemical changes that lead to the creation of life. Selected theories: A. Lazcano, J. Oró (comets as the source of life on Earth); A. Brack, F. Raulin (meteorite theory); B. C. Clark (theory of the comet pond); F. R. Krueger, J. Kissel (cometary-earthly scenario of the origin of life); G. W. Wojtkiewicz (the theory of geological eternity of life). Theories of this group also contain a multitude of detailed naturalistic solutions. They are sometimes referred to as pseudo-panspermia or "soft" panspermia or molecular panspermia.

12 Examples of the theory of neopanspermia are: interstellar or interplanetary panspermia; cometary panspermia; directed panspermia. See *The Biological Big Bang. Panspermia and the Origins of Life*, ed. N. C. Wickramasinghe, Cosmology Science Publ., Cambridge 2010.

Primary spontaneous generation (also referred to as "naive") originates from antiquity (mainly from the views of Aristotle) and includes the belief that in favourable environmental conditions certain (sometimes even quite complex) living organisms can arise suddenly, unprompted and spontaneously. This view has lasted for a relatively long time, as microorganisms were believed to be formed in this way until the 19th century. Depending on the place to which the spontaneous generation is attributed, it can be divided into a spontaneous generation that took place on Earth and cosmic (extraterrestrial) spontaneous generation.

Natural abiogenesis, on the other hand, is a collection of many detailed protobiological theories[13], which share a claim that life in the Universe is created through gradual and complex physical and chemical transformations. Depending on where the various stages of this process take place, we can speak of earthly, cosmic or bilinear abiogenesis (in the case of the latter, it is believed that its initial stages also took place in outer space, but ultimately, life reached the Earth). Therefore, in the natural layer, they differ primarily in the place where the process of the creation of life occurs, while they can all include the same philosophical component. Therefore, taking into account the content of the various theories of the origin of life, three basic types of philosophical layer underlying the natural views can be distinguished, and it is thus possible to propose three varieties of the abiogenesis theory: (1) meta-information abiogenesis – the group of theories, which refer to some form of universal integration principle or some kind of the law governing the course of all the processes within the Universe,[14] or the theo-

13 Protobiology is a science created in the 1950s that deals with the origin of life (biogenesis). It is based primarily on the idea of chemical evolution, although not all of the theories proposed by protobiology respect all the philosophical and naturalistic premises of this idea. See: K. Dose, *Molecular Evolution and Protobiology: An Overview*, in: *Molecular Evolution and Protobiology*, eds. K. Matsuno, K. Dose, K. Harada, D. L. Rohlfing, Plenum Press, New York – London 1984, 1–10.

14 For example: G. Wald (theory of the designed Universe); H. D. Kenyon (biochemical predestination).

ries assuming the eternal existence of biological information[15]; (2) mechanistic-chance abiogenesis – the group of theories based on the assumption of the chance emergence of the first living molecule, because of the "lucky" coincidence of natural circumstances and physico-chemical regularities favorable for the origin of life[16]; (3) abiogenesis as a self-organisation of matter – the group of theories which adopt the evolutional way of understanding the emergence of qualitatively new systems and which point to regularities governing the process of their development, among which the crucial element is the natural tendency of matter to organize itself into more and more complex structures[17]. All three groups of the theories of abiogenesis can be subdivided in even more detail, distinguishing their varieties, in which the aforementioned theses of a philosophical nature are accepted with different intensity and expressed with different force[18]. Historically, however, natural abiogenesis can be understood as the development and transformation of the idea of naive spontaneous generation, which will be discussed further.

The latter group of theories of the origin of life, the pre-existence of life combined with neopanspermia, is a view that also derives from antiquity. However, in the versions developed today, it not only assumes that life can move through the Universe and thus, at a certain historical moment (once or many times), it has also reached our planet in a very simple form, where it has found conditions fa-

15 For example: C. Portelli (theory of metainformation sources); P. Fong (static-dynamic theory).

16 This group of theories of abiogenesis includes, among others: H. J. Muller (theory of random gene formation); G. Schramm (theory of random self-replication); A. C. Elitzur (theory of the first living particle).

17 This group of theories of abiogenesis includes, among others, the following: A. Rudenko (theory of self-development of open catalytic systems); H. Kuhn (theory of self-organization of protobiological systems); M. Eigen (theory of the self-organization of matter); B.-O. Küppers (theory of the origin of biological information); S. A. Kauffman (theory of molecular systems self-replication); C. de Duve (theory of the thioester world).

18 See more: W. Ługowski, *Philosophy and Biogenesis*, Wydawnictwo Arboretum, Wrocław 2008; Origins of Life and Evolution of Biosphere (*Special Issue: Abstracts form The 2008 ISSOL Meeting*), 39(2009)3–4, 179–392.

vourable to its development, but it also specifies the conditions and mechanisms responsible for the aforementioned journey of life[19].

3. LINKS BETWEEN THE DIFFERENT TYPES OF CONCEPTS OF THE ORIGINS OF LIFE

The scheme defined by the proposed division of the types of concepts of the origin of life takes on additional significance when the links existing between the different types of concepts are revealed. They exist both between groups of concepts located in one of the designated areas (metaphysical or naturalistic), and between types of concepts relating respectively to the problem of the origin of life on Earth and the origin of life in general (M↔N, E↔U), and between concepts from different areas (M↔E, M↔U, N↔E, N↔U). All these links make it possible to see both the historical development of ideas about the origin of life and the relations existing between different ways (levels) of thinking about the genesis of life (metaphysical, naturalistic, philosophical-naturalistic).

When examining these links, it can be seen that:

(1) The adoption of the concept of the pre-existence of life leads to the recognition of either its eternity, or the creation of life by God (outside the Earth), or the creation of life through cosmic spontaneous generation. Such solutions, on the other hand, force the introduction of the concept of panspermia (currently neopanspermia) as an explanation of how existing/created/generated life reached the Earth;

(2) The adoption of the concept of creation in the matter of the origin of life on Earth is tantamount to the adoption of the concept of creation in general, with the act of creation being direct or indirect. The second version of creation is possible to be reconciled with the theory of natural abiogenesis, as the act of creation can be

19 For example: *Life in the Universe. From the Miller Experiment to the Search for Life on other Worlds*, ed. J. Seckbach, J. Chela-Flores, T. Owen, F. Raulin, Kluwer, Dordrecht – Boston – London 2004; *Life in the Universe. Expectations and Constraints*, eds. D. Schulze-Makuch, L. N. Irwin, Springer, Berlin – Heidelberg 2006; *Comets and the Origin and Evolution of Life*, eds. P. J. Thomas, R. D. Hicks, C. F. Chyba, C. P. McKay, Springer, Berlin – Heidelberg 2006.

understood as a hidden creative action manifesting itself in the processes of transformation of matter;

(3) The pre-existence of life combined with neopanspermia requires referring to the cosmic version of abiogenesis; however, one can also refer to explanations of a strictly metaphysical nature: the creation of life, the eternity of life, spontaneous generation in an extraterrestrial version;

(4) The idea of panspermia is nowadays continued in the form of modern, scientific neopanspermia and it is possible to be reconciled with both abiogenesis and with metaphysical concepts (eternity, creation, spontaneous generation). Therefore, the transformed idea of panspermia is still useful for the supporters of cosmic abiogenesis;

(5) The idea of spontaneous generation is now being pursued in the theories of natural abiogenesis in the form of earthly, cosmic and bilinear abiogenesis. This relationship is evidenced by the presence of the basic claim of the transformation of inanimate matter into the living matter in the abiogenesis theories; the difference is in how the mechanism of this transformation is explained[20];

(6) The direct creation of life can be reconciled with the idea of spontaneous generation as a sudden and spontaneous transformation of inanimate matter into the living matter – this transformation can be a result of the direct creative intervention of God, who brings the inanimate matter to life;

(7) Indirect creation of life can be reconciled with the concept of abiogenesis, as the latter discusses a complex physico-chemical process leading to the creation of life, which, from the point of view of understanding creation, can be seen as an indirect creative act (the intermediary are the physico-chemical transformations which take place in accordance with the Creator's will and with his effective involvement);

(8) All three versions of natural abiogenesis (meta-information abiogenesis, mechanistic-chance abiogenesis and abiogenesis understood as a self-organisation of matter) can function within each of the types of abiogenesis: earthly, cosmic and bilinear, and, in

20 See: A. Świeżyński, *Nowożytne przemiany idei samorództwa*, Roczniki Filozoficzne 57(2009)1, 195–229.

the case of cosmic abiogenesis, can be combined with the idea of panspermia (in the neopanspermia version).

4. RELATIONSHIPS BETWEEN THE VIEWS ON THE ORIGINS OF LIFE – A HISTORICAL AND CAUSAL APPROACH

When we examine contemporary theories of the origins of life, we can notice their structure, which includes three levels[21]: (1) conceptual level; (2) theoretical level; (3) empirical level. The conceptual level can also be called the metaphysical (strictly philosophical) layer of the theory. In historical terms, it distinguishes between two main ideas – the idea of panspermia and the idea of spontaneous generation (in the earthly version of spontaneous generation) – which guided detailed solutions to the issue of the origin of life on Earth from the beginning. The third identifiable idea – the idea of the eternity of life – should be considered a "backdrop" for the idea of panspermia, since it does not provide a solution to the question of the genesis of life on its own but it removes the problem by recognising that life does not have a beginning – it has always existed (whatever this "always" means). These ideas were modified during the period of crystallization of the modern scientific method and empirical research, becoming theoretical elements of naturalistic theories of origin of life. Their modification was influenced by empirical findings (mainly physico-chemical and astronomical-cosmological), through the theory of physico-chemical evolution and the contemporary version of the theory of the "plurality of worlds" that may harbour life[22]. As a result of this modification, various versions of the theoretical

21 See: W. Ługowski, *Kategoria zmiany jakościowej a biogeneza*, IFiS PAN – Ossolineum, Wrocław – Warszawa – Kraków – Gdańsk – Łódź 1985, 10.

22 The contemporary version of the theory of the "plurality of worlds" that may harbour life, which was previously mentioned by, among others, Nicholas of Cusa (1401–1464), Giordano Bruno (1548–1600), Bernard Le Bovier de Fontenelle (1657–1757), Christiaan Huygens (1629–1695), Immanuel Kant (1724–1804), expresses the belief that there are other planetary systems apart from the Solar System with conditions conducive to the creation and development of life. Nowadays, the empirical basis for this belief is the discovery of many planetary systems in the observed Universe, which include planets that meet the basic natural conditions necessary for life to appear and exist. See:

approach to the natural process of abiogenesis and the mechanisms of the phenomenon of panspermia (neopanspermia) appear in the theoretical layer of contemporary theories of the origin of life. It should be noted that the proposal of earthly abiogenesis was made possible by the adoption of the theory of physico-chemical evolution, inspired by Darwin's theory of evolution, and the emergence of the proposal of cosmic abiogenesis as a theoretical construct for certain contemporary theories of biogenesis was made by the extension of natural abiogenesis beyond the Earth under the influence of the theory of the "plurality of worlds" that harbour life. The fusion of these two versions of abiogenesis gave birth to bilinear abiogenesis, which is the third way of formulating the origin of life on a theoretical basis and is currently preferred by a large group of researchers[23].

An important observation relates to the way in which the idea of panspermia has been transformed into the theory of neopanspermia. This was done not directly but through the prior proposal of the theory of earthly abiogenesis and then of cosmic abiogenesis. The latter has facilitated the modification of the idea of panspermia in such a way that it is possible to justify, from a theoretical point of view, the origin of life on Earth by referring to some kind of natural mechanism for delivering life to Earth from the outside. The liter-

A. Bednarczyk, *Z dziejów idei życia we wszechświecie: epoka Oświecenia (Fontenelle, Huygens, Kant). W trzechsetną rocznicę śmierci Christiana Huygensa (1629-1695)*, Kwartalnik Historii Nauki i Techniki 40(1995)3, 7–48; C. B. Pilcher, J. J. Lissauer, *The quest for habitable worlds and life beyond the solar system*, in: *Exploring the Origin, Extent, and Future of Life. Philosophical, Ethical, and Theological Perspectives*, ed. C. M. Bertka, Cambridge Universty Press, Cambridge 2009, 143–166. In contrast to the physical or cosmological theory of the plurality of worlds, in this case we should be talking about the theory of the plurality of bio-worlds.

23 See for example: J. P. Dworkin, D. W. Deamer, S. A. Sandford, L. J. Allamandola, *Self-assembling amphiphilic molecules: Synthesis in simulated interstellar/precometary ices*, Proceedings of the National Academy of Sciences of the United States of America (2001)98, 815–819; G. Cooper, N. Kimmich, W. Belisle, J. Sarinana, K. Brabham, L. Garrel, *Carbonaceous meteorites as a source of sugar-related organic compounds for the early Earth*, Nature (2001)414, 879–883; M. Bernstein, *Prebiotic materials from on and off the early Earth*, Philosophical Transactions of The Royal Society B (Biological Sciences) (2006)361, 1689–1702.

ature on the subject relatively often overlooks this dependence and a direct historical connection between the ("old") idea of panspermia and neopanspermia is made, as if the latter was only a simple continuation of the former[24].

In the context of the above correlations, it is puzzling why a clearly formulated idea of cosmic spontaneous generation did not emerge when the search for an answer to the question

of the origin of life begun as a fourth idea and, at the same time, as an alternative to earthly spontaneous generation. Perhaps this was related to the old concept of the Earth as the only environment that is favourable to the creation of life, and of the cosmos as a sphere where life can only exist as eternal. It seems that the "missing" idea of cosmic spontaneous generation is now being revealed, as it were, in a secondary way, in some contemporary theories of biogenesis, of course as the cosmic abiogenesis theory.

5. CONCLUSIONS

In the proposed systematisation of views on the origin of life, the philosophical criterion used is associated with the presence of specific ideas in the existing concepts of biogenesis. Apparently, such a solution gives a universal and holistic character to the said systematisation. This is because it avoids being entangled in a diversity of contemporary concepts of biogenesis in their natural layer connected with a multitude of detailed solutions of the problem of biogenesis (biogenesis scenarios), a diversity which is difficult to put in an unambiguous order. Moreover, the proposed solution allows to include in the outlined scheme both older and contemporary concepts of biogenesis, as well as those which will be put forward in the future, which is highly probable – judging on the basis of the dynamic advancements in protobiology. It therefore should be expected that,

24 Cf. F. Raulin-Cerceau, *Historical Review of the Origin of Life and Astrobiology*, in: *Origins. Genesis, Evolution and Diversity of Life*, ed. J. Seckbach, Kluwer Academic Press, New York – Boston – Dordrecht – London – Moscow 2004, 17–33.

regardless of the scientific content of new natural scenarios of biogenesis, they will be founded on one of the aforementioned essential ideas of the origin of life, albeit, perhaps, again adequately modified.

The following general conclusions can be drawn from the proposed systematisation of the types of concepts of biogenesis and links that are revealed between them in a historical and typological approach:

(1) Contemporary concepts of the origin of life, regardless of the detailed empirical solutions that they propose to the essential problem, include in their non-natural layer a continuation of one of the two essential ideas of the origin of life: spontaneous generation (currently in the form of the theory of natural abiogenesis) or/and panspermia (currently in the form of the theory of neopanspermia);

(2) The metaphysical concept of creation can be reconciled with the natural layer of each of the three contemporary varieties on the concept of abiogenesis, and with neopanspermia; which cannot be said about the concept of eternity of life;

(3) The philosophical layer (foundation) is irreducibly present in every theory of the origin of life, as long as it is a theory and not a wide set of findings of a natural character;

(4) The presence of the natural (empirical) and the philosophical layer in contemporary natural theories of the origin of life requires, on the one hand, their clear distinction from each other (due to their methodological difference), on the other hand – the awareness of their interdependence and mutual determinants that are important for proposed final and holistic solutions to the issue of the origin of life;

(5) The philosophical foundation which is irreducibly present and identifiable in the natural theories of the origin of life proves that the problem of the origin of life is not just a strictly scientific, but also a philosophical problem; and therefore it cannot be fully solved by referring only to the empirical aspect of the issue.

The issue of the philosophical foundations of the theory of the origin of life, highlighted above, is often addressed in the light of the conviction that "mature science" should be free of philosoph-

ical determinants. Meanwhile, the very initiation of scientific research on biogenesis has already represented a significant philosophical breakthrough in two fundamental aspects. From an ontological perspective, it required a break with the perception of matter as a passive substance and recognition of its active character. From an epistemological and methodological perspective, it meant moving away from the scientific models of classical physics and turning to the ones proposed by evolutionary biology[25]. Consequently, the fundamental presuppositions in contemporary biogenesis research include: (1) the autodynamics of matter; (2) a holistic view of nature as a system composed of interrelated and interacting elements; (3) a historical view of the evolutionary process that takes into account the diversity and variability of evolutionary factors and mechanisms. It can therefore be argued that in the mainstream of contemporary research into the origin of life there is a conviction, consciously or sometimes unconsciously accepted by researchers, that life is the natural emergent property of matter. Consistent development of this formula is important from the perspective of the science of protobiology (and also from the perspective of its most modern and dynamically developing strain – astrobiology), as it constitutes a fundamental premise for research on biogenesis, the presence of which contradicts the claim of protobiology as a science that is without any philosophy.

The "continuity thesis"[26], which is a consequence of the adoption of the idea of self-organisation of matter, is an ontological presupposition that is necessary for the scientific investigation of the origin of life. This can be used to derive a methodological principle of continuity. However, the methodological principle of continuity can be applied without recognising the ontological continuity thesis. It is then recognised that the creation of life is admittedly within the framework of the regularity of nature, but is a "peculiarity", i.e. something

25 See: W. Ługowski, *Filozoficzne podstawy teorii biogenezy: kontrowersje rzeczywiste i pozorne*, op. cit., 187.

26 See: I. Fry, *Are the Different Hypotheses on the Emergence of Life as Different as they Seem*, op. cit., 389ff.

exceptional, one-off and in this sense accidental. However, scientific data (and arguments) on favourable/non favourable conditions for the creation of life, used as an argument in favour of the thesis on the chance creation of life, are different from a philosophical presupposition, e.g. on the self-organisation of matter, which is in line with the contemporary methodology of natural research. Philosophical theses (e.g. chance origin of life) should not be formulated and justified on the (sole) basis of natural findings (e.g. specific conditions of the original Earth). From this perspective, statements and publications whose authors seem to claim that the creation of life was a "lucky coincidence" must be of concern. As a result, by reducing the problem of the origin of life only to empirical and naturalistic solutions, and at the same time introducing "through the back door" approaches that are foreign to the consistent application of a fully evolutionary view of matter as active and capable of subsequent transformations, the followers of the views of J. Monod, F. Crick or E. Mayr[27] consider it to be impossible to produce scientific answers (as science searches and studies regularities, not one-off, unique occurrences). In this way, the search for a solution to the mystery of the origin of life is transferred from the sphere of what is scientifically "miraculous", because it reveals the fascinating properties and regularities of matter, to the sphere of what is almost "miraculous", because it is so unlikely.

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27 See J. Monod, *Chance and Necessity*, Collins, Fontana Books, Glasgow 1974; F. Crick, *Life Itself*, Simon and Schuster, New York 1981; E. Mayr, *The Growth of Biological Thought*, Harvard University Press, Cambridge MA 1982.

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GLOBALISM OF EVOLUTIONISM*

Abstract. The phenomenon of globalization, which is well known in the economy, can nowadays be observed also in the area of science. It is based on the fact that more and more scientific disciplines are applying the same explanatory principle, namely the theory of evolution. Therefore, every development, including that of man, according to the pattern of genetic reproduction, takes place on the basis of natural selection. With psychological properties, mental abilities and social behaviours, which are eloquently referred to as "memes", it is as with genes: only those that are better, stronger, more capable of surviving will survive after accidental changes and only they will be passed on. In short, reproduction regulates and controls human behaviour. Such a way of thinking and explanation can be found today in many publications on sociobiology and evolutionary psychology. Even if they present many new details, they pay tribute to the old human desire to explain everything in a simple way, according to the same scheme. The same expectation towards science was expressed by E. Haeckel in the 19th century and J. Monod in the 20th century. However, when these two biologists explained man as a whole based on the theory of evolution, they admitted that they referred to philosophy, to which contemporary representatives of sociobiology and evolutionary psychology cannot or do not want to confess.

Keywords: globalization; evolutionism; sociobiology; evolutionary psychology; anthropology

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1. INTRODUCTION

The title formulation emphasizes the ubiquitous presence of evolutionism in the field of broadly understood anthropology, that is including, apart from natural anthropology, also the whole of this problem, which is usually placed within philosophical, cultural or even theological anthropology. Speaking of global evolutionism, the title emphasizes both the topicality of the subject matter under consideration and its dynamic character: the expansion of evolutionism into further and further areas of knowledge is similar to the better known and more visible expansion of economic and free market globalism[1].

The expansion of evolutionism is undoubtedly supported by the ever-growing importance of biology in recent decades. However, it neither identifies with it nor is it its simple resultant. If that were the case, it would be possible to speak directly about the expansion of naturalism or about the globality of biology. The expression "evolutionism" defines the discussed phenomenon more correctly because it is not so much about an evolutionary description of the creation and development of man, but also and primarily about an evolutionary interpretation of human being, thinking and acting in their entirety. Therefore, if free market globalism is commonly defined as the global interweaving of economy, politics, law and culture, then the globalism of evolutionism in the field of anthropology can be defined as the interweaving of uniform and at the same time universal, on the basis of natural selection, explanations of the specific nature – both biological and behavioural, as well as psychological and social – of the human phenomenon in its entirety.

A fairly complete presentation of all these problems would require at least four chapters on separate topics: (1) Evolutionism in natural anthropology: from C. Darwin's theory of evolution to

1 Cf. Z. Bauman, *Globalizacja. I co z tego dla ludzi wynika*, PIW, Warszawa 2000; *Globalopolis. Kosmiczna wioska. Szanse i zagrożenia*, ed. R. Borkowski, PAX, Warszawa 2003; *Duchowość współczesnego człowieka w świetle globalizacji i edukacji*, ed. S. Urbański, Wydawnictwo UKSW, Warszawa 2003; *Globalizacja a tożsamość*, ed. J. Zdanowski, Askon, Warszawa 2003.

E. Haeckl's evolutionism; (2) Evolutionism in philosophical and cultural anthropology: from evolutionary anthropology to evolutionary theory of cognition by K. Lorenzo, G. Vollmer, F. M. Wuketitsa; (3) Evolutionism in sociology: from evolutionary theory of cognition to sociobiology of E. O. Wilson and evolutionary monism of R. Dawkins; (4) Evolutionism in psychology: from sociobiology to extreme and moderate evolutionary psychology.

The entirety of such a study clearly exceeds the limits and possibilities of this article. Therefore, it will be limited to the historical, methodological and emotional background of each of the chapters mentioned above, that is it will focus on the genesis and some cognitive and psychological conditions of the monistic evolutionary explanations.

2. BETWEEN THE EVOLUTIONARY DESCRIPTION AND THE EVOLUTIONARY MECHANISM

It seems quite certain that, as a result of the data obtained from the observation of fauna in the Galapagos Islands, already since 1836, Charles Darwin was convinced that the concept of species stability must be rejected as erroneous and replaced by the concept of evolutionary development of living organisms. His biographers are still haunted by the question why he waited to publish his research and beliefs for so long, that is over 20 years? Today, the most probable reason for this delay is assumed to be his willingness to show the causes of evolutionary mutability, that is his willingness to answer the "why?" of evolution. However, Darwin obtained those only from the content of the terms "struggle for existence", "natural selection" and "selection", which he gained after intense reflection on the observed facts[2].

The evolutionary description consists in and ends with a chronological and morphological ordering of the material. Phylogenetic sequences established on this basis are a consistent extrapolation, although with a certain admixture of hypotheticality. In spite of their

2 T. P. Weber, *Darwin und die Anstifter. Die neuen Biowissenschaften*, DuMont, Köln 2000.

hypothetical complements, they fall within the scope of evolutionary description as they still remain on the "how" dimension of evolution. However, all attempts to answer the "why" of such a course of action lie outside the scope of this dimension. In such a case, one should speak plainly only about evolutionary hypotheses or models, and not about the theory of evolution. In the name of the terminological order, one should only talk about evolution in the first case, while in the second case – about revolutionism. However, the dividing line between the two terms is blurred because the answers to "why" are often presented as answers to "how". And it is this possibility that is probably the strongest foundation of any evolutionism[3].

On the margins of the above distinction of questions, it should be reminded that it is definitely a past belief that this very difference of questions marks the boundary between natural and philosophical anthropology. In the past, it was claimed that only the first one asks about "how", that is about the phenomenally perceptible qualities of man, while the second one asked about "what" and "why", that is about the so-called deep causality of a human being. In the meantime, however, it has become clear that a biologist is also allowed to legitimately ask questions "what?" and "why?". Ernst Mayr devotes three separate chapters (seventh, eighth and ninth chapter) of his latest book to these very questions. Darwin's theory is discussed in a chapter that is of vital importance to our discussion, entitled: *Questions: "Why?" – the evolution of organisms.* Within its framework, he draws particular attention both to the ambiguity of the term "evolution" and to the fact that "in evolutionary biology, broad generalizations ... are rarely true"[4].

With such a title and statement, Ernst Mayr only briefly expresses what his contemporary scientific methodologists Thomas

3 J. Stepan, *Fakt ewolucji?*, in: *Człowiek wobec wyzwań racjonalności*, ed. A. Kiepas, Uniwersytet Śląski, Katowice 2002.

4 E. Mayr, *To jest biologia. Nauka o świecie ożywionym*, transl. J. Szacki, Prószyński i S-ka, Warszawa 2002, 160.

S. Kuhn[5] and Karl R. Popper[6] comprehensively discussed and proved, namely that every scientific theory is a kind of answer to the question "why", that none of them, however, has either the feature of full objectivity or the right to final truth. Their balanced judgment is crowned by Paul Feyerabend with perhaps too radical a warning but one, as it were, addressed to contemporary evolutionism, indicating that the whole of scientific objectivity must be reduced to subjectivity, while scientific truth must be reduced to the preference of a particular way of thinking[7].

From the methodological analyses, so far carried out on different levels of scientific proceedings and cognition, two practical conclusions should be remembered when constructing and evaluating explanations that aspire to be theories: firstly, that the explanations offered by each theory can never enjoy the attribute of absolute certainty; and secondly, that each theory always explains merely a strictly defined and narrowed down phenomena and never the whole and arbitrarily chosen area of phenomena. Both of these reservations must be borne in mind when the mechanism of evolutionary explanations developed on the basis of specific organic groups is transferred to life in its entirety, in particular to the whole of the human phenomenon. Ernst Haeckel could not have known this in the second half of the nineteenth century, and today many proponents of the evolutionary interpretation of man in psychology and sociobiology do not want to remember it. Aware of both of these limitations, Jacques Monod provides in his work from 1970[8], which he himself calls an essay on the limitations of biology and philosophy, an almost classic example of the methodological disharmony in which attempts to fully explain man within the framework of Darwin's theory of evolution become entangled.

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5 T. Kuhn, *Droga po Strukturze. Eseje filozoficzne z lat 1970–1993 i wywiad-rzeka z autorem słynnej „Struktury rewolucji naukowych"*, transl. S. Amsterdamski, Sic!, Warszawa 2003.

6 K. Popper, *Alles Leben ist Problemlösen. Über Erkenntnis, Geschichte und Politik*, Piper, München 1995.

7 P. Feyerabend, *Wissenschaft als Kunst*, Suhrkamp, Frankfurt a. Main 1984, 77.

8 J. Monod, *Le hasard et la necessite. Essai sur la philosophie naturelle de la biologie moderne*, Seuil, Paris 1970.

3. E. HAECKEL'S EVOLUTIONARY MONISM

Over time, the results of studies of comparative biology of living organisms confirmed not only the correctness of Carl Linnaeus' eighteenth-century classification linking man and monkeys as primates, but also the validity of Thomas Huxley's statement concerning man's close similarity to the chimpanzee and gorilla. For the first of Darwin's most ardent followers, Ernst Haeckel, the existence of this similarity became proof that the whole man, with his speech and consciousness, including morality and religion, is not different from great apes in terms of quality, but only in terms of complexity[9]. Haeckel speaks about this issue unambiguously, stating that: "The phylogeny of the human soul is inseparably intertwined with the organs of the human body, especially the brain ... . The psychological characteristics that distinguish us from other mammals are merely quantitative differences, not qualitative ones. The evolution of man provides psychology with the basis for monistic explanations and thus destroys this whole edifice of mysteries that was built on the dogma of the personal immortality of the human soul. The clarity of natural cognition definitively eliminates supernatural mythology"[10]. And the clarity of this cognition lies, in his conviction, in the fact that "the physiological functions of the body, usually called spiritual functions – or, in short, the soul – are controlled by the same physico-chemical mechanism as in other mammals"[11].

Norbert Elsner very aptly and succinctly put forward Haeckel's views in his biographical introduction to Haeckel's correspondence with Frida von Uslar-Gleichen and her family, published in three volumes: "Haeckel did not follow the frameworks established for natural sciences. He transformed the biological theory of evolution into a worldview with an almost religious nature, crowned with the divine

9 E. Haeckel, *Natürliche Schöpfungs–Geschichte. Gemeinverständliche Vorträge über die Entwicklungs–Lehre*, Georg Reimer Verlag, Zehnte Auflage, Berlin 1902, 701–716.

10 Idem, *Systematische Phylogenie der Wirbeltiere*, Georg Reimer Verlag, Berlin 1895, 627.

11 Ibid, 625.

qualities of goodness, truth and beauty"[12]. "In his opinion, the traditional distinction between soul and body should be abandoned for purely natural reasons and it should be recognized that human spirituality is also subject to evolutionary development. As a consequence, the concept of creation must be abandoned. Referring to Spinoza and Goethe ..., he accepted the universal spirituality of all nature, both animate and inanimate"[13].

Haeckel drew his conviction of the validity of his arguments and his worldview from two sources. The first one was methodological in nature, as it was based on the thesis on the possibility of explaining all phenomena within the framework of causal determinism. The second one was more emotional and cognitive as it resulted from the desire to explain everything with one universal key, on the basis of one principle only.

Haeckel spoke of the strictly binding and all explanatory determinism on many pages of his extensive work, repeating in different words what he wrote already in 1868, in his *Natural History of Creation*: "We particularly emphasize that the internal causal relationships between all biological phenomena are exclusively mechanical. All explanations of the theory of evolution are also mechanical or 'physical'. This means that only causal causes (*Causae efficientes*) are taken into account, while intentional causes (*Causae finales*) must be excluded. This definitely justifies the legitimacy of philosophical monism and rejects the worldview of dualism and finalism". "The absolute confidence in the theory of evolution, also with regard to man ..., lies in the fact that as an inductive generalization of all natural phenomena ... it is a universal right and a logical necessity. The theory of the ape-pedigree of man is a detailed deductive conclusion from the general theory of evolution and is therefore also characterized by an absolute logical necessity"[14].

In the presentation of such arguments, Haeckel constantly emphasized the important, almost indispensable role that philosophy

12 E. Haeckel, *Das ungelöste Welträtsel. Frida von Uslar–Gleichen und Ernst Haeckel. (Briefe und Tagebücher 1898–1900)*, Wallstein Verlag, Göttingen 2000, 7.

13 Ibid, 41.

14 Idem, *Natürliche Schöpfungs-Geschichte. Gemeinverständliche Vorträge über die Entwicklungs–Lehre*, op. cit., 794 and 799.

plays in them. "The naked, experiential facts", he wrote, "are merely raw building material which, without any deep reflection, without any intertwining with philosophy, does not create any science. ... Empirical data demand penetration, inner influence of philosophy, in order to create this unquestionable edifice of true, monistic science, that is an edifice called natural science"[15].

Haeckl's philosophical-natural monism is not identical with either materialism, naturalism or spiritualism, as it is based on a thesis that one spirit brings everything to life and every manifestation of a spirit has a material basis. Haeckel considers it a mistake to expose the uniqueness of man: all the qualities that have so far distinguished man are in their rudiments also present in the animal world. In his opinion, this applies not only to bipedalism and brain structure, but also to speech, consciousness, morality and religion. Consequently, psychology should be the physiology of the spiritual life, while the register of superstitions should include, among other things, faith in the immortality of the human soul and in the existence of the personal God, the Creator[16]. Haeckel formulates the same conclusion in his other work as follows: "Providing psychology with a decidedly monistic basis, anthropogenesis destroys this giant edifice of mysteries built on the old dogma of the personal immortality of the human soul. Supernatural mythology must also in this case give way to clear natural cognition"[17].

Haeckel linked the common physico-chemical determinism to the conviction that is it possible to provide uniform and absolutely certain explanations. In the spirit of this conviction, he wrote: "The theory of evolution not only gives a complete picture of the phenomenon of life, but also provides a satisfactory answer to all the 'whys' of this phenome-

15 Ibid, 782.

16 Idem, *Der Monismus als Band zwischen Religion und Wissenschaft. Glaubensbekenntnis eines Naturforschers, vorgetragen am 9. Oktober 1892 in Altenburg beim 75jährigen Jubiläum der Naturforschenden Gesellschaft des Osterlandes*, in: G. Heberer, *Der gerechtfertigte Haeckel*, Stuttgart 1968, 464–489; Idem, *Über unsere gegenwärtige Kenntnis vom Ursprung des Menschen. Vortrag gehalten auf dem Vierten Internationalen Kongress in Cambridge am 26. August 1898*, in: G. Heberer, *Der gerechtfertigte Haeckel*, op. cit., 403–421.

17 Idem, *Systematische Phylogenie der Wirbeltiere*, op. cit., 626.

non"[18]. This all-encompassing answer is the law – in Haeckel's terminology the "theory" – of natural selection and, within it, the biogenetic law, which enables the reconstruction of phylogenetic development on the basis of available observations of ontogenetic development[19]. According to Haeckel, for the theory of evolution, this law is what the Newton's law of gravity became for Copernicus' heliocentrism, thus constituting a reliable and necessary tool for the cognition of nature[20].

The extent to which Haeckel was fascinated by the possibility of having a "tool" that consistently explains the genesis and development of life is clearly illustrated by his numerous and almost unchanged, frequently re-issued human family trees. He did not hesitate to include forms in them with names invented at his desk, without any mention of their purely hypothetical character. And although most of his detailed remarks differed in content from that of sociobiology today, Haeckel is a precursor in his willingness to use homogeneous explanations and in his reluctance to reveal the burden of their hypothetical nature, and he should be a warning to contemporary sociobiologists. However, few of them realize that they are still or again merely following the thought paths set out by Haeckl as early as in the 19th century.

Such an accusation must not be made against this peculiar continuation of Haeckel's monism that Jacques Monod took up in the second half of the 20th century. And this is due to the fact that in his attempts to explain the whole of man within evolutionism, he was able to admit and indicate where and how he passed from the plane of objectivity of natural sciences to the plane of philosophy.

4. J. MONOD'S EVOLUTIONISM

For Monod, the primary duty and ultimate goal of all scientific research is to establish and explain the position of man in the universe. In his opinion, biology plays the leading role in the implementation

18 Idem, *Natürliche Schöpfungs-Geschichte. Gemeinverständliche Vorträge über die Entwicklungs–Lehre*, op. cit., 95.

19 Ibid, 303–309.

20 Ibid, 702.

of this task. This is because biology, more directly than any other science, addresses the problems of "human nature". However, biology would be unable to do so if there was no theory of evolution. After all, this theory reaches the "essence" of life through the mechanism of inheritance that was deciphered within molecular genetics. Thus, molecular genetics today is the opportunity and foundation of the most profound cognition of living beings, including humans[21].

The starting point for this cognitive process is to capture the characteristics that fundamentally distinguish living beings from inanimate objects. Such basic distinguishing features are, in Monod's opinion: (1) teleonomy, i.e. the purposeful construction of structures and directing their functions to the implementation of a pre-determined project; (2) autonomous morphogenesis, i.e. the self-determination of the growth process; and (3) reproductive invariance, i.e. the ability to invariably transmit genetic information.

Teleonomy itself is not yet a feature that distinguishes living beings, as it is also a characteristic of tools, machines constructed by man. However, what distinguishes living beings from all artifacts is their autonomous morphogenesis, that is the fact that they owe their creation and functioning to themselves and not to external forces. But the self-determination of structure and growth is also characteristic of crystals. In crystals, however, the source of this determinism is the grain of the same crystal, while the creation of a new living organism is decided by another living organism. Thus, the ability to invariably transmit genetic information from one organism to another is a crowning feature of the first two and it definitively characterizes living organisms.

