

Seminar SAW

Exploring 19th and 20th centuries historiographies of mathematics in the ancient world 2011-2016

Programme 2014- 2015

organized by Karine Chemla, Matthieu Husson, Agathe Keller, Christine Proust
and the SAW group

Université Paris Diderot, Condorcet Building - room 483A 9:30 am to 5:30 pm
<http://sawerc.hypotheses.org/seminars/internal-seminar-historiography-2015>

Presentation

The organization of this seminar marks the beginning of the third and last phase of the SAW project. Our aim is to explore various facets of 19th and 20th century historical research about ancient mathematical sciences, especially those attested to by sources written in Chinese, the languages of the Indian subcontinent and cuneiform script.

After a brief examination of 17th and 18th century writings on mathematical sciences of the ancient world, we will analyze how worldwide in the first half of the 19th century roughly speaking, different milieus (orientalists, Confucian scholars, Indian pandits, mathematicians, philologists, theologians, etc) began systematically exploring mathematical sources of the past. We will analyze the issues and sources they privileged, their methods of inquiry and interpretation, the values they prized, the networks and the institutions to which they belonged and the contexts in which they carried out their historical work. After having focused on historical writing before the professionalisation of the history of mathematics, we will turn to the time period of professionalisation.

Against this background, we will then concentrate on two specific topics important for the SAW project: the historiography of computation and the

historiographic treatment of measurement units in the history of ancient mathematics. Finally, we will examine more global issues: how the different historiographies of ancient mathematics approached questions of comparison and circulation, and how they dealt with issues related to culture, civilization, and similar topics. The past and present-day uses of history of mathematics in specific communities will be equally at the center of our interest in this final part of the seminar.

The seminar is intended as a meeting of historians of mathematics with historians of philology, of orientalism, assyriologists, indologists, sinologists, and other specialists.

Programme

March 16th, 2015

Jed Buchwald (California Institute of Technology)

Hieroglyphs, astronomy and religion in the in Napoleonic and restoration France, or the Dendera Affair

Abstract - In 1802 the artist Vivant Denon published a drawing of an Egyptian ceiling from the temple of Dendera, far up the Nile. Done during the Napoleonic expedition, Denon's drawing of what appeared to be a zodiac caused an immediate uproar in Paris, as arguments flew back and forth over its age. Some asserted its immense antiquity, others, particularly after the Concordat with the Catholic Church, bitterly insisted on Biblical authority. Press censorship under Napoleon's chief of police, Fouché, soon dampened discussion. Then, in 1822, the Dendera zodiac, sawn and exploded out of its original location by a French archaeological vandal, appeared in Restoration Paris, reigniting antagonisms during a period of intense religious, ideological and political controversy. The "Dendera Affair" opens a window onto many aspects of Empire and Restoration scientific and intellectual culture, most notably the issue of who could speak with authority about antiquity: scientists like Fourier and Biot, who differed angrily with one another, but for whom the Dendera zodiac was nevertheless an image of the Egyptian sky untouched by human imagination, or philologists and linguists, such as the young Champollion, who saw the zodiac as a literary creation embedded deeply within Egyptian culture.

June 1st , 2015

CHEN Zhihui (SPHERE, CNRS & Université Paris Diderot, SAW Project)

Comparisons between Tianyuan, Siyuan Procedures and Algebra Drawn by Wylie and Li Shanlan

Abstract - Alexander Wylie(1815~1887) was an British protestant who arrived in China in 1847. By collaborating with Chinese mathematician Li Shanlan (1810~1882) and translating Augustus De Morgan's (1806~1871) Element of Algebra, Wylie first introduced the modern symbolic algebra from the West. Apart from this important work, he wrote the "Jottings on the Science of the Chinese. Arithmetic" and some other works, in which he drawn the comparison between the history of algebra in Western and Chinese mathematics in the Song and the Yuan Dynasties (960-1368). This article compares "Jottings", English and Chinese Prefaces to the translation of the Element of Algebra and other documents in English, meanwhile, examines Chinese mathematical books collected by Wylie. Influenced by the Society for the Diffusion of Useful Knowledge and its publications, Wylie obtained a perspective of knowledge about Western algebra and its history from the articles written by De Morgan in Penny Cyclopaedia. For the mathematics in the Song and the Yuan Dynasties, Wylie mainly employed Yi Zhihan and Luo Shilin's Interpretation on the Rule of Four Sources 四元釋例, therefore he understood the characteristics in the "method for extracting roots using addition and multiplication", "procedure of Celestial Origin" (天元術 Tianyuan shu) and "procedure of Four Origins" (四元術 Siyuan shu). This understanding was the key with which Wylie's comparison could be drawn much deeper. Wylie's view on the history of mathematics was also influenced by De Morgan and other British historians: the historiographical goal was focusing on the practical use in the understanding and studies of mathematic knowledge and the transmission of Christianity at present, which embodies in some of Wylie's mathematical translation works after the "Jottings".

