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ON THE EDGE OF PROMISE AND MISUSE: CONTEMPORARY DIALOGUE BETWEEN SCIENCE AND RELIGION

1. INTRODUCTION

The history[1] of relations between science and religion exhibits dramatic chain of misunderstanding, both in the times of anathemas and in the times of euphoric statements, in which the information disclosed by science was instrumentally treated in favor of religious believe. The symptoms of similar misunderstanding and misuse of arguments perhaps dressed in a more sophisticated garment, can be still traced in contemporary science-religion dispute. Armed with methodological analyses of recent decades we are much more alert to false tunes, but, on the other hand, the growing and accelerating avalanche of scientific achievements provokes to quick and unbiased judgments on both sides: on the side of the opponents and of the defenders of religion.

In the present paper, the scope of my interests will be limited to the „cognitive aspect" of the science-religion relations. Consequently my aim here is not to analyse the interaction of science and religion through, for instance, moral issues created by modern genetic engineering. With the help of a few examples, placed within the proposed systematizing scheme, I will point out at some delicate problems in which theological statements concerning contemporary scientific achievements is involved.

2. THE SPACE FOR THE DIALOGUE

Before I go into details I would like to scetch a more general framework for the

[1]I mainly relate here to the history of Europe.

science-religion dialogue.

In the confrontation, which we call a dialogue between science and religion, science, with its specific methodology, is in fact unable to be involved „personally"; it has to nominate its representative — meta-science. Distinction of this kind works well at least within a simplified „first-order approximation" scenery of science-religion relations. This scenery assumes the following image of scientific activity, in which the empirical method plays the crucial role.

Scientific method explains phenomena of the physical world on the basis of experiment and observation together with their mathematical analysis. Needless to say, the empirical method is a fruitful method. This is true for the entire history of modern physics from Newton's mechanics, which should be regarded as its first implementation, to the very recent developments of contemporary physics. Nevertheless, the very principle of the empirical method sets quite evident limits onto the area of applicability of this congitive instrument. Spheres of human experience and expressiveness which cannot be fitted into the frame of the mathematical language, subject to the experimental verification, find themselves beyond the reach of this method. Unodoubtedly, the borders have been pushed slightly forward over the years. The method extends its efficacy to the area previously untouched by it. For example, biology, in its branch called molecular biology, has evolved, from a pre-scientific stage, into science in the above sense. However, attempts of the empirical method to conquer new fields of applicability still provide no justification for any renewal of physicalism or scientism.

Methodological analyses have revealed rules empirical method obeys, and they have also better visualised a conventional character of its fundamental claim that the physical world has to be explained by the physical world and by nothing else but the physical world itself. This convention implies that in the language of scientific reasoning absolutely no room is left for such notions as God or moral values. This price has to be paid when one agrees to investigate the world with the help of the empirical method as it is understood here. Basing on this method the scientist is concerned only in what empirical predictability and verifiability allows for. All the rest is silence.

Although the empirical method has been practiced for a long time, a clearer awareness of the following two metodological aspects is much more recent: *(i)* that science can speak only about „scientific problems" and *(ii)* that such attitude is a methodological convention adopted by the society of scientists. An approach of this kind seems to have freed the conscience of theologians from the imperative of intervening into scientific activity. The new atmosphere within the Catholic Church made itself apparent, for example, in

declarations of the Second Vatican Council on the authonomy of the scientific practice.

A „treaty" of mutual non-intervention may be formulated in the following way: Scientific activity ahould enjoy authonomy, theology will not interfere into it. On the other hand, science keeps silence on issues specific for theology, in fact they are even out of reach of the scientific method.

After all, the science-religion dialogue does take place. It need not violate the above restrictions, provided it is carried within a proper space. Scientific investigations bring outcomes which, if viewed from outside of the empirical practice, are well suited as subjects of philosophical and theological analyses. This outer perspective (space) I call meta-science. In the next section I would like to focus on some aspects of such analyses by squeezing the broad spectrum of diversity of attempts into a simple methodological scheme.

