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FROM QUADRIVIUM TO NATURAL SCIENCES: NEW IMPULSES IN THE TRADITIONAL FRAMEWORK

This issue of Theory of Science, co-edited by Marek Otisk and David Černín, contains the papers that have been presented at the conference *From Quadrivium to Natural Sciences: New Impulses in the Traditional Framework* at the University of Ostrava in 2018.[1] The purpose of the conference was to track how the various inquiries into the nature developed from the original quadrivial disciplines to the natural philosophy and natural sciences. The scope of the conference was intentionally set to be as inclusive as possible; therefore the conference offered a platform for many excellent international researchers dealing with various geographic traditions: the Latin West, Orthodox East, and the Islamic scholars who left footprints in the history of science from the early Middle Ages to the Renaissance and the early Modern Age. The unifying theme for this vast field is a very idea of the nature as a subject of intellectual examination.

There are multiple methods that can be employed when approaching a history of any subject, including the history of science. It is possible to study the history of science *diachronically* and to propose inspiring and courageous narratives that aspire to open our eyes towards those aspects of science we have previously ignored. However, before such revolutionary goals can be pursued, it is necessary to conduct diligent research of individual cases that must be properly examined before they are used as building blocks of any grand theory. All papers in this issue are great examples of this essential step. Authors approach their subjects *synchronically*, they carefully choose and reconstruct the context, and they provide a detailed and informative image of the history of science.

While overlooking the final set of papers, ranging from the 10th to 17th century, we may feel the urge to ask the question whether we should understand the history of science as a *continuous* or a *discontinuous* process. Was there a radical change in the way we ask questions about the nature?

[1] This issue of Theory of Science, as well as the conference "From Quadrivium to Natural Sciences: New Impulses in the Traditional Framework," is supported by the scientific project IRP201820 "The Construction of the Other in Medieval Europe" (University of Ostrava).

Are the quadrivial disciplines of the Middle Ages substantially different from the natural philosophy and natural sciences in the Modern Age? Has any scientific tool or unprecedented discovery altered the course of science in such way that it has shattered all previous continuity? Alas, the papers cannot provide any definitive answer to this pressing conundrum. Big historical questions like this one may always be underdetermined by the available evidence and it is up to the historians to choose which story they want to tell. However, the papers in this issue reconstruct the exciting moments in the history of science which are mostly overlooked by the grand narratives. As implied by the name of the conference: the traditional framework needs new impulses. Let us now forget all those scientific revolutions and paradigm shifts and let us just explore the individual mysteries that have fascinated people for hundreds of years.

Crina Galiță and her paper "The Status of the Quadrivium in the Corpus on Logic of the Brethren of Purity (ʾIḫwānaṣ-Ṣafāʾ)" explore the place of empirical disciplines in the context of encyclopaedia Rasāʾil and its relation to the overarching concept of knowledge and formal logic.

The following paper by Marek Otisk, "Gerbert of Aurillac (Pope Sylvester II) as a Clockmaker," aims to reconstruct a coherent picture of Pope Sylvester II and his knowledge of timekeeping and time measurement, thus providing an excellent analysis of mechanical tools during the early Middle-Ages and underlying scientific knowledge.

In "Botany as a New Field of Knowledge in the Thirteenth Century: On the Genesis of the Specialized Sciences," co-researchers Mustafa Yavuz and Pilar Herraiz Oliva tackle a complex and entangled topic of ancient texts on botany that have influenced scholars at the University of Paris in the 13th century. They focus on a pseudo-Aristotelian text *De plantis*¸ that have been translated multiple times between Arabic, Greek, and Latin.

A procedural shift to the Renaissance is realised in the paper "Marsilio Ficino's Allegorical Use of Optical Phenomena" by Martin Žemla, who inquiries into the metaphorical use of light in texts of Ficino and he also tracks Ficino's possible influence on Copernicus.

Medical sciences are represented by the paper "Renaissance Anatomy: The Path from Ars to Scientia with a Focus on Anatomical Works of Johannes Jessenius," written by Tomáš Nejeschleba. In accordance with the central topic of this issue, the author analyses subtle changes in the role of anatomy: from an art to the way of obtaining knowledge.

Jan Čížek contributes by a study of a unique modern approach to natural sciences – Mosaic physics. In "The 'Physica Mosaica' of Johann Heinrich

Alsted (1588–1638)," he analyses the goals of the project proposed by Alsted and he uncovers its shortcomings.

The last paper "Cosmological, Astronomical and Astrological Elements in Sermons of Seventeenth-Century Ruthenian Authors" by Olga Čadajeva highlights a reception of natural sciences among the orthodox clergy and its reflection in sermons for various audiences. The continual incursion of Western natural philosophy into Orthodox sermons points out to the ideological and ethical challenges of the period.

All papers in this issue cover a vast range of disciplines that were born from quadrivium and changed significantly throughout the examined period. Each author documents the investment of our ancestors in the inquiries into the nature and in the discourse that exhibits certain continuity despite apparent differences and alterations. We hope that these synchronic studies will help to elucidate the fascinating topic that the history of science truly is and may one they become pieces in a larger diachronic picture of the human past and its intellectual heritage.

David Černín and Marek Otisk