If the mechanism of reproductive invariance worked flawlessly, that is the transmission of genetic information was inviolable, the preservation of life would be absolute and, consequently, there would be no evolution. In fact, however, the reproduction process entails various types of anomalies, its normal course being distorted by numerous mutations. Although they are not subject to any regularity, they are "blind", pointless,

21 J. Monod, *Le hasard et la necessite. Essai sur la philosophie naturelle de la biologie moderne*, op. cit., 11.

random, they are automatically transferred to proteins. And although most of them are lethal, harmful to the body, some of them turn out to be beneficial to the body under certain environmental conditions. These are immediately selected by the selection mechanism and preserved by the mechanism of reproductive invariance, thus introducing orderliness and targeted order in the cluster of random molecular connections. In Monod's words: "We are talking about incidental deformations, about changes caused by accident. They are merely a possible source of genetic information transformation, and therefore the only manager and controller of heredity. Thus, chance is the sole source of every novelty, it is the sole maker of the entire biosphere"[22]. Evolution is the produce of the convergence of a random disruption at the molecular level with an incidentally beneficial functioning of a modified organic structure.

The basis of the evolutionary process is the imperfection of the organism's self-preserving tendency, there are errors in the mechanism of replicative invariance. But the motor of evolution is natural selection. It makes an incidental novelty in genetic material a functionally beneficial novelty. This "makes" does not, after all, identify itself solely with the impact of the external environment on the body. Selection is a result of environmental factors and the internal aspirations of the organisms to consolidate and enhance their teleonomic performance, it couples the specific nature of the organism with its anatomical equipment. "Selection", Monod writes, "only allows those mutations that do not weaken but increase the teleonomic compactness of the body"[23]. In other words: the influence of external factors depends on the teleonomic advancement of a particular organism, a particular species. Thus, the internal factors of an organism or species determine, to some extent, the type and direction of selection to which they are subject.

The higher the degree of organization or development of individual organisms or entire species, the stronger the influence of the internal environment on the evolutionary process. And as this development progresses, the importance of ways of behaving in this development

22 Ibid, 127.
23 Ibid, 136.

increases. Just as an incidental mutation, the incidental "choice" of a new way of behaving can increase the ability to adapt and develop, thus improving the teleonomic equipment of the organism, or the species. Selection forces first to affirm and then to favour beneficial forms of behaviour. This, in turn, gives preference to those structures which enable and facilitate such beneficial behaviours. Thus, the "invention" of a new way of behaviour may in a specific way shape the course of evolutionary development[24].

The interdependence of structures and behaviours conditioning evolutionary development has led to the emergence of the ability to imagine, i.e. enabled non-visual perceptions, at a certain level of cerebral development. Thanks to it, the most developed beings of their time were able to recreate the experiences of the past and, on the basis of their internal experiences, anticipate future events and prepare for them in advance.

Specific practice confirmed and indicated the obvious advantages of this, although initially still primitive, ability to look to the future. Therefore, selection favoured the ability to anticipate the future and, under pressure from a number of negative experiences, it corrected and improved it. This, in turn, led to the further development of the central nervous system. The end result is a brain capable of predictions consistent with the outside world and the good of the species. This is how the harmony between the purely theoretical reasoning "from behind the desk" and the actual structure of external reality, which is often admired but sometimes misinterpreted today, came about. The logic of modern man is ultimately nothing more than a collection of experiences of the fossil man and his ancestors recorded in the brain[25].

The ability to imagine is the individual ability of particular individuals. As such, it is not yet capable of shaping social behaviour, but it is nevertheless an indispensable basis for this new achievement, that is symbolic speech. The opportunity to share one's own sensations and experiences, personally acquired and considered internal

24 Cf. ibid, 141.
25 Cf. ibid, 164.

and external experience, with other individuals has had a decisive impact on changing social activities and behaviours. The ability of verbal communication was such an advantage for the first hominids that natural selection had to be interested in its further development. And by perfecting the ability of symbolic speech, it lead to the further development of the brain. Thus, speech has become a factor shaping both biological and behavioral evolution of man.

On the basis of the exceptional effectiveness of actions and behaviours created by the command of symbolic speech, with the simultaneous ignorance of the rules of functioning of the brain, created incidentally by way of selection, man came to the conclusion that he is fundamentally different from all other living beings, that he is a being that qualitatively exceeds the whole biosphere. This judgment gave rise to a conviction of a transcendent human nature resulting from it being endowed with an immaterial soul. However, this conviction is only an illusion, the dualism of body and soul is a mere illusion. But this illusion is so deeply rooted, almost genetically fixed, that without it, man cannot understand himself, nor can he live morally. A man should nevertheless know, Monod concludes, that he lives under an illusion, that he lives under a delusion[26].

According to Monod, the same genesis and the same role in human life is played by another great dualism, namely the dualism of matter and spirit, dualism of the natural world and the world of ideas. The latter world is a subjective interpretation of causal relationships, it is a projection of deliberate human actions into the natural world. Its origins also date back to the birth of symbolic speech, that is to the beginnings of humanity. Equipped with the ability to speak but biologically defenseless group of human beings had to experience, every step of the way, that their strength is determined by their cooperative compactness. In order to preserve this compactness, for effective consolidation within individual human groups, it was necessary to clearly show the historical importance of the whole group and, at the same time, to have guidelines to mobilize individual members to fulfil their

26 Cf. ibid, 173.

tasks. Such a unifying and mobilizing role was played by the sets of various principles, i.e. different kinds of myths, "encoded" in the outside world. The human species owes its survival, development, domination over its environment to them. Thus, although the mythical justification of man's position, privileges, and duties departs from the objective truth, their indispensability is anchored in human biology. In Monod's words: "Mythical and religious beliefs are, like all philosophical systems, the price that man pays for his existence"[27].

The development of the world of ideas resulted in biological evolution no longer controlling the human world. Thanks to his knowledge, man freed himself from dependence on the laws of selection and took evolution into his own hands. Today, he lives not on the achievements of evolution, but on the achievements of knowledge. Unfortunately, Monod complains, in ethical issues he still refers to the biological past. After all, he continues to explain the fact and way of his existence on the basis of mythical ideology, as well as continues to seek a measure of objective ethical values in the external reality beyond. Unfortunately, the outside world does not have such a measure. It cannot have it because in the light of objective scientific data the whole life is merely a product of chance.

Scientific cognition does not provide man with any explanation for his existence or any objective, top-down standards of conduct. As an incidental product of blind evolution, man is not determined by any external factor and has to determine himself in the daily practice of actions and behaviours. Moreover, science also reminds us that the order of valuation is at a level that goes beyond the limits of objective cognition. Therefore, according to the directives of science, man only has this one option: to fully accept both his own contingency and his sole responsibility for ethical norms. The postulate of scientific objectivity requires man to take full responsibility for himself. Until he does so, he will live in the magical world of his ancestors, he will lie to himself about the existence of objective ethical norms, encoded outside of or beyond human reality.

27 Ibid, 183.

If top-down directives of conduct are not given to man, if he is to create them himself, than what can guarantee his assessments any relative but the highest possible correctness? Monod's answer is: although modern science knows that its cognition is not a direct source of evaluation, it is only on its basis that a person can achieve objective, or the least subjective evaluation. The postulate of objectivity demands that value judgements be based on cognition, so it only approves of the ethics of knowledge, the ethics of cognition. Therefore, its creator can only be a creature gifted with the ability of cognition – a human being. Monod concludes this line of reasoning with a proposal in which cognitive optimism is intertwined with existential pessimism: "Finally, modern man knows that, in the face of the immense indifference of the universe from which he accidentally emerged, he is left entirely on his own. Neither his destiny nor his duties have been written down anywhere. It is up to him alone what choice he makes: he can choose darkness and he can choose kingdom"[28].

For Haeckel and Monod alike, man, with all his biological and psychological equipment, is a produce of evolution. As such, he is, to both of them, a creation of a blind chance, as he is merely a product of the beneficial convergence of randomly occurring organic changes with a blind determinism of natural selection. Consequently, both of them deny the existence of purposefulness external to the human being and explain its origin and operation by evolutionary determinism. For both of them, evolutionism is a consistent glorification of the objectivity of scientific cognition, although in Monod's case, it is not burdened with the apodictic confidence characteristic for Haeckel. It has revived again today, though without the nineteenth-century ideological aggressiveness, in the evolutionary sociobiology, while Monod's biology continues today, though with reduced methodological criticism, evolutionary psychology. It seems certain that today's intertwining views of sociobiology and evolutionary psychology are, in their basic construction, merely a more elaborate, more detailed argumentation enriched by Haeckel's and Monod's version of the philosophy of nature.

28 Ibid, 195.

5. BETWEEN SOCIOBIOLOGY AND EVOLUTIONARY PSYCHOLOGY

If sociobiology is defined as "the scientific study of the biological foundations of all forms of social behaviour"[29], and evolutionary psychology as "a true synthesis of the contemporary principles of psychology and evolutionary biology"[30], then it is already clear from the definitions themselves that it is impossible to draw clear-cut substantive boundaries between the two disciplines. This can be clearly confirmed, for example, by the quoted here and standard for evolutionary psychology work by David Buss. The author devotes several chapters precisely to the problem of human behaviour that sociobiology also speaks about in a similar way. Therefore, it seems reasonable to claim that evolutionary psychology is not only a chronological but also a thematic continuation of sociobiology. Both are related to the revolutionary theory of ethological cognition of the Konrad Lorenz school, although the quality of this relationship is controversial[31].

This text deliberately distances itself from the – deserving of a more detailed analysis – issue of the type and degree of closeness of these links, and it does not take up the undoubtedly interesting discussion on the content-genetic or purely chronological relationship between sociobiology and ethology. Attention is focused entirely on the desire to show,

29 E. O. Wilson, *O naturze ludzkiej*, transl. B. Szacka, PIW, Warszawa 1988, 256.

30 D. M. Buss, *Psychologia ewolucyjna*, transl. M. Orski, Gdańskie Wydawnictwo Psychologiczne, Gdańsk 2001, 17.

31 Cf. e.g. E. O. Wilson, *Sociobiology. The new Synthesis*, Harvard University Press, Cambridge, 1975; Idem, *Consilience. The Unity of Knowledge*, Alfred A. Knopf, New York 1998; Idem, *O naturze ludzkiej*, op. cit.; D. P. Barash, *Sociobiology and Behavior*, Elsevier North–Holland, New York 1977; R. Dawkins, *Samolubny gen*, transl. M. Skoneczny, Prószyński i S–ka, Warszawa 1996; Idem, *Ślepy zegarmistrz czyli jak ewolucja dowodzi, że świat nie został zaplanowany,* transl. A. Hoffman, PIW, Warszawa 1994; R. Riedl, *Biologie der Erkenntnis. Die stammesgeschichtlichen Grndlagen der Vernunft*, Paul Parey, Berlin und Hamburg 1979; F. M. Wuketits, *Biologische Erkenntnis*, G. Fischer, Stuttgart 1983; *Evolution, Ordnung und Erkenntnis*, eds. J. A. Ott, G. P. Wagner, F. M. Wuketits, Paul Parey, Berlin – Hamburg 1985; Z. Łepko, *Antropologia Konrada Lorenza*, in: *Z zagadnień filozofii przyrodoznawstwa i filozofii przyrody*, vol. 13, eds. M. Lubański, S. W. Ślaga, Wydawnictwo ATK, Warszawa 1991, 157–280; A. Pobojewska, *Biologiczne "a priori" człowieka a realizm teoriopoznawczy*, Wydawnictwo Uniwersytetu Łódzkiego, Łódź 1996.

even at the cost of certain simplifications, the community that combines sociobiology with evolutionary psychology. In particular, they are linked by a common starting point and a similar course of argumentation, and, consequently, also by close formal deficiencies and content errors.

Both disciplines start from a consistent conviction that it is possible to understand and explain the development and specific nature of man at the level of the theory of evolution, completely disregarding the common within this theory distinction between the course and mechanism of evolution. Consequently, in their entire argumentation, they are both based only on hypothetical assumptions about the mechanisms that control the course of biological evolution. Moreover, the arguments of both seem to be entangled in a similarly erroneous cycle: on the one hand, they explain the current ways of behaviour with evolutionary conditions, and on the other hand, they conclude from the observation of the current behaviour that the specific evolutionary conditions are indispensable.

The starting point of sociobiology and at the same time its formal bridge to evolutionary psychology is the individualization of natural selection. This allows the equipment and behaviour of specific individuals to be explained in the same way as the theory of evolution explains the origin and development of species, i.e. allowing the genes of specific individuals to be assigned the importance that the gene pool plays within the whole species. In turn, the starting point of evolutionary psychology and the bridge that connects it with sociobiology in terms of content is the concept of meme. It allows the knowledge acquired on the plane of biological evolution to be transferred to the plane of cultural evolution, as memes are attributed the same content and the same role as genes play in biology. Just as a gene is the unit of biological inheritance, the unit of cultural inheritance is imitation, that is a "meme": the shortened version of the Greek "mimem" in view of the "gene"[32].

32 Cf.: S. Blackmore, *The Meme Machine*, University Press, Oxford 1999; *Gene, Meme und Gehirne. Geist und Gesellschaft als Natur*, eds. A. Becker *et al.*, Suhrkamp, Frankfurt am Main 2003.

The so-called memology, as referred to by its founders and users, can, formally and in terms of content, be treated as a classical pattern of thought circling in the name of obtaining uniformly simplified explanations. This circling is documented by the terminology itself: the cultural information conveyed through the ability of imitation is given the name meme to enable the attribution of what the gene makes and what the gene is: the bearer of heredity through replication and, at the same time, the driver of evolution through selection carried out in the dispersion of the incidental changeability. If, however, the starting point of the arguments is what is to be their final result, it is difficult to be surprised at the vagueness of the concepts underlying the respective reasoning. This is clearly demonstrated by some of Susan Blackmore's statements. Thus, for example, a "meme" is, according to her, information copied in the process of evolution, namely that which causes evolution, and at the same time information that can be copied, that is the subject of evolution. Her reasoning can serve as one of the many examples of such entangled and thus intricate arguments: "If ... imitation may guarantee the process of evolution, ... then the definitions of meme and imitation can be easily linked to each other by stating that a meme is everything that is transmitted by way of imitation and that memes are found everywhere that imitation takes place"[33].

This kind of freedom in terms of the starting point and the complexity in the course of the argumentation is a sacrifice made by their authors in favour of the possibility of having a unified vision of human creation and development, however simplified. This target point of her argumentation is presented by S. Blackmore in the form of "meme theory" as follows: "The evolution of hominids reached a breakthrough point when our ancestors began to imitate each other, thus introducing this new replicator, that is a meme, into the world. The environmental changes caused by memes lead to gene selection, with the direction of the changes being determined by memetic selection. The numerous effects of such changes include such reorganization of the human brain

33 S. Blackmore, *Evolution und Meme: Das menschliche Gehirn als selektiver Imitationsapparat*, in: *Gene, Meme und Gehirne*, op. cit. 67–68.

and speech organ that favoured the replication of better adapted memes"[34]. Such an "argument" probably deserves an articulate evaluation stating: *sapienti sat!* And it would be worth answering the question of whether and to what degree is the content of this argumentation new in conjunction with what J. Monod has already said about the contribution of imitation to the evolution of hominids.

However, with all its intellectual indigestion, the concept of memes has one indisputable merit: its very existence documents the insufficiency of purely genetic explanations offered by the original versions of sociobiology and evolutionary psychology in the form of the concept of a "selfish gene". It includes the reduction of living individuals, including the human being, to the role of a case or a vehicle, concerned only with the transmission of their own gene information, which is a peculiar continuation of the nineteenth-century naturalism and an up-to-date example of contemporary biologism in the interpretation of the human phenomenon.

Perhaps the awareness of this accusation is explained by the fact that the central role in the views and outlooks of sociobiology and evolutionary psychology is played by the issue of aggressive and sexual behaviour, i.e. behaviour with a clear domination of purely biological determination. Within and by means of these behaviours, there is indeed a lot of data to support and multiple examples to illustrate the thesis of natural selection on the effective survival of the best adapted individuals. But can the need for reproduction explain the whole array of human behaviours? Does it fully explain even just sexual behaviour in its entirety? So far, it has not even been possible to distinguish between what kind of behaviour this need actually causes and which behaviours are merely its hypothetical illustrations. The concept of global evolutionary explanations in sociobiology and evolutionary psychology has also failed to deal with many examples of human behaviour in which the procreative interest plays no role. Therefore, as such, it is unable to benefit from the previous achievements of the philosophy and methodology of sciences: not only is it not subject to falsification, but it does not even care about verification.

34 Ibid, 71.

6. CONCLUSIONS

The main idea of the above-mentioned arguments can be summarized in the following three points:

(1) In the second half of the nineteenth century, Ernest Haeckel presented his philosophical monism in the form of a necessity and possibility of replacing the explanations of religious faith with explanations of the theory of evolution. In the conviction that scientific explanations are rationally homogeneous and brutally correct, he eliminated teleonomic explanations for the benefit of the universal causal determinism, which also includes human beings in their entirety.

(2) At the beginning of the second half of the twentieth century, Jacques Monod made a similar attempt to explain the origin and development of the whole animated world, including man, on the basis of the theory of evolution. However, his evolutionism lacks the apodictic confidence characteristic of Haeckel's evolutionism, although, just as Heackel's evolutionism, it glorifies scientific cognition as the only instance of correct, rational explanations.

(3) The explanations offered today on the basis of this theory of evolution are being disseminated and transferred by sociobiology and evolutionary psychology to an ever wider range of phenomena. Within the framework of both these disciplines, the Haeckel's and Monod's philosophy of determinism and chance is continued and developed in detail. They differ from Haeckel's evolutionism in their lack of an anti-religious attitude, and from Monod's philosophy – in their lack of concern for the self-criticism that characterizes modern natural science. They are linked with Monod himself by a similar interpretation of religion as one of the factors facilitating man's survival, while with Monod and Haeckel, they have a similar tendency to explain the whole reality as simply and uniformly coherently as possible. They owe their popularity to this tendency, although the price they pay for it is a considerable lack of criticism.

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"REASON AND FAITH". THE PROBLEM OF THE SEPARATION OF DISCIPLINES*

Abstract. The paper maintains and reinforces a viewpoint that science and religion (theology) are methodologically and epistemologically independent. However, it also suggests that this independence can be overcome if a "third party" is taken into account, that is – philosophy. Such a possibility seems to follow from the thesis of incommensurability and the thesis of underdetermination formulated and analysed in the current philosophy of science.

Keywords: reason; faith; religion; philosophy; science

1. INTRODUCTION

The dispute about "reason" and "faith" is as old as a human rational reflection on the world, at least in the European cultural area. It is quite commonly agreed that the fundamental turn, which was made in thinking about the world at the turn of the 7th and 6th centuries B.C. in ancient Ionia, was that mythical and religious explanations were replaced by reflections made solely by the force of reason. Indeed, antiquity did not present that issue in the form of an exclusionary alternative: *either* mythical stories and religious messages contain the truth *or* it can only be achieved by separating ourselves from irrational sources of knowledge and standing in opposition to them, nevertheless, the foundations of the conflict, of which the best-known manifestations are the Galileo affair, disputes over

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Darwin's theory of evolution, or today's discussions caused by such authors as Richard Dawkins[1] or Steven Hawking[2], can be already found in the Ionic origins of rational human thought. Therefore, in contemporary philosophical reflection, it is worthwhile to ask a question about the role of philosophy in this dispute, whose old sources are simultaneously the sources of its own.

This manuscript addresses this question. However, before we can answer that, it is necessary to define sides of this conflict (or, as some prefer, partners of the dialogue), called here "reason" and "faith", in more detail. Then we will present arguments – supported by historical examples of emerging disputes and their solutions – for the most appropriate and justified, as it seems, approach to describe and shape relations between the parties to the conflict (resp. dialogue), which are defined as *independence* or *separation*. The indication of the norm of independence will be, in turn, the basis for a cautious attempt to take a further step: going beyond – after all – the "separation doctrine". However, the possibility of making such a step, without falling into polarised stances (e.g. statement of convergence), which at the same time means something more than just a search for metaphorical coincidence between "reason" and "faith", is suggested by some of the achievements of contemporary philosophy of science that we will point out. These include the thesis of underdetermination and the thesis of incommensurability. The notion of the *postulated ontology* of (scientific) theories found in them seems to indicate the title and contemporary role of philosophy in the dialogue between "faith" and "science". It would be an attempt to build the image of the world which is as coherent as possible, the sources of which would be located in the ontology that is being discovered (and perhaps also partly constructed), which is "postulated" in given theories, formulated in various fields of knowledge.

1 See e.g.: R. Dawkins, *Bóg urojony*, transl. P. J. Szwajcer, CiS, Warszawa 2007.

2 Hawking's anti-religious comments are quite subdued, nevertheless, clear and can be found in almost all of his popular science texts. The most famous one is *A Brief History of Time: From the Big Bang to Black Holes*.

2. PARTIES TO THE CONFLICT (DIALOGUE PARTNERS)

Both words ("reason" and "faith"), defining sides of the comparison and used in the title, have slogan-like quality and thus their use here is inaccurate. This can be justified, however, by the need to indicate identifiable issues in a quite easy way. However, to clarify the issue under consideration, it should be noted that "reason" is here synonymous with rational knowledge, i.e. the knowledge that is acquired in sensual and intellectual cognition, the results of which are intersubjectively communicable and verifiable. Moreover, quite importantly in the context of our problem, sources of this knowledge can only be natural. This kind of knowledge has been acquired by philosophy since its emergence; the ideal of "natural reasonableness" distinguished it from beliefs, myths and legends. In modern times, this ideal of learning about the world was taken over by natural sciences. Therefore, the first part of our comparison is rational knowledge, once acquired in terms of philosophy, whereas in modernity – in natural sciences as well[3].

Faith, in the proper sense, is an individual attitude of a person. As one of the most outstanding Catholic theologians of our times, K. Rahner, states, faith is a private response to God's revelation. This revelation is not only, and not primarily, a notification in the intellectual sphere, but

3 Certainly not every kind of philosophy, and, in any case, not every proposition that is called in such a way, leads to such understood knowledge. However, there are also types of philosophizing that can meet the criteria of rationality and bring valuable knowledge of the world. It is also worth noting the word "also" used above. It is true that many traditional philosophical issues have been taken over by natural sciences over time, reformulated in terms of them (usually to a more specific form), and are now being solved within the framework of these sciences. However, this does not mean, as some people want, that the philosophical reflection on the natural world is an anachronism. A closer consideration of this problem exceeds the scope of this article and is secondary to its content. In particular, those who share the opposite view and maintain the thesis about the death of the philosophy of nature as a result of intensive development of science can – without prejudice to main theses of this text – consider that the ideal of rational knowledge of the world is nowadays only achieved in natural sciences. This is because the content of these sciences is sometimes compared with religious truths, similarly like e.g. in medieval times – truths of "pure reason", i.e. philosophy, were compared with religion (see examples provided further in the text).

a call to consecrate one's life to God revealing himself [4]. The reality of faith therefore concerns the subjective level of human beliefs and, above all, attitudes, and as such cannot be reasonably compared with the objective content of rational knowledge. Admittedly, there is no doubt that for specific people such a subjective level of the drama "reason and faith" is very important, and for many – the most important; but also because it is a subjective level, everyone interested in it must look for solutions on its own – that is, individually and subjectively. An attempt at a rational comparison between "reason" and "faith" can take place when we talk about the sphere of faith in question, that is, the content of beliefs about the world that can be contained in religious truths. The latter, in turn, are analyzed and explained in theology (or rather in theologies – there are theologies of various religions) understood in a wider sense as a scientific discipline[5]. In this sense, the word "faith" is used in the title. Thus, the slogan-like term "reason and faith" should be understood here as referring to the comparison of rational knowledge, nowadays mainly scientific (in the narrower sense of the term "science"), with religious truths, the meaning of which is specified in theology. In the further part of the article, the term "science" will be used in a narrower sense – as a synonym for natural sciences, while the other side of the comparison will be called theology or religion[6].

3. STANDARD: INDEPENDENCE

I. Barbour puts in order the arguments of proponents of the "doctrine of separation of levels" and distinguishes their two basic forms: science and religion (theology) that have opposing methods and different languages.

4 See: K. Rahner, H. Vorgrimler, *Mały Słownik Teologiczny*, transl. T. Mieszkowski, P. Pachciarek, PAX, Warszawa 1987, 534.

5 In opposition to the narrow understanding of the term "science" as a synonym for natural sciences.

6 Naturally, religion, theology and faith are terms that usually mean different realities. Their interchangeable use in this article, however, is justified by a fairly common convention, in which analyses of such issues as those addressed in this text are used interchangeably as "science and faith", "science and religion", or "science and theology".

Barbour sees the opposition of methods in what he calls an epistemological dichotomy: the source of knowledge in theology are revealed truths, whereas in science – human reason and empiricism (observations and experience)[7]. To put it more strictly, it should be said that the fundamental diversity of sources of knowledge in these disciplines forces the use of methods that are not so much contradictory, but simply different. Indeed, it is difficult to imagine testing the dogma of world creation in a laboratory, or – in terms of the traditional treatment of scientific theories as something more than "texts" born in a particular culture – interpreting Einstein's general theory of relativity using hermeneutic methods.

According to Barbour's reconstruction, those who consider both scientific theories and formulations of religious truths to be "language games" used for various social purposes indicate differing languages. Using such an approach, the function of religious language is to encourage to adopt certain attitudes in life and to be guided by selected moral principles, while the function of the language of science – prediction and retrodiction concerning the course of phenomena. In particular, scientific theories are useful tools for such prediction and, consequently, for creating technological applications, without claiming the right to be true. In this (linguistic) sense, religions cannot make such claims either, therefore, they cannot be either consistent or inconsistent with scientific theories[8].

Although the approach outlined above does indeed allow the statement of complete independence of the scientific and religious spheres to be substantiated, it is hard not to notice that it is unacceptable within the framework of Christian theology, according to which dogmatic statements describe the existing reality and are entitled to truth-qualification as much as possible, although, naturally, the criteria for evaluating the truthfulness of such statements are not and cannot be empirical. The neo-positivist reconstruction of science as a language game does not seem to be accurate. Without entering here into

7 See: I. Barbour, *Jak układają się stosunki między nauką a teologią?*, op. cit., 14.

8 See ibid, 18–19.

polemics about the validity of a realistic or anti-realistic (including neo-positivist) approach to scientific theories, we advocate the former: scientific statements are statements about existing, non-objective reality, which are entitled to truth-qualification. Naturally, this weakens the linguistic argument for the separation of science and religion, but it does not invalidate it. The thesis about the linguistic diversity of these fields can be understood most simply, i.e. as a statement of the obvious fact that these fields are linguistically incommensurable. This means that for many (certainly the vast majority) terms of the language of science there is no translation into religious terms and vice *versa*. In science, it is impossible to give any sense to such terms as "sin", "grace" or "salvation", just as the terms, let us say, "point particle" or "initial singularity" cannot be translated (and such translation, if it were possible, would be pointless) into the language of theology.

A Protestant theologian, L. Gilkey (who is an expert in American trials against "scientific creationism"), compares the arguments for the independence of science and religion in a slightly different way and presents them in several groups. First of all, the subject of these fields is different: objective, repetitive data for science, the beauty and order of the created world as well as the experience of inner life (where human faces such realities as guilt, trust, forgiveness) for religion. Therefore, the experience, and sometimes also the logical content of theory, is the source of scientific knowledge, while revelation is the source of religious knowledge. Moreover, science answers the objective questions of "how", whereas religion answers the questions of "why", i.e. questions concerning the meaning and purpose of life and events. Finally, the language of science is used to formulate quantitative, testable predictions, while religious language is, because of God's transcendence, symbolic and analogous[9]. It is difficult to rationally oppose the arguments quoted here, and their strength is also demonstrated by the fact that they neither become entangled in controversial theses concerning the theory of scientific cognition nor are they based on interpretations of the phenomenon of religion that are unacceptable in Christianity.

9 See ibid, 16–17.

The arguments discussed above for the thesis of independence of science and religion are of methodological and epidemiological nature. A factual argument should be added to them. As St. Thomas Aquinas already pointed out, it follows from the very fact of Revelation that faith and knowledge can't be the same[10]. If, by rational reasoning, one could have discovered identical – and all – truths we knew by faith, the Revelation would have been superfluous. Naturally, this is not an "interdisciplinary" argument – it can only be formulated and recognized based on (Christian) theology, which makes it irrelevant in discussions with those who do not recognize theological sources of cognition. However, for a Christian theologian or a believer looking for answers to various questions that arise between science and faith, this is an important argument.

4. INDEPENDENCE – EXAMPLES

The thesis about the separation of cognitive planes of science and theology has repeatedly been an argument in the discussions on specific issues in which reason and faith seemed to clash. An example of such an issue is the dispute over the eternity of the world[11]. The question of whether the world has always existed or whether its existence is limited in time has been already asked since ancient times. It is clear that in a culture associated with Christianity, proclaiming the dogma of creation, the answer had to be unequivocal. As many philosophers attempted to justify the thesis about an eternity of the world, medieval times developed three strategies of "defending" the truth about the creation of the world, thus its temporal limitation, against such philosophical "attacks"[12]. Some tried to polemize with the philosophical thesis about the eternity of the world, using philosophical arguments

10 Thomas Aquinas, *Questiones disputate de veritate*, 14,9.

11 See: O. Pedersen, *Konflikt czy symbioza? Z dziejów relacji między nauką a teologią*, transl. W. Skoczny, Biblos, Tarnów 1997, 194–197.

12 Bearing in mind that philosophical considerations in pre-modern times can be considered as an equivalent of present scientific investigations, the example quoted here can be treated as one of the manifestations of the conflict between science and religion.

as well. An example is provided by the views of St. Bonaventure, who formulated a kind of mathematical "proof", by reducing it to contradiction, against the thesis about the eternity of the world. According to him, a world that eternally exists would have to exist for an infinite number of years. As each year has twelve months, the world's lifetime calculated in months would have to be expressed by the number twelve times greater than infinity. It is impossible, in his opinion, because such a number is unthinkable. A different strategy was chosen by averroists, who pointed out that the thesis about the temporal finiteness of the world is a philosophical thesis, while the conviction about its eternity – a truth of faith. Since both theses belong to a different cognitive order, it can be argued that both are true. This was an application of the well-known doctrine of double truth, according to which a thesis can be true in theology and false in philosophy at the same time (and vice versa). In a sense, the doctrine of double truth is a variation of the "doctrine of separation of levels" that we defend here. However, it is an extreme variety, "resolving" all possible disputes between religion and philosophy (today: science) already at the starting point, especially without the need to penetrate into the substance of a specific issue. The thesis about the methodological and epistemological independence of religion and science is, however, neither equivalent to the doctrine of double truth, nor this doctrine follows from our thesis. This is evidenced by the third medieval approach to the dispute over the eternity of the world, which can be both qualified as referring to the separation of levels and avoiding the risky theory of two truths. Among the proponents of this approach was St. Thomas Aquinas, who in his polemics with Bonaventure claimed that – indeed – adding to the infinite number was possible (that is, for example, adding something to the infinite number of years of the world's existence, to obtain a "greater" infinity expressed by the number of months of the eternal world's existence) and the world could have an infinite past. We only know from the article of faith (*sola fide*), based on the truth revealed in the Scriptures[13], that this is not the case.

13 See: O. Pedersen, *Konflikt czy symbioza? Z dziejów relacji między nauką a teologią*, op. cit., 196.

Thomas believed that the temporal finiteness of the world is true – as we know from Revelation. In philosophy, in turn, one can reasonably argue also for its eternity, but philosophically this dispute is unresolved. Thus, philosophy (let us recall again: today we would say "science") can neither support nor refute the theological view of the temporal beginning of the world. Aquinas' stance is a medieval example of applying the thesis of independence of science (rational cognition) and religion to a specific problem of temporal characteristics of the world. This is because the methodological and epistemological separateness of these fields shows that with scientific arguments it is impossible to support or refute a religious view, and religious theses have no such power with respect to scientific views.

The above-mentioned example of the discussion about an eternity of the world, shows that the "doctrine of separation of levels" was applied long before anyone called it in that way, and, in particular, it is not only today's way of defending the truths of faith against supposed attacks of science, "invented" as a result of such attacks.

A more contemporary example of the application of the thesis about the independence of science and religion are some positions formulated in the dispute over Darwin's theory of evolution.

The first years after the release of *On the Origin of Species* were marked by numerous disputes and doubts raised concerning Darwin's theses. A substantial part of these doubts was formulated by scientists and was strictly scientific. For instance, the reasons for Darwin's postulated variability in the world of living beings were discussed, the role of natural selection as the main factor responsible for the adaptation of organisms to their living environments was questioned, as well as, accepted in the theory of evolution, time scale and dating of some fossil finds. Most of these doubts have been resolved over the years in favour of the theory of evolution, but it is worth remembering that Darwin's first adversaries primarily argued with him on his own, scientific framework[14].

14 This means that not every argument against the Darwinian way of explanation must necessarily be religiously motivated, which is worth taking into account in the analyses

Independently from scientific disputes, there were also philosophical discussions, which appeared very fast, largely due to misunderstanding of main theses of the theory of evolution in religious circles, or due to a deliberate over-interpretation of this theory by some scientists, such as E. Haeckel, who claimed that the theory of evolution was invented only to put Christianity and the Church in a bad light. An anecdotal example of a peculiar "religious fear" of the theory of evolution is a statement made by the wife of one of the Anglican bishops, who, learning about this theory, was to shout out: "Evolving from apes! My God, may it not be so; and if it is, may it not be spread!"[15]. The fear of Darwin's ideas also found far more official tone. In the Episcopal Church's edict[16], we read that if the evolutionary hypothesis was true, the Bible would become a terrible fiction[17]. This position is an expression of the belief (*tertium non datur*) that either evolutionism is true (so the Bible is lying), or the revelation contained in the Scriptures is true, which must entail the rejection of Darwinian ideas.

In addition to such views, which proclaim an irremovable conflict between the religious truths of Creation and the theses of the theory of evolution, more balanced positions also emerged in the Anglican Church. The reaction of J. McCosh, Rector of The College of New Jersey (today's Princeton University) to the theory of evolution, actually, to its questioning in church circles, were words: "We give to science what belongs to science and to God what belongs to God. When we face scientific theory, our first question is not whether it is consistent with religion, but whether it is true"[18].

Such a position is, as we can see, an attempt to dismiss the disputes between science and religion about the theory of evolution, by refer-

of contemporary disputes about evolutionism and creationism.

15 P. Barrett, *Science and theology since Copernicus. The search for understanding*, T. and T. Clark, London – New York 2004, 98.

16 The Episcopal Church is an Anglican community operating in the United States.

17 As cited from: C. A. Russell, *Cross-currents: interactions between Science and Faith*, InterVarsity Press, London 1985, 149.

18 As cited from: P. Barrett, *Science and theology since Copernicus. The search for understanding*, op. cit., 101.

ring to the thesis about the independence of these fields. F. Temple, later Archbishop of Canterbury, went a little further in his views. He seemed to see not only the lack of conflict between science and faith in this issue but also suggested a kind of compatibility of the truth of Creation with the new theory: "[The Creator] equipped certain particles of matter ... with such inner forces that living creatures like these we observe today have evolved in the ordinary course of things"[19].

The question of whether it is possible to go beyond the doctrine of separation of levels in a methodologically legitimate and "safe" way and to seek some kind of compatibility of scientific and theological truths will be addressed in the last part of this article.

Similar positions to those described above can also be found in the Catholic Church's reaction to the developing theory of evolution. Those included both voices of strong opposition to the new theory and positions indicating – considered as appropriate here – the thesis of independence of religious and scientific truths. The first ones include, for example, a statement by a German theologian, J. Pohle, who wrote in his 1908 *Manual of Dogmatic Theology*: "The description of creation in the Book of Genesis is realistic – it is a true story. Darwin offends God who directly created a body of the first man"[20].

Such careless formulations that can be found not only in the views of the then theologians remain private views, even if their authors were among the most prominent representatives of their field. However, those views can be found also in official statements. For instance, the Pontifical Biblical Commission, in a 1909 document, announced that the basic truths of faith included: the conviction that God is a direct creator of the first man, the truth that a woman takes her origin from the body of the man, and the statement that all mankind has its roots in a unique, single beginning[21]. This opinion

19 As cited from: J. Moore, *The Post-Darwinian Controversies*, Cambridge University Press, New York 1979, 220.

20 J. Pohle, *Lehrbuch der Dogmatik*, Verlag von Ferdinand Schöningh, Paderborn 1908, 427.

21 From: J. Tomczyk, *O rozdzielności płaszczyzn*, Na początku... 13(2005) 7–8, 250. It seems that this opinion is indeed difficult to reconcile with main theses of the the-

probably requires careful interpretation, but the polemical tone is clear regarding certain statements of Darwinism.

In addition to such statements, which seem to suggest – like some above-mentioned statements made by representatives of the Anglican Church – an irremovable dichotomy between the theses of science and the truths of faith, there are also supporters of the thesis of independence among representatives of the Catholic Church from the early 20th century. According to one of the most famous Catholic theologians of the time, B. Bartmann, the proper "answer" of the theology to the theory of evolution is to distinguish physical order from a spiritual one. There is no need – writes Bartmann – to reject the hypotheses about the evolutionary origin of human. It can be argued that God created the human soul from nothing, while the body from existing matter[22]. It seems that the author suggests some form of the thesis about evolution as a "way" of creation, also familiar in present-day Catholic thought[23]. L. Janssens also spoke in a similar spirit when he stated that from a theological point of view, for the truth that God created human, it was not important how the human body had been created[24].