3. CLASSIFICATION OF APPROACHES

Classification presented in this section is by all means biased by the assumption, based on my personal conviction, that science has a message to offer for theology. Consequently a question arises: how to recognise this mesage without abusing arguments.

In general, the attempts to relate messages emerging through science and religion ramify into two categories: one I shall call the theological attitude (T) and the other the apologetic of preambles of faith (A).

Approach (T) is placed in a „religious environment". A certain believe is pressuposed. Both a religious belief and a scientific knowledge constitute a background for the discourse, whose aim is a new understanding of theology — theology coherent with the image of reality formed by science, or at least noncontradictory to it. *(Fides quaerens intellectum* — faith in search for reason).

The other attitude (A) does not assume any definite religious faith. Seemingly, it has not much in common with religious thought. It rather penetrates the scientific issues from a general philosophical perspective. However, the vision of reality emerging out of these analyses calls, for a „justification of the Universe"[1], pointing out beyond science. To this way of approaching faith I have given the name of the apology of preambles, since it is not much apologetic in terms of particular religious statements but it rather provides a background — necessary condition for any religious belief. *(Intellectus quaerens Jidem* — reason in search for faith).

[1] The term „justification of the Universe" I owe to Michael Heller: M. Heller, *Usprawiedliwienie Wszechświata,* Kraków: ZNAK 1984.

In principle, interaction of science with religion may be accomplished through a reflection both on *detailed scientific achievements* (D) and on *fundamental properties* (F) of empirical method, scientific practice and scientific results. By combining approaches (perspectives) (T) and (A) with methods (D) and (F) we obtain all possible ways of dealing with the science — religion problem. A few examples, which follow, illustrate the introduced systematizing scheme.

Attempts of the type (T-D), to build a meaningful relation between detailed scientific results and theology seem to be a task of a very restrictive validity. An affinity of a scientific statement with a religious one may appear to be only superficial. An example of a great complexity of problems arising from such a confrontation is the case of the theory of the Big Bang as confronted with the theology of creation. E.g. Willem B. Drees explores this confrontation[1], taking into account both the understanding of the Bible and various methodological aspects of the Big Bang theory. (Critical assessement of the cosmological argumentation is presented by Michael Heller in the paper that follows.)

I think that the sufficient reason to doubt the validity of any direct confrontation of (T-D) kind is a transitory character of details of our knowledge (in spite of a progress in science as a whole). Still fresh in memory are some theological interpretations mixed with scientific theories (whatever „scientific" ment at an epoch), bringing nothing else but a discredit to theology, when their force of argument faded with the declining of the theory; to recall a classical example: an adherence of theology to Ptolemaic model of the Universe as coherent with the supremacy of man over the creatures.

In a more acceptable version of (T-D), the details of scientific knowledge are taken as a source of analogies and metaphors, to set forth a new enriching representation for certain theological issues. One might raise an objection based again on transitory character of scientific details, however metaphors can be regarded as tools (tools for better understanding), and tools do not have the status of invariability. It is quite usual that aged tools are replaced by some new and more adequate ones. Still a theologian has to be constantly aware of the dynamic character of the image used.

Robert J. Russell[2] finds in „philosophical implications of [...] quantum physics [...] a heuristic source of theological metaphor": „Quantum correlations — writes he — provide us with rich metaphors for mysterious and transcendent unity for believers in Christ and even for our search for wider ecumenical unity in the global religious perspective". Or: „Theological complementarity as an

[1] W. B. Drees, *Beyond the Big Bang: Quantum Cosmologies and God,* Thesis, Rijksuniversiteit Groningen 1989.

