



European Traditions of Philosophy of Science: Unexpected Varieties

Workshop organized by

Dr. Andrei Mărășoiu, University of Bucharest &
Käte Hamburger Kolleg: Cultures of Research
RWTH University, Aachen

5th - 6th May 2023
University of Bucharest
Splaiul Independenței nr. 204
București, 060024 Romania

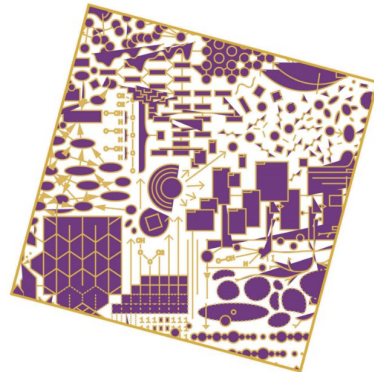
Friday 5th May

Friday 5th May, 9:00
Conference opening

Andrei Mărășoiu - University of Bucharest

Friday 5th May, 9:30
Varieties of Science: About cultural-institutional preconditions of
producing scholarly knowledge

**Stefan Bösch - Käte Hamburger Kolleg Aachen: Cultures
of Research (c:o/re), RWTH Aachen University**



Abstract

Currently, a variety of intertwined trends, such as globalization, postcolonialism, the emergence of the Anthropocene, or the emergence of a multipolar world order, give new urgency to the question of the role and form of science in a changing world order. The rationale driving this paper is to analyze, in terms of the theory of reflexive modernization, global world ordering as a process of cosmopolitisation (Beck 2011). Otherness and its recognition are located at the forefront of this approach.

In the field of capitalist development, the theory of a Varieties of Capitalism already 20 years ago revealed that despite homogenization, globalization also enables various paths for development. The thesis of this paper is that analogous developments can also be observed in the field of science (Bösch et al. 2020). Varieties of science can be studied as a process of epistemic cosmopolitisation that makes transparent the respective cultural-institutional preconditions of producing scholarly knowledge.

The presentation not only presents a first sketch of a concept of Varieties of science, but also substantiates them in the form of an outline of an empirical research program.

References

Beck, U. (2011): We do not live in an age of cosmopolitanism but in an age of cosmopolitisation: the 'global other' is in our midst. In: Irish Journal of Sociology 19(1), pp. 16–34.
Bösch, S.; Hahn, J.; Krings, B.-J.; Scherz, C.; Sumpf, P. (2020): 'Globale Technikfolgenabschätzung'? Konvergenzen und

Divergenzen kosmopolitischer Wissenschaftsdynamiken. In: Soziale Welt, Sonderband 24, pp. 332-365.

Friday 5th May, 11:00

An unexpected model of knowledge production based on the ideas of knowledge conversion and scientific ethos. A Japanese approach

Constantin Stoenescu - University of Bucharest & Romanian Academy

Friday 5th May, 12:30

The Berlin School & the Vienna circle

Gabriele Gramelsberger- Käte Hamburger Kolleg Aachen: Cultures of Research (c:o/re), RWTH Aachen University

Friday 5th May, 14:00

Lunch Break

Friday 5th May, 15:30

Keynote

A logical framework for interventionist counterfactuals

Gabriel Sandu - University of Helsinki

Friday 5th May, 17:00

Keynote

The dynamic logic of causality: from counterfactual dependence to causal intervention

Alexandru Baltag - University of Amsterdam

Friday 5th May, 18:30

Recognizing artificial mathematical intelligence

Markus Pantsar - University of Helsinki & RWTH Aachen

Abstract

The study of intelligence in animals has two potential pitfalls. First, the setting for experiments may not be suitable for animals to exhibit their characteristic intelligence. Second, the observed behaviour may be misrepresented in terms of intelligence. Often this involves ascribing unjustifiably high level of intelligence to animals. In this talk, my focus is on artificial intelligence (AI) and how its study could avoid related pitfalls. In particular, I focus on artificial mathematical intelligence. Related to the first pitfall, I ask whether mathematical AI applications are systematically deprived of the chance to exhibit their characteristic intelligence (if any). Related to the second pitfall, I ask whether there is a danger in misrepresenting the processing of current mathematical AI applications in terms of intelligence. I argue that unlike in animal studies, the second pitfall is significantly more prominent than the first one. However, I argue that the first pitfall may become more serious as mathematical AI applications reach a sufficiently high level. As a proposed solution to both present and future problems, I propose a community-based approach to recognising artificial mathematical intelligence.