The resolution of the dispute between the theory of evolution and the dogma of creation, referring to the "doctrine of the separation of cognitive levels", found its official tone in Pope Pius XII encyclical, *Humani Generis*, of 1950. In this document, we can read: "... the

ory of evolution, and even more broadly, with some basic theses of modern biology. One might think that it was, among other things, an attempt to "defend" the original sin doctrine. A proper understanding of this dogma in the light of the achievements of modern science is one of real (as opposed to a great number of apparent ones) problems facing today's theology, as well as considerations in the field of "science and religion". This problem is taken up e.g. by A. Anderwald, *Początki człowieka a grzech pierworodny. Od konfliktu do integracji*, in: *Kontrowersje wokół początków człowieka. Między Biblią i antropologią*, eds. G. Bugajak, J. Tomczyk, Wydawnictwo św. Jacka, Katowice 2007, 287–297.

22 B. Bartman, *Lehrbuch der Dogmatik*, Freiburg 1911; quoted from: J. Tomczyk, *O rozdzielności płaszczyzn*, op. cit., 251.

23 See e.g.: K. Kloskowski, *Filozofia ewolucji i filozofia stwarzania*, vol. 1: *Między ewolucją a stwarzaniem*, Wydawnictwo ATK, Warszawa 1999, 190–213.

24 L. Janssens, *Summa Theologica*, Freiburg 1912; quoted from: J. Tomczyk, *O rozdzielności płaszczyzn*, op. cit., 251.

Teaching Authority of the Church does not forbid that, in conformity with the present state of human sciences and sacred theology, research and discussions, on the part of men experienced in both fields, take place with regard to the doctrine of evolution, in as far as it inquires into the origin of the human body as coming from pre-existent and living matter – for the Catholic faith obliges us to hold that souls are immediately created by God"[25]. In this papal statement, as in the views of Catholic theologians cited above, one can see not only the affirmation of the methodological and epistemological thesis about the independence of scientific and theological research but also the reference to the ontological position of soul-body and spirit-matter dualism. As our deliberations concern the aforementioned thesis of independence, this ontological strand appearing in theological solutions to the dispute about evolution will be omitted here[26].

The above-mentioned considerations were aimed at presenting arguments in favour of the thesis – and illustrating it using examples of solutions to specific problems – that science and theology (religion) are two fields that are methodologically and epistemologically separate. This thesis, however, is not the last word that can be uttered in relation to the issues raised here. Because it is clear that although, as stated in the introduction, the final solution to the alleged conflict between science and religion is within worldview framework, thus it is a subjective solution, in the construction of such a worldview, if it is to have the value of rationality, there is no way to avoid objectivised deliberations, guided by the question of how "actually" the world and our place in it finally look. Regardless of the validity of the thesis about the separation of science and theology, the subject of these fields, although studied from significantly different points of view, is – at least in part – the same: a world investigated by natural sciences is the world created by God.

25 Pius XII, *Humani Generis*, no. 36.

26 It seems that reading the truth about human creation in the spirit of Cartesian dualism is neither the only way nor the most popular one to interpret it in the history of Christian doctrine.

Is it possible, therefore, to go beyond the "doctrine of the separation of levels" in a methodologically proper way, without falling into either scientific simplifications, proclaiming the conflict of certain religious truths with scientific achievements, thus falsity of the former[27], or into unjustified optimism, maintaining that science and religion are convergent in reality[28]? The last part of this article indicates that this question can be answered positively.

5. GOING BEYOND THE "SEPARATION DOCTRINE"

Some suggestions related to the possibility of going beyond the claim of independence of science and religion (but without its negation), thus to the possibility of building a coherent picture of the world, which would contain elements of both scientific knowledge and religious (theological) beliefs seem to result from two theses formulated and analysed in contemporary philosophy of science. These include the thesis of incommensurability and the thesis of underdetermination.

The thesis of incommensurability was originally formulated in the context of T. Kuhn's question concerning scientific change. Successive scientific theories, concerning the same area of reality, are very often linguistically incommensurable. This means that in the transition from older theory to newer one there is such a significant change in the meaning of theoretical terms in these theories that it is impossible to translate them from the language of one theory to

27 Some state, for example, that religion formulates opinions about the material world – e.g. when it talks about miracles – so its claims fit perfectly within the scope of scientific interests and "on closer investigation they turn out to be scientific claims". Therefore, religious claims would be subject to typically scientific falsification. See: R. Dawkins, *Snake Oil and Holy Water*, Forbes ASAP, 10.04.1999.

28 The conviction about the possibility of the convergence of science and religion is stipulated by the physicist and Nobel laureate – C. Townes: "The purpose of science is to discover order in the universe and thus understand the things we see around us, including ourselves. ... The purpose of religion can be defined ... as understanding (and thus acceptance) of the purpose and meaning of our world and what our place in it is. ... Understanding the *order* in the world and understanding *the purpose of* the world are not the same, however, they are not very far apart" (C. Townes, *Gathering of the Realms: The Convergence of Science and Religion*, Science and Spirit 10(1999)1, 18–19).

the language of another. At the same time, however, we are usually entitled to claim that a newer theory is better than its predecessor. This is possible because it can be demonstrated that the older theory somehow anticipated certain characteristics of the successor, which have been preserved (and highlighted) in the latter. Hence, if one can make such an evaluation of two linguistically incommensurable theories, holding the superiority of a newer theory over its predecessor, the incommensurability is not equivalent to incomparability[29].

The thesis of incommensurability was therefore originally related to the theories created in the same branch of science. Moreover, the considered theories were supposed to concern the same area of reality. However, it seems that it can be extrapolated to cases of theories from various fields, which are even more linguistically incommensurable, for example, by comparing scientific and theological theories[30]. Such a comparison would not be intended, obviously, to evaluate the superiority of one theory over the other. The conclusion from the suggested here extrapolation of the thesis of incommensurability is more modest: it simply turns out that the theories in science and theology, although undoubtedly linguistically incommensurable, can be compared, thus there can be a platform of their "meeting". This, in turn, makes it possible to avoid the extreme consequences of the claim of independence of these two fields and ultimately leads to the conclusion that independent theories may "meet" methodologically and epistemologically.

The second form of the thesis of incommensurability, called the ontological form, offers even more than just opening the possibility of "meeting" two incommensurable theories. This form of the thesis in question states that two theories are incommensurable if, when they concern the same scope ("fragment" of reality), they suggest various, nonempirical features of this reality. This is what happens

29 See: Z. Hajduk, *Z ogólnej teorii związków inter- oraz intrateoretycznych*, in: *Filozofia a nauka w myśli Księdza Kazimierza Kłósaka*, eds. Z. Liana, A. Michalik, OBI – Biblos, Kraków – Tarnów 2004, 137–139.

30 The concept of "theological theory" certainly differs in meaning from that of "scientific theory". However, this does not seem to prevent us from extrapolating the thesis of incommensurability to these two "types" of theory.

with scientific theories on the one hand and with theological theses on the other. If their subject is, at least in part, the same (the world investigated in sciences is, after all, the "scene" and in some aspects also the subject matter of Revelation), then they can formulate – and they are formulating – statements about their subject that point to different "nonempirical features" of this world. However, such distinctness does not mean – which emerges indirectly from the thesis of incommensurability – that only one of these theories is right and the other must be wrong.

It is worth asking at this point what are these "nonempirical features" of reality, suggested by different theories of the same subject matter. The answer seems to be guided by the second of the above-mentioned theses from the scope of the theory of scientific cognition: the thesis of underdetermination.

There are three formulations of the thesis of underdetermination that are not identical: linguistic, classical (usually called the Duhem-Quine thesis) and ontological[31]. Leaving aside a detailed discussion of these formulations, it is enough to note that each of them contains the conviction that scientific theories include ontological theses in a certain (not direct and not ambiguous) way[32]. This is most clearly noticeable – according to its name – in the ontological form of the thesis in question. It states that there are empirically equivalent theories[33], but they differ in terms of postulated ontology. That means two things. Firstly, the theories "postulate" some kind of ontology, that is to say, on their basis, it is possible to formulate certain statements concerning the basic, ontic structure of the reality to which they refer. This "postulated ontology" are the previously

31 Cf. P. Zeidler, *Spór o status poznawczy teorii. W obronie antyrealistycznego wizerunku nauki*, Wydawnictwo Naukowe IF UAM, Poznań 1993, 33–34.

32 The analysis of individual formulations of the thesis of the underdetermination from the point of view of contained in them ontological strands can be found in the paper: G. Bugajak, *O postulowanej ontologii teorii naukowych*, Studia Philosophiae Christianae 40(2004)2, 315–322.

33 The empirical equivalence of a theory means that the set of empirical consequences (observational sentences possible to bring out from the theory) is the same for both theories.

mentioned "nonempirical features" of incommensurable theories. Secondly, such ontological theses are not subject to empirical verification. The latter conclusion follows from – also formulated by Quine – ontological relativity dogma. This principle expresses the conviction that previdistic power is what really matters in scientific theory. What we recognize in such a theory as fundamental features of reality is irrelevant from the point of view of the theory itself[34]. In other words, although theories "postulate" some kind of ontology, they do not "force" it.

6. CONCLUSIONS

The above-mentioned considerations lead to the conclusion that in the case of concrete scientific and theological theses –for example concerning the alleged conflict between the theory of evolution and the belief in the creation of the world and human by God – an attempt can be made to read this "postulated ontology" that is hidden in these theories and create a coherent, philosophical picture of a fragment of reality to which both theories relate. Creating such a picture would be the task of philosophy, especially given the fact that in the face of ontological underdetermination of initial theories, the reading of ontology suggested in them is a matter of their some philosophical interpretation. Such an interpretation cannot be completely arbitrary – after all, its framework is determined by the form of analysed theories. At the same time, however, the proper selection of philosophical interpretative tools may lead to "reconciliation" of both theories at the level of philosophy.

The outlined procedure does not violate the principle of independence of science and theology because the construction of a coherent, ontological picture of some fragment of reality, to which the theories of these two fields refer, is not done within the framework

34 "The ontological relativity dogma" is formulated by Quine in such works as *Theories and Things*, Cambridge, Mass. 1981, and *Pursuit of Truth*, Cambridge, Mass. 1990.

of either of them, but consists in introducing a "third partner" to dialogue. It is the philosophy which acts here as an interpretative tool and a platform for "meeting" ontological conclusions that are drawn out independently from both sources: scientific and theological.

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SIGNIFICANCE OF ONTIC DUTY*

Abstract. What are the relationships between value and duty? Which ontic status has a duty and why? This article aims at clarifying these concepts. It is indicated that in Kant's writings, we come across texts that enable a slightly different interpretation of his philosophy. And so: the matter of good will is the goals themselves; good will must act according to the maxim that the members of the kingdom of goals follow. And this is a moral good since the highest principle of morality is the desire for autonomy of will. Thus, the form of universal legislation is a community of autonomous beings in which the humanity of each of them is realized. In such a community, the a priori content – the content of an ethical reality – is created. It can be said that relationships between people are various forms of ontic status of a duty.

Keywords: value; duty; Kant's law

1. INTRODUCTION: POSING A PROBLEM

"The duty to know the duty is therefore not 'infertile', not having a chance to change a person", L. Koj wrote in one of his books[1]. This is the first reason for my interest in this issue. I share his conviction that practicing ethics is, above all, "the desire to know resulting from the desire to fulfill a duty or to influence the relevant beliefs and actions of other people[2]. That is the conviction that I obtained

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1 L. Koj, *Powinność w nauce. Określenie i poznawalność powinności*, vol. 1, UMCS, Lublin 1998, 228.

2 Ibid.

during my studies at the John Paul II Catholic University of Lublin, where I had the opportunity to get acquainted with the thought of K. Wojtyła and T. Styczeń.

The second reason for my renewed interest in the subject of duty was the book written by Andrzej Kaniowski *Supererogacja. Zagubiony wymiar etyki* [*Supererogation. A lost dimension of ethics*][3], in which the author maintains that in Kant's views one can find a basis for stating that the philosopher from Królewiec [Königsberg] accepted the existence of an ontic duty. Is he indeed right? And if so, what is the ontic duty and what is its significance about? In order to answer these questions, one should think a little bit about the attempts made so far to understand the duty, and especially its understanding by the philosopher from Królewiec.

The third reason for my interest in the issue of ontic duty is related to the claims of some philosophers that the essence of ethics is the issue of a value, not a duty. Moreover, they claim that ethics should be built through the references to the virtues, not the duties. According to the, W. Ockham is the main culprit[4]. Others say that one should live according to the value, not duty. And therefore – a value or a duty? Or maybe both, as it was indicated e.g. by Wojtyła?

The fourth reason for my interest in the issue of ontic duty is related to the views of Hans Jonas. And the fifth one, finally, is the desire to find an answer to the question of what the duty is at all, what is its existential nature.

What is a duty then? What is its ontic status? Isn't it an anachronism to talk about the ontic duty in the post-metaphysical era? Isn't this concept of crypto-theological character? Isn't the duty only formal, as I. Kant thought? Or maybe Kaniowski is right claiming that in Kant's system, it is possible to find something that is a content, ontic, and not only formal duty? Is it therefore possible to explain the ontic duty without referring to religious concepts? And finally, why is it significant? It seems that all the questions can be

3 A. M. Kaniowski, *Supererogacja. Zagubiony wymiar etyki*, Oficyna Naukowa, Warszawa 1999.

4 Cf. W. Giertych, *Rewolucja w moralności*, 2 (http://list.media.pl/archivum-list-katolicki.php?lng=pl&pg=71), [accessed on: 12/2004].

reduced to the one asked by H. Jonas: Do we take part in the axiological decisions voluntarily or is it our duty?[5] Jonas means nature's "decisions", but I think this question can be generalized and related to any consideration of the binding nature of reality, regardless of the philosophical direction we represent. In other words, it is about showing the relationship between freedom and duty, freedom and value, or, as others would say, good and freedom. How does good "stimulate" us to act; does it oblige us absolutely, "seduce" us, or is it just our choice without any justification, a manifestation of a specific free decision?

2. THE CONCEPT OF DUTY

It is commonly believed that the issue of duty appeared with Kant. The issue of duty, however, is much older and reaches back to the ancient thought. I will not present the whole discussion on this topic here. If you are interested, I would like to refer you to the book by A. Kaniowski.

The departure from the Greek understanding of *enetelechia* as a basic ontic category and the development, under the influence of Christianity, of the concept of freedom contributed to the emergence of the concept of duty. The duty started to come down to the will of God declared in prohibitions and orders. Wilhelm Ockham, who treated freedom not as an act of reason, but only as an act of will, had a great influence on the development of this concept of duty. He decided that humans have no inclinations for good and that they are completely undetermined. If a human being was determined towards good, he or she would be enslaved. Moreover, there is no increase in freedom in human beings. Everyone is born as a completely free being. God is also completely free and has therefore provided human beings, on a random basis, with a law that can be changed at any time. In everyday life, therefore, there is a clash between freedom and God's order, which a human being perceives in his or her conscience as a duty. This duty is not be based on any

5 H. Jonas, *Zasada odpowiedzialności*, transl. M. Klimowicz, Platan, Kraków 1996, 146.

principle. Conscience is something like a stamp that certifies a recognized duty[6].

Therefore, Ockham separated the concept of being from the concept of good, freedom from reason. With social changes, especially as the result of the progressive individualization and creation of the sphere of privacy and the weakening of the power of external and legal orders, moral theories began to focus on the question of duty.

It should be treated as an independent phenomenon which cannot be reduced to either desire, value or norm. F. Brentano had a great influence on this understanding of duty through his work *O źródle poznania moralnego.* His students began to juxtapose a duty with a value. Some considered these concepts equivalent, others separated them, giving priority to the value (e.g. N. Hartmann or M. Scheler). However, it is impossible to analyze the whole discussion on this subject here. I'll just add that Herbert Spiegelberg contributed a lot to explain what the duty is. He made many distinctions. He spoke of duties, permissions, claims and rights[7]. Each of these terms referred to a different object. He believed that these objects create a certain ideal state, referred to as the *kat' exochen* order, that is, something that is ideal in itself, a goal. He assumed that in addition to the ideal order, there is also an order of certain directives and mutual assignments. It is artificial in nature. This order "exists by itself and has its foundation in the nature of things"[8].

According to Spiegelberg, we grasp this order directly, when in our everyday life we oppose the order to disorder, without referring to any directive[9]. The advantage of Spiegelberg's concept is that it is not limited to the activities themselves. For it indicates what this world should be like, or rather should not be, that is, what states should never occur. The advantage of this concept is also the fact that it is not limited to moral duties. It rather shows the ideal state

6 See: W. Giertych, *Rewolucja w moralności*, op. cit., 2.

7 H. Spiegeklberg, *Sollen und Durfen, Philosophischen Grundlagen der ethischen Rechte und Pflichten*, Klawer Academic Publishers, Dordrecht – Boston – London 1989.

8 Idem, *Gesetz und Sittengesetz. Strukturanalytische und historische Vorstudien zu einer gesetzfeien Ethik*, Max Niehans Verlag, Zürich und Leipzig 1935, 143.

9 Ibid.

of affairs, a certain reality that connects what should be a moral duty and what should be a duty from a different, non-moral point of view.

Kaniowski's main objection to the Spiegelberg's concept is that (like any phenomenological concept) it refers to intuition[10]. Neither does it answer the question of what are the sources of the duty, which is very important because, as soon as the duty is no longer bound to the will of God, the question of the origin of the duty and its nature became more legitimate. After all, many people believe that compliance with duty depends only on the existing social relations and that it is only psychological. Duty is an accepted compulsion. So it is neither a datum nor does it have a subjective character[11].

Nevertheless, Kaniowski believes that the advantage of the concept of duty in Spiegelberg's understanding is that it does not only focus on what I should do, but it considers what state should not exist, as well as the fact that he uses the method of discourse to establish universal duty, which makes its character content-based and not only abstract and formal. Thus, the accusation made against Moore's ethics and value ethics concerning the fact that they drag with them "the mortgage of mysterious, intuitive mystification and crypto-metaphysical and quasi-theological construction" does not concern it[12].

Kaniowski is right when claiming that Spiegelberg's concept of ontic duty, although it has a certain connection with metaphysical thought, does not define in advance a certain ideal state to be realized, "according to some proper being, a state of perfection", but gives the opportunity to define the type of this state, or rather what state should never occur. It protects against ideologizing the content of the duty. It also does not indicate an unambiguous way of realizing this duty, assuming the impossibility of realizing all states of affairs, thus better showing the rooting of the duty both in the subject and in social relations, in inter-subjective references.

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10 Cf. also H. Buczyńska-Garewicz, *Uczucia i rozum w świetle wartości. Z historii filozofii wartości*, Zakład Narodowy Imienia Ossolińskich – Wydawnictwo PAN, Warszawa 1975.

11 H. Krämmer, *Integrative Ethik*, Suhrkamp, Frankfurt – Mainz 1992, 22.

12 Ibid, 413.

Kaniowski believes that in Kant's concept, one can also find the basis for distinguishing the ontic duty. He refers to those fragments in which the philosopher from Królewiec deals with the issues of human responsibility for the world around him/her, when he mentions a certain debt we have in relation to the reality around us. Agreeing with this statement, I would like to go a little further and show that the ontological (ontic) duty appears not only in connection with the issue of responsibility for the natural world, but that it is possible to discover its ontological, and not only formal, character by considering Kant's understanding of humanity.

3. HUMANITY REALIZED IN TWO WORLDS

The Kant's ethic, as I understand it, makes it possible to state that duty is a being, or even that it is more a being than a duty, and that the content of what duty is indicates the objective reality of the idea of human freedom and enables the empirical world to be linked with the ethical world. In order to avoid any misunderstandings, I would like to note that Kant did not do so. His earlier assumptions did not allow him to do so by. However, he had a good intuition about certain dependencies. And that's what we need to examine.

As we know, Kant was convinced that moral content cannot serve as a criterion to distinguish it from other content. So it is not the content that should be compared with each other, but the content should be adapted to the form. Thus, Kant writes: "The principle of happiness can provide maxims, but never the ones that would be suitable for rights [for] the will, even if universal happiness is taken for granted"[13]. Nevertheless, one can risk a thesis that Kant's concept of happiness, although undefined, is not only formal.

As we know, Kant talked about a goal in itself or about a kingdom of goals and pointed to the idea of humanity as the greatest limitation of individual goals, which he treated as a new characteristic of formal law. The idea of humanity is a principle determining the

13 I. Kant, *Krytyka praktycznego rozumu*, transl. J. Gałecki, PWN, Warszawa 1984, 63.

will, it constitutes the basis of the law itself. Goodwill must follow the maxims that the members of the kingdom of goals follow. And this is a moral good since the highest principle of morality is the desire for autonomy. The concept of humanity is special. It is different than universal concepts. Although we can say, after Lévinas, that the universality comes through the concept of humanity imperceptibly, and due to this fact a human being becomes one of the elements of a larger whole (for this reason he rejected the Kant's concept), it is difficult to deny that the content of the concept of "humanity" is special. And it cannot be determined in a purely formal manner.

Taking into account the specificity of the notion of humanity, we can show that the duty to treat both one's own humanity and the humanity of others has the appropriate content, which exists as binding in both the ethical and empirical world, i.e. sensually cognizable. Such an interpretation may seem strange, incompatible with Kant's thought. Nevertheless, *Uzasadnienie metafizyki moralności* [*Justification of the metaphysics of morality*] contains a fragment that allows for such interpretation. Discussing the role of practical reason in that work, Kant writes: "The will of such a [rational] being can only be one's own will when the idea of freedom is assumed, and must therefore be granted in practical terms to all rational beings"[14].

The above quotation, however, does not allow us to state that Kant transfers the understanding of freedom from the theoretical sphere to the practical one. However, it allows us to assume that he wanted to draw the reader's attention to the equality of human beings who form a certain community, and to the fact that every rational being is a member of the "intelligent world", and thus is capable of the same perception of the world and of free, autonomous action[15].

The freedom of man as an autonomous being is revealed in the fact of lawmaking. However, the law cannot be established outside the community. Thus, the form of universal legislation is a community of au-

14 I. Kant, *Uzasadnienie metafizyki moralności,* transl. R. Ingarden, PWN, Warszawa 1984, 89.

15 See more on this subject, P. Baumanns, *Kants Ethik. Die Grundlage*, Könighausen und Neumannn GMbH, Würzburg 2000, 95f.

tonomous beings in which the humanity of each of us is realized. As H. Cohen aptly put it, Kant's main thesis should be as follows: "In this community, the content *a priori*, the content of ethical reality is created"[16].

Thus, the pure content of the will is the idea of humanity realized in a community of autonomous legislators. Therefore, the concept of pure desire refers us to the concept of a community of beings who establish the law on their own. Consequently, particularistic will can and must be combined with the will of a general legislator, who defines the ethical content that is realized in every human being as the representative of humanity, that is in a community of law-establishing beings. Hence, the Kantian pure will is not, as it is commonly believed, something completely undefined, but it is the ability to self-determine oneself in a community as a world of intelligent beings. However, this will is realized in two worlds to which man belongs, that is in the world of reason and the world of the senses. The recognition that the human will makes a self-determination in community, which is expressed by the idea of humanity, is, in my opinion, Kant's greatest ethical discovery, which is probably not fully appreciated. Thus, Kant had a brilliant intuition and wanted to show, better than today's neo-Kantianists or neo-Hegelianists do, that in order to understand reality, a certain moment of idealism is necessary and that the recognition of this idealism helps to overcome what is sometimes called the rule of nature. For Kant brilliantly sensed that there is some kind of ontological duty, which many individuals see as an obligation.

Max Horkheimer accused Kant of being naive, claiming that he failed to see that economic interests cannot be reduced to psychological ones because they are determined by the material base and not the human will. However, as Adela Cortina correctly observes, it was Horkheimer who overlooked something very important. He did not notice that in human society we are defined by both natural (economic) and moral laws[17].

16 H. Cohen, *Kants Begrüdung der Ethik nebst ihren Anwendungen auf Recht, Religion und Geschichte*, vol. 2, Berlin 1910, 130.

17 A. Cortina, *Würde, nicht Preis: Jenseits des Ökonomismus*, in: *Ethik aus Unbehagen, 25 Jahre ethische Diskussion in Spanien*, ed. J. Mugerza, transl. R. Zimmerling, Verlag Karl Albert, Freiburg – München 1991, 230.

The law of nature is inextricably linked to egoism, which is particularly evident in the free market economy. But even there people come to the conclusion that it is in the interest of the whole community to overcome this egoism[18]. The world of reason, that is, the community that gives itself appropriate rights, is sometimes ready to abandon a world that constitutes a kind of "social lottery", in which there is inequality between people, to live in a community where everyone is equal. The history of mankind shows various attempts, unfortunately, most often unsuccessful, at moving from one community to another. John Rawls had a similar intuition. That is why he placed people making the original choice behind the veil of ignorance. Horkheimer's proposals, although they were a dream in a way, also showed what the philosopher from Królewiec discovered. They constituted a desire to turn such a perfect community into a reality.

As claimed by Adela Cortina, who has just been mentioned now, ethical content expressed in the form of pure desire cannot be realized in any community for a very simple reason. It expresses something that cannot be converted into material values that would then be subject to exchange. The thing that cannot be attributed any advantage and thus has no equivalent that would have the opposite value and that could be compared with something else is human dignity, not value (price). And it is this dignity that we discover in synthetic moral judgments a priori .

A similar understanding of duty can be found in T. Styczeń, who says that: "A moral duty is ... a specific figure 'is', a peculiar, irreducible manifestation of the specific living dynamism of the person. This 'duty' cannot be reduced to or derived out of anything"[19].

Therefore, it can be said that the ontological duty is first and foremost a relational reality and that it is founded on the fact of being human in the human community, that is, on the dignity of those who discover, often intuitively, that they live in two different worlds: the real one, which can become even worse, and the one they would like

18 Ibid.

19 T. Styczeń, *Problem możliwości etyki jako empirycznie uprawomocnionej i ogólnie ważnej teorii moralności. Studium metaetyczne*, Wydawnictwo KUL, Lublin 1971, 150.

to make real, and even more so, they do not want to let this world become worse, as they have an idea of a better one, only they do not know how to improve it practically. That is what its significance lies in.

As G. Simmel noted, duty is a derivative of reality and of that which is perfect, of what is and what is not yet there, although we would like it to occur, or better still, something that we fear could occur[20]. And while Simmel treats duty only in psychological categories, his observation seems to explain well what ontological duty is. It is a derivative of an already existing state and a state we are trying to realize or avoid. Thus, is there any way to characterize this duty more precisely and to show that it is both common and individual, that is that it has a specific addressee? To answer this question, it is necessary to look more closely at the relational nature of the ontological duty. Such a reflection will allow us to better understand what Kant had an intuition of and what, for obvious reasons, he did not develop.

4. CONCLUSIONS: THE RELATIONSHIP NATURE OF THE ONTOLOGICAL DUTY

In considering duty, attention should be paid to all those statements that are found in both Kant and his commentators (bot supporters and opponents), showing the relationship between ontological duty and responsibility – addressed and non-addressed. For if we understand the concept of duty more broadly, without limiting it to a duty in the legal sense, we notice that it defines the area of interpersonal relations and determines the relationship between the actions of individual people, or even entire societies, towards the world. That is why Kant spoke about our responsibility for the world and our debt to the world.

These relations can be cognitive, volitional or emotional. They have the duty-creating content and oblige to appropriate actions. A more detailed reflection allows us to state that a person does not strive to know only because they are guided by simple curiosity. They

20 G. Simmel, *Einleitung in die Moralwissenschaft. Eine Kritik der ethischen Grundbegriffe*, Cotta'a Nachfolger, Stuttgart – Berlin 1892, 40–46, (new edition: http://socio.ch/sim/em 1_1.htm).

often discover that they cannot avoid the effort of studying certain truths, because otherwise they would find themselves in a state that they would not want, that is one that should never happen. They are also aware that many dangers can be avoided if one learns more about reality or interpersonal relations.

For example: A good teacher knows that the fruitfulness of their work depends on the knowledge of the relations in the class, on the knowledge of the students' talents, etc. They create a certain reality. The duty to get to know the pupils is not yet clearly addressed. It applies to all teachers. Nevertheless, something can happen that will prompt a particular teacher to take special care, to make more cognitive effort. In such a case, we will say that the duty was clearly addressed. The above example shows that an addressed duty does not have to be imposed by a particular subject, whether it be God or man. On the contrary, it comes from an object. A specific reality appears to be more duty-creating than any other, and therefore requires the deepening of cognitive relationships. And it is impossible to evade this obligation.

The situation is similar when it comes to volitional relations. People may want to do something or try to avoid it. However, they have the foresight to know that it is impossible not to want to change the situation, because otherwise something worse will happen.

We should all fight for peace, for environmental protection, for economic development. However, there are those who are particularly affected by a given duty because they have special predispositions, even if they do not know it. It is to them that the duty is addressed, e.g. the duty to arouse in themselves the desire to cooperate or to give up too fierce competition. How often do they realize only after taking some action that they had the necessary predispositions to perform this particular task.

Human behaviour is accompanied by feelings that determine the quality of interpersonal relations to an even greater extent. And it is not insignificant what they will look like. We are constantly experiencing the need to change or consolidate them. Discontinuation of actions that aim at organizing feelings often leads to misfortunes, resulting in states that one would rather avoid. However, it is easy to identify people who

perceive the prevailing emotional relations as unbearable and want to change them or try to cultivate the good ones. And they do so because they are more sensitive, that is more predisposed to make out the duties imposed by the surrounding reality. Then, duty is addressed in nature.

Therefore, duty appears to be a source of moral responsibility for man, who is faced with others, who "grasps" that he cannot do otherwise. I put the word "grasp" in inverted commas consciously and deliberately to show that I mean more than just theoretical cognition.

The arrangement of interpersonal relations and those that define our relationship with the world around us create a certain reality in the cultural dimension which determines specific ontic duties. Therefore, an ontological duty is different from a legal duty.

An ontic duty should have a relational character. It arises with the appearance of all kinds of interpersonal relations, as well as the relationship between man and the reality that surrounds him. The resulting intersubjectivity is also binding. However, it is difficult to read what whole nations should do and what individual people should do, which can be strictly calculated and codified, and which is only a matter of our sense of duty. The perception of ontic duty often gives rise to a moral duty.

Duty is not opposed to human desires. Every value, in order for it to exist, needs interpersonal cooperation and the existence of an opposite value. Every work is a hardship, great artists painted pictures in order to earn a living. Thus, great works were created. Free time does not bring joy to an unemployed person. There is no pure duty or pure desire. The fulfillment of a duty leads to a new desire, the fulfillment of a desire gives rise to an obligation. It is not possible to logically infer a duty. It is, after all, expressed in the form of a judgement. Since the ontic duty is the arrangement of the relationships that we want and need to consolidate or change. Kant was therefore right when juxtaposing freedom with duty.

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THE KNOBE EFFECT FROM THE PERSPECTIVE OF THOMISTIC ETHICS: THE PROBLEM OF NORMATIVE ORDERS AND COMPETENCES*

Abstract. This article discusses how to interpret the so-called Knobe effect, which refers to the asymmetry in judgments about the intentionality of the side effects caused by one's actions. The observed tendency is explained through the "moral undertone" of the actions judged. So far, discussions have mostly been held among philosophers in the analytical tradition that is, those who see the theory of morality largely as an ethics of rules. The analysis developed in this article advances the research carried out so far to include teleological ethics, most notably the tradition of Thomistic ethics. Philosophical discussions address the problem of normative orders, focusing in particular on two types of cognition concerned, respectively, with moral judgments and facts. Investigating this issue proves to be helpful not only to explain the Knobe effect, but also to better understand the very notion of an intentional action as employed in the philosophy of action. As a result of this analysis, the Author explains the existing asymmetry in the attribution of intentionality to actions with the respondents' confusion between cognitive orders. This problem brings us to the issue of normative competences. In analyzing the Knobe effect, normative competences could be responsible for the classification of the data collected and separation of the "purely informative" order from the order of moral judgments, referring to norms or values.

Keywords: Knobe effect; side effect; intentional actions; normativity; competences; Thomistic ethics

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1. INTRODUCTION: RESEARCH CONTEXT AND THE PURPOSE OF THE ARTICLE

Joshua Knobe presented the results of his experiment in an article entitled *Intentional Action and Side Effects in Ordinary Language*, which is very well known in the world of experimental philosophy[1]. These results intrigued many philosophers and psychologists and revealed a new problem which had not been clearly resolved so far. The perception of an intentional action was examined, namely, whether a side effect of an action would be assessed as intentional. The collected results showed an interesting asymmetry in attributing the intentionality of inducing a side effect. It is also interesting from the ethical point of view, since the asymmetry of the results obtained by Knobe himself, as well as by some of the interpreters, is explained by the "moral connotation" of the assessed acts. As a result of this interpretation, Knobe formulated a hypothesis which Frank Hindriks[2] called the Moral Valence Hypothesis[3]. It states that the moral value of side effects affects the attribution of intentionality. In this article, we will refer to this hypothesis as a moral hypothesis.

Until now, discussions have been conducted mainly among philosophers, who see the theory of morality primarily as the ethics of principles. Therefore, it would be intriguing to expand the reflection on morality with selected teleological ethics. This article will undertake analyses taking into account the tradition of Thomistic ethics. Attention will also be focused on the problem of normative orders and, consequently on two aspects of cognition: "informing about the moral evaluation" of an object and "informing about facts" (empirical facts) concerning human action. The examination of this issue may be helpful not only in the search for an explanation of the asymmetry in attributing the intentionality of action, but also in getting a better understanding of the issue of intentional action itself.

1 J. Knobe, *Intentional Action and Side Effects in Ordinary Language*, Analysis 63(2003)3, 190–194.

2 F. Hindriks, I. Douven, H. Singmann, *A New Angle on the Knobe Effect: Intentionality Correlates with Blame, not with Praise*, Mind and Language 31(2016)2, 204–220.

3 J. Knobe, *The Concept of Intentional Action. A Case Study in the Uses of Folk Psychology*, Philosophical Studies 130(2006)2, 203–231.

The purpose of this article is to indicate the theoretical basis on which it is possible to demonstrate that in the quest to explain the Knobe effect, there is a confusion of normative, or in other words, cognitive orders. It is primarily a matter of distinguishing between the cognition of reality according to norms understood as patterns that inform human beings about the cause and effect order (the empirical order perceived in "purely informative" cognition), which refers to events, and the cognition of reality according to norms or values that give rise to moral judgment or classification, which are defined as actions.[4][5][6] In other words, the problem of confusing the two orders can be reduced to the issue of normative competences, which, in the context of analyzing the Knobe effect, would be responsible for identifying the data collected and separating the "purely informative" order from the evaluator's order, referring to norms or values. This problem was addressed by J. Knobe in the article entitled *Person as scientist, person as moralist*[7]. He suggested that there are two ways to approach the problems presented. One would correspond to a colloquial perception of intentional action that would be morally tinged. The second would represent a "scientific" approach that would be cut off from the influence of ethical judgements. However, the problem seems to concern the cognitive abilities of people and the more fundamental competences that could be described as normative.

4 The issue of normativity, which goes beyond the legal and moral order, is developed by Michał Piekarski in his research: M. Piekarski, *Od typiki doświadczenia do normatywnej antycypacji. Przyczynek do fenomenologii normatywności*, Filo-Sofija 33(2016)2, 71–86; Idem, *Efekt Knobe'a, normatywność i racje działania*, Filozofia Nauki 97(2017)1, 109–128.

5 The understanding and distinction between of "event" and "action" comes from F. Ricken and is presented in a slightly different way than is usually assumed in the philosophy of action, cf. K. Paprzycka, *Analityczna filozofia działania. Problemy i stanowiska*, in: *Przewodnik po filozofii umysłu*, eds. M. Miłkowski, R. Poczobut, WAM, Kraków 2012, 465–494.

6 In this article, I will refer primarily to the Thomistic tradition and use the category of norm and the accompanying evaluation. However, it seems to me that similar conclusions can also be drawn from other traditions, such as phenomenological ethics.

7 J. Knobe, *Person as scientist, person as moralist*, Behavioral and Brain Sciences 33(2010)4, 315–329.

2. THE KNOBE EFFECT AND ITS EXPLANATION

What was the experiment about? Knobe presented two stories to the respondents which differed in the side effect of the described action. In one situation, the respondents had to deal with "harming" and in the other with "helping". As per the questionnaire, the story, for the purpose of this article referred to as the "harming form", is as follows[8]: The vice-president of a company went to the chairman of the board and said: "We are thinking of starting a new program. It will help us increase profits, but it will also harm the environment." The chairman of the board answered: "I don't care at all about harming the environment. I just want to make as much profit as I can. Let's start the new program." They started the new program. Sure enough, the environment was harmed[9].

The first question asked by Knobe to the respondents was as follows: Did the director intentionally cause harm to the environment? The second was: Evaluate the level of the director's responsibility for harming the environment. The story according to the "helping form" was very similar: The vice-president of a company went to the chairman of the board and said: "We are thinking of starting a new program. It will help us increase profits, but it will also help the environment." The chairman of the board answered: "I don't care at all about helping the environment. I just want to make as much profit as I can. Let's start the new program." They started the new program. Sure enough, the environment was helped[10].

