

Seminar SAW

Seminar Exploring 19th and 20th centuries historiographies of mathematics in the ancient world 2015-2016

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>

Programme - January 22nd, 2016

Historiography of ancient mathematics and astral sciences in China before its professionalisation

Presentation – The official histories composed in China since at least the 1st century BCE, and in particular the technical treatises they contained, were a site in which a historical approach to earlier mathematics and astral sciences developed. This earlier type of historical work will be compared with renewed forms that interest in the history of ancient mathematics and astral sciences took in East Asia from the end of the 18th century onwards, and before the professionalisation of the history of science. Finally, we will be interested in the relationship between these new developments in East Asia, and the emergence of a historical interest among Europeans towards the ancient mathematics and astral sciences in East Asia. The networks along which information on these topics circulated in Europe will be examined, as well as how information was transformed while it circulated. This session will specifically explore the various forms the interest in ancient mathematics and astral sciences took in these different contexts. We will examine the reshaping of the past in the form of the production of editions of ancient texts so far hardly available, or even lost. We will also be interested in how these ancient documents were interpreted, compared with others, and which import they had for those who worked on them. We will further examine the milieus in which such forms of historical endeavor were cultivated and what was at stake for them in these historical approaches. We will finally be interested in the various types of approaches to ancient mathematics and astral sciences that took shape accordingly.

Daniel Morgan, *A Sphere unto Itself: the Death and Medieval Framing of the History of Chinese Cosmology*

CHEN Zhihui, *Wylie's translation of the terminologies for the traditional Chinese mathematics*

Martina Schneider & Karine Chemla, *The reception of Alexander Wylie's Jottings on the science of the Chinese. Arithmetic in Europe in the 19th and early 20th centuries*

MIZUNO Hiromi, *When Cultural History Meets Mathematics: wasan and Yoshio Mikami*

Daniel Morgan (ERC Project SAW & SPHERE, CNRS-Université Paris Diderot)

A Sphere unto Itself: the Death and Medieval Framing of the History of Chinese Cosmology

Abstract – This paper attempts to explain the apparent lack of dialogue between Indian and Chinese cosmologies in Six Dynasties and Tang China. Modern historians like Qian Baocong, Nōda Chūryō, Henri Maspero, Wolfram Eberhard, and Joseph Needham coming all the way to our day tell the same essential story about the history of cosmology in China: that the history of cosmology is the history of instrumentation (two-dimensional diagrams and gnomon planes vs. three-dimensional sphere instruments); that there were three true 'schools', the contest between which was settled by the second century, almost as soon as it had begun; that subsequent centuries were defined by crackpot ideas that threatened the rightful winner; and that Monk Yixing dealt the topic a final *coup de grâce* in the eighth century. I argue that this narrative derives from the primary sources at our disposal, i.e. Shen Yue and Li Chunfeng's 'heavenly patterns' monographs of the fifth and seventh century, respectively, and Gautama Siddhārtha's *Kaiyuan zhanjing* of 729. Revealing something of the complexities underlying this neat *telos*, I attempt to reveal how and why particular medieval authors were complicit in this narrative. The reasons are very specific to each man's circumstances: Gautama, a Chinese-born Indian working at the Tang Clerk's Office, whose task was to synthesise Chinese tradition; Li, who appropriated his predecessor's work to turn it against him and argue for a different version of history; and Shen, who was following the party-line of one side in a debate that was far from over... all of which leads back to a single misinformed petition in 178 from someone making excuses to be released from his banishment in the northern wastes. One of the curious results of this narrative as it came to be over the second to eighth century is that Indian-origin cosmology that we know to have been present at that time was denied any rightful place in the history of technical knowledge. In the modern era, lastly, I will discuss how this medieval, exclusionist narrative sees continued use in comparative history of science for the ends of drawing an absolute dichotomy between Chinese and Western thought.

Résumé – Cette communication tente d'expliquer le manque apparent de dialogue entre cosmologies indiennes et chinoises dans la Chine des Six Dynasties et des Tang. Les historiens modernes tels que Qian Baocong, Nōda Chūryō, Henri Maspero, Wolfram Eberhard et Joseph Needham racontent en effet jusqu'à nos jours la même version de l'histoire de la cosmologie en Chine, à savoir que l'histoire de la cosmologie est d'abord l'histoire de l'instrumentation (le diagramme et le plan de gnomon à deux dimensions contre l'instrument sphérique à trois); qu'il y avait trois véritables « écoles », entre lesquelles la compétition fut achevée à peine commencée au deuxième siècle de notre ère; que les siècles suivants sont marqués par des idées stupides qui menacent le gagnant légitime; et que le moine Yixing donna un coup de grâce final au VIII^e siècle. J'affirme que ce récit dérive des sources à notre disposition, c'est-à-dire les monographies sur les « Signes Célestes » rédigées, respectivement, par Shen Yue (Ve siècle) et Li Chunfeng (VII^e

