

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

March 18<sup>th</sup>, 2016

### Historiography of calculation and computation in the ancient world

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*Number, Units, and Conceptual Categories. Conceptions and misconceptions about numbers in China and the West*

**Abstract** – In the 19th and 20th centuries, Western scholars often developed misleading preconceptions about Chinese scientific thought and methods. In particular, achievements in the field of mathematics were dismissed as primitive, and Chinese conceptualizations of numbers were labeled underdeveloped. As the present paper aims to show, these preconceptions failed to acknowledge the actual value and the originality of Chinese proto-scientific and scientific thinking. China has a rich intellectual history in the field of the exact sciences. There is abundant evidence of the existence of a concept of number and of a highly developed, complex computational system already in Shang Dynasty's (16th-11th century B.C.E.) oracle bone inscriptions. Chinese discourse with numbers and on numbers unravels its complexity through the ages in a canonical set of mathematical texts (the so-called *Suanshu shijing* or Ten Classics of Mathematics), but also without such canon, as a few recently acquired manuscript sources prove. Moreover, not only are numbers advanced intellectual instruments to seize upon reality, but the very concepts of 'number' and 'unit' in themselves are at the core of a subtle meta-reflection in Chinese thought. The present paper further analyzes these concepts and their role as knowledge categories in early Chinese philosophy, further problematizing their relationship with and their use in relatable mathematical sources. In this analysis, a selection of pertinent examples drawn from early Chinese philosophical texts will be taken into consideration, focusing especially on the works of Gongsun Long (4th-3rd century B.C.E.), a pseudo-historical thinker associate with the so-called "School of Names" (*mingjia*).