In the results obtained, an asymmetry in the assessment of the intentionality of inducing a side effect was revealed. As many as 82% of those who received the "harming form" stated that the company director had intentionally caused harm to the environment. According to the standard understanding of intentional action[11], such a result is incorrect

8 The translation of the story and questions is derived from: K. Kuś, B. Maćkiewicz, *Z rozmysłem, ale nie specjalnie. O językowej wrażliwości filozofii eksperymentalnej,* Filozofia Nauki 95(2016)3, 91–92.

9 J. Knobe, *Intentional Action and Side Effects in Ordinary Language*, op. cit., 191.

10 Ibid, 191.

11 In the philosophy of action, the so-called standard understanding of "intention-

because the director had no such intention. On the other hand, 77% of the respondents who received the "helping form" considered that the company director did not intentionally help the environment, which can be deemed a correct result[12]. It is also interesting to note that the answers concerning the attribution of intentionality are correlated with those concerning guilt and praise. This means that those who pointed out the director's guilt in the "harming form" also indicated his intention to cause a side effect. A similar situation occurs in the "helping form". Those who did not indicate the praiseworthiness of his act were at the same time unwilling to attribute intentionality to the side effect he produced. This led Knobe to formulate a thesis that the moral views of the respondents or their moral evaluation of the effects caused influence their judgement on the attribution of intentionality to the actions in question. Therefore, the asymmetry in the attribution of intentionality to actions is the result of their different moral evaluation[13].

One of the solutions which, according to Agnieszka Dębska[14], most widely explains the asymmetry in attributing intentionality to actions is

al action" (*Simple View*) is distinguished, as indicated, among others, by F. Adams, H. McCann. An action is considered to be intentional if the subject of the action had the intention to cause a given effect. Not all actions can be explained by referring to the standard view. Other views associate the decision on the intentionality of action not so much with intention, but with the action anticipated by the subject and the acceptance of its consequences (G. Harman, M. Bratman, A. Mele). In such a situation, an action may also be intentional if the subject had no intention of doing it. See also, M. Piekarski, *Dwa argumenty na rzecz tezy o predykcyjnym charakterze racji działania*, Studia Philosophiae Christianae 54(2018)1, 93-119.

12 Knobe assumed that the result of the study could have been distorted due to the specific attitude of people towards large corporations. Therefore, he repeated the experiment, presenting a different story. It is irrelevant to our analyses, as the results of the research proved to be reproducible, cf. J. Knobe, *Intentional Action and Side Effects in Ordinary Language*, op. cit., 191.

13 J. Knobe, *Intentional Action and Side Effects in Ordinary Language*, op. cit. 190–194; Idem, *Intentional Action in Folk Psychology. An Experimental Investigation*, Philosophical Psychology 16(2003)2, 309–324; Idem, *Intention, Intentional Action and Moral Considerations*, Analysis 64(2004)2, 181–187.

14 A. Dębska, *Wnioskowanie na temat intencjonalności działania w ujęciu filozofii eksperymentalnej*, Filozofia Nauki 21(2013)3, 145.

the theory of responsibility of J. C. Wrigth and J. Bengson[15]. Its main advantage is that it tries to provide a solution that will constitute a theory of asymmetric evaluation of responsibility in its broadest sense. As a result, it could explain not only the so-called Knobe effect, but also other cases of asymmetry. These include accidental actions (resulting from a lack of skill) or those resulting from fortune, e.g. uncontrolled pulling of the trigger resulting in hitting the center of the target or a person, as well as actions aimed at throwing a "six" on the dice. In such circumstances, the respondents define morally tinged actions as intentional actions[16] and those that can be described as morally neutral as unintentional[17]. Situations have also been observed in which the respondents tend to assess certain activities as intentional when their side effects are negative but morally neutral[18]. This refers to a case when, in order to increase a company's overall profit, a sales increase occurs in one of its branches while a decrease takes place in another[19]. The results of another experiment in which the participants of the study were presented with a story of a drunk driver who lost control of the vehicle and killed a family of five showed that the respondents blamed the perpetrator for causing the deaths of random people, but they did not attribute intentionality to his actions[20].

An important change, as Dębska notes, proposed within the framework of the theory of responsibility, compared to the classical

15 J. C. Wright, J. Bengson, *Asymmetries in Judgments of Responsibility and Intentional Action*, Mind and Language 24(2009)1, 24–50.

16 In Butler's and later Knobe's research, the moral value of the effect, in the context of which the intentionality of an action is attributed, is presented negatively – death of a person and harm to the environment, respectively.

17 J. Knobe, *The Concept of Intentional Action. A Case Study in the Uses of Folk Psychology*, op. cit., 203–231.

18 Knobe and Mendlow formulate an example referring to the decision of the managing directors of the corporation concerning the sales. The authors of the study assume that the change in the level of sales itself is morally neutral. The adoption of such a position, in the context of a broader ethical analysis, is not so obvious.

19 J. Knobe, G. Mendlow, *The Good, the Bad, and the Blameworthy. Understanding the Role of Evaluative Reasoning in Folk Psychology*, Journal of Theoretical and Philosophical Psychology 24(2004)2, 252–258.

20 T. Nadelhoffer, *The Butler Problem Revisited*, Analysis 64(2004)3, 277–284.

theory of error, is the link between the concepts of responsibility and intentionality. The determination of whether an action was intentional does not depend on the attribution of guilt, but on the determination of responsibility[21]. Proposing a solution based on the theory of error, Malle and Nelson put forward a hypothesis that in cases of actions marked by negativity and guilt, the respondents tend to attribute intentionality to such actions. The authors suggest that this results from an emotional attitude emerging during the analysis of a given story, under the influence of which the respondents are inclined to look for information increasing the negative image of the subject assessed. Consequently, intentionality is linked with guilt. However, such an approach is contradicted by the research conducted by Thomas Nadelhoffer[22], which showed that although the respondents blame the drunk driver for causing the accident, they do not attribute intentionality to his actions.

However, what is puzzling about both concepts is that both Malle and Nelson, as well as Wright and Bengson try to link the issue of intentionality with the notions of "guilt" or "responsibility" and not with the notion of "intention". On the one hand, the determination of the degree of correlation between the individual concepts allows to determine the direction of further research. On the other hand, it assumes a certain essential relationship between the concept of intentionality of action and other concepts. This approach to the problem from the very beginning treats the concept of intentionality of action as a derivative of other concepts or complex processes. Thus, it suggests a certain paradigm that does not allow the concept of intentionality to be treated in an autonomous manner. Therefore, it is worth looking at the issue of intentional action in a wider context.

21 B. F. Malle, S. E. Nelson, *Judging Mens Rea. The Tension Between Folk Concepts and Legal Concepts of Intentionality*, Behavioral Sciences and the Law 21(2003)5, 563–580.

22 T. Nadelhoffer, *The Butler Problem Revisited*, op. cit., 277–284.

3. MORALITY AND COGNITION

The vast majority of published analyses concerning the "Knobe effect" are conducted from the perspective of the tradition of analytical philosophy. Therefore, all references to morality and ethics are naturally combined with different kinds of ethics of principles. In this article, an attempt will be made to broaden this perspective with the tradition of teleological ethics and, as a point of reference, we will use Thomistic ethics in its broadest sense.

Philosophical investigations from an ethical perspective should begin with the question of what morality is. The clarification of the understanding of morality is an important element of further analyses. It will provide a better understanding of Knobe's moral thesis and a new look at the importance of positive and negative side effects affecting the attribution of intentionality. However, it is not a matter of providing a comprehensive answer to the question of what morality is, but a matter of pointing out the problems associated with understanding morality. Note that when we use the term "moral", we indicate certain properties of an object. Not only deeds, but also judgments, norms, experiences, attitudes, or patterns are moral. There is also often talk of a moral mind or sense, as well as of a moral man[23].

We should ask ourselves what the term "morality" refers to. When we talk about "morality", do we define the area of research interest, most often free and conscious human acts, and what is described as amoral will not be studied by ethics? Or rather, when using the term "morality", will we indicate the recommended attitudes within a specific ethic[24]? The questions posed are important given that they are largely omitted and overlooked in studies and analyses of the Knobe effect. The first way of understanding morality as a specific property or quality of a state of affairs, as mentioned above, is different from the second way of understanding morality as a certain evaluation. The term

23 J. Krokos, *Sumienie jako poznanie. Fenomenologiczne dopełnienie Tomaszowej nauki o sumieniu*, Wydawnictwo Naukowe UKSW, Warszawa 2004, 135.

24 The phrase "Christian morality" indicates attitudes that are to characterize Christians and constitute a pattern of behaviour for them.

"morality" then appears as an expression of approval and stands in opposition to what is described as immoral. In other words, the distinction can be reduced to questions: "What is morality?", which is a question concerning the essence of morality and the criterion of morality, and to the question "What is moral?", that is "What should I do and why?", which is a question concerning the standard of morality and its source[25]. In a different approach to this issue, although it does not seem to be entirely accurate, there is talk of morality defined descriptively and normatively[26]. In the Polish ethical tradition, a distinction is usually made between morality, which should be understood descriptively in this context, and ethics as a reflection on morality and on how one should act[27]. Taking into account the above-mentioned distinctions, ethics should be understood as morality defined normatively.

The awareness of the existence of both dimensions of morality enables a more detailed analysis not only of Knobe's moral thesis, but also of the structure of history in which the asymmetry in attributing intentionality to actions is revealed. It is necessary to consider whether the attribution of intentionality is influenced by the moral views of the respondents or their moral judgments, or by the very nature of the analysis of the problem presented. In other words, and assuming that Knobe's hypothesis is valid, whether this asymmetry results from treating the stories presented as a "moral problem" or as a "cognitive problem". It refers primarily to the cognitive methodology and normative competence that would be responsible for distinguishing between cognition "informing about facts" ("purely informative" cognition) and "moral" cognition, i.e. informing about the moral classification of perceived objects. It should be noted that every cognition informs about something, although it is necessary to distinguish between the two types or aspects of cognition

25 T. Biesaga, *Spór o normę moralności*, Wydawnictwo Naukowe Papieskiej Akademii Teologicznej, Kraków 1998, 9.

26 B. Gert, J. Gert, *The Definition of Morality*, in: *The Stanford Encyclopedia of Philosophy*, ed. E. N. Zalta, (Spring 2016 Edition), (https://plato.stanford.edu/archives/spr2016/entries/morality-definition/), [accessed on: 12/2017].

27 M. Ossowska, *Podstawy nauki o moralności*, Państwowe Wydawnictwo Naukowe, Warszawa 1963, 9–23.

mentioned above: "informing about facts" and "informing about moral judgments". It is primarily a matter of perceiving a certain metalevel, concerning the perception of reality from a moral perspective. In other words, it can be assumed that cognition "informing about facts" means cognition that informs about the objective state of affairs or refers to cognitive processes and the structure of cognition itself. It is most often expressed in descriptive sentences and statements[28]. On the other hand, cognition "informing about moral judgements" means value cognition, indicating a certain non-empirical property (quality) of the recognized object (good/bad; valuable/non-valuable; morally ordered/forbidden) or relating the data of cognition to norms or moral values recognized by the subject of cognition. It is most often expressed in value sentences and evaluating statements ("This is a good man"; "His actions were bad")[29].

4. SCOPE OF MORALITY

One more question should be asked. If the attribution of intentionality to actions is influenced by moral factors, than is the classification of the act or problem as moral done because it is an act that meets certain conditions or because it is related to something, such as a norm or a value? Another fundamental question will refer to what allows us to conclude that a given story is morally tinged. This question is important above all from the perspective of the interpretation of the whole phenomenon discussed. Knobe and Mendlow constructed another research form that contained a story concerning sales exclusively. In the story, the natural (main) effect was an increase in sales in one branch of the company and, as a side effect, there was a slight decrease in sales in another branch[30]. In Dębska's interpretation[31], the reconstructed story would be morally

28 However, it should be remembered that descriptive statements can also be morally tinged.

29 The distinction between evaluating and descriptive statements is also applied by Z. Ziembiński, *Analiza pojęcia czynu*, Wiedza Powszechna, Warszawa 1972, 15–17.

30 J. Knobe, G. Mendlow, *The Good, the Bad, and the Blameworthy*, op. cit., 252–258.

31 A. Dębska, *Wnioskowanie na temat intencjonalności działania w ujęciu filozofii eksperymentalnej*, op. cit., 146–148.

neutral, although neither Knobe nor Mendlow explicitly indicate this. The results of the survey constitute the main argument in favour of a morally neutral perception of the constructed story. The respondents were unwilling to attribute guilt, even though they considered the act of the perpetrator as intentional. This could mean that regardless of the type of effects caused, they are perceived as morally neutral. However, in reality it does not have to be so. The application of the criterion of guilt and praise does not have to determine the morality or immorality of a given action or effect[32]. According to the Thomists, the answer to the question concerning the scope of morality will, in most cases, lead to the conclusion that there are no morally indifferent (neutral) acts[33]. However, from the perspective of ethics based on principles, the preferred attitude is that there are morally neutral actions, i.e. actions that go beyond the moral classification. What would such an attitude lead to? Knobe claims that the moral valuation of side effects affects the attribution of intentionality to actions[34]. However, he does not address the valuation of the main effect, which under these circumstances is either not morally valued or its moral valuation does not affect the attribution of intentionality. From the perspective of Thomistic ethicists, both effects are morally tinged because they are the result of actions and can or should affect the attribution of intentionality. Such an approach would lead to the assumption of the *Wide Moral Valence Hypothesis*[35], under which the relationship between the moral valuation of the main effect and the moral valuation of the side effect significantly influences the attribution of intentionality to actions. The aforementioned distinction between actions that are intentional and events that are impulsive,

32 In this use of the term, morality is a dimension that describes (classifies) a given act or effect rather than evaluating it as good or bad.

33 In Poland, for years, there has been a discussion among ethicists about the concept of morality and, consequently, about the very scope of morality. Works by authors such as K. Frankel, J. Woroniecki, J. Keller, T. Kotarbiński, I. Lazari-Pawłowska, M. Ossowska, T. Ślipko, H. Juros, T. Styczeń, A. Szostek, B. Chyrowicz should be mentioned.

34 J. Knobe, *The Concept of Intentional Action. A Case Study in the Uses of Folk Psychology*, op. cit., 212–228.

35 Articles referring to empirical research and developing the hypothesis of broad moral valuation are being prepared.

unconditional or understood from a purely cause-and-effect point of view must be taken into account[36]. In the terminology of some Thomists, these would be unconscious (irrational) acts, which originate from other human powers, without the participation of their reason and will[37]. When analyzing the differences between "action" and "event", Friedo Ricken stresses that the difference lies in justification. In the case of an "event", the answer to the question "why?" will be a preceding event, meaning that the focus should be on the cause-and-effect relationship. In the case of an "action", the answer to the question "why?" will be intention. Sometimes, in such a situation, there is talk of an "intentional" causation. Therefore, what distinguishes actions from events are intentions[38]. This may be important for understanding the emerging asymmetry in attributing intentionality to actions.

When asking what morally neutral (amoral) acts are, one should also answer the question about the scope and type of morality. Let us keep in mind that, in the context of the Thomistic tradition, we are working within the area of norms which determine the scope of morality and moral obligations. Let us add that the broad issue of values, which depends to a large extent on the way they exist, characteristic of phenomenological ethics, is pushed aside at this point. Therefore, when addressing the concept of morality, let us note that one can distinguish its two main understandings, two types of morality[39]. The first understanding is focused on the personal dimension of man and is referred to as individual or autonomous morality. Within this type of morality, moral evaluation is carried out from a personal perspective, and the application of moral norms has its origin in their recognition (in conscience) and not in the external body that adopts them. This approach to morality is essentially in line with the Thomistic tradition[40]. The second understanding of morality emphasize the existence of norms that define social morality.

36 F. Ricken, *Etyka ogólna*, transl. P. Domański, Wydawnictwo ANTYK, Kęty 2001, 73–74.
37 T. Ślipko, *Zarys etyki ogólnej*, Wydawnictwo WAM, Kraków 2004, 75.
38 F. Ricken, *Etyka ogólna*, op. cit., 73.
39 N. Cooper, *Two Concepts of Morality*, Philosophy 155(1966), 19–33.
40 Z. Sareło, *Sumienie – zobowiązujący dar*, in: *Meandry etyki*, ed. Z. Sareło, Wydawnictwo Wszechnicy Mazurskiej. Acta Universitatis Masuriensis, Olecko 2001, 113–130.

The sense of duty plays an important role in it, and it is often combined with statutory law. Morality understood in this way is often referred to as positive morality. However, it must be borne in mind that it cannot be equated with the law. This understanding of morality functions very strongly in the tradition of analytical philosophy or, more broadly, Anglo-Saxon philosophy, largely due to liberal philosophers of politics and law who promote the idea of contract.

The strong influence of the understanding of morality as social morality can be seen i.a. in the argumentation of Katarzyna Paprzycka. It refers to the existence of a social obligation to help the environment. Such an attitude would assume the acceptance of the existence of such an obligation by all respondents, which would justify blaming the president of the company for their failure to meet this obligation. As a result, the respondents could attribute intentionality to an action that would harm the environment[41]. The way of explaining the Knobe effect proposed by Paprzycka assumes a specific vision of morality and the development of a certain argumentation that would not be possible under the conditions of individual morality. This very clearly shows how important the adopted concept of morality is for confirming Knobe's moral thesis. Of course, the presented distinction between individual and social morality does not exhaust the problem of understanding morality, but it does indicate the possibility of more fundamental problems that may arise if this distinction is overlooked[42]. It mainly concerns the scope of morality. In the case of social morality, the scope of norms is more limited. First of all, for the most part, it does not apply to the norms relating to the so-called "private sphere", that is, the area that includes, among other things, a commitment to oneself[43]; secondly, cer-

41 K. Paprzycka, *Rozwiązanie problemu Butlera i wyjaśnienie efektu Knobe'a*, Filozofia Nauki 22(2014)2, 73–96; Idem, *O intencjonalności działań i zaniechań, czyli o społecznej naturze sprawstwa*, Przegląd Filozoficzny – Nowa Seria 97(2016)1, 45–65.

42 J. Grzybowski, A. Jaworska, A. Kazimierczak-Kucharska, A. Norwa, A., Waleszczyński, S. L. Zalewska, *Sposób na filozofię. Kluczowe zagadnienia z dydaktyki przedmiotowej*, Liberi Libri, Warszawa 2016, 72–74.

43 R. Moń, *Obowiązki moralne wobec siebie. O różnicy między wolnością polityczną a moralną*, in: *Primum philosophari. Opuscula Antonio Siemnianowski dedicata*, ed. D. Olejniczak, WT UAM, Poznań 2016, 317–332, T. Buksiński, *Moralność warunkowa*

tain areas of human life may be excluded from the norms of social morality, such as specific practices of family life.

Let us return to morally neutral actions. There is no consensus among ethics on morally neutral (indifferent) acts. In the Thomistic tradition, there is generally a consensus that an act that is indifferent to its object (e.g. walking, eating) ceases to be indifferent in a particular situation[44]. This is mainly due to the purposefulness of the act. Utilitarian ethics also belong to the tradition of ethics of principles. Within them, one is dealing with the "measurement" of the overall level of happiness, thus a specific action can be morally neutral. This occurs when an act contributes neither to the increase nor decrease in overall happiness. However, this is done with reference to the guiding principle. Therefore, both in the utilitarianism of rules and motives, we deal with a moral indifference to actions[45]. The situation will be presented differently in the views of Richard B. Brandt, who draws attention i.a. to "reprehensible" and "morally praiseworthy" acts[46]. In his definition, in terms of our analyses[47], it is important that one sees that, due to the nature of the acting subject, among the less and more desirable acts, there are certain acts that may be average or affect the mediocrity of the (moral) nature of the subject performing them. This means that within the framework of moral analysis, one can distinguish the existence of a certain group of acts which, depending on the ethical tradition, will not be subject to moral evaluation or will be morally neutral (indifferent).

Concluding the topic concerning the determination of the area of morality and the scope of potential analyses made from a moral perspective, it is worthwhile to note the moral categories that are used in

i bezwarunkowa, in: Ibid, 259–268.

44 T. Ślipko, *Zarys etyki ogólnej*, op. cit., 188.

45 N. Szutta, *Utylitaryzm wobec krytyki etyków cnót*, Diametros 11(2007)1, 54–55.

46 R. B. Brandt, *Etyka. Zagadnienia etyki normatywnej i metaetyki*, transl. B. Stanosz, Wydawnictwo Naukowe PWN, Warszawa 1996, 778–780.

47 "X is morally good" means nothing more than: "Y did X, and X would not have occurred had not the character of Y been in some respect less desirable than average". R. B. Brandt, *Etyka. Zagadnienia etyki normatywnej i metaetyki*, op. cit., 780. The author provides an explanation and develops the presented definition, being convinced that no simple definition seems satisfactory. There is no room for developing this topic in this article.

the analysis of the Knobe effect. In his initial experiment, besides the question of intentionality, Knobe himself posed the question concerning guilt and the reason for causing a side effect. The category of guilt was also used by Malle and Nelson, combining it with the tendency for the respondents to create a negative image of an actor when the effect s of their actions were morally negative. This problem was approached a bit differently by C. Wrigth and J. Bengson, using the category of responsibility, with a special distinction between negative and positive responsibility. Although they separate the category of guilt and merit from the category of positive and negative responsibility, the moral categories they distinguish seem to be identical. When analyzing the results of the research from the perspective of responsibility, one should also remember to distinguish legal responsibility from moral responsibility, as well as to distinguish those two types of responsibility from responsibility as such, i.e. the very phenomenon of responsibility, described by J. Filek as a non-adjectival responsibility functioning on a metaphysical or ontological level[48]. However, this is merely a partial use of the potential of the ethical perspective. In personalistic concepts, a category of a good deed dependent on the intentions of the perpetrator and a righteous deed conditioned by the objective state of affairs will appear. Phenomenologists will add a category of value, or more precisely the realization of value or anti-value, depending on whether the subject responds to it. In the tradition of Thomistic ethics, the issue of valuation will also arise, but the category of ultimate goal will be much more important. Given the abundance of possible ethical analyses depending on various traditions, Knobe's moral hypothesis should be reviewed in a new light.

5. MORAL RESPONSIBILITY FROM A THOMISTIC PERSPECTIVE

The problem presented in Knobe's stories refers to classical ethical and legal discussions about responsibility. They describe a situation in which one decision (action) has two effects. In classical dilemmas referring to the principles of double effect, already formulated by

48 J. Filek, *Filozofia odpowiedzialności XX wieku*, Wydawnictwo ZNAK, Kraków 2003, 9–10.

St. Thomas the main effect is intended and good (positive), while the side effect is not intended and is assessed as bad (negative). A significant modification conducted by Knobe is that in one story, the side effect produces positive results. It is worth emphasizing that the principles of double effect formulated by St. Thomas concerned the problem of attributing responsibility for a given act and whether the perpetrator of such an act should be to blame for it (in a moral sense). However, in the context of the Knobe effect, there is something else that requires attention. The story itself, its narrative, does not directly raise either the problem of guilt or the problem of responsibility. It is only the questions asked in both stories that reveal the individual problem layers. Therefore, the "moral undertone" can have a much broader dimension, not only in terms of moral responsibility and guilt.

In the interpretation of the discussed research results, it is important to understand the side effect. Knobe had to clarify this term due to the emerging doubts. He understands the side effect to be a certain result that the perpetrator did not specifically try to achieve, but predicted that it would appear as a result of the action taken[49]. In the Thomistic tradition, this would require further clarification. It should be remembered that Thomistic ethics is teleological ethics and the reference to the purpose of action plays an important role in moral evaluation. This is a fundamentally different approach to considering moral issues than that found in principle-based ethics. Therefore, first of all, when speaking of intention, one should still distinguish between directly intentional acts (an intentional act in itself), which is the positive fulfillment of an action, and indirectly intentional acts (an act intentional in its cause), which means the discontinuation of an action[50]. Katarzyna Paprzycka tries to explain the occurrence of the Knobe effect precisely by means of the category of a discontinued action, which refers to the fulfilment of the social obligation to care for the environment, attributed by the respondents[51]. Secondly, it is also important to specify the issue of the

49 J. Knobe, *The Concept of Intentional Action. A Case Study in the Uses of Folk Psychology*, op. cit., 206–207.

50 T. Ślipko, *Zarys etyki ogólnej*, op. cit., 421.

51 K. Paprzycka, *Rozwiązanie problemu Butlera i wyjaśnienie efektu Knobe'a*, op. cit., 73–

causal relationship between the resulting effects and the actor and their decision. Without going into detail, one should be aware of the following relationships. A situation of co-occurrence of a different cause may occur and, as a result of these specific two or more causes, which may occur simultaneously or in succession, a specific side effect appears. There may also be a situation in which one and the same action simultaneously produces two effects, but its sole (necessary) cause is the actor[52]. This distinction is omitted in analyses of the moral impact on the assessment of intentionality. Therefore, the example of a sniper who, by taking a shot – as a side effect – informs about his position, is fundamentally different from the example contained in Knobe's stories[53]. However, analysis of the issue of intentional action in the context of the above remarks would require separate investigations.

To sum up the topic undertaken, according to Tadeusz Ślipko, a Thomist, a directly intentional act is defined as any conscious act in which a person intends a certain action (effect) regardless of any ad hoc combination of external factors, even though it (he) appears in the structure of an action merely as a side effect[54]. The structure of the action, that is the shooting, entails the generation of a bang, which at the same time indicates the source of its origin. Therefore, in the example with a sniper, informing about one's position as a result of a shot will be considered by a Thomist ethicist as a directly intentional act, even though it occurs as a side effect. An indirectly intentional act, on the other hand, is a conscious act in which a person knows that a certain action and its natural effect, which they directly intend to produce, is associated, through the interaction of an external cause, with yet another side effect, no longer intended by them, but only permitted and tolerated because of sufficiently important reasons[55].

96; Idem, *O intencjonalności działań i zaniechań, czyli o społecznej naturze sprawstwa*, op. cit., 45–65.

52 T. Ślipko, *Zarys etyki ogólnej*, op. cit., 424.

53 G. Harman, *Practical Reasoning*, Review of Metaphysics 29(1976)3, 433.

54 T. Ślipko, *Zarys etyki ogólnej*, op. cit., 427.

55 Ibid.

Knobe's stories relate precisely to indirectly intentional acts, i.e. actions that take into account the occurrence of side effects, but are permitted or tolerated by the actor for reasons important to them. From a Thomistic perspective, even though the president of the company says: "I don't care ... . I just want ...", it does not mean that he does not address the side effect intentionally. Friedo Ricken will even speak about "intentional" causation. This is where a space for the analysis of the "moral undertone" of the evaluations or the attribution of intentionality appears. Moral factors may relate to the weighing of moral reasons for agreeing to a side effect. However, this requires the definition of at least two things. First of all, what can be considered a moral rationale, secondly, what will be "weighed" and whether the "weighing" will only take into account the empirical, quantifiable consequences, or certain non-empirical properties, qualities of individual objects or arguments as well. The presented approach allows one to extend the space for the analysis of moral factors that can influence the assessment of the intentionality of an action to such issues as goodness, value or moral rationale. It may also be the case that the concept of intentionality can be applied differently depending on whether a given problem is considered as an ethical issue or as an epistemological issue. This would consequently lead to the formulation of a thesis about the existence of two types of intentionality: cognitive and ethical. Testing such a thesis would require detailed empirical research. In this article, we aim to check whether there would be a theoretical basis for this.

6. THE PROBLEM OF NORMATIVE ORDERS AND COMPETENCES

In the article entitled *Person as scientist, person as moralist*[56], Knobe proposed to test the "*person-as-scientist theory*", which could provide the right approach to understanding certain aspects of our daily cognition[57]. He presented it in the form of a metaphor. He suggested that the common way of creating the sense of the perceived world functions on the

56 J. Knobe, *Person as scientist, person as moralist*, op. cit., 315–329.
57 Ibid, 317.

principle of a modern university with its division into individual faculties and institutes. This approach would suggest that there are separate processes responsible for constructing a "scientific" perception of the world around us. Translating this into a problem of competence, Knobe tried to test the hypothesis that some basic competences are "scientific" by their nature, but there may exist certain factors, e.g. in the form of moral considerations, that prevent the correct application of these competences. However, he did not rule out the possibility that there is no basic level of competence in which cognitive abilities can be considered "scientific". Therefore, cognitive processes could prove to be sufficiently developed through moral considerations[58]. However, he ultimately concluded that research on human cognition does not indicate that such a rigid division exists, although one can distinguish between processes relating to moral issues and others often considered "scientific". He also put forward a stronger thesis that processes that indeed appear as "scientific" actually take into account moral reasons. This led him to the conclusion that we are thoroughly moral beings[59].

In agreeing with Knobe's final conclusions about the moral nature of man and the strong influence of moral judgments on decisions of a "scientific" nature, we cannot agree with him that it is impossible to distinguish between these two normative orders in common reasoning. One should start with the very understanding of competence. I assume that for a Thomist, competence will be associated with the classical understanding of virtue as the ability to do something rather than with processes seen as psychological, consisting in choosing some alternatives and ignoring others[60]. The difference in the two approaches would be that in the psychological approach, we focus on the criterion of choosing a given alternative, while from a philosophical perspective, in addition to recognizing the given alternative within the adopted criterion, there must be a conscious choice (will). The mere fact of indicating the existence of a certain tendency, and in our case it will be the existence

58 Ibid.
59 Ibid, 328.
60 Ibid, 326.

of a tendency to asymmetrically attribute intentionality to actions depending on positive or negative effects, does not prove that it is correct or incorrect, nor does it indicate whether the "scientific" choice is influenced by moral factors. The mere observation of the difference between the side effect in the "harming form" and the side effect in the "helping form" is made in moral categories and refers to the real difference between the effects (helping, harming) and not a logical difference (p, ¬p).

Therefore, it should be decided that on one occasion we are dealing with a "scientific" approach, and in other situations with a moral approach, and not a morally tinged "scientific" approach. The moral context of the situation may influence the respondents in such a way that they will apply the criteria of moral rather than "scientific" evaluation. An important factor may be the relationship between the moral weight of the side effect and the moral weight of the main objective of the action. This relationship is especially taken into account in the Thomistic case studies referring to the doctrine of double effect. However, the choice to judge a given situation in a "scientific" or moral manner would be determined by the normative competence of the respondent allowing them to distinguish between the moral and non-moral order.

In the above-mentioned context, the cognitive competences responsible for cognition "informing about facts" and moral competences are different from normative competences, understood as the ability to identify and distinguish data obtained in cognition and mediated in language. We will use an example. The death of an animal, as an observed event, can be identified as follows: (1) taking the life of a living creature; (2) killing an animal; (3) hunting an animal; (4) obtaining food. From the perspective of Thomistic ethics, the subject cognizing an action in order to morally classify a given act must attribute to it a certain purposefulness or intention, even if the act or event is considered in itself[61]. In such situations, the influence and role of moral judgments becomes apparent. Therefore, the ability to refrain from attributing this purposefulness (intention) despite the existence of a certain tendency

61 At this point, I omit the important question raised among Thomistic ethicists as to whether there are any acts that are good or bad in themselves.

may depend precisely on the normative competences that would be responsible for separating and identifying individual data. In other words, the cessation of an animal's vital signs is a biological fact, and as such, it has no moral value or judgement. Only when expressed in language can it take on a moral character, as it will be the death of someone's guardian or the murder of an innocent being.

The approach presented could be introduced by the example of a coin, the reverse and obverse of which would be the cognition "informing about facts" and cognition "informing about moral evaluation", respectively, which are determined by the corresponding normative orders. The right competences would be correlated with these two orders. The edge of the coin, on the other hand, would represent the normative competences that would be responsible for the ability to consciously move from one order to another. The legitimate question is whether such a radical separation, using Knobe's terminology, of "scientific" order and moral order is justified. An affirmative answer can be given if the existence of morally neutral acts is rejected. As has already been presented, this perspective is close at least to the ethics of the Thomistic and phenomenological tradition. In this context, the answer to the question of what morality is will play a key role. Depending on this answer, the moral thesis used to explain the Knobe effect may take on a completely different meaning.

It is worth noting that within the framework of the investigations focused on the issue of normativity, but carried out from an epistemological perspective, the research insights presented seem to be approved by Michał Piekarski, who claims that normativity is co-present in every possible personal experience understood in the sense of phenomenological clarity[62]. This allows him to distinguish between the normative and the empirical. It also enables him to formulate the thesis about the existence of orders that are primarily normative and orders that are secondarily normative[63]. These findings are an attempt

62 M. Piekarski, *Od typiki doświadczenia do normatywnej antycypacji. Przyczynek do fenomenologii normatywności*, op. cit., 85.

63 Idem, *Efekt Knobe'a, normatywność i racje działania*, op. cit., 123.

to break out of a certain paradigm that associates the issue of normativity exclusively with law and morality. The combination of both research perspectives, epistemological and moral, could result in the formulation of a general normativity theory.

7. CONCLUSIONS

The investigations presented, carried out in the context of the Thomistic tradition, were intended to show in a broader light how the practice of ethics and approaches to understanding morality can influence the setting of research directions in the dynamically developing experimental philosophy. The analyses conducted have shown that adopting a perspective that rejects the existence of morally neutral acts may change the interpretation of the causes of asymmetry revealed in the experiments in question. In addition, a new possibility of explaining the Knobe effect was indicated. It is based on the assumption that human cognition has a double nature. On the one hand, it informs us about the facts; on the other hand, it provides information about the moral evaluation of the objects being cognized. Therefore, in the stories analyzed by the respondents, it is not so much the influence of moral factors on "scientific" cognition that may be revealed as the mixing of cognitive and normative orders. The research carried out within the framework of experimental philosophy may capture certain tendencies and prompt researchers to seek clarification of these phenomena. They may also try to answer the question as to whether the resulting asymmetry is caused by underdeveloped normative competences, which incorrectly identify and separate two normative orders: cognitive and moral. However, this requires further theoretical and empirical research.

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WHAT NORMATIVITY AFTER THE "DEATH OF GOD"? ETHICAL IMPLICATIONS OF *WEAK THOUGHT**

Abstract. The article aims to analyse the concept of normativity in the philosophy of weak thought developed by Gianni Vattimo. Weak thought refers to the theory of a weakening of being in an era of the end of metaphysics, as well as a challenge to the Cartesian concept of the subject. Such a philosophical theory does not entirely abandon normativity in the moral dimension. Vattimo proposes a weak notion of normativity, i.e. persuasion, without claims to universal applicability. Weak normativity derives from dialogue and respect for tradition, it recommends compliance with specific moral principles, but it does not acknowledge universal ethical obligations. This version of normativity is grounded in cultural heritage, agreement and social contract.

Keywords: weak thought; strong thought; human nature; morality; nihilism; freedom; natural law; cultural heritage; post-metaphysical ethics

1. INTRODUCTION

In the 1960s a renaissance of Friedrich Nietzsche's thought began in many countries. *Nietzsche-Renaissance* had a profound impact on philosophy as it was practiced both in Italy and beyond. In the country on the Tiber, it was not easy to speak and write positively about the author of *Thus Spoke Zarathustra* immediately after World War II, due to his association with the birth of fascism and national socialism. Over the years, the Italians' approach to Nietzsche

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changed significantly, owing primarily to their reception of Martin Heidegger's work which questioned many erroneous and simplistic ways of understanding Nietzsche's thought. In 1964, a critical edition of all works by the author of *Thus Spoke Zarathustra* was published in Italy, which contributed to an increased interest in his works.

One of the Italian thinkers who undertook new research on Nietzsche's work in the 1960s was Gianni Vattimo. The author, associated with the University of Turin, is considered in many circles to be one of the most popular European thinkers and one of the main representatives of philosophical postmodernism. He is also the best-known theorist of weak thought (*pensiero debole*) and a major researcher in the phenomenon of nihilism. By referring to the thoughts of Friedrich Nietzsche and Martin Heidegger, the Turin philosopher developed one of the contemporary models of post-metaphysical ethics, which considers compassion and mercy as central moral categories.

How should the concept of "God's death" be understood as interpreted by Gianni Vattimo? What is the essence of his concept of weak thought? Is it possible to defend the traditional understanding of human nature and natural law in the era of biotechnological revolution? How can normativity be substantiated without the foundation of nature? Can cultural heritage be a source of normativity? How should normativity grounded in weak thought be evaluated? The main goal of the article is to present the nature of normativity stemming from the philosophy of weak thought, and to discuss concerns regarding the substantiation of moral norms based on cultural heritage, agreement and social contract.

2. FROM THE "DEATH OF GOD" TO *WEAK THOUGHT*

The "death of God" category was introduced into the public domain by Friedrich Nietzsche. What is the basic meaning of this concept? It is an image that symbolizes the disintegration of our culture's metaphysical foundation and the disappearance of traditional moral values. For Nietzsche, this poignant metaphor became a kind

of Ariadne's thread which helps one navigate through the maze of contemporary culture and properly diagnose the most significant problems of our historical epoch. The "death of God" consists first and foremost in a disintegration of traditional metaphysics, and the end of belief in an objective order of the world which would justify upholding truth and moral principles, regardless of the place, time and circumstances.