June 8th, 2015

(Room 324, Olympe de Gouges - 2pm-5pm)

Rivka Feldhay (Cohn Institute of Tel Aviv University)

Jesuit Philosophers-Mathematicians and the Aristotelian Tradition

Abstract - My talk in the forum of the SAW project concerned the positions taken by Jesuit educators in the 17th century towards the traditions of knowledge they were embedded in: in particular that of Aristotle and Aristotelianism. Modern historians tend to interpret commitment to the tradition in terms of a demand for obedience to

authorities that oppresses innovation. My reading of the mechanisms by which the discourse on Aristotle was transformed in the 17th century has led me to question such modern interpretations and to emphasize the "dialectics of tradition" and its transformative effects.

The dynamics of a living tradition I tried to reconstruct was presented in my paper through a specific example: the case of Paolo Casati's *Mechanicorum Libri Octo* (1684), a monumental "Summa" of pre-classical mechanical knowledge. I then tried to reconceptualize the attitude of Jesuits to their tradition, following Hanna Arendt's meditation on prejudices against the tradition and the loss of access to our ancestors' experiences. Our history, Arendt claimed, has been shaped by a series of disruptions such as the scientific revolution; the French revolution; the industrial revolution; but mainly by the catastrophic wars of the twentieth century. These have totally destroyed our ability to understand tradition as "the guiding thread through the past and the chain to which each new generation knowingly or unknowingly was bounded in its understanding of the world and its own experience". (Arendt, *Between Past and Future*, 22) Indeed, according to Arendt, interpreting new experiences in the light of previous traditions requires figures of authority to play the role of adults in keeping up a public space for education. But this does not necessarily mean an obstacle to innovation. Innovation often grows from discovering a previously unrecognized connection of the present to the past, or simply from representing the past in the present. These acts of re-connecting and representing then construe a network of human relationship that protects a common world. At the same time, new connections, and failure to transmit old ones exercise a transformative force on the tradition itself. It is thus not true to conceive of tradition simply in terms of oppression and negation.

June 29th, 2015

Justin Smith (SPHERE, Université Paris Diderot)

What Do Historians of Philosophy Study? Some Methodological Problems in Defining a Corpus without Boundaries

Abstract - One of history's most remarkable cross-cultural encounters between representatives of different philosophical traditions, or at least one of the most remarkable such documented encounters, took place in India well before the British colonial period, at the height of the Mughal Empire, between representatives of the Sanskrit Indian, Persian Islamicate, and European traditions. In the mid-1660s the French natural philosopher, physician and disciple of the materialist Pierre Gassendi, François Bernier, was introduced by his Muslim host in India, Danismand Khan, to a pandit, who remains unnamed in Bernier's report but has been speculatively identified as Kavīndrācārya Sarasvatī, a Maharashtrian scholar and manuscript collector, and an important intermediary

between Persian Islamicate learning and the Sanskrit tradition. Bernier is there to serve as a court physician to the Moghul rulers, but he has also passed his time, so he claims, translating Descartes and Gassendi into Persian, and loses no opportunity to communicate with his hosts on philosophical matters. He is well integrated into the Persian Islamicate world, even to the extent of being able to undertake significant translation projects in Persian, the language of the ruling elite throughout northern India under the Moghuls. The difference between him and his Muslim and Hindu hosts, I wish to show, may be traced back ultimately to differences in the mechanisms of knowledge transmission, on the one hand, and in the conception of the purposes of natural-scientific inquiry on the other. The orality and anthropocentrism that shaped the earliest period of Indian intellectual life, and that have played an important role in all Eurasian intellectual traditions, would serve as the distal causes of the appearance of utter difference between the thought worlds of the learned men of 17th-century India, and the French materialist philosopher and experimentalist who sought them out with a mixture of curiosity and contempt.
