

Seminar SAW

Rethinking Practice and Culture in the History of Science

organized by Koen Vermeir and the SAW project's group

Université Paris Diderot, Condorcet Building - room 646A - 9:30 am to 5:30 pm

<http://sawerc.hypotheses.org/seminars/practices>

Programme May 4th, 2016 - Session 4

Readers and Speakers

Eric Vandendriessche, *Texts reading of E. Tyler, Primitive culture, Chapters I and VII*

Marc Vander Linden, *Archaeological culture, material culture or culture? Material and anthropological dimensions of a debated concept, and Texts reading*

Diana Solares Pineda, *Calculation and numerical writings : a space of conflict between agricultural workers. Le calcul et les nombres écrits : un espace de tension entre des travailleurs agricoles*

Agathe Keller et HIROSE Sho, *On schools, traditions or cultures in Sanskrit mathematical and astral sciences: some considerations.*

Eric Vandendriessche, *texts reading*

E. Tyler, 1871, *Primitive Culture: Researches Into the Development of Mythology, Philosophy, Religion, Languages, Art and Customs*, Fourth edition revised 1903, Volume 1, London, John Murray, Albemarle Street.

- ◆ Chapter I “the science of culture”
- ◆ Chapter VII “the art of counting”

Marc Vander Linden (Institute of archaeology, University College London)
Archaeological culture, material culture or culture? Material and anthropological dimensions of a debated concept

Abstract - Archaeologists stand alone in the field of humanities and social sciences in the sense that, at least in prehistory, material remains constitute their sole source of information regarding the human past. At the turn of the 19th and 20th century AD, pioneers of the discipline developed the concept of 'archaeological culture' to classify the growing amount of data available to them. Its definition remains Gordon Childe's iconic formulation of "certain types of remains - pots, implements, ornaments, burial sites, house forms, constantly recurring together". Following the wider intellectual spirit of the time, these typological constructs were interpreted as the material productions of past tribes of which birth, movement and fate could be traced back. From the 1960s onwards, archaeological cultures were criticised, especially in Anglo-American archaeology, because of the naivety of such culture-historical readings and because the defining categories of data rarely overlap as implied in the original definition. Subsequent theoretical schools shifted the focus towards paradigms influenced firstly by natural sciences, and later by philosophy and anthropology. This gradual move was accompanied by a denial of archaeological culture, and a growing emphasis upon material culture as a factor shaped by and shaping human agency. Yet, archaeological cultures still remain a frequent feature of the literature and are routinely accepted in numerous traditions of research across the globe. The success of this longevity partly rests in the existence of material patterns in the archeological record and the lack of convincing theoretical and methodological alternatives to explain this empirical reality.

Through a review of the history of archaeological cultures and their underlying assumptions, this presentation will review their past, present and future role in archaeological reasoning. Their wider relevance will be discussed, especially the intimate, but far from straightforward, relationship between archaeological culture, material culture and culture (as viewed in other social sciences).

Suggested reading

- ◆ Roberts B. & Vander Linden M. 2011. Introduction. In Roberts B. & Vander Linden M. (eds.) Investigating archaeological cultures. Material culture variability and transmission. New-York, Springer: 1-21.
- ◆ Vander Linden M. & Roberts B. 2011. A tale of two countries: contrasting culture-history in British and French archaeology. In Roberts B. & Vander Linden M. (eds.) Investigating archaeological cultures. Material culture variability and transmission. New-York, Springer: 23-40.

Diana Solares Pineda, (Universidad Autónoma de Querétaro, México)
Calculation and numerical writings : a space of conflict between agricultural workers.

Abstract - Calculating will present an analysis of current agricultural activities in which numerical writing and calculation are mobilized by people involved in the agricultural work in Mexico. This analysis comes from a larger study that aims to determine the mathematical knowledge of migrant agricultural families.

