B1. Methodology and Scientific Reasoning

B3. Historical Aspects in the Philosophy of Science

Integrity and Diversity of Traditions and Trends in Today's Philosophy of Science

(symposium proposal)

Andrei Rodin

rodin@ens.fr

University Nancy-2/Paris-Diderot/ REHSEIS-SPHERE

Speakers: Hourya Bénis-Sinaceur, Elena Mamchur, Jonathan Regier, Andrei Rodin, Jean-Jacques Szczeciniarz

1. Short Abstract:

Today's philosophy of science stems from very different intellectual traditions and presents a variety of very different trends. What we see as a problem that needs a remedy is not the diversity of the contemporary philosophy of science itself but the poor communication between philosophers of science representing different intellectual traditions and working in different parts of the globe, often in different languages.

We would like to use the 14th CLMPS as an opportunity to engage different schools of philosophy of science into an active intellectual interaction. We hope that such a meeting will open new possibilities for the collaboration of scholars having different cultural and philosophical backgrounds.

2. General Description:

Today's philosophy of science stems from a number of different intellectual traditions and presents a variety of very different trends. Philosophers of science widely disagree not only about specific claims concerning the subject-matter of their study but also about the aim, scope, epistemic status and even the very subject-matter of their discipline. Since questioning of such general issues belongs to philosophy we do not assume that philosophy of science may or should reach a final consensus about such matters. What can possibly bind the philosophy of science into a single whole is, in our view, not a consensus about its first principles but a rational dialogue. What we see as a problem that needs an urgent remedy is not the diversity of the contemporary philosophy of science

itself but the poor communication between philosophers of science representing different intellectual traditions and working in different parts of the globe, often in different languages.

We would like to use the 14th CLMPS as an opportunity to engage different schools in philosophy of science into an active intellectual interaction. Since this meeting takes place in France we find it appropriate to make a particular accent on French school of philosophy of science and evaluate its legacy within a broader international context. We hope that our Symposium will serve a better integrity of existing schools and trends in today's philosophy of science and open new possibilities for the collaboration of people having different cultural and philosophical backgrounds. Although any reflection about intellectual traditions necessarily involves a historical aspect our ultimate aim is to develop forms and modalities for a future world-wide dialogue.

The proposed Symposium comprises five papers of rather diverse character. Jean-Jacques Szczeciniarz describes the place of French school of philosophy of science within today's international context, traces its historical origins and suggests some guidelines for its further development. Hourya Sinaveur Benis provides a more specific account of works of Jean Cavaillès and his influence onto the Anglo-Saxon philosophy of mathematics. Jonathan Regier discusses a hot dialectical controversy between the historical and the systematic approaches in the philosophy of science as one of main dividing lines between the Analytic and the Continental (both broadly conceived) traditions in this field. Andrei Rodin considers another controversy, which equally has to do with the Analytic/Continental division, namely the controversy between translation and formalization. Elena Mamchur warns in her paper against a straightforward multi-cultural and sociological approach in the philosophy of science, which makes this discipline irrelevant to issues of scientific knowledge and scientific truth. In spite of their different character all the five papers are given from a perspective that takes into account the existing diversity of philosophical traditions and aim at a better integrity of these traditions.

3. Titles and Abstracts of Talks:

3.1.

Speaker: Hourya Bénis-Sinaceur (IHPST)

Title: Jean Cavaillès and the Philosophy of Concept

Abstract:

Jean Cavaillès is one of masters of French historical epistemology. He worked at the point of intersection of very diverse philosophical trends, some of which he discusses, some contests and some accepts, as well as of various scientific trends dominated by the contemporary structural

mathematics. In this context he revived the Spinozean idea of the « philosophy of concept ». Later this project was extended in France over the analysis of scientific discourse (Foucault) and general philosophy (Deleuze) and then defended under the name of philosophy of body and flesh (followers of Merleau-Ponty). Today this project transcends the national boarders and inspires Anglo-Saxon historians of mathematics, who study mathematical practices by taking into account the history of concepts and, more ambitiously, offer some mathematical phenomenology.
It is less known that Cavaillès also developed a philosophy of betting and action. Here is a quote that may hopefully provoke a further discussion: « to know is to insert oneself into the nature living at the core of becoming, to invent successful movements, so that this invention becomes an element of a dialogue like a gesture of the body climbing a rock ».

3.2.

Speaker: Elena Mamchur (Russian Academy of Sciences)

Title: Should the Role of Epistemology in the Philosophy of Science be Reconsidered?

Abstract:

Contemporary philosophy of science is a constellation of disciplines without any clear-cut outlined boarders or any common method in science investigation. Traditionally philosophy of science has been considered as epistemology. Now this point of view has been undermined: according to a wide spread opinion, in the second half of the XX-th century philosophy of science “uncoupled” from epistemological approach to scientific knowledge.

This is ordinary practice for the so called “cultural” perspective of the phenomenon of science study. The representatives of cultural approach regard science as an aspect of human culture. Cultural perspective of science investigation includes such fields of disciplines as “science studies” and some other historical and social inquiries of science. In “science studies” there exist a lot of approaches to scientific knowledge which differ from each other by the aspects of consideration. Among them is a study of scientific knowledge as a kind of linguistic activity; “anthropology of science”; inquiry of scientific cognition as a communicative activity; investigations of distributions of material and financial resources within the scientific community; the study of different locations of scientific activity and so on. The common feature of all these aspects is that they deny the legacy of epistemological inquiry and completely ignore the issue of truth.