Nietzsche repeatedly uses the phrase "God is dead" (*der Gott ist tot*) in his work *Thus Spoke Zarathustra*. According to the philosopher, the God of Christians is not the true God. Therefore, "the death of God" does not in fact mean the demise of a God who really exists, but merely the end of divinity called to existence by man. In this perspective, it is man who is a creator of the Supreme Being. Nietzsche wrote: "God is a conjecture; but I desire that your conjectures should not reach beyond your creative will. (...) God is a conjecture; but I desire that your conjectures should be limited to what is thinkable"[1]. For the author of *Thus Spoke Zarathustra*, the deceased God was the one who, as a ruthless ruler, had controlled man and did not allow people to live independently and freely. Along with the "death of God", a transcendent lawgiver who had ruthlessly enforced man's observance of fixed and immutable moral norms ceased to exist.

According to Nietzsche, this omnipresent and omnipotent type of God had to die so that man could start a new life. "But he *had* to die; he saw with eyes that saw everything; he saw man's depths and ultimate grounds, all his concealed disgrace and ugliness. (...) He always saw me: on such a witness I wanted to have revenge or not live myself. The god who saw everything, *even man* - this god had to die! Man cannot bear it that such a witness should live"[2]. For the author of *Thus Spoke Zarathustra*, the disintegration of the Divine foundation – guaranteeing the world's order, stability and universal moral principles – marks the beginning of a new era of freedom,

1 F. Nietzsche, *Thus Spoke Zarathustra,* transl. by Walter Kaufmann, London 1978, 85–86.

2 Ibid, 329–330.

which is well expressed by the following passage from *The Gay Science*: "We philosophers and 'free spirits' feel, when we hear the news that 'the old god is dead', as if a new dawn shone on us; our heart overflows with gratitude, amazement, premonitions, expectation. At long last the horizon appears free to us again, even if it should not be bright; at long last our ships may venture out again"[3].

Gianni Vattimo developed the concept of "God's death" by creating the category of weak thought which may be perceived as one of the possible interpretations of Nietzsche's thought. Weak thought stems from the negation of strong thought (*pensiero forte*). Strong thought is, above all, the knowledge typical of the metaphysical tradition of the West which sought to define a coherent, monolithic, stable and immutable structure of reality *tout court*. In this context, it is a question of cognition, as Vattimo claims, founded on "Plato's mistake" which consists in attributing the character of eternity and stability to being. As a result, the world of our concrete existence becomes devastated and shorn of value. For strong thought, knowledge implies, above all, seeking the truth as an independent and stable point of reference that is secure and safe for all[4]. Various forms of strong thought abstract from the affective and interpretative dimension of human subjectivity, evoking Truth, Life, Reality, History and Subject as absolute categories of a dogmatic nature.

In the Turin philosopher's approach, the decline of strong thought and the birth of weak thought coincide with the end of modernity and the beginning of the postmodern era. At this point, it is worth emphasizing that weak thought is in harmony with the basic paradigms of postmodern culture, which perceives differentiation, fragmentation, diversity and instability as positive and constitutive elements of reality[5]. As a consequence, one should not strive to unify them or arrange in a hierarchy from above or from the outside. Post-

3 F. Nietzsche, *The Gay Science,* transl. by Walter Kaufmann, New York 1974, 280.

4 Cf. A. Dal Lago, P. A. Rovatti, *Elogio del pudore. Per un pensiero debole,* Milano 1989, 9–22.

5 Cf. P. Duchliński, A. Kobyliński, R. Moń, E. Podrez, *O normatywności w etyce*, Kraków 2015, 253–287.

modern diversity entails the possibility of fragmenting reality and recognizing its immeasurability. Breaking up with the past leads to a regionalization of various fields of knowledge and the abandonment of traditional cultural canons[6].

Vattimo claims that weak thought is a concept that is conscious of its own limitations and therefore abandons any claims to great global metaphysical visions – it is primarily a theory of weakening the constitutive character of being in an era of the end of metaphysics[7]. Weak thought is a philosophy which rejects certainty for the sake of freedom. In this sense, it is a typical example of postmodern philosophy. Such a philosophical manner of thinking implies that the inaccessibility and concealment of being should not be a cause for grief or despair, but a condition for the proper interpretation of our human condition and creation of a friendly relationship with other people.

3. NEGATION OF THE CONCEPT OF NATURE

An important element of the weak thought concept consists in the rejection of the notion of nature. In 2006, an interesting discussion on the beginning of life, evolution, Darwinism and biological evolutionism between Gianni Vattimo and two well-known Italian scientists was published in the philosophical monthly "MicroMega"[8]. In this debate, Luigi Luca Cavalli-Sforza and Francesco Cavalli-Sforza represented the standpoint of contemporary genetics and biology, while Vattimo – defending the primacy of philosophy over scientific research – presented the philosophical approach to many of the problems associated with the evolution and biotechnological revolution we are witnessing nowadays.

One important topic in their discussion concerned the concept of nature. During the debate, Vattimo upheld his earlier claim that the concept, that the concept of nature is mythological (*mythologico*) and

6 Cf. G. Vattimo, *Vocazione e responsabilità del filosofo*, Genova 2000, 76–77.
7 Cf. Idem, *Della realtà: fini della filosofia*, Milano 2011.
8 Cf. G. Vattimo, L. L. Cavalli Sforza, F. Cavalli Sforza, *Scienza o filosofia?*, MicroMega 20(2006)1, 7–24.

risky (*rischioso*). Its mythological character consists in that nature is a pure idea, devoid of any real content – an idea inherited from the past and uncritically accepted by successive generations. On the other hand, the risk associated with nature lies in the fact that, in certain currents of thought, it is assigned a normative character – treated as a norm imposing specific moral obligations on people. To avoid the alleged "danger" from the normative nature, it should be rejected *en bloc*. This kind of negation first and foremost regards human nature as a normative structure which can guide us to making specific moral decisions.

The Turin philosopher claims that the concept of nature is purely cultural. Moreover, nature is supposedly closer to non-being than to being as it is entirely subordinated to and liable to manipulation by science and technology. The threat of manipulation is particularly relevant in modern times, in which the technological man introduces into the natural world the "tyranny" of the laws and principles he creates. As a consequence, the history of our civilization has been dominated not by what is natural, but by what is artificial and man-made. Today, we cannot be certain whether various natural systems inherited from our ancestors are necessary for our biological survival. On the contrary, we can use highly developed technologies which allow us to produce anything artificially. What is more, the Turin philosopher claims that science, technology and modern processes enable the replacement of the old natural order with our creations – without compromising the survival of our species.

Vattimo firmly rejects the notion that nature has any primary or absolute normativity which determines the basis of normative ethics – it is not true that nature conditions and defines our moral choices and decisions. For the Turin philosopher, there is no interference between the natural world and the moral world. "The only value I acknowledge", says Vattimo, "is my soul, that is, my freedom, my moral conscience, my decision to love my neighbour instead of hating him. And this is what I would like to survive in the world"[9]. The freedom which

9 Ibid, 22.

the thinker writes about is cultural and technological in its character, not natural or metaphysical. If freedom is understood in such terms, there is no objective limit to human transformation. As a result, one should abandon the allegedly false nature/culture antithesis and start thinking in terms of all being but history.

The Turin philosopher believes that at our birth we are "thrown" into a historical tradition which defines us, even if this does not happen in accordance with purely mechanical laws. Until today, this "throwing" into history only meant destiny which could but be acknowledged and accepted. Nowadays, this can be deliberately changed. We are called upon to create laws and organize behaviour that is truly free, i.e. independent of any pre-existing rules or standards. According to the creator of the concept of weak thought, the contemporary biotechnological revolution is a manifestation of freedom conceived this way[10].

By emphasizing the dynamic understanding of the human being, Vattimo refers, among others, to the philosopher Giovanni Pico della Mirandola – one of the greatest Italian representatives of Renaissance Platonism. Mirandola was the thinker who claimed that the only essence of man is having no essence. He described man as a being to whom God did not attribute any specific nature, and objected to seeing man as a microcosm which reflects different types of nature existing in the universe. He argued that human dignity is founded on man's freedom. Pico della Mirandola believed that the human being does not have a definite and permanent place in the universe, but was created to become whatever he wanted: an eartly or a heavenly creature; a mortal or an immortal one. Consequently, it is man's responsibility to endow himself with his own essence[11].

In his analyses of human nature, Vattimo also refers to the Scottish thinker David Hume. He confirms the validity of "Hume's law", which says that one must not move from a description of a certain state of affairs to the formulation of moral principles. According

10 Cf. G. Vattimo, *Credere di credere. È possibile essere cristiani nonostante la Chiesa?*, Milano 1996, 1999[2], 70–75.

11 Cf. G. Pico della Mirandola, *De hominis dignitate, Heptaplus, De ente et uno e scritti vari* – Latin text and translation into Italian, Firenze 1942.

to the Turin philosopher, a reference to the category of natural law in ethical argumentation leads to authoritarian and anti-democratic naturalism; if a truth that is substantiated in terms of nature appears in a political debate, we are undermining the principle of freedom and the democratic coexistence of people.

Any morality which does not respect "Hume's law" entails violence. This also applies to traditional Christian morality which refers to the metaphysical justification of norms and values. Metaphysical violence affects many of its aspects. The Turin philosopher claims that, although the tradition of natural law very often opposed the use of violence, there were also situations in which it served its legitimation[12].

At this point it is worth emphasizing that Vattimo makes exceedingly harsh accusations against the Catholic Church and its moral teaching. He accuses the institution of philosophical errors, homophobia, sexual morality which is hostile to man, etc. According to the humanist, the greatest mistake which is turning people more and more against Catholicism and betrays the original spirit of the Gospel consists in reading the evangelical truths in the light of an objectifying philosophy (*filosofia oggettivante*) which attempts to uphold the immutable nature of man and defend the category of natural law. Vattimo believes that by doing so, the Catholic Church destroys the very essence of Christianity. Why? Due to the fact that in the name of human nature and natural law, the Church ignores the commandment to love one's neighbour. The Turin philosopher rejects any natural essence of man, society, or family. He claims that the revolutionary novelty of Christianity lies in the rejection of an objective category, and putting freedom, individuality and the internal dimension of every human being in the spotlight.

According to Vattimo, Christianity has introduced into the world the principle of a radical renewal of classical metaphysics: instead of focusing on the subject and the accepted natural forms seen as permanent and eternal and treated as the source of moral

12 Cf. G. Vattimo, *Dopo la cristianità. Per un cristianesimo non religioso*, Milano 2002, 120.

norms, it now directs its gaze towards freedom and the inner man. He believes that the objective character of natural laws is a myth. A critical mistake of Catholicism consists in combining Christian faith with the objectivity of natural laws and constructing sexual ethics on this foundation. In this perspective, the objective laws of nature are nothing other but nature as it was understood by the society of past epochs – considered as archetypes – which identified them with the eternal truth about man and society.

On the one hand, the Turin philosopher fiercely criticizes Catholicism for its moral teaching about individual life and sexual ethics, while on the other appreciates Christian social ethics and the involvement of Catholics in public life. At this point, it is worth noting that in recent years Vattimo has frequently referred in his philosphical studies to the cultural traditions of South America. He believes that the continent has a postmodern character and therefore represents an alternative to the Western lifestyle. The Turin philosopher is an avid supporter of the South American popular movements and hopes that they will lead to the necessary social and political reforms.

According to Vattimo and the leaders of these movements, the chief, modern enemies of mankind today are globalization, cultural Eurocentrism, and the world domination exercised by the global financial system. In this new 21st century class struggle, the left-wing circles should join forces with Catholics. With this regard, South America, with its specific understanding of religiousness and Christianity, is a kind of laboratory in which the new world postulated by the Turin philosopher is being forged.

What is nature for Vattimo? According to the philosopher, what we call nature is simply our old habits. We oppose changes introduced in the name of nature, which does not exist, while, in fact, we all participate in such changes. The creator of the weak thought concept notes, that in the case of man, it is difficult to limit human nature to what he is and what he can become by allowing nature to operate. For humans, natural is what appears to be such in the particular circumstances of our existence – just as it is natural to

respond to being greeted in the street, even if this is not imposed by any metaphysical law. This natural criterion should apply in view of the rights established in the democratic political order[13].

While rejecting human nature and the resulting natural law, Vattimo advocates freedom, interpreting nature as a category which competes with and opposes freedom and man's inner self. The philosopher's mistake consists in a static and biological view of human nature – with such an interpretation of human existence it is, of course, difficult to uphold a proper vision of man's freedom. Vattimo is one of those authors who reject the category of nature resulting from the adoption of an absolute and abstract concept of freedom, understood as liberation from all that is not defined by freedom itself. As a consequence, this also applies to liberation from nature. However, human nature does not mean a pure objectivity of passive matter, but also a rational identity that stems from various experiences of man as a being immersed in history.

Vattimo accepts a very general understanding of human nature which entails, for example, a common concern that human body should not be treated as a tradable good. Such an approach to human nature is aimed at protecting man's dignity in an era of biotechnological revolution. The Turin philosopher regards human nature primarily in metaphorical terms – as a form of concern for the protection of human dignity[14]. In his anthropological analyses there are no references to other important thinkers who present distinctly different visions of human nature. At this point, it is worth referring to valuable studies by the Italian philosopher Vittorio Possenti[15], as well as some important works of the German thinker Robert Spaemann[16]. Unfortunately, the Turin philosopher completely disregards the interesting arguments of these authors.

13 Cf. G. Vattimo, *La vita dell'altro. Bioetica senza metafisica*, Lungro di Cosenza 2006, 43–44.

14 Cf. Idem, *Dopo la cristianità*, op. cit., 87.

15 Cf. V. Possenti, *Il nuovo principio persona*, Roma 2013.

16 Cf. R. Spaemann, *Happiness and Benevolence*, transl. by Jeremiah Alberg, Notre Dame 2000.

4. CULTURAL HERITAGE AS A SOURCE OF MORALITY

On the one hand, the creator of the weak thought concept expresses the conviction that we cannot derive any moral norms or laws from human nature. Since it is the essence of man to have a history, to create culture and technology, all normativity related to the category of human nature must be rejected. On the other hand, Vattimo claims that we cannot agree to a total relativism and moral anarchy, i.e. we need a different form of normativity – not everything is allowed, not every act is approved, not all that is technically possible is necessarily morally acceptable. Where do moral norms originate, then, and how can we substantiate them? Where should we look for a new source of normativity? For the Turin philosopher, the source of moral norms – determining what is acceptable and what is forbidden – is our cultural heritage and dialogue held within a common axiological tradition[17].

According to Vattimo, today's disappearance of ethical discourse based on universal and ultimate principles is global in nature and results primarily from the prevailing cultural pluralism and a change in the Western attitude toward other cultural circles which have become emancipated in recent decades from the status of colonies into independence and self-determination. The decline of the ethics of first principles also results from the criticism of traditional morality by the three great "masters of suspicion": Karl Marx, Friedrich Nietzsche and Sigmund Freud[18]. Such philosophical theories reflect the profound social and cultural transformation of the last two centuries. However, overthrowing of the first principles does not imply the acceptance of situational ethics. What we are dealing with here is the fundamental difference between post-metaphysical ethics and ordinary, pure relativism. "The claim that the reliability of the first principles has fallen apart cannot be translated into considering our

17 Cf. G. Giorgio, *Il pensiero di Gianni Vattimo. L'emancipazione della metafisica tra dialettica ed ermeneutica*, Milano 2006, 239–240.

18 Cf. G. Vattimo, *Addio alla verità*, Roma 2009, 95.

historical condition and being part of a community to be the only absolute. If the real world (the first principles) has become a fairy tale, Nietzsche writes, the fairy tale has been destroyed as well (and so it cannot be absolutized either)"[19].

How can normativity founded on weak thought be defined, then? It is worth to emphasizing that normativity in the moral sphere comprises a number of objective and subjective elements. This has been pointed out by the authors of the latest scientific studies devoted to this issue[20]. Essentially, there are two basic sources of moral normativity, i.e., a particular reality and the subject's will. Normativity appears to be derived from the decisions of a subject or subjects, yet it also depends on a particular frame of reference which "is recognized as the most appropriate here and now. An action that is in accordance with its contents is what may be referred to as an obligation (*Gesollt*), in other words – that which ought to be done. Such action is both rational and moral"[21].

The frame of reference may be referred to in a variety of ways: as the ideal orders of obligation, natural law, the idiom of conduct, a person's the person's reality, or still otherwise. Ryszard Moń claims that "it depends on the sensitivity of a person, the sharpness of their mind, what action or way of life they will undertake in order to satisfy the demands of a particular frame of reference, a particular idiom of conduct. Thus, normativity appears to result from the will to live happily and the rational idiom of human activity"[22].

The creator of the weak thought concept stresses that we must draw on cultural heritage and traditions to which we belong. Cultural heritage and tradition is the set of all elements and objects,

19 Ibid, 98.

20 Cf. C. Gill, *Virtue, Norms and Objectivity: Issues in Ancient and Modern Ethics*, Oxford 2005; J. D. Wallace, *Norms and Practices*, Ithaca 2008; G. Brennan, L. Eriksson, R. Goodin, *Explaining Norms*, Oxford 2013; E. Colzani, A. Rossetti, *Mente, azione, normatività*, Milano 2014; C. Korsgaard, *Le origini della normatività*, Pisa 2014.

21 R. Moń, *Warto czy należy? Studium na temat istoty i źródeł normatywności*, Warszawa 2011, 495–496.

22 Ibid, 543.

within which we make our choices when confronted with other people. We choose not based on the criterion of absolute truth, but on the basis of love. We choose those interpretations and solutions which allow us to look at the other person without feeling shame: truth should go hand in hand with love.

Paying heed to cultural heritage and interpreting tradition does not result solely in a reevaluation of all values, but also in the discovery of the contents we inherit. Many rules which apply in social life are not automatically suspended or abolished by post-metaphysical ethics. A number of them had been previously treated as natural norms. Recognized as cultural heritage rather than as the nature and essence of things, they may remain valid in our historical epoch as well; not as natural norms, however, but as rational norms, recognized by human reason.

According to the Turin philosopher, the truth about destroyed foundations becomes a new foundation today. One may develop an ethical discourse based on the tradition of origins and cultural heritage, or create maxims referring to our actions. One may also develop guidelines which define behaviour and the hierarchy of values. Adopting as the ultimate point reference of the more specific affiliations – such as race, nation, social class, or family – implies reducing one's own ethical perspective right at the very source. While the rules of human conduct derive from this type of concrete affiliations, they do not constitute an absolute imperative, but only a broadening of our horizons. According to Vattimo, this way origin and affiliation become the main point of reference for ethics.

What maxims and behaviours may be derived from our tradition, origin and cultural heritage? First and foremost, those characterized by criticism. This is accompanied by constantly paying heed to the contents of the heritage and origins, in order not to overestimate the past perspective and to maintain an awareness of responsibility in relation to one's own cultural tradition. "Paying heed to the heritage", says the Turin philosopher, "does not only lead to 're-evaluating' all values, but also to elevating and imitating certain contents we have inherited"[23].

23 G. Vattimo, *Addio alla verità*, op. cit., 102.

Moral principles derived from cultural heritage and the norms we recognize as rational, represent a limited form of the normativity of post-metaphysical ethics proposed by Vattimo. In the work of the Turin philosopher, we will not find an adequate answer to the question of what constitutes the content and foundation of moral obligation, or any in-depth analysis of various ways of understanding normativity. According to the author of the weak thought concept, the objective moment of the normativity of post-metaphysical ethics is cultural heritage and interpretable tradition, while the decision of the subject, who considers moral principles derived from tradition as rational norms, is its subjective moment[24].

5. CONCLUSIONS

Gianni Vattimo's post-metaphysical ethics, built on the foundation of weak thought, preserves a limited form of normativity instead of completely abandoning it. Moral principles derived from cultural heritage and recognized as rational norms should be considered a weaker version of normativity. It is difficult to find any other form of normative ethics within the framework of a philosophy which negates the idea of strong thought and continues the work of Friedrich Nietzsche. The most important reason for it being impossible to develop alternative forms of normativity is Vattimo's rejection of human nature and natural law.

The philosopher claims that in our time, science and technology transform nature into history. In a world where all becomes history, there is no room for objective moral norms, as human existence does not have an internal structure from which permanent and immutable ethical principles might be derived. The only acceptable ethics is that of interpretation. While searching for his own individual rules of conduct, man should only interpret events and thoughts, deeds and

24 Cf. A. Kobyliński, *O możliwości zbudowania etyki nihilistycznej. Propozycja Gianniego Vattima*, Warsaw 2014, 189–196; Idem, *Nihilism and Ethics in the Philosophy of Weak Thought of Gianni Vattimo*, Seminare. Poszukiwania Naukowe 37(2016)4, 55–67.

words. Such a perception of morality does not mean consent to relativism, since it also assumes a weak version of normativity.

Vattimo's attitude to the Christian message and his profound redefinition of the religion's basic moral categories raises objections. It is also difficult to agree with the author's rejection of nature and natural law as sources of morality. Unfortunately, the Turin philosopher regards human nature primarily in metaphorical terms – as a form of concern for the protection of human dignity. One may have the impression that one of the main reasons for the negation of human nature and natural law consists in the defense of human freedom and self-fulfillment. Unfortunately, the creator of weak thought fails to note that nature and freedom are not contradictory concepts. In fact, human nature implies specific goals which human beings pursue in a conscious, rational and free manner.

It appears that the greatest deficiency of the weak version of normativity consists in its limited ability to impose certain behaviours on the moral subject. The German thinker Romano Guardini, while analyzing Immanuel Kant's ethical system, talked about the problem of the binding force (*die Verpflichtungskraft*) of truth, goodness, and value. Guardini believed that the greatest shortcoming of an autonomous vision of morality consists in the very limited binding force of orders and prohibitions defined by the categorical imperative. Similar concerns may be raised with regard to moral norms derived from cultural heritage.

On the one hand, the weak version of normativity protects man from extreme relativism and moral anarchy, while on the other, in an era of biotechnological revolution, this type of normativity is not enough to effectively defend the human species against various forms of manipulation and interference in the basis of our existential structure. Faced with the current challenges of civilization, only a return to the traditional understanding of human nature can effectively protect human dignity and our species' uniqueness among other living organisms. The adoption of a dynamic concept of human nature, and pointing to dialogue, agreement or cultural tradition as a source of moral norms creates a breeding ground for biotechnological manipulations and various attempts to change the essence of our humanity.

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AXIOLOGICAL FUNDAMENTS OF RELATIONS BETWEEN ETHICS AND POLITICS*

Abstract. The subject of this article is the axiological basis of relations between morality and politics. The author shows anthropological and metaphysical origins of the idea of common good in social life. What role does morality play in political activity and where are moral foundations of a democratic state to be found? How to ensure the presence of moral values in public life (education, participation, common good, open society). The most important questions include: Who is responsible for ideas of democracy? Can democracy survive without a footing in pre–democratic values?

Keywords: democracy; liberalism; common good

1. INTRODUCTION

In recent years, philosophical polemics over the axiological status and function of democracy have revived. The debate about moral aspects of democracy leads to at least two radically different positions. The former assumes that the most important issue is a political system that provides civic rights for all people, rather than the state of customs that determines how these rights are used. Democracy has no moral function in terms of social and personal values and goals. It comes down to a formal, purely procedural, legal and institutional

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status which provides everyone with the same privileges. The use of these privileges remains a matter of individual choice[1].

This view is challenged by philosophers who, together with democracy, combine the ideals of equality, freedom and respect, subordinated to the dignity of every human being. Thus, the second interpretation refers to a completely different dimension of democracy, seeing it as a constitutive factor. According to this position, values define both the essence of democracy and its basic tasks. An idealistic dimension of this project causes that this system will never be fully implemented. This fact undoubtedly affects the paradoxical nature of democracy. As a multithreaded, historical process, democracy requires constant correction, modification and reform. After all, democracy covers the life of an individual as well as that of the community to the same extent. In this situation, the question of who is to convey these values, ideas and make them generally accepted and desirable models of civic life becomes more important. This imperative cannot be delegated to the law in force in a state, as it is intended to ensure harmonious (i.e. non-conflicting) coexistence for all people. It is based on the acceptance of philosophical, religious and ethical pluralism. The dispute between Socrates and sophists, in which the same themes were discussed, cannot be overlooked here. The way in which these theses were discussed and formulated indicates that morality was treated as a public aspect of human life. It is deeply rooted in a community of language and social experiences. This conviction of the ancients is fully shared by a modern American philosopher, Charles Taylor. "I am rejecting all atomist views; since what man derives from society is not some aid in realizing his good, but the very possibility of being an agent seeking that good"[2]. Social practice and reflection on its content evoke questions, fears and hopes that lead to the search for the best system for moral de-

1 J. Szacki, *Demokracja po komunizmie. Przeciw, a nawet za tezami Krasnodębskiego,* Znak 536(2000), 52.

2 C. Taylor, *The Nature and Scope of Distributivetive Justice,* in: Idem, *Philosophy and The Human Sciences. Philosophical Papers,* Cambrigde University Press, Cambridge 1985, 292.

velopment of the citizen. It is traditionally accepted that this system is democracy that binds human values with respect for the dignity of every human being together. These considerations represent the moral superiority of democracy over other political formations, simultaneously, they protect it against external and internal enemies. On the other hand, the same facts determine that democracy is easily subject to all kinds of depravity and banalisation. They are supported by a wave of international conflicts, tensions and threats that undermine the essence of democracy. They are particularly visible from the perspective of the dominance of global and free market economy. The latter introduce radical changes to civilisation, which, among other things, lead to the question of who is responsible for the topicality of democratic ideas, for the realization of its axiological postulates. There is a growing consensus that the fate of democracy should be decided by politicians. Meanwhile, at the root of democracy lies the philosophical interpretation of human nature, its optimal, social and individual development, which is enabled by the principle of justice. This principle guarantees freedom and equality for all citizens as participants of public life. Have these thoughts, ideas, values and concepts lost their meaning today, or are they simply becoming more difficult to implement? Certainly, democracy – conceived as an axiological project of life and coexistence between people – demands certain patterns of moral behaviour.

It is therefore worth taking a closer look at why democracy is being severely criticized. Is its theoretical basis being undermined or is its democratic power system being negatively evaluated? Philosophers of old times often stressed that democracy was an elite regime. Only highly civilized countries, where society has reached an appropriate intellectual and moral level, can meet its demands. Therefore, many thinkers point out that most of modern democracies have a genesis which is very diverse in social, economic, historical and cultural terms[3]. Never in history has democracy experienced

3 S. P. Huntington, *Zderzenie cywilizacji,* transl. H. Jankowska, Warszawskie Wydawnictwo Literackie MUZA, Warszawa 1998, 168.

such a triumph of popularity, nor has it consistently faced social and economic problems on such a scale as today. In the past, traditional Western democracies emerged evolutionarily through historical processes. In the post-war years, this path was abruptly shortened by revolutions, which entailed social conflicts, economic crises, poverty, debts, unemployment, demoralization and degeneration of marginalized social groups, spreading nationalist demagogy, revival of Nazi ideology, growth of religious fundamentalisms. One can count infinitely the number of plagues which oppress modern societies and which indirectly become a threat to democracy. This also makes that assessment of democracy radically varies; for some communities it is the most "shameful" socio-political formation, which is held responsible for all the negative effects of transformation. For many other communities, democracy remains an unrivaled example of the state's respect for human rights. Usually in such assessments – not free of emotions – the difference between two dimensions of democracy, i.e. the form of governance and the way of life of citizens, is blurred.

Tocqueville, observing democracy in the United States as much as two hundred years ago, drew attention to its internal weaknesses and threats. These certainly include uniformization and promotion of mediocrity, the lack of eminent personalities among politicians, populism, demagogy and the worst evil in the form of politicization of a state. All these disadvantages in some way arise from the same background – mass society. It found many critics, but it seems that it was Ortega y Gasset who portrayed the "spirit" of the mass society most accurately. "A psychological diagram of modern mass man", explains y Gasset, "includes two basic features: a free expansion of demands and needs that life brings, in particular with reference to oneself and a deeply rooted lack of gratitude for those who made this comfortable life possible"[4]. The lack of gratitude stems from the conviction that all available goods are intended for free consumption. The world of ideals is doomed to negative selection and

4 J. O. y Gasset, *Bunt mas*, transl. P. Niklewicz, Warszawskie Wydawnictwo Literackie MUZA, Warszawa 1995.

is increasingly replaced by various value substitutes that are subject to multiple and contradictory interpretations. It also leads to ideologization of democracy, which means that within this reasoning "thought is functionalized, interpreted only in terms of their social, racial, economic or psychological sources and functions"[5]. Detailed research on the conditions of democracy usually does not take the priority of ideas over their historical concretization into account. Indirectly, they lead to ideologization of the foundations of democracy. Democracy is assessed for its side effects, not for its axiological credibility. Reflection on this situation leads to the question whether the axiological fundaments of democracy lies in its public institutions or whether it should be sought in moral culture of society. The first option assumes that integrity, justice, solidarity, etc. are a matter of basic structures of the state, which indirectly oblige citizens to act in a moral way. Another version, in which society and its moral awareness established in tradition ultimately decide about which norms apply in public life, is also adopted.

According to Gasset, "the crux of the matter" lies in the fact that there is no more morality in Europe. This is not about some kind of revolution in the perception of morality as "Nietzschean" revaluation of all values. Gasset speaks of the mass man's natural desire to live beyond morality. This view is shared by many ethicists, political scientists and philosophers. In the light of today's prevailing social attitudes, the absolute acceptance of moral norms is something quite absurd and impractical. Above all, money, status, career, possession, consumption and use, thus all that comes down to "business", are valued. Ethics is not a means of exchange, it therefore does not serve to do business, it refers to objective values of good, beauty and truth. Such patterns of behavior find neither social justification nor political recognition. This shows some elementary flaws in European culture and the concept of education of human being built on it. In the light of these observations, it is worth considering the position of Satori, Taylor or MacIntyre, who unanimously claim that the ideals of democracy have been exhausted,

5 Ibid, 56.

only empty phraseology remains. For too many citizens and politicians democracy boils down to unrestricted consumption and "to taking and implementing corporeal politics", comments Kincaid, "that is, to a good life, whose criteria are pleasure and pain"[6]. This standard of living has a negative impact on both the state and general public. "It is true that a well-organized society cannot exist without good, where politics is reduced to economics, ideals to ideology and ethics to a calculus"[7].

The second great threat to democracy to be mentioned is the treatment of egalitarianism as a measure that can be applied to all areas of life. At least two of them do not submit to such criteria – art and science, which by their very nature represent a world of higher, elite values.

As a result, the lack of links between democracy and values, which go beyond pragmatism and egoistic utilitarianism, is increasingly deepening. Undoubtedly, from a certain angle, they confirm the equality and autonomy of an individual, although they undermine the objective status of morality. This negation is not only covered by value judgements, but also their objective grounds. They are reduced to individual beliefs. I have the impression that this fate was not only met by metaphysical or religious rationale, but also the critique of pragmatic rationality. The same degree of relativisation applies to competence, credibility, integrity, as well as a lie, stupidity or betrayal. Under these conditions, pluralism and tolerance only sanction such a state. For some philosophers, these are tolerance and pluralism that determine the moral nature of democracy. However, taking such a position, one immediately falls into the traps set by human nature. As Spaemann rightly stresses: "Persons are and will remain dangerous. ... . Abolition of this state of affairs would mean the elimination of persons and turning people into intelligent animals. That is why we cannot let any theory of the person pass which ignores the possibility of strife or mentions it only to condemn it"[8].

6 J. Kincaid, *Resource Scarcity in Western Political Theory: Scare Natural Resources*, Beverly Hills 1983, 123.

7 G. Sartori, *Teoria demokracji*, transl. P. Amsterdamski, D. Grinberg, PWN, Warszawa 1998, 605.

8 R. Spaemann, *Osoby. O różnicy między czymś a kimś*, transl. J. Merecki, Wydawnictwo

Undoubtedly, the great value of democracy is its ethos of justice, which is most fully expressed in fundamental human rights. It is difficult to understand them, especially to interpret and indicate a reference, limiting oneself to the analysis of abstract concepts. Therefore, it is necessary to reach into their context, which indicates some area of social and political reality. The democratic approach to human rights translates into a concept of the civil state and an outline of the theory of the common good. An attempt to understand the essence of the relationships between ethics and politics requires a closer analysis of these concepts. It leads to a metaphysical reflection, abandoned today, on a human being and their vocation to do good.

2. AXIOLOGICAL FUNDAMENTALS OF DEMOCRACY

The question of whether the ideas of democracy are still valid, or whether they find support in contemporary state structures, is reasonable for all the pathologies mentioned earlier. What attracts the attention of most authors dealing with this issue is expressed in the belief that contemporary democratic societies are experiencing a crisis of their own identity. In view of this state of affairs, such questions become fundamental: Can an ethically divided community maintain political unity? On what foundation should it be based?

Philosophers, who are the authors of already classic studies, proposed three different models of building and recognition of a political community: (1) by identifying the political community with the moral one; (2) assuming that the ethical community is superior to the political one; (3) these communities are secondary in relation to the good and purpose of a human person. These schematic representations clearly show that the concept of community either depends on the status of a state or on the condition of an individual. The arrangements adopted in these considerations make it possible to assess political systems on the basis of the idea of the common good and related category of human good. This picture should be

Oficyna Naukowa, Warszawa 2001, 234, 232.

complemented by a level of the individual's participation in community activities. Taking a closer look at an individual from the side of participation as well as common good can help to capture the specificity of political existence. Obviously, these issues will only be addressed in this outline in a fragmentary and simplified way.

Many prominent philosophers consider civil society, i.e. a full-fledged axiological community, to be the basis of modern democracies. Equality, freedom and justice are enjoyed by all citizens, but only a few can use them responsibly. Therefore, they choose real citizenship and thus create civil society. It boils down to "historically determined decisions of particular individuals"[9]. This community is understood as a "historical product" that is inscribed in particular fates of individuals. The source value for the civic community is an individual: free, aware of their own goals, ready to bear the risk and responsibilities associated with their implementation. In the light of this description, questions arise as to what conditions must (should) exist for people to reach a degree of maturity that will ensure their effective participation in civil society. Philosophers are inclined to treat responsibility as a measure of mature freedom. This is mainly about civic responsibility. Therefore, it is worth recalling that such a responsibility takes three forms. Firstly, we need to refer to its formal aspect, including legal sanctions. Secondly, there is a kind of forced responsibility, e.g. for economic or political reasons. Thirdly, a moral type of responsibility that is voluntary and specifically directed towards good. Every manifestation of moral good has its basis in the personal dignity of human being. That is why people act *non solum agentur, sicut alias, sed per se agunt*[10]. Individuals therefore act "by themselves" and are free and equal in this sense, i.e. they are particular individuals, not as copies of their species. This dignified context affects the way we understand justice and the autonomy of an individual, and it indirectly indicates the relationship that exists

9 S. Dziamski, *Podstawy aksjologiczne demokracji*, in: *Filozofia a demokracja*, eds. P. J. Juhacz, R. Kozłowski, IF UAM, Poznań 2001, 209.

10 St. Thomas, *Summa theologiae*, I, 29, 2.

between the good of a person and the good of community. The category of the common good is deeply rooted in the tradition of philosophical thought, although it does not always meet with acceptance. Its ardent opponents, like its followers, invoke the Aristotelian tradition. This is because of at least two reasons. The first is obvious, Aristotle created a systemic framework for the concept of the common good, linking it to three actors of political life: community of citizens, those in power and a working individual. The second reason for this interest in this thought has its negative aspect. Aristotle's concept is inconsistent, multi-threaded and can be interpreted ambiguously. Aristotle attempts to specify and provide the notion of common good, claiming that a good state is a community of happy life, embracing families and family lines, for the purpose of a perfect and self-sufficient existence. The basis of this good should be seen in virtue, which is developed only in states governed by virtuous rulers, i.e. people who retain reason and generosity in their choices. The common good itself boils down to virtues of the good citizen, which develop and improve in the space of public life. The state is one of primary sources of human upbringing. The basis and purpose of this political *paideia* become virtues based on prudence and bravery. The best state is where virtues of a citizen are the virtues of a good human being. The realization of the common good, i.e. the concern for moral good of citizens, depends primarily on the *arete* of those in power. Only the best of them can make decisions for everyone and on their behalf. They should know what is best and most useful to all citizens. Those in power must therefore meet a number of basic conditions to meet challenges of the common good. Some today's liberal-conservative groups refer to them, emphasizing that those who do not have to live by their own work, who have experience in the public sphere and are highly moral people, who are capable of selfless dedication to the state' affairs, should govern a country.