[2] R. J. Russell, *Quantum Physics in Philosophical and Theological Perspective,* [in:] *Physics, Philosophy, and Theology: a Common Quest for Understanding (PPT),* Vatican City State: Vatican Observatory 1988, pp. 343—374.

epistemological parallel to complementarity in physics, may illuminate many of apparently contradictory issues in theology". Basing on a specific character of quantum chance, Russell develops a metaphor of God Creator working through chance: „Hence from a theological perspective we can understand God not only creating the universe through the mixture of chance and law[1] but creating order as embodied chaos".

I will not comment on the content of the above metaphors except for a general remark, that by introducing metaphors one takes a risk that with some too far reaching extrapolations there might be but one step from the sublime to the ridiculous.

With the last example we have, in fact, crossed a boarder of (T-D) and found ourselves on the grounds of (T-F). Arthur Peacocke[2] also deals with chance, but this time in thermodynamics and biology: „[...] *the mutual interplay of chance and law (necessity or determinism) is creative,* for it is the combination of the two which allows new forms to emerge and evolve". His metaphor of creation of the world by God as a work of a composer, who elaborates simple tune „and expands it into a fugue by a variety of devices" certainly belongs to (T-F). Theological visions of Teilhard de Chardin, though perhaps more guided by huge imagination than merely scientific facts, also seem to belong to (T-F), being deeply rooted in a fundamental claim of evolutionary character of reality, a claim generaly acknowledged in contemporary science.

The exploration in (T-F) of more basic properties science discovers in the world („mutual interplay of chance and law", „evolutionary character of reality") may prolong the lifetime of the theological arguments, as compared to those of (T-D) type. Nevertheless the great scientific revolutions can change the concepts which were previously considered to be fundamental.

Combination (A-D) does not work well. Apologetic build on transitory elements would be of dubious validity.

Looking for an example of attitude (A-F) we return to quantum physics, but as viewed from a different perspective than that adopted by Rusell. In quotation taken from *The quantum world* by John Polkinghorn[3], the philosophical and theological importance of quite general features of quantum physics is stressed out in a way which seems to be best classified as an (A-F) approach:

> However strange and unexpected the discoveries of quantum physics have proved to be, it is still the case that the 'unreasonable effectiveness of mathematics' (in Eugene Wigner's phrase) continues to operate as a guide to the pattern of the physical universe. [...] it is this, very intelligibility of the quantum world which is the guarantee of its idiosyncratic reality. Perhaps that is the most important conclusion, for it allies physics with theology in a common endeavor to understand the many-leveled structure of the universe that we inhabit.

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[1] This very metaphore explores Peacocke (see below).

[2] A. Peacocke, *Intimations of Reality,* Notre Dame: University of Notre Dame Press 1984.

[3] J. Polkinghorn, *The Quantum World,* [in:] *PPT,* pp. 333—342.

The more fundamental regularities of scientific achievements and procedures are considered, the more reliable and time-resistant appear observations leading to religious connotations. In my opinion, much more of „transcendental information" is contained in a sense of mystery, which practicing science evokes, in an awareness of limitations inherent in our images of the world, in a reflection on the world's intelligibility and rationality, than in what a particular model, or even a theory can offer. The very fact that science can work presupposes a certain regular structure of the reality and gives rise to a question „why it is so?". Ernan Me Mullin[8] refers to presuppositions of science:

> The appeal is not to a 'gap' in scientific explanation but to a different order of explanation that leaves scientific explanation intact, that explores the conditions of possibility for there being any kind of scientific explanation.

One may object that apology of preambles of faith, leading merely to very basic religious notions is not of a great help for those who look for a rational justification of a particular religion. Certainly this is true, but I would not depreciate the role of these foundations (or preambles) of religion. A demonstration, to man of our civilization, that religious thinking has rational grounds and can be cultivated together with any scientific practice, is perhaps the most essential apology of religion and a precondition of any religious outlook. I also consider this apology the most legitimate and desirable outcome of the science-religion dialogue.

[8] E. Me Mullin, *Natural Science and Belief in a Creator,* [in:] *PPT,* pp. 49—79.