It is legitimate to study science without taking into account the issues of truth or falsity of scientific results. What is illegitimate is to declare that epistemology must be excluded from science study on the only ground that the representatives of cultural approach are not interested in it. Nobody denies

usefulness of cultural perspective in science study. Everybody would agree that this aspect of inquiry is necessary for adequate reconstruction of scientific enterprise as a whole. Not long ago R. Rorty called epistemologists to a peaceful coexistence[1]. However, epistemologists do not need such calls being not against the cultural perspective. They are not even against the study of scientific knowledge regardless of the issues of truth. They only insist that the results of studying science from the cultural perspective must be supplemented with the results of epistemological inquiry. Without epistemological consideration any analysis of science would be unable to catch the very nature of scientific knowledge.

3.3.

Speaker: Jonathan Regier (Paris-Diderot)

Title: Representing a Relationship: The Historical and the Philosophical in the History and Philosophy of Science

Abstract:

How the history of science and the philosophy of science are meant to relate? I will organize my reflections around two important subjects, that of realism and that of usefulness:

1) In order to validate the partnership between philosophy of science and history of science, are we required to historicize epistemology? Given that the current mode in history of science is very much agnostic concerning realism, to what extent could it ever work with a realist philosophy? We might look at recent efforts to use both the French tradition and the Khunian tradition to justify a breakdown of distinctions between the historical and the philosophical.

2) Should our field concern itself with *being useful* to contemporary science? Given that contemporary science tends to operate in a mode of realism, whether naïve realism, theory realism, object realism, or otherwise, should the history and philosophy of science be used to expose presuppositions that are built into current scientific systems and practices? Would the goals of such an enterprise be chiefly political and ethical, as they are, so often, in critiques of technological and biological sciences? Even more to the point, could the philosophy of science contribute to the betterment of scientific reasoning *by means of* the historicizing of science?

3.4.

Speaker: Andrei Rodin (Nancy 2)

Title: Translation versus Formalization

[1] Rorty R. Philosophy in America Today // Consequences of Pragmatism. Minneapolis University of Minnesota Press. 1982.

Abstract:

It is often repeated that Euclid's "Elements" for centuries were used as the Bible of mathematics. However when one studies texts, which circulated under the name of Euclid's "Elements" in different epochs, in different geographical areas and in different cultural and linguistic environments, one finds a surprisingly diverse literature. Until very recently translators and editors of Euclid's classics also worked as revisors who tried to produce an improved version of the "Elements" rather than merely reproduce older contents with new means. In a long run such a non-trivial character of translations of Euclid's "Elements" made possible a radical rethinking of foundations of mathematics, which dramatically changed its shape throughout its long history (and also throughout its wide geography), and at the same time allowed for an impressive historical and geographical continuity of mathematical thinking.

Using the example of Euclid's "Elements" I shall argue that scientific contents, generally, endure through a non-trivial translation rather than mere repetition of linguistic, symbolic and conceptual patterns. I shall show how this translational mechanism allows for a cumulative growth of scientific knowledge , on the one hand, and a renewable symbolic representation of this knowledge, on the other hand. I shall argue that the diversity of symbolic representations is necessary for knowledge aiming at the universal validity and the universal significance. In this context I shall critically reconsider the role of formalization in mathematical and scientific practices. I shall conclude with some reflections concerning the place of translation and formalization in the living traditions of doing philosophy of science.

3.5.

Speaker: Jean-Jacques Szczeciniarz (Paris-Diderot)

Title: French School and the Diversity of Traditions of Philosophy of Science

Abstract:

In my talk I describe the Classical French Rationalist tradition going back to the 17th century, which underpins works of Brunschvicg, Couturat and Renouvier, and show its historical links to the Anglo-Saxon tradition including the philosophy of Bertrand Russell. Taking into consideration the heritage of German Idealism (and more specifically Husserl) I shall also discuss works by Lautman and Cavaillès and stress their links with the Analytic tradition. Among the followers of these French authors I shall mention Desanti, Granger et Vuillemin. Applying the method developed in the French tradition and building upon works of Cavaillès, Granger and Caveing I shall discuss the notions of idealization and thematization. A matter of my special interest is to understand why the

French tradition payed a relatively little attention to foundational issues.
Finally I shall discuss Zalamea's claim according to which "the most of structures and generic schemes studied by Lautman in his thesis can be explicated and extended through the Category theory; in particular the study of the duality between local and global properties extends over the duality of functorial localizations and global integrations. In this context I shall discuss some of Grothendieck's theorems, which make explicit his architectonic categorical approach. _

4. Information about the Speakers:

Hourya Bénis-Sinaceur, Emiritus Researcher of CNRS, member of IHPST, vice-director of the International Institute of Philosophy, member of the Administrative Committee of the International College of Philosophy. Contact: sinaceur@canoe.ens.fr

Elena Mamchur, professor, Director of the laboratory of Phylosophy of Physics of the Institute of Phylosophy of Russian Academy of Sciences. Contact: Elena.mamchur@rambler.ru

Jonathan Regier, doctorant and monitor at the department of History and Philosophy of Science of the University Paris-Diderot; affiliated member of the REHSEIS-SPHERE. Contact: jonathan.n.regier@gmail.com

Andrei Rodin, a contract-based researcher in the Universities Nancy-2 and Paris-Diderot, affiliated member of the REHSEIS-SPHERE. Contact: rodin@ens.fr

Jean-Jacques Szczeciniarz, professor, Director of the department of History and Philosophy of Science of the University Paris-Diderot. Contact: jean-jacques.szczeciniarz@paris7.jussieu.fr