

The scientific revolution of the beginning of the 20th century, in the advent of quantum physics and scientific cosmology and the following new synthesis of evolutionary sciences and discovery of complexity science, has led to a rediscovery of the complexity of nature and the role of causality. In other terms, nature cannot be thoroughly described and explained merely by strict set of laws, but rather, to some degree, must be understood through the employment of plural methods, models, laws, formal tools, and vast array of experimental techniques. Hence, the concept of “causality” has ceased to be seen as an idle concept, but is rather the *signum* of complexity and a beacon for fruitful investigation on natural phenomena. In such a theoretical context it seems that theology can find new opportunities to launch a timely discussion on the foundations of science and the current understanding of nature. This project aims to explore how this could be done, focusing on the systematic relations between new mechanical philosophy (NMP) and theology of science.

Roughly put, the NMP is a revision of older mechanical philosophies, and extends main theoretical problems from the last fifty years of post-logical empiricist philosophy of science. It is particularly focused on the issue of the causal explanation of natural phenomena and offers an overview of methodology, arguing for the possibility of a scientifically informed metaphysics. By the theology of science, in accordance with Michał Heller’s general idea of such a theological project, we intend to propose the sort of theological subfield which would be looking at science through the eyes of a well-informed theologian. Being well-informed means that the theologian should have deep acquaintance with the current philosophy of science, and he/she should focus particularly on issues of understanding creation/nature and values within the realm of scientific endeavour.

We propose to look at the philosophical account of nature and of science provided by NMP from a broader perspective, i.e., a theological one. This choice is not casual, but is well justified from both historical and theoretical points of view: from the historical, since theological reflection learned a lot from the confrontation with Old Mechanism; and from the theoretical, since the theology of science may undertake some issues (e.g., causation, explanation, pluralism) raised within NMP. The main aim of this project consists in the critical study of the development of the debate about causality and scientific explanation within contemporary philosophy of science, the case of NMP, and finally to point out the series of implications for further theological reflection within the theology of science, in particular the case of causal talk and theological method.

The justification for undertaking the research project is twofold. Firstly, even if there is very extensive research done on the NMP in the field of philosophy of science and on the Old Mechanism in the history of science and theology, our main question, about the possible implications of NMP for the theology of science, has not been discussed before. Although NMP has been arisen from the field of the life sciences, nevertheless, debate on mechanisms and mechanistic explanation has been spread over all sciences (i.e., physics, life sciences, social sciences). For this reason, we consider NMP as highly representative for the contemporary debate on causality and scientific explanation. Secondly, our classification of the main causal approaches within the NMP helps to highlight the intertwined metaphysical and epistemological aspects of causal explanations. We interpret these different metaphysical and epistemological aspects of NMP in the light of its realist commitments, arguing that explanatory reductionism, as employed by mechanists, does not lead necessarily to positions completely hostile for theology-science dialogue. Finally, we furnish several proposals for further development of theology of science, by focusing on the issue of causal history, causation, intelligibility of the world, limits of human cognitive capacities, eminently plural character of theological reasoning.

The project will use typical methods of theology, analytic philosophy and philosophy of science: conceptual analysis, study of the history of the dialogue between theology and natural sciences (especially case of Old Mechanism), study of metaphysical and epistemological implications of NMP.

The importance of the project results for the development of the theology of science would be that theology of science: 1) is able to address the theoretical, metaphysical and epistemological implications of NMP, 2) is not forced to criticize contemporary approaches to causation since they do not use, e.g., classical Aristotelian conception of four causes, but may note numerous theoretical affinities between theological and contemporary causal explanations; and between theological and contemporary focus on norms of explanation, if they are referred to metaphysical grounding of aesthetic and epistemic values, 3) can undertake in up-to-date terms the issue of intelligibility, cognitive limits, and rationality of science, 4) can elicit elaboration of hypothetical theology and raise important epistemological questions regarding formulation of theological knowledge, 5) will be able to abandon outdated way of conceiving all empirical causal explanations as being reductionist and blocking the path towards metaphysical accounts of nature and science.

The importance of this project consists, on the one hand, in investigating the current philosophical issues within the theology of science, and on the other hand, in showing how to carry out investigations within this theological subfield.