For identifying this knowledge, the agricultural activities are analyzed in terms of “praxeology” by considering:

- ◆ What is the specific task to be done and what is its purpose?
- ◆ Who is involved and what are the goals of the participants?
- ◆ How are tasks solved and what tools are used?
- ◆ What is the discourse elaborated for supporting the performance of tasks?

Consideration of these aspects show that the techniques used by the workers in the fields to write and calculate with numerical information depend on the purpose of the task and the workers’ function and hierarchy. This consideration is implicit in the discourses of the different workers who talk about the techniques; such discourses appear in moments of teaching and particularly when there are conflicts between workers. The capability of recognizing numbers and calculations written by someone else is fundamental, but this is not limited to the use of a writing code nor the correct performance of an algorithm; it is equally necessary to know why the document was written, who wrote it and why he/she wrote it.

In addition, I will briefly present a dialog between different theoretical perspectives that allow to construct the analysis tools used.

The purpose is to contribute to the research that aims to identify links (or breaks) between the mathematical knowledge that these immigrant children use in their work activities and the one they are taught at their schools.

Le calcul et les nombres écrits : un espace de tension entre des travailleurs agricoles

Résumé – Je présenterai l’analyse des activités agricoles d’aujourd’hui qui impliquent l’utilisation de l’écriture et du calcul numérique de différents acteurs du travail agricole au Mexique. Cette analyse provient d’une étude plus large cherchant à identifier les connaissances mathématiques des familles immigrantes de travailleurs agricoles. Pour identifier ces connaissances, les activités agricoles ont été analysées en termes de “praxéologie”, en considérant :

- En quoi consistent les tâches spécifiques et quels sont leurs objectifs ?
- Qui participent à ces tâches et quels sont leurs intérêts ?
- Comment ces tâches sont effectuées et avec quels outils ?
- Quels sont les discours concernant la manière de réaliser les tâches ?

La prise en compte de ces aspects montre que les techniques des travailleurs agricoles pour écrire des informations numériques ou pour faire du calcul numérique sont conditionnées par l'objectif de la tâche, par la fonction et la hiérarchie des travailleurs. Cela est implicite dans les discours des différents travailleurs qui s'expriment sur les techniques; ces discours apparaissent dans des moments d'enseignement et particulièrement quand il y a des conflits entre des travailleurs. Être capable de reconnaître les nombres et les calculs que l'autre a écrit devient fondamental, mais cela ne se limite pas à une codification de l'écriture ni à l'exécution correcte d'algorithmes ; il faut également savoir à quoi sert le document qui contient ces nombres, qui l'écrit et pour quoi faire.

De plus, je présenterai d'une manière succincte le dialogue entre les perspectives théoriques qui ont permis de construire les outils d'analyse utilisés.

L'objectif final est de contribuer à l'identification des relations -ou les distances- entre les connaissances mathématiques extrascolaires des enfants des familles immigrantes et les connaissances qui leur sont enseignées à l'école primaire.

Agathe Keller et HIROSE Sho, (SAW project & SPHERE , CNRS – Université Paris Diderot)

On schools, traditions or cultures in Sanskrit mathematical and astral sciences: some considerations.

Abstract – The mathematics and astral science found in Sanskrit texts have more often than not been considered as a homogenous, ahistorical whole, both from within this scholarly tradition as by those who have studied it. Little has then been reflected on what notions of « culture » could be applied within it. We suggest here to critically re-open the notion of « school », and « tradition » categories that exist within the Sanskrit scholarly sources themselves, to see if they help us describe different sets of practices and associated values, by a group of people. In the background we will wonder: when does a system with a set of practices and values become a culture? When are we describing variations within a same culture? Should we apply to actors categories that do not belong to them? To do so, we will take two case studies: one on the sharing and transformations of proofs between commentators [Bhāskara (fl. 629), Pṛthūdaka (fl. 850) and Amarāja (fl.12th century)], the other to critically re-open the idea of « Kerala school ».