In the above-mentioned postulates, an emphasis is placed on prudence of those in power as their personal *arete* (bravery, perfection). This is due to the nature of the common good: the common good is treated as a virtue that is primarily exercised by those in power. They

act as a model of behavior, simultaneously, their decisions form the moral framework of public life. They translate directly into established law. Justice, alongside the good, determines content and meaning of the common good. The external goods available to citizens in a state are limited and, to some extent, always nondurable. They also create a natural space for competition among citizens. On the other hand, inner goods, that is to say, acquired efficiency for prudent, fair and good conduct, serve in a durable way to improve both individuals and community. MacIntyre, referring to Aristotle's practical philosophy, attempts to explain the political function of a virtue in the following way: "A *polis* needs an *arete* not only for people to improve themselves internally, but also because, first of all, each country continues, develops in competition with others ... , besides, wise politics is based on prudence, i.e. on the virtue of citizens, leaders and lawmakers, and secondly, power of a state is a function of its life practice, what we call today customs and culture"[11]. The attempt to establish what the common good is in fact, leads to several answers that complement each other. The common good can be understood in several ways, referring to various fragments of Aristotelian *Politics*: (1) as a virtue that binds together those in power and people that they govern, defined in common as "good citizen and good man"; (2) as a goal, the essence of a state, which is subordinated to what is fair and good for all, given the rational nature of human being; (3) as the sense of a state's action, well-established in "reason" and guided by the "right measure"; (4) the common good as the fundament of the bond between citizens and a state, more specifically, between an individual and community, a community with individuals. In this sense, the common good is the principle of citizens' participation in a state, which is measured by good and justice. The moral law perpetuates this kind of bond.

The notion of common good therefore links the political and moral sphere; both of them belong to the rational activity of human being. In accordance with the Greek tradition, Aristotle is convinced that one cannot separate political wisdom from one's moral attitude. The

11 P. Śpiewak, *W stronę dobra wspólnego*, Aletheia, Warszawa 1998, 121.

common good opens up the prospect of civic forms of participation. Contemporary supporters of the common good, despite introduction of significant modifications to this concept, are unanimously in favour of linking political morality with the morality of a state itself. According to these findings, there is a close link between the choice of measures to pursue specific policy objectives and their ideological and political rationale. The fair organization of a state and life of its citizens includes a certain objective whole and unity. Both in terms of facts and ideas. The concept of the common good can therefore be considered to indicate intertwining of relations between morality and politics and vice versa. I do not want to get into the details of these dependencies, but they cannot be identified with each other.

The above-mentioned resolutions should be complemented by two important observations. It was already Aristotle who drew attention to them, emphasizing that there were no perfect political systems, and their advantages and disadvantages carried the stigma of historical experience. Human being always acts under certain conditions, with limited knowledge, which, obviously, has an impact on their moral awareness. New forms of participation emerge in the course of history and affect the realization of the common good in various ways. They take on both creative and pathological nature. This state of affairs at least partly explains the critical comments that some philosophers make about the classical concept of the common good. One should take a closer look at them.

These doubts and criticisms concern both theoretical foundations of the possibility to justify the idea of the collective good and the corresponding concept of a good citizen, i.e. a virtuous man. These issues are discussed from the point of view of contemporary state organizations and lead to fundamental changes in the way we understand the concept of common good. Oakeshott clearly states that the instrumental vision of politics within the theory of the common good is contrary to the individualistic one, i.e. libertarian tradition of Europe[12]. Hence, he calls for rethinking of the basis of the rela-

12 M. Oakeshott, *On human Conduct*, Clarendon Press, Oxford 1975, 19–23.

tionship between an individual and community; what should it be based on? The discussion, or rather dispute, that is currently taking place between communitarists and liberals concerns this very issue. However, the importance of this dispute has a much broader context for ethics and politics. It can be considered on three levels: (1) historical level – it is about confronting two distinct ways of interpreting the essence of the relationship that exists between an individual, society and a state; whether they are based on constant characteristics of human nature or have their roots in progress, civilization; (2) they refer to the fundamental question of state's tasks; is the state to create the common good or to protect the inalienable rights of individuals (freedom, equality, autonomy and the right to property); (3) they are an attempt to answer the question whether moral truths can become political principles and how they can be legitimized. Is the state to open up the widest field of freedom to citizens and all of them will enjoy this right according to their abilities, or should the state take on the role of a teacher and educator?

3. LIBERALISM AND NEGATION OF THE IDEA OF COMMON GOOD

Any answer to such wide-ranging questions concerning moral tasks facing the state must relate to changes in the way values are perceived and hierarchized. While defending a certain concept of a state based on the idea of the common good, one should remember about the relative nature of things of value and human attitudes related to their realization. The idea of the common good includes a diverse world of values, corresponding to many spheres of human activity. For this reason, the problem does not lie in the question of what this idea serves, i.e. whether the moral improvement of a person or the improvement of living conditions, but whether there is an overriding value that links them together. The resolutions to these issues, found in the literature, lead to the separation of two positions: those developed by liberal and communitarist thought. The former is represented by Rawls, who assumes that "everyone is equally free to carry out any life plan according to their own discretion, as long as it

does not violate the principles of justice"[13]. In this above-mentioned dispute, Rawls takes a liberal stance. On the other hand, the communitarists, including Alsaider MacIntyre, Charles Taylor, Michael Sandel and Michael Walzer, advocate a vision of man who realizes himself by means of socially rooted goods and values. The concept of the human as a social being by its nature entails the conviction that dignity – as a measure of human moral value – can only be realized in the society. The conclusions that follow from the above-mentioned assumptions lead, on the one hand, to the rejection of the liberal model of society, i.e. of so-called atomist views. On the other hand, they lead to the recognition of natural, primordial relationships of an individual with society. They are in stark contrast to the views developed by liberals, who treat the individual (not social) aspect of human life as a measure of individual self-fulfillment. Looking for axiological fundaments of democracy, a closer look at the essence of this conflict is needed.

The first problem, which is indicated by the cited dispute, concerns the form of social existence and its (non-)involvement in shaping an individual's morality. Sandel describes the essence of this problem in more detail, explaining that for communitarists the community is a factor that constitutes the moral identity of man. Taylor's works not only develop this idea, but also attempt to confront it with the achievements of European philosophy and culture. For this philosopher, social space combines language, tradition and communication as the fundament of human existence. While liberals refer to institutions to protect the freedom of citizens, communitarists demand the establishment of additional institutions to give moral meaning to this freedom. MacIntyre's stance on the social significance of moral discourse is characteristic of this trend. It only makes sense if it is based on some concept of human purpose. Thanks to this, the history of human life is filled with values, virtues and patterns that are socially recognized and practiced. They draw

13 A. Szahaj, *Jednostka czy wspólnota? Spór liberałów z komunitarystami a "sprawa polska"*, Aletheia, Warszawa 2000, 14.

their intersubjective nature from it too. "The history of my life ... has always been integrated within the history of those communities from which I derive my personal identity. ... . Historical identity and social identity overlap"[14].

The dispute in question specifically concerns the content and form of the community bond, its axiological background. The reflection on these issues and their interpretation is connected with the choice of some philosophical heuristics. Can communities be created or discovered based on moral or anthropological laws? "Should we", A. Shahaj adds, "start with some idea of good accepted in advance and from its perspective look at individuals, evaluate their actions ... or rather *vice versa*: should we start with individuals and, by virtue of their conscious support and consent, move on to defining the common good, as the liberals demand?"[15].

Therefore, the question is: is there a single, traditionally established moral model of good life and good society? In one of his works, Philips[16] investigated that issue thoroughly, taking the ideal of community formulated by communitarists as a starting point. The results of his arduous historical and sociological studies can be presented in several points: (1) human mobility in every historical period shows that people did not always accept their membership in a given community; (2) people in every community differed from each other, which was manifested, among other things, by a different attitude to traditions, values, goals and inherited patterns of behavior; in other words, community is the foundation of many narratives and many separate histories; (3) in each community there were conflicts, rivalries, differences in interest, and differences in treatment of other people; (4) social solidarity in such communities was also limited and selective.

This reminder of "hard facts" allows us to discover one more level of dispute. It is about the interpretation of European tradition,

14 A. MacIntyre, *Dziedzictwo cnoty*, transl. A. Chmielewski, PWN, Warszawa 1996, 394.

15 A. Szahaj, *Jednostka czy wspólnota? Spór liberałów z komunitarystami a "sprawa polska"*, op. cit., 157.

16 See: D. L. Philips, *Looking Backward. A Critical Appraisal of Communitarian Thought*, Princeton University Press, Princeton 1993.

taking its links with moral philosophy into account. The communitarianists refer to the heritage of Aristotle's, St. Thomas' and Hegel's thought. The Liberals reach for texts by Locke, Mill and Kant[17]. Apart from the historical dimension of these connections, they indicate different ways of approaching morality and its functions; whether its sources should be sought in permanent, unchanging principles, goods and goals, or whether morality is shaped by changing historical processes.

In order to fully outline this issue, one more question needs to be posed: does liberalism remain neutral to values and the common good? The communitarists accuse the liberals of being in favour of individualism, autonomy, subjectivity and egoism. Marcel Weissenberg distinguished two ideal liberal types[18], which he described as rational egoism and enlightened individualism. According to this description, a liberal individual feels responsible only for their own interests without adopting any social obligations. A liberal state is programmed not to advocate any system of values, which does not mean that it does not take certain moral assumptions. Axiological neutrality, which has been accepted by a liberal state, is a form of acceptance of civil liberties. This very fact is assessed differently by both critics and supporters of liberalism. MacIntyre maintains the view that "the overriding good of liberalism is ... constant maintenance of the political liberal order. Thus liberalism originally rejecting any overriding theory of good in fact began to embody such a theory"[19]. Gray, on the other hand, points out that we have to give up universalistic models because they are simply inadequate to the current conditions of life and its development. According to this author, liberalism expresses its realism by opting for pluralism of values. This position does not stem from worldviews, but refers

17 Cf. *Liberalizm u schyłku XX wieku*, ed. J. Miklaszewska, Meritum, Kraków 1999; also: M. Król, *Liberalizm strachu czy liberalizm odwagi*, Znak, Kraków 1996.

18 M. Wissenburg, *Liberalna osobowość*, transl. A. Pawelec, in: *Demokracja w Europie Środkowej*, ed. J. Miklaszewska, Instytut Studiów Strategicznych, Kraków 2001, 228.

19 As cited in: A. Szahaj, *Jednostka czy wspólnota? Spór liberałów z komunitarystami a "sprawa polska"*, op. cit., 26, note 34.

to cultural differences in contemporary societies. "For us, the postmodern condition of divided perspectives and not well-established practices is a historical fate, we should be wise enough to take the best from it. Secondly, we should consider communities, rather than individuals, as persons of political life. Thirdly, instead of considering the pluralism of individual lifestyles ... we should consider the pluralism of entire life forms. Fourthly, Western liberalism should be considered as being associated with a certain form of community. Fifthly, agonistic liberalism, emphasizing the impossibility of finding a common measure for different values ... contributing to the understanding of politics as the political art of achieving modus vivendi ... , as the pursuit of peace, not truth ..."[20]. These claims should be considered against a broader, theoretical background. In all its theoretical versions, liberalism is characterized by: (1) axiological neutrality, so that freedom ensures equality for all; (2) adopting a certain version of the ethics of liberalism, in which the principle of justice and individual virtues play a major role; (3) liberalism postulates a certain model community based on the ideal of righteousness and a full dimension of humanity.

Liberalism does not so much reject values as it situates them within individual attitudes, without referring them to the metaphysical roots of existence. Therefore, there is acceptance of moral pluralism in practice, not in the world of theoretical ideas.

In the light of these recent remarks, it is worthwhile to raise the issue of the attitude of liberalism towards the common good once again. Contemporary authors point to two formal dimensions of the common good: legal and procedural. The law of the community determines its good and defines it in relation to collective life. The procedural dimension, on the other hand, refers to the social fact that there is a practical agreement on the scope of elementary needs. None of these dimensions of the common good dictates what people should do to achieve full development. For liberals, the greatest

20 J. Gray, *Enlightemment's Wake. Politics and Culture at the Close of Modern Age*, Routledge, London 1990, 123.

political crime is to deprive people of their freedom of choice and the right to their own beliefs. This is an act equivalent to depriving them of their elementary dignity. What remains, then, is acceptance of the fact that "We are ... doomed to accept the constant presence of certain uncertainty, dispersion, separation of powers and polytheism ... in our lives"[21]. Thus liberalism questions the axiological sensibility of public life for an individual. A moral dimension of the common good is denied, only current legal and procedural aspects remain. This state of affairs is confirmed by the liberal tendency to defend autonomy of the person against the community and to affirm individualism and dominance of values of private life. These assumptions take on a different meaning today than in the 19th century. They concern a mass society subject to market pressure and a dominant consumer attitude. Since then, the structure and organization of the state, as well as economic, social, cultural and religious conditions, have changed radically. In many areas of life, two simultaneous processes are currently taking place: disintegration of the community and atomization of civic life; yet it is the neoliberalist trend that maintains the belief that the obvious consequence of economic growth is an increase in welfare of all citizens, which will undoubtedly make them happy. It is not difficult to note that utilitarian roots are behind such views. They undermine both a democratic framework of the state and the common good. This is due to the obvious fact that utilitarianism cannot be reconciled with the idea of democracy. The disputed issue does not only concern the conflict between moral criteria of what is good and right and an utilitarian measure of political effectiveness. In fact, it is about how the value of social life is understood – whether it is limited to the exchange of benefits or whether it is a field of cooperation and interaction between people. Every such dispute refers to the concept of human being from the perspective of dynamic changes in civilization. If this interpretation closes within the framework of naturalism and

21 A. Szahaj, *Jednostka czy wspólnota? Spór liberałów z komunitarystami a "sprawa polska"*, op. cit., 270.

practicism, the utilitarian model of life will prove to be the most appropriate for it – both with regards to an individual and community. This field of research can be extended if the metaphysical level of reflection on human and their nature is also taken into account. We then reach fundamental questions that transcend the limits of what is historically finite and empirically documented. This metaphysical reflection, not free from tensions and internal dialectics, refers to the intellectual and spiritual dimension of human existence. From this perspective, it is clear that democratic ideas have their origin in philosophical meditation on the vocation of human being. "Each thought", writes B. Skarga, "carries an axiological charge from which no one can free themselves. Contrary to all attempts, it is impossible to separate thought from *paideia*"[22]. In the project of democracy, which has already been mentioned before, the idea of educating people is inscribed in the circle of tradition, language, values and social communication. Dialectics of thinking leads to the emergence of various theories, practice allows to confront them with reality. Thus it is possible to extend the criteria for lifestyle choices as well as forms of participation. This creative, human attitude is born out of the awareness that every social reality shows some axiological deficiencies, so it demands changes, modifications and reforms. The fulfillment of man and community in the world of values is expressed in the desire aptly formulated by Ricoeur that humanity would be one and each individual would develop individually. This postulate clearly indicates the teleological and perfectionist nature of the common good. It reveals a goal and helps to achieve it fully. This is also what the idealistic spirit of democracy is – if it is reduced to the sphere of "facts", the balance between the stability of the state, the principle of justice, and the dignity and freedom of citizens will be undermined. Moral ideals, such as perfection, fullness and unity, cannot be reduced to political imperatives. Exceeding the measure of reason is always dangerous both for an individual and community. Hence, the emphasis in democracy is put on active participa-

22 B. Skarga, *Ślad i obecność*, PWN, Warszawa 2002, 134.

tion of citizens, i.e. various forms of cooperation and collaboration with other people in the pursuit of the common good. These forms are becoming more and more complex and require from citizens not only lifelong learning (i.e. acquisition of knowledge), but also self-education. Above all, it involves the realization of one's own humanity, in which respect for others, manifesting itself in love, justice, nobility, honesty and credibility, is inscribed. Not only the good of a person, but also social order is based on these values. In this order, an individual should find not only support for their efforts, but also certain patterns, established in tradition and social customs.

4. CONCLUSIONS

At the end of this brief essay, I would like to return to the question asked in the *Introduction*: who is to convey values and the world of democratic ideas, to make them universally recognized and desirable models of civil life? This issue has already been raised in dramatic circumstances and referred to the philosopher's social mission. Socrates confesses that "... like a gadfly released by the hand of a god who by stinging rouses the Athenian horse out of its slumber. ... I, who keep waking you up and annoying you ..."[23]. The path that Socrates pointed out runs in the public space of a discourse about what is fair, right and good. The philosopher's task is to provoke such a social dialogue, to ask questions that are essential for an individual and community, force self-reflection, reach for what is always a value. The Socratic discussion about justice and other virtues "... restores the possibility of an expression in which a person, abandoning reciprocal relationships, appears as the only one, unique"[24]. I will use B. Skarga comment to complement Levinas's thought "These meetings face to face abolish anonymity, thus attributing responsibility to me. Even for this reason, it is difficult to consider it an epi-

23 Platon, *Obrona Sokratesa*, transl. W. Witwicki, PWN, Warszawa 1958, 113.

24 E. Levinas, *Całość i nieskończoność. Esej o zewnętrzności*, transl. M. Kowalska, PWN, Warszawa 1994, 358.

sode of personal life; on the contrary, we can assume that the sources of community and culture are hidden in it"[25].

I should conclude my considerations here. What is most important in them is focused in the area of relations linking the idea of the common good with the presence of a metaphysical reflection on the meaning of human existence. On the other hand, a culture of thinking affects specific human activity and, more broadly, social models of democratic education. Without strong axiological fundaments, this process must lead to degradation and atomisation of social life. These issues cannot be resolved through political compromises or social negotiations alone.

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25 B. Skarga, *Ślad i obecność*, op. cit., 72.

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RELIGION AS A BOND – A DELUSIVE HOPE OF POLITICS*

Abstract. Politics is on the one hand an attempt to implement certain good, a desire for achieving agreed objectives, on the other hand – as Max Weber says – a simultaneous attempt to avoid a particular evil. If in defining the notion of politics there are references to good and evil, purpose and desire, it has to include the non-political spheres – culture, axiology, religion. Mark Lilla argues that for decades we have been aware of the great and final separation that has taken place in Western Europe between political and religious life. This awareness implies a conviction, which is obligatory today in most countries and societies, that to separate politics from religion is a great achievement. For many thinkers and politicians this is an undisputed success from which the West learns to benefit while preparing other regions of the world for such separation. Therefore it seems that modern politics should be free from religious inspiration and temptation. On the other hand, a significant number of sociologists and political scientists show the vitality of religious attitudes, proving that in its deepest essence religion is an expression of human behaviour. Each person and each community always has an element of irreducibility which is an internal defence against reducing man to "here and now", confining his world to what is useful and usable. It is our experience that a man is naturally open to transcendence. Thus, if man is ever to achieve individual and social reconciliation with himself, he will always look for rational and moral meanings. This situation creates a platform for the emergence of a completely new attitude in society and politics – attitude of seeking and pursuing spirituality in a world without religion. Increasingly, the understanding of religion manifests itself in a wide etymological sense, sociological and ethnological: religare – "to connect", "to bind", "to build community ties". Religion so understood would be a great solution to the dilemma of separation – the adoption of religion (bonds) without a doctrine, while ensuring social cohesion, strengthening the feeling of being together, maintaining a spiritual connection. Many thinkers are convinced that we cannot base social life only on fear, discipline and economy; we need a deeper and stronger foundations for Community Cohesion. But is it possible to carry out such a project at all? Is politics becoming a place for the formation of relationships, education and conservation of values, a narrative space which tells citizens what is good and right and what is wrong and inappropriate? Can it replace religion in its deepest essence – in its intimate sense of an exploration and discovery of transcendence? Will it not become a caricature of religion, and a caricature of politics, and ultimately a trap for freedom?

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1. INTRODUCTION: THE INEVITABILITY OF THE GREAT SEPARATION

Politics is on the one hand an attempt to implement certain good, a desire for achieving certain agreed objectives, on the other hand – as Max Weber says – a simultaneous attempt to avoid a particular evil[1]. If in defining the notion of politics there are references to good and evil, purpose and desire, it has to include the non-political spheres – culture, axiology, religion. This means that politics is not so much a formal-procedural discourse as an ethical-axiological one. This, of course, results from the very attempt to define politics, not as a technocratic structure, but as a relationship[2]. As Mark Lilla argues, that it cannot be forgotten that for decades we have been aware of the great and final separation that has taken place in Western Europe between political and religious life[3]. This awareness implies a conviction, which is obligatory today in most countries and societies, that to separate politics from religion is a great achievement. For many thinkers and politicians this is an undisputed success from which the West learns to benefit while preparing other regions of the world for such separation.

This tendency is not new, of course. Hugo Grotius, called the founding father of international law, already excluded God from international relations, claiming that religions are the cause of unrest, dispute and war. The idea of God and religion has been also excluded from scientific research. Many are convinced that the issue

1 See: M. Weber, *Polityka jako zawód i powołanie*, transl. A. Kopacki, P. Dybel, Warszawa – Kraków 1998.

2 See: M. Król, *Filozofia polityczna*, Kraków 2008, 130ff; J. H. H. Weiler, *Chrześcijańska Europa. Konstytucyjny imperializm czy wielokulturowość*, Poznań 2003, 114.

3 Cf. M. Lilla, *Bezsilny Bóg. Religia, polityka i nowoczesny Zachód*, transl. J. Mikos, Warszawa 2009, 62.

of the existence or non-existence of God is no longer scientifically or metaphysically interesting[4]. In the early twentieth century, John Dewey, one of the key creators of the new American educational culture, argued that the pursuit of absolute ideas, the ambition to create the highest rationale and principles, only lead to authoritarian policies which are always anti-democratic. This should result in a reasonable consent to only interim and pragmatic solutions to social and political problems[5]. Thinking along the same lines, Richard Rorty expressed a specific desire: "We wish we did not have to have an opinion about God. It is not that we know that the word *God* is a meaningless term, or that it fulfils the function in a word play not aimed at establishing facts. We are sorry that this word is used so often", said Rorty[6].

This desire has been largely fulfilled, but its effect is not so much the achievements of secularization as the fact that politics, not religion, takes responsibility for the space in which, until now, the Christian narrative has dominated in our civilization. In this situation, it is culture and politics in the broadest sense of the word that are faced with an attempt to gather people around an idea. This is due to the obvious fact that each community, all the more so the political one, must implement good defined in some way (values). This means that in any society (as paradoxical as it sounds), it is impossible to implement politics without "religion", i.e. without social references anchored in the arguments in favour of bonds. Thus, politics, whether we like it or not, becomes a kind of implementation of values, axiological behaviour and rules. The consequence of this is the conviction that for many people it is social and political relations, not religion, that

4 See: H. Grotius, *Trzy księgi o prawie wojny i pokoju w których znajdują wyjaśnienie prawo natury i prawo narodów a także główne zasady prawa publicznego*, transl. R. Bierzanek, Warszawa 1957.

5 See: J. Dewey, *Philosophy and Democracy*, in: *The Middle Works of John Dewey 1899-1924*, vol. 11 (1918-1919), ed. J. A. Boydston, Southem Illinois University Press 1988, 43-53.

6 Cf. R. Rorty, *Konsekwencje pragmatyzmu. Eseje z lat 1972-1980*, transl. C. Karkowski, Warszawa 1988, 141.

have become, in a way, the "soul" of the modern, multicultural and multithreaded world[7].

Apparently that the leading pragmatists and postmodernists of the West – to name but a few: Rorty, Vattimo, Žižek, Agamben, Bauman, Fish – share not so much the negation of God and religion but the hope and conviction that if the public and political space is deprived of religious symbolism and its narratives, it will remain empty and thus, by definition, will become better. It will not generate oppression and confrontation; on the contrary, it will manifest itself as a place of debate where the solutions better than confessional ones can be worked out[8]. Disapproval of using religious arguments in the public debate is based on the conviction that theybring conversation to an end, because religions do not foresee the possibility of their own error[9]. Thus, religious emblems (e.g. the cross) will change their meaning – they will be regarded as cultural gadgets, peculiar souvenirs and symbols, signs of a faith that has "emigrated" into the private sphere, thus becoming a hidden treasure to which only the trusted are allowed. A space meticulously cleared of religious symbolism is considered in this vision to be more democratic and thus able to prompt proper social behaviour on a basis other than religious. The desire to "sterilize" the public sphere from religious symbolism and confessional attitudes is thus based on the conviction and assumption that politics, devoid of religious inspiration, will create better and more lasting motivations for community life.

2. THE NECESSITY FOR RELIGION – BONDS

Why does this transformation seem necessary? Although, the influence of religion on political life and the construction of moral social rationale have been finally pushed out of the public sphere into the

7 Cf. T. Eagleton, *Rozum, wiara i rewolucja. Refleksje nad debatą o Bogu*, transl. W. Usakiewicz, Kraków 2010, 147; G. Ritzer, *Magiczny świat konsumpcji*, transl. L. Stawowy, Warszawa 2009, 27ff.

8 Cf. R. Rorty, *Filozofia a zwierciadło natury*, transl. M. Szczubiałka, Warszawa 1994, 315.

9 Cf. Idem, *Religion in the Public Square. A Reconsideration*, Journal of Religious Ethics 31(2003), 141–149.

private sphere, the very ethos that binds communities together is still needed in secular society. Religion as a narrative, as a sign of the confessional era has been weakened, but post-modernity failed to find a formula that would fulfil the desire for a policy that would create a good, free, just world, free from religious inspirations[10]. The hope that it is enough to equip a good man with tools – social and political instruments – and this will allow him to build a better world has failed. The atheistic thinker Andre Comte-Sponville, among others, is convinced that secular society, a modern world of great separation, needs a religion understood quite differently – as a great world of thoughts, symbols, gestures, customs and values. After all, no society can do without religion, just as there is no society without education, no civilization without message, no community without fidelity[11].

This is confirmed by many sociologists and political scientists, whose research shows the vitality of religious attitudes, proving that in its deepest essence, religiousness is an expression of human behaviour. In spite of the secularization changes, it turns out that in every person and every community, there is always some *element of irreducibility*, that is, an internal defense against reducing a human to the "here and now" only, limiting their world to what is useful

10 Among other things, the consequences of May'68 are becoming less and less enthusiastic. The unstoppable decline of school and education in many Western countries began at that exact time. One of the offenses of this rush was the confusion of the teacher who educates with the master who dominates. We still have not recovered from this confusion. This was also when spontaneity was elevated to the rank of a criterion of conduct. "May'68" was not so much a revolt against capitalism as it was a feud with bourgeois forms. As a result, many people were orphaned by these forms that post-modernity abolished without offering anything in return. All areas of existence – but especially culture and education – have unfortunately been subordinated to the idea of equality. But even the enthusiasts of "Revolution'68" say that one must also want, can and know how to defend the idea of hierarchy between people, especially between a teacher and a student. Because if this order collapses, culture and education will collapse too. See: A. Finkielkraut, *Wielokulturowość w Europie polega na afirmacji wszystkich tożsamości poza własną*, lecture given on June 27, 2011 at the European Debates of the Centrum im. prof. Bronisław Geremek, Ośrodek Kultury Francuskiej Uniwersytetu Warszawskiego and Francuska Izba Przemysłowo-Handlowa w Polsce.

11 Cf. A. Comte-Sponville, *Duchowość ateistyczna. Wprowadzenie do duchowości bez Boga*, transl. E. Aduszkiewicz, Warszawa 2011, 36, 46.

and helpful, mechanical and technical[12]. Marek Szulakiewicz rightly notes that the good condition of religion in the 21st century is one of the most annoying problems for many. For its expected end and fall does not occur. Religion is a part of human consciousness and not, as many intellectuals and politicians thought, just a stage in history[13]. After all, we ourselves experience the fact that in every human, there is a natural openness to what exceeds them – to what is transcendent and what is often expressed in poetry, music or art. Therefore, if a person is to ever, in individual and social life, achieve reconciliation with themselves, they will always seek the rational and moral meaning of their existence. Sometimes this phenomenon is called the deprivatization of religion, referring to the process of the return of religious doctrine, religious values and its institutional dimensions to the scene of social life on both the normative and behavioral levels[14].

In my opinion, such a situation creates a platform for the emergence of a completely new attitude, both social and political – the search and realization of spirituality in a world without religion. In a project of great separation, disconnected from confessional rations, arguments and influences, but at the same time in a space of human relationships in which one cannot live without politics (outside the community) and cannot live without bonds. Hence, contemporary atheists, satisfied with the separation of religion from politics, say at the same time – you may not believe in God and still cultivate

12 Cf. J. Mariański, *Religia w społeczeństwie ponowoczesnym*, Warszawa 2010, 157; J. Sochoń, *Religia jako odpowiedź*, Warszawa 2008, 85-93.

13 Cf. M. Szulakiewicz, *Religie i religijność we współczesnej kulturze*, in: *Religie i religijność we współczesnym świecie. III Międzynarodowy Kongres Religioznawczy*, ed. M. Szulakiewicz, Toruń 2011, 22.

14 As Casanova argues, secularization and deprivatization are social processes of historically and culturally determined character and course. In different historical periods and cultural circles, the relations between them were shaped differently and sinusoidally. Secularization and deprivatization create a theoretical framework for reflection on the legitimizing function of religion in the social world. See: J. Casanova, *Deprywatyzacja religii*, in: *Socjologia religii Antologia tekstów*, ed. W. Piwowarski, Kraków 1998; P. Michel, *Polityka i religia. Wielka przemiana*, transl. B. Czarnowska, Kraków 2000, 98.

important religious traditions. It has become clear that people want to celebrate important social moments, important stages in their lives and those of their community members, to enter into some ritual, a para-religious celebration[15]. Every culture, including the Western culture, needs some continuity and tradition, but – in the eyes of postmodern thinkers – understood not as a religious denomination (confession, faith), but as a certain cultural code, a specific bond of both social and political life. However, if this code is rooted in tradition, seeks goals and values, then the very achievement of great separation does not answer the question – what story supports people and their communities by constructing paradigms, defining values and choices? Of course, in some sense, the sociological role of religion as the universal social bond is played by the market and the capitalist economy. It is about the information market, because today it is the best commodity and the most desirable good. Halik claims that it is the media that have taken over most of the traditional roles of religion – they interpret the world, decide on the issue of truthfulness and importance, propose great symbols, lifestyle, create events and sacraments – signs of what is fleeting, mysterious, distant and invisible[16].

The openness to what is transcendent and mysterious, what exceeds the everyday, relative dimension of human existence, what does not fit into our world, is to some extent the basis and source of religious experience. However, such experiences can, especially nowadays in the age of secularization, produce a purely cultural spirituality, consciously deprived of its roots in institutional religions[17]. These are, on the one hand, the resources of religious culture incorporated into the political system, on the other hand, the mental acts

15 It is a kind of peculiarly understood religion without God – a democratic religion of the people, born of people, for people, by people. A religion that gives space to go beyond itself, but that space is not eschatological. Such a proposal does not provide the content in transcendence, but ensures well-being, fulfilment here on earth, in the present. Cf. M. Lilla, *Bezsilny Bóg. Religia, polityka i nowoczesny Zachód*, op. cit., 230.

16 Cf. T. Halik, *Europa pomiędzy laickością a chrześcijaństwem*, Więź (2011)2-3, 127.

17 Cf. M. Szulakiewicz, *Religia i czas*, Toruń 2008, 134-136.

of community, traditions, types of habitual behaviour and related ethos. They become (especially for those who describe themselves as non-believers, agnostics, atheists) a platform for creating motivation for human attitudes in a pluralistic, migratory, heterogeneous, changeable and hybrid world[18].

All this makes secularization and its achievement manifest itself, as I have already pointed out, through the loss of religious inspirations and theses of influence on political decisions. Religious content was separated from political power structures. At the same time, however, in the experience of the West, which assimilated the idea of great separation, there is also the awareness that religion has not disappeared from public and social life[19]. Of course, this shape of religion is no longer based on the hard paradigms of great confessions and their institutions. It becomes a more individual and existential event. The secularization postulates should therefore be reviewed. Religion has not disappeared, but in late modernity, it plays a different social and cultural role than a few decades earlier. Nevertheless, we still need morality, community, fidelity, tradition, enthusiasm, imagination, work, loyalty to exist as a community. In the public and scientific debate, there is, therefore, a persistent conviction that the bond that will tie a pluralistic and polyphonic world together does not have to be religion, even understood as tradition, but politics. But how can spirituality and axiology be pursued in the political world without religious inspirations and influences if there is no longer a narrative in the West that would connect entire generations? After all, we no longer live in the shadow of the Christian tale of God and man.

I believe that for many of today's secular people, the answer is religion, but understood in a wide etymological sense, sociological and

18 This obviously implies a practice in which rituals, institutions and forms become the most important. Without a profound experience of transformation, religion becomes a form in itself and a goal for itself. The reason for this phenomenon is the separation of religious experience (personal involvement) from religious rituals. See: K. Dobbelaere, *Sekularyzacja. Trzy poziomy analizy*, transl. R. Babińska, Kraków 2008, 67ff.

19 Cf. M. Szulakiewicz, *Religie i religijność we współczesnej kulturze*, op. cit., 25.

ethnological, in the meaning of the term – *religare* – "to connect", "to bind", "to build community ties"[20]. A religion defined in this way can permeate all the most important areas of life, including politics, understood as concern for the common good, building the future and making an effort to accomplish the goals set. More and more voices are being heard that a society, a nation, a state, communities necessarily qualified as democratic today, need a certain quantum of common values that will bring generations together. Without it, no society can survive or develop[21].

3. RELIGIOUS FOUNDATIONS OF A LIBERAL WORLD

What does that mean? The Western world is clearly moving towards a transformation of civilization paradigms. It gives up religion in the public and institutional space, but at the same time offers a kind of substitute – a kind of *mysteries of the state*, which are understood as a spiritual legitimization, and as a point of reference for modern societies. As Szymon Wróbel says, liberalism is a weak project, above all a "metaphysically weak" project. It is dominated by the desire to avoid metaphysical obligations, but also religious and ethical attachments, discourses about the ultimate good. Paraphrasing the slogan "*minimum of state*", liberalism, in some way, says: *minimum of metaphysics.* However, against a metaphysical, ethical and religious minimum, the cultural and political proposal of the state becomes a very strong one[22]. Even secular thinkers such as Slavoy Žižek, Alain Badiou, Fredric Jameson can see

20 See: E. Durkheim, *Elementarne formy życia religijnego. System totemiczny w Australii*, transl. A. Zadrożyńska, Warszawa 1990. It was Durkheim himself, the son of a rabbi, who abandoned the confession and adopted an atheistic worldview, developed the idea of a global civil religion, writing about the "cult of man", the "religion of humanity", or the "religion of law". A key role in this secular religion was to be played by state education, aimed at bringing up citizens capable of sacrifice. See: R. A. Wallace, *Èmile Durkheim and the Civil Religion Concept*, Review of Religious Research 18(1977), 287–290.

21 Cf. A. Comte-Sponville, *Duchowość ateistyczna. Wprowadzenie do duchowości bez Boga*, op. cit., 32.

22 Cf. S. Wróbel, *Kto się boi liberalnej religii obywatelskiej?*, Znak 671(2011)4, 48.

the impact of a "theological proposal" thus formulated on politics even though they themselves, of course, have a negative opinion of it[23].

The need for such social mysteries, organized by political bodies, stems from the simple and already mentioned observation that no community can be based solely on the concentration of power, compulsion and economy in the long term. The state and the rulers (those who govern cultures and civilizations) also need spiritual justification[24]. For many people who accept the capitalist-liberal model, culture, not religion, is a kind of *quasi*-sacrament of the modern world. Culture, its symbolism and content, become a kind of visible sign of an invisible (but secular) reality. Without symbolic structures that allow hope into society beyond immediate interests and temporal calculations, societies and individuals lose their orientation[25]. The political nature of humans is connected with their ability to speak, rationally discuss and decide on fundamental issues of social life, such as justice, rightness, courage. In this, and only in this sense, politics can be a sphere of realization of human freedom and perfection. The potential of values is realized in the sphere of what is political, where there is a possibility of an argumentative, rational, free dispute concerning basic community goods – goodness, fairness, justice[26]. Thus, despite the diversity and polyphonic structure, the democratic society cannot function without discipline, restraint, tolerance, patience, willingness to compromise and trust[27]. That is why despite the achievements of the secular community of contemporary Western countries – choice (democracy), progress, freedom, law, courage, generosity, serenity, justice – it is increasingly evident that, as

23 See: G. Jankowicz, *Nowoczesne misteria państwa*, Tygodnik Powszechny 48(2009), 40.

24 See: K. J. Schipperges, *Religia a zeświecczone społeczeństwo. Instrumentalizacja religii w nowożytnych systemach władzy politycznej*, transl. B. Floriańczyk, Communio 138(2003)6, 84.

25 Cf. T. Eagleton, *Rozum, wiara i rewolucja. Refleksje nad debatą o Bogu*, op. cit., 167; A. Delbanco, *The Real American Dream: A Meditation on Hope*, Harvard University Press 2000, 56.

26 Cf. Ł. Dominiak, *Cztery koncepcje zoon politikon. Uwagi dotyczące problematyczności politycznej natury człowieka*, Horyzonty Polityki 1(2010)2, 101.

27 See: K. J. Schipperges, *Religia a zeświecczone społeczeństwo. Instrumentalizacja religii w nowożytnych systemach władzy politycznej*, op. cit., 66.