Friday 5th May, 20:15

Conference Dinner

Saturday, May 6

Saturday 6th May, 9:00

Measurement problems need a consciousness: The case of Fritz London and the relation of Phenomenology to Philosophy of Science

Dawid Kasprowicz - RWTH Aachen

Abstract

The physicist Fritz London is mostly known for his seminal contributions to modern chemistry, especially to the integration of quantum mechanics to chemistry and his research on superfluidity which has become a pioneering work for the construction of superconductors. Less known is the phenomenological background of London's work. In the last ten years, however, scholars from philosophy of science have opened a debate on the interpretation of London's earlier works, going back to his dissertation from 1922 that was published in Edmund Husserl's Yearbook of phenomenological research. The approach London offers and the questions he raises in these works seem to go beyond the classical observer problem in quantum mechanics and hint to something that I would like to call the unity of scientific experience. Here, the scientist is still well aware of her/his influence in the measurement of quantum phenomena, but the main focus is not only on the measured object anymore. It takes into account the manifold steps how to maintain a reference to the conscious object one has in mind when she/he talks about phenomena like the emissions of photons. I will argue in my talk that these modes of maintaining the research phenomena as a

noema go way beyond critiques of introspection or psychologism. They open up the dynamics of what Husserl called „co-variations“ of perceived phenomena and the variations of conscious research objects. „Co-variations“, in this sense, do not depend on subject-object-dichotomies but on the dynamics of research practices and the need to unify a scientific experience. I will first show some passages from Fritz London's work to support this argument and then distinguish it from other interpretations of London's work. Finally, I will argue why London represents a striking example how phenomenological questions enter into old debates of philosophy of science.

Saturday 6th May, 10:30

Possible Worlds Semantics as a Scientific Research Program & and Modal Frame Incompleteness

Mircea Dumitru - Romanian Academy & University of Bucharest

Saturday 6th May, 12:00

Logic Meets Wigner's Friend(s): the epistemology of quantum observers

Sonja Smets - University of Amsterdam

Saturday 6th May, 13:00

Lunch

Saturday 6th May, 15:00

The Fable of Science: Francis Bacon's Solomon's House and its European reception

Dana Jalobeanu - University of Bucharest & HIAS-Hamburg

Saturday 6th May, 16:30

Magic and Machines in the European Renaissance

Arianna Borelli - RWTH Aachen & Commission on History and Philosophy of Computing

Abstract

Most, if not all, justifications of science emphasize a narrative of a so-called scientific revolution which marks the divide between non-scientific and scientific practices. According to mainstream narratives, the revolution took place in European early modernity, at the time of Galileo and Newton, but variants place it already in the Middle Ages or even antiquity, or within non-Western cultural contexts, such as the Arabic-Islamic cultures.

However, historians of science have for decades been illustrating that no transformations in Early Modern Europe (or elsewhere) can be conceptualized as a scientific revolution. This is not simply because changes took place over a long period of time, but rather because the constellations that led to the emergence of modern science in the 19th Century are too complex to be conceived as a linear move from non-scientific to scientific practices of knowledge production. Looking at early modern actors and activities as more or less scientific distorts the historical constellations and so precludes the understanding not only of the past, but also of the present. It is only by realizing the variety and

complexity of past practices of knowledge production and justification that we can appreciate the contemporary varieties of scientific practices, which are often hidden or negated in reference to a constructed linear past.

My intention is not to discuss the issue sketched above in its generality, but only to provide an example of the variety of early modern practices of production and justification of knowledge, showing how, although they may at times appear scientific or non-scientific, in fact they escape such classification. The case study concerns the work of Cornelis Drebbel (1572-1633), who in his time was known across Europe both for his treatise *On the Nature of the Elements* (1604) and for his perpetual motion machine. I focus on how Drebbel, like other historical actors working within the cultural context usually referred to as "natural magic," not only took a special interest in constructing technical artefacts, but also used the structure and functioning of these more or less complex machines as templates for conceptualizing the dynamics of natural phenomena. In this context, elements from various natural-philosophical frameworks, such as alchemy, atomism or Aristotelian physics, can be freely combined, as means to express the knowledge produced by machine-related activities. Then, I suggest that this epistemic mode is also present among contemporary scientific practices.

Saturday 6th May, 18:00

On the Philosophies of Soviet Artificial Intelligence

Benjamin Peters - RWTH Aachen

Abstract

This paper will examine the material media philosophies of Soviet artificial intelligence research and its precursors, especially the sometimes anthropomorphic, sometimes invisible assumptions at work in the making of smart technologies in the wake of wartime experience of damaged bodies.