siècle), ainsi que la collection *Kaiyuan zhanjing* de 729 de Gautama Siddhārtha. Après avoir mis en évidence certains complexités de cette téléologie, j'essaie de mettre au jour comment et pourquoi certains écrivains médiévaux se sont rendus complices de ce récit. Les raisons sont toutes spécifiques aux circonstances de chacun : Gautama, un Indien né en Chine, qui travaillait au Bureau du Scribe des Tang, tâchait d'offrir une synthèse de la tradition chinoise; Li qui s'est approprié l'œuvre de son prédécesseur pour la retourner contre lui, en soutenant une vision différente de l'histoire; et Shen qui n'adhérait qu'à la ligne d'un parti dans un débat qui était loin d'être terminé... le tout dérivant d'une seule pétition mal informée de 178, rédigée par quelqu'un qui cherchait des excuses pour être relâché de son bannissement dans le nord. Un des résultats curieux de ce récit, pendant sa formation entre le IIe et le VIIe siècles, est l'exclusion de toute cosmologie d'origine indienne de l'histoire des connaissances techniques. Pour ce qui est de l'ère moderne, enfin, je discute la manière dont ce récit se poursuit dans l'histoire comparative des sciences dans le but de polariser la pensée chinoise et occidentale.

CHEN Zhihui (ERC Project SAW)

Wylie's translation of the terminologies for the traditional Chinese mathematics

Abstract – In his *Jottings on the Science of the Chinese. Arithmetic*, Alexander Wylie outlined a general history of Chinese mathematics in English language. It was inevitable to translate some specialized terminologies when he explained some specific examples. The translation of these terminologies significantly embodies the comparison between the mathematics in China and the one in the West. This presentation focuses on Wylie's translation, trying to find out how the English versions of the terminologies were shaped. It could be seen that the translation of the terminologies was shaped by the co-influence of two factors: the works by the mathematicians such as De Morgan in Britain, and the milieus in China, including the mathematical books and the Chinese scholars' interpretation upon which Wylie relied.

Martina Schneider (ERC Project SAW & Mainz Universität) & **Karine Chemla** (ERC Project SAW & SPHERE, CNRS-Université Paris Diderot)

The reception of Alexander Wylie's Jottings on the science of the Chinese. Arithmetic in Europe in the 19th and early 20th centuries

Abstract – Protestant missionary Alexander Wylie's *Jottings on the science of the Chinese. Arithmetic*, published in 1852, was a major contribution to a history of mathematics and astral sciences in ancient China, which made brand new knowledge on the topic available for the first time in the West. The text was mainly known in Europe through a German translation that Biernatzki published (1856) in the *Journal für die reine und angewandte Mathematik*, and two French adaptations of the latter, published respectively in 1862 and 1869, by Olry Terquem (in two parts, in *Bulletin de bibliographie, d'histoire et de biographie mathématiques*, and *Nouvelles annales de mathématiques*) and Joseph Bertrand (in *Journal des Savants*). As Ulrich Libbrecht already emphasized in his 1973 book, these translations were adaptations, and contained mistakes, which affected the reception of Wylie's work in Europe, and consequently the image of mathematics in ancient China. This talk aims at studying the transformations brought about by the translations, and interpreting how they changed Wylie's original intention. It also aims to examine the reception of these various publications.

MIZUNO Hiromi (University of Minnesota, USA)

When Cultural History Meets Mathematics: wasan and Yoshio Mikami

Abstract – My paper discusses the Japanese mathematician and historian of *wasan* (Japanese mathematics), Yoshio Mikami (1875-1950). Internationally known by the 1920s as the first person to introduce *wasan* to the English-speaking world and the first Japanese member of the International Society for history of Science, Mikami was nonetheless marginalized in the Japanese academia. What is fascinating about Mikami is his innovative adoption of the newly emerging genre of the cultural history to the historical study of *wasan*. While innovative and even subversive of the established academia, Mikami's approach essentialized the Japanese culture at the sacrifice of class and gender differences and political contexts and eventually facilitated the fascist discourse. My paper explores historiographical issues Mikami's approach raises for us, the issues associated with seeing a non-Western mathematics as part of the "indigenous culture."