Comte-Sponville says, it needs *religare* (bond) and *sacrum* (sacrifice) to defend these achievements. Society and politics can do without God as a transcendent reason, but it cannot do without religion understood as a bond[28]. The liberal secular state lives and works effectively thanks to assumptions developed through centuries of religious narrative, which it does not establish and cannot fully guarantee. These are anthropological ways of perceiving a human, and these are never neutral in their content in regard to world view. On the contrary, they result from certain assumptions, both philosophical and theological, which at the same time imply certain conclusions concerning the shape of social and political life. Hence, the state and the law are never a pure political element, but are based on accepted (consciously or not) world views. The total neutrality of the community is therefore an illusion and even the leading liberal thinkers are aware of this[29]. Jürgen Habermas, who was referred to by many as the "Pope of secularism", warns against "unjustly excluding religion from the public sphere" and "cutting secular society off from the important sources of meaning" that are still hold by religious communities today. It turned out that reason is not a socially sufficient tool for ensuring solidarity in society: religious reflection is still necessary, says the German philosopher. Reflection purified by a process of critical self-reflection, which the social sciences already have done. Science itself should "keep a distance from religion without closing in on its perspective". It turns out that it is often religion, and not scientific arguments, that remains an irreplaceable protective barrier against various types of extremism: greedy market expansion, bioengineering, economic polarization[30].

Even Gianni Vattimo, who cannot be accused of being a religious sympathizer, says that liberal European societies should allow

28 Cf. A. Comte-Sponville, *Duchowość ateistyczna*, op. cit., 34.

29 See: K. J. Schipperges, *Religia a zeświecczone społeczeństwo. Instrumentalizacja religii w nowożytnych systemach władzy politycznej*, op. cit., 80.

30 Cf. J. Habermas, *Faith and Knowledge*, in: Idem, *The Future of Human Nature*, Cambridge 2003, 109; J. Habermas, J. Ratzinger, *The Dialectics of Secularization. On Rison and Religion*, San Francisco 2005; S. Burdziej, *Socjologia postsekularna?*, Studia Socjologiczne 197(2010)2, 97.

Christian symbols in the public sphere, while excluding Muslim symbols that are alien to European tradition. The cross should become a universal symbol of secular society, constituting, in a broad sense, the humanistic condition of the people of Europe[31].

It turns out that the secular world of postmodern ideas, although it has deconstructed all great narratives, needs to read old religious texts to create bonds, a community of tradition, origin and moral prerogatives. Ancient religious knowledge can integrate people in common activities, giving structure and hope to the community. Religion appears here not as a confession, but as a love for the story, love for the word, for the *Logos*[32].

4. POLICY AS A BOND – A HOPE FOR SOLIDARITY

The consequence, however, of such an approach to religion and its cultural role is that a privatized, non-dogmatic and soft form of religious existence, reconciled with the achievements of the modernizing Western world and recognizing its pluralistic and neutral priorities, will not fulfill its educational and moral role either. In my opinion, it is not able to create a motivational foundation for moral behaviour. That is why its role is taken over by politics establishing values and behaviours (ties as I call them) in the so called *background culture*. Such tendencies could be observed already in the Protestant reflection on the role of religion in politics[33]. Jürgen Moltmann argued that the church and religion should be dissolved, so to speak, in the state, and faith in a civic ethos. Secularization of religion was to strengthen the state and culture. This will transform religion into politics, and politics will create a space for learning ethical and civil behaviour[34]. Thus, religion descends, becomes

31 See: G. Vattimo, *After the Christianity*, Columbia University Press 2002, 101-102.

32 Cf. A. Comte-Sponville, *Duchowość ateistyczna*, op. cit., 35.

33 Cf. M. Marczewska-Rytko, *Religia i polityka w globalizującym się świecie*, Lublin 2010, 249-251.

34 Cf. J. Moltmann, *Theology of hope: on the ground and the implications of a Christian eschatology*, transl. J. W. Leitch, London 2002, 202-210. Of course, the first strong modern link between religion and politics, or rather the subordination of religion to politics,

reflexive and is reconciled with the reality of the modern state, within a liberal political order. It is convenient for those in power, does not bother anyone, its arguments do not have to be present in the political debate, and at the same time gives individuals inspirations and motivations other than politics. In this way the secularization force is strengthened. The state becomes sovereign, free from such an important social factor as religion, even transforming it and later taking its place[35].

Of course, the key desire of many atheistic circles to build a world with rules not determined by religious laws and principles, but purely political, independent of, for instance, Christian inspirations. In such a world, there is no need to wait for God's Messiah, all hopes are placed in the "here and now". At the same time, there is a belief in the realization of the state of justice and peace, kindness and goodness, as prerogatives that only come from immanent temporal conditions[36].

A similar hope was also expressed by the aforementioned American pragmatist Richard Rorty, who claimed that there does not have to be

occurred in Hegel's philosophy, where the state was defined as a *self-conscious ethical substance*. It is an ethical spirit as an open, self-explanatory substance will, which thinks of itself and realizes itself, and which puts into action what it realizes, providing that it realizes at all. The state understood as an ethical community turns out to be the first – an autonomous and self-sufficient total. The state is the reality of the rational will, which has been elevated to the level of universal self-awareness. In this way it is the highest expression of the objective spirit. Hegel speaks of the state in the most sublime words. He even says that "the existence of the state is a march of God in the world". In Hegel's historical-philosophical idea, the state as an objective spirit is necessarily "divine" in a certain sense and must be treated as a divine element present on earth. And as the Absolute itself is an identity in diversity, so is the state. In the final perspective, the state is a divine idea available on earth, through which freedom gains objectivity. In a sense, freedom in Hegel's case consists in the individual's boundless blending in with the objective spirit of the world. See broader: G. W. F. Hegel, *Wykłady z filozofii dziejów*, transl. A. Zieleńczyk, Warszawa 2003, 60; S. Łojek, *Hegel i Nietzsche wobec problemu polityczności*, Wrocław 2002, 190-196; R. Kozłowski, *Heglowska koncepcja państwa*, in: *Hegel a współczesność*, ed. R. Kozłowski, Poznań 1997, 97.

35 Cf. Z. Krasnodębski, *Większego cudu nie będzie*, Kraków 2011, 145. This thesis may also be associated with a naturalistic understanding of religion. See broader: S. Sztajer, *Racjonalność religii wobec niektórych współczesnych prób jej naturalizacji*, in: *O racjonalności w nauce i w życiu społecznym*, eds. Z. Drozdowicz, Z. Melosik, S. Sztajer, Poznań 2009, 275.

36 Cf. P. Valadier, *Nędza polityki i moc religii*, transl. T. Żeleźnik, Warszawa 2010, 20-22.

an objective reality to convince people of the virtues of social life and especially the important virtue of solidarity. He thought that there was such a thing as moral progress and that, in fact, it was heading towards ever greater solidarity. People become somehow inclined to minimize suffering and misery existing in the world. Here, solidarity fulfills the function that a conscience rooted in religion used to perform, without, however, appealing to a sense of guilt and responsibility, without invoking religious precepts. Rorty obviously offers neither epistemology (the correspondence between the intellect and reality) nor metaphysics, in which the search for meanings and values beyond the language game is carried out. In his view, morality is supported by literature (but not by the Bible), in which man can find social ideals. Above all solidarity, which, however, is not related to the search for the truth about oneself or to the objectivity of values. Solidarity in this sense means the empathic principle of reaching out to the unhappy[37]. On such assumptions it is possible to build a secular society without the need to cement it with religious inspirations and rations.

Let us ask, however, if such a perspective will transform social practices, politics, culture, education, relations, media into school of solidarity, concern for the common good, civic virtues, and thus fulfil the *telos* of man? How to give meaning and purpose to life without reference to supernatural motives? Can you trust reason, art or modern civilization? Sergio Quinzio, the Italian thinker, in his meditations on contemporary social disappointments, notes that modernity denies the news of the need for God and salvation, but that at the same time the thesis about the rebirth of the world through the progress of history, the development of science and technology, the social revolution is only an attempt to accomplish a pseudo-resurrection[38].

Rorty emphasized that the true value of solidarity does not depend on where it comes from, but on how it is produced, and therefore, as is the case with Jürgen Habermas' theory of communication,

37 Cf. R. Rorty, *Przygodność, ironia i solidarność*, transl. W. J. Popowski, Warszawa 2009, 293-297.

38 See: S. Quinzio, *Przegrana Boga*, transl. M. Bielawski, Kraków – Dębica 2008, 88-89.

the American thinker wants solidarity to be born as an act known and learned from literary texts[39]. The very conviction that the ideas of goodness, kindness, solidarity learned from literature will ensure proper social relations and will be permanently assimilated in the era of media and culture tabloidization is a reverie of academic intellectuals. Is there not, without references to God and "bad faith", without objective standards of justice, only a reference to pleasure, emotional preference or what is called "personal satisfaction"? Such recourse to emotions, without stating the reasons, can only generate views that change from hour to hour. The speaker, who is deprived of a permanent point of reference, and the listeners, who have only their own emotions, leave Rorty's beloved idea of solidarity to the mercy of whims[40]. Of course, Comte-Sponville sees the danger of nihilism – revolution of lawlessness and sloth, barbarism, contempt for values and duty, relations based on violence. All this can very quickly destroy social relations. But the French philosopher argues that this should be contrasted with the double wall of rationalism and humanism, whose foundations lie in the heritage of the West[41].

It remains, however, unexplained why the language of *secular stories*, which is not stable enough to support the truth, should be strong enough to forge decency and solidarity as principles that are accepted by and unite different people. If we realize that language as a tool of expression can be used against the author's intentions, we are surprised to find that it has been granted the status of a means of achieving good – both in Rorty's vision and Habermas' theory. If solidarity is necessary to reduce the scale of human misery, what qualities and values associated with collective thinking would be able to induce people to do, as a group, what they are not willing to do, acting as individuals? Rorty says that we are simply motivated to make moral commitments by community solidarity, which transforms individual "I want" into

39 Cf. R. Rorty, *Przygodność, ironia i solidarność*, op. cit., 299.

40 Cf. P. Diggins, *Iluzje pragmatyzmu, Modernizm oraz kryzys poznania i autorytetu*, transl. M. Filipczuk, Warszawa 2010, 639; W. Buchner, *Demokratyczna dewaluacja polityczności*, Horyzonty Polityki 2(2011)2, 68.

41 Cf. A. Comte-Sponville, *Duchowość ateistyczna*, op. cit., 57-58.

collective "we want"[42]. In the realm of solidarity, an invisible hand acts in some way like magic, transforming private vices and selfish aspirations into a collective virtuous quest for the common good. What is good for us is good for everyone. It is as if humanity has the ability to respond to the misfortunes of others through innate feelings such as sympathy, pity, and conscience. Of course, poststructuralism and postmodernism do not want to acknowledge that human nature has its innate inclinations as its foundation. Therefore, it is literature, not nature, that is to take over the tasks of morality. This peculiar and hopeful appeal is addressed to our imagination, not to our instincts. In the world of words, we are what our dictionaries are, and solidarity originates from acts of persuasion, from faith in the power of metaphor[43].

What's more, liberal democracy turns out to be incapable not only of raising the imperative of solidarity, but also of overcoming the disease of modernity – the emergence of anti-civil, mafia and exclusionary behaviour. It seems, says Eric Voegelin, that restoring proper order is only possible by recovering full reality, proper evaluation of its transcendent dimension, without ideological distortions. It simply means noticing the unquestionable role of religion in social life and the role of reason in assessing the situation of man and the world. We do not, therefore, live in a post-Christian, post-Philosophical, Neo-Pagan world, or in times of new myths that shape politics, but in the era of enormous de-culturization resulting from the deformation of reason, caused, paradoxically, by the secular process of destruction

42 Cf. R. Rorty, *Przygodność, ironia i solidarność*, op. cit., 292.

43 Before we allow the theses of the American pragmatist to seduce us, it should be noted that solidarity, instead of building morally, can brutally discriminate, as is the case of ethnic, religious, or racial solidarity and the "cleansing" that the massacres carried out in their name brought about. But interestingly, Rorty wants solidarity to function as a social reality, largely for the reasons why Adams reconstructed the image of the Virgin as an opportunity in the literary space – to value the cultivation of mercy and compassion. Both the philosopher and the historian want to convince us not of what is, but of what could be, as a product of literary imagination. Cf. J. P. Diggins, *Iluzje pragmatyzmu. Modernizm oraz kryzys poznania i autorytetu*, op. cit., 637.

of religious narratives[44]. Can this deformation become a place of formation for new generations? This is an open question, but a positive answer is extremely risky, as its verification will no longer take place in theory, but in specific social relations and attitudes.

5. CONCLUSIONS: THE REAL POWER OF RELIGION – INTERNAL TRANSFORMATION

In my opinion, the thesis about the unquestionable and inalienable role of religion in public and political life is based on quite a simple but key observation. The atmosphere of social and political life is determined by the personal life of individuals of which the community is composed. This is well illustrated by the saying of Forster, which, at the beginning of the 20th century, was recalled by father Woroniecki: "*das Sociale lebt vom persönnlichen* – the whole value of social life depends on the personal values of individuals". Hence, religion does not so much formulate social morals (this can actually be done to some extent by culture or politics). This is its secondary task, but it is a necessary consequence of the first and foremost task of religion – to sanctify the souls of individuals. The moral success of today's secularized Christian societies is possible only through religion, understood not as a bond, but as a living relationship with God – found, known and beloved[45].

John Gray expresses similar intuitions in different words. In his book *Black Mass. Apocalyptic Religion and the Death of Utopia*, he makes a very strong thesis that modern politics (politics subjected to the idea of great separation) is only a chapter in the great book of religious history. He argues that the idea that it is possible to build a wonderful world in which religion is only a private little space nurtured in the privacy of individual behaviour is a dangerous dream of idealist-utopians. It is necessary to accept, says Gray, the irreducible presence of religion in individual and social life, as well

44 Cf. E. Voegelin, *The Gospel of Culture*, in: *The Collected Works of Eric Voegelin*, vol. 12, *Published Essays 1966-1985*, ed. E. Sandoz, Louisiana State University Press, Baton Rouge 1990, 178.

45 See: J. Woroniecki, *Kościół w oczach wiary*, Szkoła Chrystusowa 13(1939)3, 153-154.

as (which is difficult for the followers of secularization) political life. Religions, faiths and confessional beliefs are an ordinary part of the public sphere, and thus also at a higher level, of the political sphere. If only, the British thinker concludes, we take a rational and realistic approach to religion, no evil demons will spoil social relationships[46].

When modern scholars excluded God and religion from political debate and later postmodern scholars deconstructed the true powers of human reason, it turned out that if there is no reference to something transcendent, the question of truth hangs in the air. We are thrown into a universe where any judgment about what is true or false, good or bad becomes unfounded because there is no objective measure which can be applied to the assessment of behavioral patterns. The inability to refer to the hierarchically ordered truth about reality has the vulnerability of man against the phantoms of his mind as one of its possible consequences – Czesław Miłosz wrote – Does the man involuntarily become an emanation of nothingness and nothingness consumes all their mental choices? Religion provides at least a meaningful world[47]. So I think Krasnodębski is right: if the project of a complete secularization of the public sphere or the internalization of religion so that its prerogatives would become immanent components of culture and politics and would be animated by them, it would mean the end of experiencing politics, as it has been understood from the beginning of the European ethos. What would remain would be administration, internal game of interest, or simple violence[48]. When the inner power of religion that animates the community dies, certain ideas and values become false, they become a source of corruption, they reveal themselves as illusory, fictitious[49]. As a result, not only will there be no dialogue of cultures without

46 Cf. J. Gray, *Black Mass: Apocalyptic Religion and the Death of Utopia*, Farrar 2008, 33. The inconsistency of reason with the experience of transcendence is discussed by A. MacIntyre in the book *God, Philosophy, Universities: A Selective History of the Catholic Philosophical Tradition*, Rowman and Littlefield 2011.

47 Cf. C. Miłosz, *O erozji*, Tygodnik Powszechny 51-52(1998), 8.

48 Cf. Z. Krasnodębski, *Większego cudu nie będzie*, op. cit., 167.

49 Cf. J. P. Diggins, *Iluzje pragmatyzmu, Modernizm oraz kryzys poznania i autorytetu*, op. cit., 522.

religion, but, above all, there will be no human reconciliation without this rationale, which, although it escapes positivist scrutiny, forms the basis of moral attitudes for many people. If there is no religion in its original rather than cultural form, what will constitute the power that binds social rations together?

In 1941, after the outbreak of the war in Europe and the disclosure of the bestiality of German Nazism, Mortimer J. Adler, an American philosopher from the University of Chicago, gave a controversial lecture entitled *God and professors*, in which he accused positivism, naturalism and pragmatism of nihilistic cruelty. He argued that the departure from the ethical reflection objectified in God as the guarantor of the concepts of good and evil, of fairness and wickedness, is due to the degradation of classical philosophical thinking, and especially of metaphysics, which is the only one capable of rationally justifying the existence of the Absolute Being. Without this, the pragmatic philosophy (postmodern, as we would say today) has no theoretical basis for pointing to inviolable values. There is no foothold to justify one's cultural, ethical and political theses. This philosophy has lost wisdom, which is the understanding of first principles and causes.[50]. Schooyans speaks directly of the threat posed by the totalitarian deviation of liberalism, which results in anarchism, obviously understood in a specific way. Anarchism as the social prevalence of individuals and the strongest groups, whose actions are not subject to universal legal jurisdiction, moreover, they even become the law. In this way, a kind of ethical oligarchical groups are revealed, to which other rules and other interpretations apply[51]. This obviously leads to a controversial conclusion – those who disregard religious principles will soon also cease to respect moral principles and then political agreements and obligations. If there is no significant authority on moral attitudes to

50 Cf. M. J. Adler, *God and the Professors*, in: *Pragmatism and American culture*, ed. G. Kennedy, Heath 1950, 67ff.

51 M. Schooyans, *Totalitarne zagrożenie demokracji*, transl. K. Deryło, Ethos 21-22(1993), 126. Similarly, Halik believes that the cultural and political victory of secularism carries the temptation to make secularism a "religion" and, consequently, an intolerant and totalitarian religion. Cf. T. Halik, *Europa pomiędzy laickością a chrześcijaństwem*, op. cit., 130.

human behavior, as well then the community needs soldiers and prisons[52]. However, this would never be what postmodern thinkers themselves would want, as it would condemn the intellectual elite above all to the loss of the cultural goods for which generations have worked. The social death of religion and the replacement of its strength by the power of political and cultural reasons would then show its monstrous face – humanism without divinity.

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52 See: K. J. Schipperges, *Religia a zeświecczone społeczeństwo. Instrumentalizacja religii w nowożytnych systemach władzy politycznej*, op. cit., 84.

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LIBERTY IN LIBERAL THOUGHT – PAST AND PRESENT*

Abstract. The article presents history of liberty in the past and contemporary liberal thought. This article argues that the founders of liberalism went a long way to define precisely the phenomenon of liberty. In more recent times they tried to separate liberty from metaphysics and morality with reference to the ideals of democracy. However, they confused the cult of equality with the liberty to show that the truth always must be at liberty's service. Liberty, however, should be understood as an ability to fulfil person's rights. Until it happens, liberalism will conceal the historic and present–time demons.

Keywords: liberty; liberalism; Christian thought; freedom; truth; John Locke; John S. Mill

1. INTRODUCTION: INITIAL TERMINOLOGY

The title of this text poses many difficulties, both methodological and substantive. It is impossible to operate with intellectual freedom in the rhizome, to use Deleuze's terminology, which is formed from the various understandings of liberty and liberalism. It should also be remembered that these terms are often used as words of praise and condemnation in political struggle, which does not encourage semantic precision and research objectivity[1]. I therefore

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1 See: A. Ryan, *Liberalizm*, in: *Przewodnik po współczesnej filozofii politycznej*, eds. R. E. Goddin, P. Pettit, transl. C. Cieśliński, M. Poręba, Warszawa 1998, 381.

limit my research description to just one issue, namely, the recognition of how liberal thought used to function in the past, and how it is understood today. For I assume that liberty belongs to the central concepts of human experience (this is, after all, what constitutes a person), however, in a liberal vision of the world it has taken on a clearly primary character, becoming a "supreme value", which determines the achievement of both personal happiness and social harmony and peace. Nevertheless, the understanding of liberty divides the individual supporters of liberalism and even leads to a kind of ideological struggle, although this fact is not apparent from a broad interpretative viewpoint. More radical views in this regard can only be brought forward through a more detailed look.

I also have to reiterate that the concept of liberty belongs to the sphere of spontaneous human experience and is sometimes inherent to such terms as a person, act of decision or awareness. It becomes controversial and contentious when it is occasionally used as a tool to create a specific anthropological, political and even economic vision. All we need is to note the different contexts in which the concept of liberty is applied by Christian thinkers and Marxist ideologues, for example. After all, it remains the main determinant of the world view that is formed and professed in both, albeit the consequences of liberty in the aforementioned approaches can be quite opposite, and even mutually exclusive. It is therefore not surprising that according to a widespread idea expressed in the literature on the subject, it is impossible to provide a satisfactory definition of liberalism, since as a primarily political term, it is an "essentially contested concept". Thus, if we define liberalism as a doctrine that convinces us that individual liberty – in accordance with the tradition of the European Enlightenment – is the highest political value, and that institutions and practices should be judged by their effectiveness in promoting this liberty, it will be a concise statement, but one that does not exempt us from further discussion[2]. For there will remain the question of liberty itself, its types, scope of application, the ontic and social

2 Ibid, 382.

status of the individual etc. The dilemmas of the concept of liberty will continue to remain dilemmas. Nevertheless, it is worth agreeing that liberalism has been an integral part of Western political discourse for three centuries and that it has managed to defeat its main enemies – absolute monarchy, fascism and communism. It has also managed to maintain its own identity in confrontation with its leading criticisms: conservatism and socialism. Since this is the reality of the situation, we should consider its possible consequences, invoking Christian reflection as a verification horizon.

2. TRUTH AND FREEDOM IN CHRISTIAN THOUGHT

The root of the Hebrew term "truth" derives from the word *aman*, which means relying on someone strong. The truth is the property of something that is sustainable and that can be relied upon. Such is the merciful God: always faithful, truthful. People, on the other hand, try to be faithful to God and God's law, faithful to the covenant made on Mount Sinai, and they are also aware that one must be loyal and noble in interpersonal relations, because that fosters loyalty to God. The biblical concept of truth is therefore not based on consideration of human relationships with the world, but is directly concerned with religious experience. The truth in the Bible is also seen as a synonym for wisdom and the mystery of God.

However, the concept of Christian truth can only be discovered in the Gospel. St. Paul replaced the Jewish expression "the truth of the law" with a much broader one, the "truth of the Gospel". Therefore, truth in the Christian sense is not only an area recognized through intellectual experience. Nor is it a contemplation, as wished by Aristotle, of the most divine element in a human being – reason. This kind of action is only the beginning of the path to truth. It accepts God's presence as the most reliable and loyal one, and is accompanied by the truth of real facts, truthfulness, faith and, above all, the identification of truth with the person of Jesus Christ (Jn 14:6). The truth of the Gospel is therefore best explained by God's word, passed on by Christ and enlightened by the powers of the Holy Spirit. The Apostle

Paul clearly states that there is an inextricable link between the truth and Christ. Its continuation depends on the ability and willingness of believers to imitate the deeds of Jesus, especially in dramatic and martyrdom situations. Therefore, the climate of truth remains an essential element of human existence and indicates that, by knowing the truth and in discovering it, man transcends the natural world and thus manifests his liberty. In the words of St. Irenaeus, liberty is a right as ancient as the existence of the man to whom God proclaimed it. Its incredible complexity, however, came to light when it began to be analyzed. Nevertheless, the concept of *free choice* began to be raised in the discussions in reference to the philosophy of Aristotle, which has since been settled for good in the reflections of St. Paul, the Fathers of the Church, medieval philosophers, Trento theologians. It has also been adopted by contemporary authors.

The Christian concept of liberty will therefore denote an absolute absence of coercion, including by God's law. Every human being is entitled to liberty by virtue of being a person, a reasonable creature and this liberty manifests itself in the person's free will to choose. Liberty is a human fact. It reveals itself in the desire and cognition of a human being who chooses his or her own judgment, which leads to certain actions. For this reason, liberty always remains human-sized. It does not take on cosmic dimensions, because no one on Earth possesses that kind of consciousness. Every person chooses the kind of judgment they want (it does not have to be the best, the wisest or the most comfortable one). The moment of choice is common to all people. For nobody can make it for them. It is impossible to impose an obligation on another person to carry out *our own* acts of decision. After all, a person is the source of his or her actions. When we encounter an accidental and variously organized world, we constantly make decisions. Otherwise, life would have little meaning. Saint Augustine, one of the most courageous and wise men of the Church, wrote: *We can be compared to a harp, and the only important thing in a harp is its strings.* Decisions in human life (the small, everyday decisions and the big ones, influencing the whole of personal actions) are – like strings – what strengthens and expands

our creative abilities and simply creates our personality. Thus, we have a free choice in any event, for we cannot be forced by any specific good to choose it, as there is always a chance of achieving the infinite good. The existence of free will opens up a sphere of liberty (I choose *this or that*, because I want to).

All these remarks stem from realistic thinking, which does not create any constructions about the world, but tries to interpret its deepest content. Unfortunately, over the course of the centuries, this metaphysical realism has been pushed to the margins of the intellectual solutions proposed, and the supporters of liberalism even considered the abandonment metaphysics to be the so-called "good form", although there has been no clarity on this issue either. In any case, we should bear in mind the Christian understanding of the truth that brings liberty while looking at all that has led to the deletion of the Enlightenment cultural project, which, after the criticism of Nietzsche and postmodern theorists like Rorty, seems at least intellectually silenced. Nevertheless, there is a growing conviction that the liberal world is simply better than all non-liberal views, and this is not just an expression of complacency in European culture. Thus, it is not – to quote Marcin Król – that if we had to choose between Christ and the truth, we would choose Christ, but rather that we are faced with a choice between truth and democracy, and we should choose democracy. This attitude accurately reflects the essence of all contemporary disputes about the shape of democracy, which are sometimes referred to in various terms: the dispute between liberals and communitarians, between neo-conservatives and neoliberals, between conservatives and libertarians, etc.[3]. Where are these choices and practices originating from? We will begin by asking these question to the participants of historical discussions.

3. CLASSICAL LIBERALISM AND MODERN LIBERALISM

Aware of the existence of different varieties of liberalism, I propose – so as not to lose the transparency of the lecture – to limit its semantic

3 M. Król, *Liberalizm strachu czy liberalizm odwagi*, Kraków 1996, 6–7.

scope to two, namely the classical and the modern version. The former should be associated primarily to the speech of the empiricist John Locke, whose views are often looked upon as pillars of modern liberal thought. Modern liberalism, on the other hand, would be an attitude threatening the achievements of classical liberals, and would refer to the proposals of the 19th century British empiricist John Stuart Mill and his supporters, who would even raise liberty to the nth power and be hostile towards metaphysics. However, the criterion by which I distinguish these types of liberalism is not a historical moment, but rather a vision of man, power and state. For a "modern liberal" could be a person that lived in the 18th century and opposed all forms of absolutism, mixing secular and religious authority or criticizing the legitimacy of resorting to freedom of conscience.

There is a good reason for reminding that the term "liberal" was first used as a political term in the context of the anticlerical actions carried out in Europe in the 19th century. At that time, the intention was to quarrel the Catholic Church with secular power and to deprive it of influence over the policies of Catholic countries. The underlying reasoning was in fact the argument in favour of religious tolerance and against any religious monopoly[4]. These cursory remarks clearly reveal that the issue of liberty is at the forefront of the discussions and is the *issue that tips the scales*. The titles of majority of works by authors belonging to the liberal circle contain the word liberty. This should be emphasized, because it was not obvious to all scholars in the times of Locke's philosophical and political activity. Robert Filmer, author of the then popular book *Patriarcha, or The Natural Power of Kings* (1680) – an advocate of absolute monarchy, assumed that the divine prerogatives of kings should be defended and in this sense recognized the slavery that resulted from the existence of paternal power. In his opinion, the typically scholastic beliefs that people are free by nature and by birth should be regarded as misleading and deceitful. In the beginning, God gave the royal power to Adam in Eden, from whom it was inherited by his heirs, until it finally passed on various kings of modern times. As

4 A. Ryan, *Liberalizm*, op. cit., 391.

a result, he desire for liberty should be regarded as a typically impious feeling. Therefore, in his opinion, political power does not come from a social contract, let alone from any awareness of the public good, but from the authority that a father has over children. Kings are the heirs of Adam, or at least they should be considered as such; the natural rights of a king are the same as those of a father; by nature, sons are never free from parental authority, even when the son is an adult and the parent is dependent on him[5]. It follows from the above that society as such cannot actually exist, because there is only a patriarchal family, just as there is no state but only a household.

This kind of interpretative perspective had been abandoned by Locke, although he formed his own views by accepting God's interference in the human history and life of each individual. As a believer, he understands a human being in a theological way. He accepts as natural and necessary the providential arrangements by which people discover their place in the hierarchy of creatures, get to know God and use and comply with the laws of nature granted by the Creator. According to him, non-compliance should be punished. The fact that the laws of nature are binding does not depend on their existence, but on man's dependence on God. An important role is played here by reason, which is fully in line with Revelation and allows liberty to operate, so to speak. For without liberty, reason would be completely useless, all the more so because liberty is a human natural state, that is to say, a state of complete liberty to act and to dispose of one's property and persons as they see fit, within the limits of the law of nature, without asking anyone for permission, without dependence on the will of another person[6].

Therefore, liberty is not about doing what one wants to do regardless of existing norms, as Filmer wanted, but rather subjecting oneself to the law of nature, in the same way as human life in its primitive state. This is why, an individual in a civil state should not be afraid of

5 B. Russell, *Dzieje filozofii Zachodu i jej związki z rzeczywistością polityczno-społeczną od czasów najdawniejszych do dnia dzisiejszego*, transl. T. Baszniak, A. Lipszyc, M. Szczubiałka, Warszawa 2000, 706–712; N. Gładziuk, *Babel*, Civitas 5, (Studia z filozofii polityki), Warszawa 2001, 25–28.

6 J. Locke, *Dwa traktaty o rządzie*, transl. Z. Rau, Warszawa 1992, 165.

hostility and threats from fellow citizens, but primarily from those in power. Thus, this version of liberty consists in submission to the authority that received it by virtue of the people's consent. Some scholars suggest that what we are dealing with here is the concept of negative liberty that relieves all pressures and obligations and is only achieved through collective action as expressed in an act of social contract. However, the very concept of "negative liberty" and "positive liberty" comes from the writings of Isaiah Berlin. While lecturing a lecture at Oxford University in 1958, he stated that the above-mentioned terms are related to the answer to the following questions: "What is the area within which the subject – a person or group of persons – is or should be left to do or be what he is able to do or be, without interference by other persons?" (negative liberty, i.e. liberty from ...) and "What, or who, is the source of control or interference that can determine someone to do, or be, this rather than that?" (positive liberty, i.e. the liberty to ... , to do something, to gain something, to achieve something, to transcend something)[7]. Therefore, if the above terminology was applied to the Locke's system (which is not agreed upon by all interpreters[8]), we would find that positive liberty is logically conditioned by the presence of negative liberty. No one can exercise their will when they are under absolute, arbitrary power. Nevertheless, this positive liberty seems essential if we are to achieve salvation, although we cannot enjoy it without the negative liberty.

These were the origins of the principles that make up political liberalism. Liberty viewed as an aspect of property is an undeniable right of every human being, inscribed in his or her natural behaviour and decisions. However, as Locke insisted, it should not be equated with discretion devoid of moral shades. For our liberty has a specific constraint, which is that, by and with liberty, we can and do fulfil our obligations to the Creator. Human beings are naturally subject only to God. Obviously, this does not only apply to the Christian God. Locke's God is not

7 I. Berlin, *Cztery eseje o wolności*, transl. H. Bartoszewicz *et al*., Warszawa 1994, 182.

8 This is what M. Król, for example, does in his work: *Historia myśli politycznej. Od Machiavellego po czasy współczesne*, Gdańsk 1998, 41.

a God, so to speak, defined by the confession of faith. The author of the *Letter Concerning Toleration* opposes the imposition of religious beliefs by political authorities. He leaves faith to the decisions of the individual conscience, although he strongly criticizes atheists and Catholics who place clerical power above secular. He is thus creating a clearly defined philosophy of tolerance, based on rational grounds. This was not a purely political doctrine. Its origins lie in the vision of human beings as a free and rational creature. Cognitive agnosticism, understood in a particular way, made it possible to prove that no truths should be imposed. Locke might have set forth the theory of a political system designed to implement the principles of tolerance since, in addition to developing epistemological issues, he announced four basic principles of the system: (1) human rights: to life, liberty and property, which are equally shared by all people; (2) the consent of the people; (3) the responsibility of the authorities; (4) religious toleration.

From the individualistic perspective, he proposed a thesis about the separation of Church and state viewing it as an opportunity to introduce toleration into concrete social life. He believed that the most important are the individual rights of human reason, which is sensitive to the natural and moral aspects of life. Thus, we are dealing with an understanding of freedom as an obligation. It has become, for a long time, a fundamental principle of that liberal trend, which remained close to conservative thought. Close not so much because of the view on how society should function, and not in terms of the hierarchy of values, but because of the approach to political change and the political temperament. It was only when the idea of liberty and, accordingly, the idea of a government that guarantees the exercise of liberty by the individual were completely disconnected from the moral attitude that liberalism showed a different face[9], especially among the supporters of utilitarian tradition. But before we discuss that face of liberalism, let us take a look at the issue of war, which is currently being discussed with great vigour, and which is also linked to the issue of liberty.

9 Ibid, 41–42.

4. BETWEEN THE STATE OF NATURE AND THE STATE OF WAR

In Locke's words, a state of war is a state of enmity and destruction. It therefore seems reasonable and fair that, under the law of nature, we are entitled to destroy whoever threatens to kill us, for the same natural reasons why a *wolf* or a *lion* is killed[10]. Thus, when a person tries to force their absolute power upon another, thy enter into the *state of war*. This should be understood as announcing an attempt on the person's life. No wonder, then, that there is a clear boundary between the *state of nature* (where people, guided by reason, still live together without judicial power) and a *state of war*, where force is used or threatened to be used against a person, and there is no common superior on earth to appeal to for relief. However, the state of war may continue until the society adopts positive laws with a judicial authority. And even when they have been formally adopted, they can be, and occasionally are, violated, sometimes by those who have been called upon to bring justice. Then the state of war continues. The very avoidance of this *state of war* is an important reason for creating societies and a political state. Locke had confidence in the legitimate authority derived from the agreement, more than in the law (at the level of political or civil society, of course), although he believed that the law was helpful in pursuing the most important human objective, which is to strive for unspecified excellence. However, in all kinds of difficulties of communal coexistence, the ultimate judge of the status of human liberty is, and must be, a conscience referred to God, the "Supreme Judge of all people"[11].

It follows from the above that liberalism, at its earliest stage of development, referred to typically metaphysical reasoning. However, it abandoned the Aristotle's tradition of treating the individual as a "cell" of the social organism and agreed to accept the emancipated ego, a man whose identity is determined in the very act of creation and not in relation to others. Unlike Thomas Hobbes, he believed that a man does not

10 J. Locke, *Dwa traktaty o rządzie*, op. cit., 174.
11 Ibid, 178.

achieve happiness in solitary activity, but turns to other people. In order for there to be a society, there is no need for an agreement; this is determined by "needs and convenience". The agreement, on the other hand, determines the emergence of a system of voluntary subordination, characteristic of a political society, which represents another stage of social development[12]. I therefore disagree with those who suggest that Locke absolutized the concept of liberty[13]. Rather, he saw its limits and associated liberty to the concept of rational necessity, as did the Stoics and Cicero. Liberty is where there are rules that preclude arbitrariness, albeit the fact that he ties goodness to pleasure and evil to suffering may encourage a different interpretation to the above. And that is what has happened in later years. As I mentioned, utilitarianists in particular have found their own roots in Locke's views. I would like to quote at least the main theses of one of the most important among them. I mean John Stuart Mill, the son of the Orthodox utilitarian James Mill.

5. JOHN MILL'S ENTHUSIASM FOR FREEDOM AND HOSTILITY TOWARDS METAPHYSICS

Unfortunately, similarly as in the case of Locke, Mill's views on liberty are not easy to discern. For they are not only entangled in inconsistencies and understatements within their own system, but nowadays they continue to expand the space of open dispute. However, his beliefs are not only invoked by liberals of all types (led by Berlin). Mill's deliberations fascinate many contemporary pragmatists and so-called postmodernists as well. Why? The English philosopher's writings originated from the idea of a widespread crisis, which clearly affected civilization at the time. The foundations of the emerging democracy, the change of social and religious customs, the emergence of technical innovations on a mass scale – all this prompted questions about the place of man and his liberty in this new cultural paradigm. In his

12 S. Filipowicz, *Historia myśli polityczno-prawnej*, Gdańsk 2001, 216.

13 Such a view is presented by S. Kowalczyk in his work: *Liberalizm i jego filozofia*, Katowice 1995, 132.

famous essay *On Liberty*, he wrote: "The only part of the conduct of any one, for which he is amenable to society, is that which concerns others. In the part which merely concerns himself, his independence is, of right, absolute. Over himself, over his own body and mind, the individual is sovereign"[14].

Liberty has therefore achieved the status of an absolute, in the sense that it has been equated with autocreation and authenticity. Whatever we do (apart from inflicting harm on other people) is permitted and creative. No barriers should prevent the realization of one's own vision of identity. Each individual has the right to "be himself or herself"; there are no hidden or shameful spheres of life of any kind that would usually be hidden under the surface of social conventions. Therefore, the fight against even the smallest manifestations of tyranny in life, especially the tyranny of customs, deserves support and promotion. Liberty of conscience, thought and speech, liberty of association, individual preferences of all sorts – these are the foundations that sustain existence and all forms of state. No one in a position of power (or actually no one at all) may interfere in the personal affairs of individuals, because such interference is, as usual, wrong and inappropriate[15]. Every person has his or her own original way of behaving, which is sensitive to the pressure of the patterns. It should not be confined in a straitjacket of natural identity. It should rather evolve, depending not only on the social situation, but also on personal desires.

Does this mean that Mill has lost the moral dimension of liberty? Probably not, because he stressed the value of European rationalism. He tried to reconcile the seemingly contradictory beliefs, namely the need to save the absolute dimension of liberal decisions with their call for the observance of moral imperatives. He seems to reiterate Socrates' idea of natural sensitivity of people to the good, who (as long as they are sensitive) will not want to do evil. He also did not forget the role of law, which, in a way, upholds the chance for liberty, so that it is not annihilated by someone else's arbitrariness. He was

14 J. S. Mill, *O wolności*, transl. A. Kurlandzka, Warszawa 1999, 26–27.
15 Ibid, 100.

aware, however, that the ideals he preached could be ignored. After all, there are people who are completely indifferent to the values of good or democracy and there is nothing we can do about this. In fact, the pursuit of the truth is probably something noble, but essentially unattainable. For the absolute truth is either difficult to obtain or does not exist at all. Therefore, we should not be surprised that many post-modern writers, such as the American pragmatist R. Rorty and his followers, like to repeat Mill's words. However, Mill did not give in to skepticism or religious emotion. He believed in the power of democratic self-government, presuming that it is democracy that makes possible the equivalence of what is mercenary, personally useful, with what is altruistic, responsive to the needs of others. It also highlights the value of pluralism on which Europe's global success is based, which, however, is beginning to fade away and is dangerously close to the "Chinese ideal of making all people alike"[16]. What, then, does the liberalism that refers to the legacy of Mill propose? It wishes for happiness for as many people as possible, the happiness as each of them imagines it[17], which would be possible if a perfect social organization could be built. It remains obvious, however, that this thesis is clearly utopian in nature.

6. A LIBERAL SPACE OF FRIENDLY APPROVAL

Contemporary post-modernists believe that the traditional liberal understanding of liberty and liberalism itself has lost its importance. Entangled in metaphysical contexts, it is unable to follow the rapidly changing society, which is convinced that it is no longer appropriate to talk about the objectivity of the world, but only about pluralistically scattered textual elements, integrated not by the power of subjectivity, which had been refuted, but by the power of texts and metaphors, forcing a constant effort of interpretation, reinterpretation, deconstruction. And since there is no real world, there can be no cognitive certainty. For

16 Ibid, 88.
17 M. Król, *Historia myśli politycznej*, op. cit., 147.

example, philosophy and science (within their own competence) with claims for a final explanation of everything as well as religion and world views referring to fixed moral norms, have no *raison d'être*. Radical pluralism, individualism, the reduction of truth (with a capital t) to the level of the "small truth" of a particular community group, a "fractal", "viral", "elusive" truth, as Jean Baudrillard puts it, its inclusion in the changing contexts of various social discourses, as well as the praise of diversity, local concreteness, liberty, justice or solidarity, have all resulted in a loss of connection with a reality that is independent of human cognitive capacity. But there is still liberty at the foundation of all life's references, which is standing on top of the axiological ladder, as well as the issue of justice. This is the position taken by Berlin, Rorty and Rawls, although each of them formulates liberalist ideals differently. They also argue that only liberty understood in a negative way is worth defending, because it denies society the right to impose any ideals on an individual. This view was referred to as liberalism of fear, or liberalism neutral towards the world of values. In order to avoid the pressure of totalitarianism, which is always a possibility, ideologies must be rejected and all axiology in politics must be abandoned. Therefore, it is necessary to accept a vision of a society in which all views are treated as equal and equally true, a society that is united only by a democratic-liberal consensus[18].

7. CONCLUSIONS

In the light of the above considerations, liberalism has come a long way in clarifying the phenomenon of liberty. The closer (in a temporal sense) it got to the present day, the more it abandoned the bond of liberty with metaphysics and morality, and linked it to the ideas of democracy, which, although devoid of any signs of perfection, brings the best forms of governance and makes human liberty a reality in the fullest sense. However, liberty has always been of the utmost importance, although it has become a "self-designed liberty" for various demo-liberals, permissives and libertines. In such a perspective, one

18 Ibid, 246.

lives "beyond good and evil", accepting every possible difference. This is no longer about toleration in the sense recognized by Locke, but rather about, say, repressive tolerance where a person treats their private aversions as public sins, and hides and conceals them. This process culminates in false humanism, according to which man is subject only to the laws that he himself establishes. In such a project, liberty assumes the characteristics of omnipotence. Hence the dogmatic battle for abolitionist and pro-abortionist legislation. However, it is not clear why the sovereign, free decisions of a stock market entrepreneur should have irreversible consequences (e.g. bankruptcy), and the strictly moral decisions, such as erotic or criminal decisions, should be subject to the "tolerance" of reversibility[19].

Some scholars have argued that liberalism has not at all been formed in the space of a continuous intellectual tradition. In their view, Locke's liberalism has little to do with Mill's liberalism, and it is wrong to consider their views as moments within an uninterrupted historical process. The rallying point here would not be the concept of liberty, but the idea of civil society[20]. It is possible. Nowadays, however, it is imperative to understand and to apply firm criticism to this liberty which, having lost the need for responsibility, has become an alienated liberty and a threat to the harmonious functioning of society. Contemporary liberal thinking confuses the cult of equality with liberty, and by emphasizing the difference between individuals and groups, it makes clear what was already obvious to the ancients – that truth (achievable in human cognitive effort) remains at the service of liberty. In this way, the truly understood and experienced liberty is lost when we live in a sphere of falsified truth. Isaiah Berlin somewhat expressed the consciousness of contemporary liberals when he wrote: "The conviction that there must be definitive, objective solutions to all normative problems and a truth that can be proved or directly intuitively grasped, that it is basically possible to discover a harmonious

19 P. Bartula, *Nowoczesna destrukcja liberalizmu*, in: *Liberalizm u schyłku XX wieku*, ed. J. Miklaszewska, Kraków 1999, 275.

20 J. Gray, *Po liberalizmie. Eseje wybrane*, transl. P. Maciejko, P. Rymarczyk, Warszawa 2002, 46.

pattern that reconciles all values and that we should aim for this one goal; that we can reveal some central principle that shapes this vision that, once discovered, will guide our lives – an old and almost universally shared belief ... seems unreasonable, it must sometimes lead to theoretical absurdities and barbaric consequences in practice"[21].

Thus, as shown by the Berlin' message, liberalism has a primary task: to prevent life from being taken over by traditional, by implication, especially Christian, barbaric ways of exercising the gift of liberty. But where does this vision lead to? Firstly, global culture is afflicted by the venomous "Americanism" – a destiny that took many people overseas to worship materialistic hedonism as an incentive to work. As predicted by Daniel Bell[22], today this destiny is shattered, Americanism has worn thin, and only the hedonism remains. Secondly, it invites – after acknowledging liberal social disasters – that we start again from the outset, and develop a liberal tradition in such a way that it adapts itself to the changing reality. This is perhaps an important characteristic of any kind of liberalism.

Naturally, people can and should change themselves and society within certain limits, but the knowledge of their own power must be accompanied by the awareness of its limitations. This is the oldest and most enduring truth about human condition if it is to remain human. However, it is necessary to include the conviction that the human ability to know the truth and act in liberty, exercised through the righteous will (*recta voluntas*), is fulfilled as a result of the Creator's gift. And liberty itself should be understood as the art of prudent and responsible realization of a person's good[23]. That is why the importance of personal acts of decision is worth emphasizing, since these are a synthesis of cognition and love and allow us to be free, of course to earthly proportions, which means that our liberty should be based on conscious action that calls for noble compromis-

21 Cit. follow: D. Bell, *Kulturowe sprzeczności kapitalizmu*, transl. S. Amsterdamski, Warszawa 1994, 315–316.

22 Ibid, 318.

23 See more broadly: A. Maryniarczyk, *Człowiek – istota otwarta na prawdę i dobro*, Człowiek w Kulturze (1998)11, 200–201.

es and mutual restrictions. If that were the case, then even liberalism should not wake up the hidden demons of the past and present.

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ETHOS, BOUNDARIES AND PRACTICAL TASKS OF PATRIOTISM*

Abstract. The main thesis of this article states that patriotism constitutes a key role in the process of globalization. The author perceives the moral dimension of nation and homeland categories as the validation of such a position. Patriotism, which is not chauvinism, deeply connects with its own nation, as well as homeland, and due to its very nature, should be open to foreigners and other nations.

Keywords: patriotism; nation; homeland; morality

1. INTRODUCTION

The introduction will comprise the account from six publications, the main idea of which is formed by two characteristic sequences of opposing views on the issue of patriotism.

Over one and a half centuries ago, Karol Libelt's dissertation entitled *O miłości ojczyzny* [*On the Love for Homeland*] was published. In the introduction, this Polish Hegelian explains the motives which prompted him to undertake the topic included in the thesis' title. "There are people", writes the author, "who regard themselves as enlightened, who ... call national relations and interests a limitation of progress, detrimental to humanity, particularly to a nation blinded by patriotism and fiercely defending its particularist interests. They regard what we call native as having no basis. It is not language, ...

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religion, ... geographical location, ... customs. Then, what is this delusional homeland, in the name of which we separate ourselves and do not connect with other nations, which have outrun us in education, which holds material and moral power, in hands of which the fate of humanity is placed .... This is how cosmopolitan thinkers reason"[1].

In turn, in 1924, the Austrian political scientist R. N. Coudehove-Kalergi in his book *Pan-Europa* outlined a great picture of the supranational political structure of "Pan-Europe", in which he devoted a separate chapter to the issue of nationality. The theme of his views comprised the idea that the essence of a nation is founded on a spiritual community, shaped by the mutual relations between great people – to be more precise, brilliant leaders, poets, thinkers and people with a specific genius[2]. In the historical development, the national communities of Europe were formed under the influence of various factors. In the Middle Ages, this function was performed by the Christian cult of the *sacrum* while the symbol of national unity comprised of the "cathedral", as a place of religious worship. At that time, Europe consisted of one nation. With the split of Christianity and the secularity of Europe, Enlightenment rationalism shifted the focus of the national bond towards a creative spirit. At that moment, the "cathedrals", now associated with universities, raised to the rank of forges, creating the new shape of culture and its symbol, while transformations resulted in a multitude of individualized nations[3]. However, the new socio-political situation which followed the First World War postulated to undertake one more step in the national evolution: to deepen and broaden national cultures by providing them with the characteristics of European culture as a new whole[4]. This process was to be accomplished by neutralizing as many different components in national cultures, as needed to form a new, great pan-European na-

1 Re-issue of the dissertation *O miłości ojczyzny*, in: K. Libelt, *Samowładztwo rozumu i objawy filozofii słowiańskiej*, Warszawa 1967, 6f.
2 R. N. Coudenhove-Kalergi, *Pan-Europa*, Wien – Leipzig 1924, 137.
3 Ibid, 139.
4 Ibid, 142.

tion, or rather a "super nation"[5]. Therefore, it is a vision of a macro national cultural creation, in which the existing nations would not disappear, but function as purely regional communities.

At last, the third publication. It comprises a recently published book by Andrzej Olechowski, entitled *Wygrać przyszłość*[6]. What is the author's vision of the nation in the context of economic and political changes which take place today? The answer is: he does not outline any. It is difficult to consider as such a mention, in which the author predicts that "communities which choose to base their consciousness on the bonds and customs of tribal nature"[7] are condemned to lose the opportunity to improve their international position. Therefore, participation in the European Union becomes an imperative of patriotism for the members of a nation "which for years has not existed on the political map"[8]. Then, in the final phase of reflection, he addresses the issue of the "national consciousness", he confines himself to confessing, that "we refer to something we cannot define"[9]. After such a declaration, it is not clear what is the author's basis for his optimistic conclusion that a person can be "authentic, responsible with regard to their origin, past and cultural heritage and, simultaneously, ready to undertake the challenges of globalization"[10].

Moving on to the second sequence, referred to in the introduction, the history proves, that almost parallel to the already-mentioned concepts of a nation, its views were represented quite differently. Two voices, belonging to R. Dmowski and B. Limanowski, have been heard in the last decades of our partitioning history. Regardless of speaking from different political orientations, these great politicians are harmonious in their full of pathos confessions regarding the sense of nationality. In the introduction to *The Thoughts of a Modern Pole* Dmowski states: "I am a Pole, that word means

5 Ibid, 144.
6 A. Olechowski, *Wygrać przyszłość*, Warszawa 1999.
7 Ibid, 10.
8 Ibid, 27.
9 Ibid, 132.
10 Ibid, 133.

a lot. I am ... because ... I know the collective life of the nation, that ... I know the interests of Poland as a whole, the highest interests, for which one should sacrifice what one cannot sacrifice for personal matters"[11]. This declaration is accompanied by the confession of socializing Limanowski: "I am a nation, that is, I am aware of my national individuality, for it is a natural condition for my independence and the development of my abilities"[12].

However, in the context of the international structures created in the interwar period, Fr. J. Roztworowski expresses his experience with national bonds by stating "... a nation is a product of blood and warmth of its native land, it is a concrete, colorful, vibrant reality, which not only speaks to the heart but clings to the incredible power of each of its particles and finds its resonance in each of its beatings"[13].

Finally, the post-war period. Yet again, the forefront is occupied by the prominent figure of cardinal S. Wyszyński. In the final phase of his views, which, on a side note, have evolved to a certain extent, the nation appears as a "natural and primordial community of people, especially families ... bound in a higher community of historical space-time, in a living biological and psychological organism, realizing a kind of spiritual personality within itself" a specific "mystery of the nation"[14]. As a result of this specific national subjectivity, the plans of Divine Providence consist in calling upon the nation to fulfil special tasks in the service of man's ultimate destiny, as has happened in the history of the chosen people. These ideas, formed based on the Primate of the Millennium's own social and ethical thought, adopted an explicit life-related shape in the final phase of his pastoral work: interned for his steadfast attitude in defending the independence of Church against the atheistic power, he became a symbol of the nation's will to prevail in its national existence. It was also a significant

11 R. Dmowski, *Myśli nowoczesnego Polaka*, Lwów 1904, 13.

12 Cit. follow: J. J. Wiatr, *Naród i państwo*, Warszawa 1973², 157.

13 J. Roztworowski, *Nacjonalizm, jego uprawnienia i etyczne granice*, Przegląd Powszechny (1923)157, 101.

14 C. Bartnik, *Chrześcijańska nauka o narodzie według prymasa Stefana Wyszyńskiego*, Lublin 1982, 9, 11.

contribution to the preparation of socio-political premises for the removal of the communist regime from our recent history.

In the conclusion of this cursory and selective review, an evident constatation may be deduced: in European history, in this case, with particular emphasis on Polish social thought, appears a clear opposition, one can say, an antinomy of two ideological trends. On the one hand, there is a constant presence of an ideological model, which, after two stages of metamorphosis, from the "cosmopolitan" (in 19th century) and "pan-European" (in 20th century) adopted the final form of a "globalist", as well as its opposing attitude of the spiritual monolith – a "patriot". Among the two model figures, the globalist embodies a distant and sophisticated strategist of the real, ultimately economic driving forces of social development, while the patriot represents a romantic idealist who elevates a beyond-individual national community spirit on the pedestal of life ideals. However, presenting these two opposing attitudes is not only relevant to the sociological diagnosis of changes in our nation's social consciousness but also reaches into the sphere of moral values. The question is whether the moral value reviving the attitude of the patriot, commonly referred to as "patriotism", retains its proper validity and significance as a model of conduct, also in the entering the historical audience age of globalization, or should it give way, or at least subordinate to a new standard of moral structure, in place of the nation affirming the new reality of the supranational "citizen", as a member of the emerging political superstructure, or a type of "megalopolis". This question is all the more relevant, as already in 1976, one of the Polish moralists wrote: "In the present day, the sense of patriotism has become blurred in the consciousness of many people. ... Young people often find it difficult to understand such a patriotic attitude of their fathers or grandparents ... they consider patriotism a relic of old times"[15]. Therefore – in short – is patriotism a social pathology or a living ideal?

15 S. Olejnik, *Ojczyzna i patriotyzm w wizji wspólnoty międzynarodowej Jana XXIII*, in: *Kierunku prawdy*, ed. B. Bejze, Warszawa 1976, 53.

2. THE NATION AS A SOCIAL ENTITY

The outlined issue poses questions such as: what is a nation, what is its proper, collective reality and what is its place in the structure of social order. This problem cannot be solved by referring to the subjective, individual intuitions of outstanding individuals, even of such a great class as those mentioned in the introduction, all the more so, because they are divided by a chasm of radically different visions of the nation. An appropriate method of philosophical thinking, as well as manners of determining the object of research and further reflection set by the said method, comprise an indispensable tool aiding the goal of the dissertation. In the paper, this method will be based on the realistic premises of Christian ethics. That is why it is necessary to reach for preliminary data and determine what this reliable source of cognition says with regard to the nation.

In short, four conclusions may be provided. Thus, (1) a nation emerges from the preceding ethnic forms of collective existence (house, tribe, nationality) as its highest form. (2) However, with the moment it settles as a separate community, it functions and creates its own values by the power of its vital forces, which, while remaining in a separate, partially invisible world of the national spirit, find their external expression in experiencing a sort of national "We". (3) At the same time, however, history attests to the fact that, at a certain stage of its historical development, inspired by its representative elites, the nation becomes the subject of efforts to achieve political independence by creating a sovereign state. The ability to undertake such actions is a clear indication that the nation exists as a subject of its collective actions, as well as that this subjectivity should be considered a strong confirmation of its separate, real existential identity. (4) At last, it should be emphasized that a nation's aspiration to achieve its statehood results from the historical necessity to possess better living conditions and development, as well as to manifest its existence and cultural values. Therefore, it is not a *sine qua non* for being a nation. As history provides, an excellent confirmation of such conclusion comprises the fact that a nation is

capable of maintaining the existence and vitality of social functioning, even after the loss of an external state organization.

To briefly conclude, the nation is not a type of "horizon line", as Olechowski repeats after the anonymous columnist, which, as everyone knows, "exists, but no one has managed to get close to it"[16], or even more so, it is not a type of a "contractual value" created by individuals, as French Colonel Verdier tried to convince the young Polish lieutenant in the Brandstaetter's drama *Ludzie z martwej winnicy* [*People from a Dead Vineyard*][17], but a living community, and simultaneously, a subject of social existence and action.

So much is said about the nation by historical experience, yet, the task ends on these findings. In turn, on the foundation of appropriate general philosophical premises of the based reflection, it is rational to examine what constitutes this creative force, functioning in the depths of the national spirit, a sort of life "principle", which embraces the whole of its life manifestations and actions, as well as defines its particular national image. In this deliberations, in the entire sense of the word, it is an "essential" issue, due to its key importance in penetrating the moral core of patriotism and allowing to draw normative conclusions from the said core.

It is clear that this is not an easy task, which additionally has been discussed for a long time, thus various solutions were presented. The one written by Coudenhove-Kalergi has been mentioned in the paper's introduction. It is necessary to omit the others in order to be able to develop one's own position on the matter more broadly. Coudenhove-Kalergi's thesis claims that the constitutive principle of a nation's identity constitutes the "national culture". The term indicates a complex of creations and institutions, among which one can distinguish language, religion, customs, literature, art and all that the national community creates in the course and with the purpose of spiritual formation of its members, according to the appropriate model of each national community. In this definition, two terms deserve to be emphasized. Firstly,

16 A. Olechowski, *Wygrać przyszłość*, op. cit., 133.

17 Cf. R. Brandstaetter, *Teatr św. Franciszka oraz inne dramaty*, Warszawa 1957, 203.

the term "complex of creations and institutions" should be explored. Its essence assumes that these elements do not appear in the national culture as a mechanical collection of loosely related elements, but as a consistent cultural category with a specific spiritual expression. Secondly, it should be emphasized that, within the provided term, the merging of individual elements of national culture into an organic spiritual structure occurs in constant living contact with the process of shaping the spiritual image of the national community's individual members, simply the process of their becoming a Pole, a Hungarian or an Italian.

Two particular characteristics of the national culture have originated from this source as well. The national culture is first and foremost characterized by "spontaneity", or even "self-creativity" of its origin. The point is, that the national culture is not a creation of a certain institutional initiative, planned and controlled according to a specific model. The national culture is formed spontaneously through the power of talents of the nation's members, although this may happen under the influence of various external factors, adapted and incorporated by the members into a unified whole with its cultural specificity.

Therefore, on the extension of this spontaneous process of the national culture's formation appears another distinguishing feature which may be described as the "domesticity", or "familiarness" of the national culture. This feature emerges from the previous one, since the nation, by producing its own values from its spiritual and material resources or, by processing or incorporating certain borrowed elements into its vital tissue, simultaneously provides them with a unique colour. Growing into the spiritual climate of the culture formed in such a manner, from the very beginning of their lives in the closest social circles, particularly family and territorial ones, the members of the nation are saturated with its spiritual content, settle within it internally and consider as their "own" world, mainly due to the power of their emotional connection. A fuller explanation of the considerations implied by these words would comprise an indication of the relationship between the "nation" and the "homeland".

3. THE NATION *VS.* HOMELAND

A nation, like anything human, resides in a certain place on Earth. In the case of a nation, such contact with Earth assumes a special form. A nation shapes its social image in a certain territory, which it populates as a permanent inhabitant. Houses and tribes wander, while nations, on principle, anchor in a larger or smaller area of habitable land. The occupied land passes from generation to generation, becoming a national legacy which, similarly to the family nest referred to as "patrimony", is considered by the members of the nation as their "homeland". In this form, the homeland transforms from a purely territorial category into a humanistic one. The nation's members, remaining in constant contact with their homeland, its peculiarity and natural colour since their early childhood, absorb these qualities as their spiritual property, as well as create a connection by the most subtle threads of their love for the country regarded as "homeland". Therefore, it is not surprising that, in the experiences of the nation's members, the homeland frequently appears more as the allure of native country than of the inhabiting people. This is how Mickiewicz viewed Lithuania in his poetic imagination, when "on the cobblestones of Paris", urged by the longing he returned "to these forest hills, to these green meadows, stretched wide over the blue Nemunas". This is not merely a description of nature, it is a part of the poet's soul, formed by the impersonated spirit of his native nature.

Thus, in the conclusion of the outlined reflection, it can be stated that, although the nation does not identify itself with the homeland, nor does the child identify itself with the cradle in which it grows and exhausts its parents to their own joy, they are bound together by undeniable, profoundly deep and creative relations. The nation finds the material basis of existence in its homeland, from which it derives considerable resources of possessions, which provides it with certain building materials for the development of the national culture, leaving a particular, unique stigma. In short, the nation lives within its homeland, while the homeland provides a valuable contribution to the culturally creative process of national, social existence.

Findings regarding the essential structure of a nation, extended by the expression of close ties between the nation and homeland, create logical premises facilitating the formulation of a definitive answer to the following questions: (1) what is the reason for the nation's transformation into a moral good; (2) what is its place in the structure of the moral order.

4. THE NATION AS A MORAL GOOD

The former question can only be answered briefly. A nation is not a beyond-personal, autonomous hypostasis or even a chimaera. A nation consists of a community of human persons, whose subjectivity and moral dignity become the principles which determine the meaning and moral destiny of any community. They are intended to create conditions necessary for the complete development of a human person. Thus, a national community emerges as one whose right to exist, as well as the sense of this existence, are expressed in the formation of an appropriate spiritual image of its integrated individuals. Therefore, precisely this internal relationship, which directs the national community towards the good of the human person, renders the nation not only a fascinating social entity but also adopts the form of social moral good. The analogy which exists between the human person and the nation will be used in order to illustrate and, simultaneously, rationally support this claim. Man as a person comprises a moral good, however, not in the sense of a model or ideal of moral conduct, such as justice. I turn, man as a person is a moral good because he is a rational subject of action who, due to his nature's relation with his moral self-improvement, is thus subject to the moral necessity of following moral patterns, that is, moral values such as justice, truthfulness or honesty. Similarly, a nation does not comprise a moral good in the sense of an ideal model of conduct but rather represents it as a collective subject that enables the human person to realize the corresponding moral perfection. The nation is not assigned any other meaning of the concept of moral good. Nevertheless, since this is the moral status of a nation, there is room for

the "nation's ethics", and within its framework – a consideration of the content of this moral virtue referred to as "patriotism".

5. THE MORAL ETHOS AND LIMITATION OF PATRIOTISM

The notion of patriotism as a moral virtue transfers the paper's deliberations into the sphere of the man's consciously shaped, personal attitudes. However, the spiritual content of this attitude is determined by man's approach to the nation. Thus, at the end of this arduous reflection, we have come to the belief that nation comprises a moral good – in general, and, above all, for the members of this national community, which subsequently leads to the conclusion that this good should become the object of the members' acceptance, spiritual integration and readiness to do anything that this good preserves in good condition – which develops and multiplies it. Such a spiritual attitude in the language of ethics is referred to as the "love of homeland" or nation, while in an appropriately high level – patriotism.

However, the simplicity of this phrase presupposes a certain condition, namely – a suitable degree of national awareness among individual members of the national community. Meanwhile, it is known from experience that the realization of the spiritual bond with the nation and its cultural identity in individual members, or even the entire sections of a nation may not occur. Therefore, an important moral postulate of patriotism and its practical realization consists of activities which can be generally described as "national education", most frequently understood as the broad social programs of spreading national awareness. They hold lesser importance for nations which live in the conditions of their stable political organization. However, it is different with regard to nations condemned to exist within the borders of a foreign statehood, particularly when it is unfavourable, hostile, or even strives for their extermination It suffices to recall E. Hartmann's *rücklichtslos germanisieren* slogan of the *Kulturkampf* in the Prussian partition[18].

18 M. Morawski, *Podstawy etyki i prawa*, Kraków 1930[4], 274.

Patriotism, in all its moral sublimity, has its boundaries. No nation comprises a "lonely island" on Earth. It always remains in constant, direct or indirect relations with other nations. Depending on the political or ethnic circumstances, these relations may assume the form of a neighbourly coexistence of equal nations or a symbiosis of the national minority with the host nation. However, in both cases, and all the more so, in conflicting arrangements of opposing nations, patriotism retains its authentic moral form, on condition that the love for one's nation is combined with an appropriate attitude towards other nations. This indicates that authentic patriotism never accepts the attitude commonly referred to as "nationalistic chauvinism", i.e., certain national megalomania which distorts the cult of one's nation by saturating it with elements of contempt – in the most favourable scenario, by ignoring the other nation. If the basic demand of patriotism comprises the care for, as well as an active engagement in defending the interests of one's nation, then it is also a necessary requirement to respect the similar interests of foreign nation's members. Only with such an approach, in specific situations, it is possible to investigate what does justice demand, as well as what conditions does it impose.

For the time being, a general definition of the moral value of patriotism will suffice. However, the said definition will be completed in the context of a subsequent issue, in which the phenomenon of threats to the national culture will be considered

6. PATRIOTISM AND THREATS TO THE NATIONAL CULTURE

Since, as has been presented in the course of considerations to date, the social core of a nation's identity and the source of its vitality consist in the national culture, then the greatest threat to this identity would be the one aimed at the nation's culture. The awareness of such a threat has accompanied the Polish social thought since the first decades of the nation's partitioning history. K. Libelt, inspired by the "cosmopolitan wise men", who regarded "the national relations and interests" as "limitation of progress, detrimental to

humanity"[19], immediately translated his ethos of patriotism into the language of the most important duties of his contemporary Pole towards their homeland. They will be shortly presented in the following section. Libelt emphasized the importance of the homeland's cult, urged the realization of true democracy by allowing the widest sections of society to participate in the material and spiritual goods of the national culture, encouraged the love of the native language and was concerned about its purity, warned against the blind imitation of foreign patterns, and ordered the strengthening and deepening of the bond between the nation and religion, in which he saw a particularly valuable good of the national community.

Nearly 150 years later, a similar initiative was undertaken by cardinal S. Wyszyński. The man saw the threat to the national culture in the organized efforts to secularize and demoralize the broad masses of society in order to undermine the nation's religious life, as well as to sever its bond with the Church, the consequence of which comprised of the nation's disconnection from the traditions and country's history, and ultimately, the weakening of Christian and Polish memory, as well as the straining of the national life's biological basis by mass slaughtering the unborn[20]. The authors contemporary to the Primate of the Millennium indicated the ambivalent character of the so-called "mass culture" which, in addition to certain positive qualities, causes more harm to the national culture by spreading cultural infantilism in its somewhat vulgar form and various ways, with the general support of the social media[21]. Such an understanding of the situation resulted in the origin of the pastoral campaigns, extended by Wyszyński, which aimed at deepening the religious and moral life of the society, and, at that period, simultaneously comprised the attainable actions which strengthened the foundations of the national culture.

19 K. Libelt, *Samowładztwo rozumu i objawy filozofii słowiańskiej*, op. cit., 6.

20 C. Bartnik, *Chrześcijańska nauka o narodzie według prymasa Stefana Wyszyńskiego*, op. cit., 7.

21 J. S. Pasierb, *Kościół i aktualne przemiany kultury polskiej*, in: *Człowiek we wspólnocie Kościoła*, ed. L. Bartel, Warszawa 1979, 336.

The structural and political transformations initiated shortly after the death of cardinal Wyszyński, the more recent inclusion of Poland in the supranational structures of the European Union, and, above all, the rapidly developing process of "globalization" contribute to the commonness of the question regarding the type of future these changes herald for the national culture. Do these changes, or more importantly, does the globalization process open the national culture to the prospects of better conditions for shaping the identities of nations involved, or does it raise fears that it would place the nation in front of new, even more dangerous threats? In short, will the "new times" constitute a chance for the national culture to grow, or will they foreshadow a confining?

The prerequisite for a correct answer to these questions consists in a proper understanding of the situation which is merely emerging, and above all, in establishing what the Marxists in their time described as the "main link" in the list of specific factors which fall within the scope of the intended action. From this point of view, presented in the paper's introduction, A. Olechowski's perception of this matter appears as blatantly one-dimensional. Admittedly, a substantial amount of criticisms of the contemporary Polish reality, as well as certain reform proposals regarding detailed improvements in social life deserve recognition. After all, these positive inspirations have been incorporated into the economic framework of the "free market" category, subject to the law of productive efficiency and maximum profit. As a result, the social effects of globalization (most importantly – the issue of unemployment) disappeared from his sight, all the more so, that he displayed no understanding of the pathologies caused by this process in the cultural and spiritual spheres of the nation's life.

The authors of the report on globalization, commissioned by the German Episcopate[22], adopted a more factual stance on this issue. As an initial point, they assumed the distinction of four fundamental levels: economic, political, spiritual and cultural, as well as ecological,

22 *Die vielen Gesichter der Glogalisierung – Perspektiven einer menschengerechten Weltordnung*, Bonn 1999.

which are methodologically relevant in the process of globalization. However, with the general approval of globalization as a tendency to integrate Europe, they admit that globalization, considered from the perspective of its animating ideology, does not appear to be a neutral worldview formation. On the contrary, the issues discussed in the following part of the paper are noticeably oriented in this respect. For this reason, in the "Third World" and Muslim countries, globalization is perceived as a form of Western European, secularized imperialism. The wakening opposition against globalism is indicated in conflicts which have already risen on this ground[23].

However, a critical remark must be made about all of these, in fact, correct constatations: they stop halfway, without reaching the roots of evil. To adequately illustrate globalization with regard to the national culture, it is necessary to reach for its ideological sources. They are hidden in theories proclaimed by the trend's representatives (it suffices to recall the name of L. Mises and M. Rothbart from the circle of the so-called libertarianism[24]) to become convinced that globalization is not merely an economic process. Globalization possesses a noticeable philosophical and anthropological foundation, which constitutes a basis for social science, whose fundamental principles were formulated in the spirit of extreme materialistic and naturalistic liberalism. The ideology elevates to the pedestal of significant values a secular model of life, imbued with various forms of postulating atheism and moral permissivism, occasionally a perverse distortion of a healthy moral sense (for instance, homosexual "marriages"), covered by the figurative fig leaf of the archaic notion of human freedom. A liberal vision of a secular, one-dimensional and spiritually flattened society constitutes the integration and a certain culmination of the built worldview's elements.

In turn, one may ask whether this is a purely theoretical construction, similarly to Plato's *Republic*, or an outlook inspiration for

23 Ibid, 34.

24 L. V. Mises, *Liberalism in the classical Tradition*, transl. R. Raico, The Foundation for Economic Education, Irvington 1985, 10. Cf. R. Legutko, *Spory o kapitalizm*, Kraków 1994, 168-174, 202-203.

a programme of actual activities, both remotely directed or undertaken by individuals or social organizations animated by this spirit. In this respect, the experience should be given the deciding voice. Guided by this directive, based on the observations of the currently occurring life changes within the European societies, including the Polish one, it is evident how effective the progress of globalization is with regard to the realization of the vision of a secular society, which is economically dominated by supranational monopolies, whose worldview and morals are moulded in the fashion of a pseudo-progressive model of a man and which, in the name of unordered freedom, advocates the desire for the interim use and possession. At this stage, this is executed through legislative acts (for instance, the legalization of homosexual couples, euthanasia, "therapeutic cloning"), or, if allowed by the political arrangements, the administrative orders, while on a wider scale – in the form of masked indoctrination conducted primarily by means of the widespread media.

Regardless of the practicality of the globalizing ideologization methods, it is clear that the impact of all these measures of advocating the globalizing cultural models must ultimately result in the strain on the authentic state and social vitality of the historically shaped national cultures. Therefore, the modern form of globalization, perceived through the prism of its animating ideology, does not constitute an opportunity but rather a serious threat to the national cultures, by incorporating the embryos of cultural atrophy, as well as the effacement of the national identity. Thus, for a nation conscious of its identity, the globalization comprises a dramatic challenge to undertake action in order to preserve or multiply its cultural heritage in confrontation with a globalist ideology. In the current socio-political arrangements, the historical role of the nation consists in the creation of its proper, spiritual and cultural conditions for the authentic development of the human person.

Such a postulate reduces these deliberations to the well-known area – it is simply necessary to refer to the initiated by Libelt, and continued by cardinal S. Wyszyński slogan regarding the defense of the national identity of the culture against the threats of liberal secularism, permeating the globalization fundaments of the worldview, which, as the presented

analysis reveals – is still valid. The mobilizing factors are provided by the aforementioned protagonists of the national identity, represented by K. Libelt and S. Wyszyński, not only as encouragement that this should be done but also as an example of how it should be executed. After all, many of the Libelt's indications remain valid even now. Nevertheless, the deontological essence of contemporary patriotism must consist in the application of its general values and imperatives to the situation and needs of our times. It is primarily a matter of sensitizing the national conscience to the dilemmas and difficulties emerging in the course of national life, as well as the necessity to undertake an appropriate, ethical understanding of the imposed attitude's national good.

7. CONCLUSIONS

However, these patriotic tasks, which the modern generation directly encounters, must correspond with the awareness of the centuries-long, currently particularly vital process of cultural convergence between nations and the occurring between them phenomena of ethnic osmosis. Globalization constitutes only one, additionally ideologically warped manifestation. Therefore, the paper's considerations focusing on the ethical aspects of the nations' identities, in the current civilizational age, require a logical consequence in the form of supplementation through the reflection on two great themes. One of the said themes would expand the concept of the national integration based on the cultural identity (the idea of such a transnational "ethnarchy" was already outlined in the 19th century by the Italian Jesuit L. d'Azeglio Taparelli[25]), while the other would strive to develop the notion of patriotism, by incorporating into its content broader ethical norms, presenting the moral values of mutual respect and cooperation of the integrated nations within the community. The significance of the patriotic ethos' implications requires that they be at least signaled, while the diversity of their content obligates to regard them as the subject of a separate study.

25 R. Jacqzin, *Taparelli*, Paris 1943, 238-241; A. Verdross, *Le probleme de l'organisation internationele*, in: *Miscellanea Taparelli*, Paris 1964, 529-534.

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