

The transmission of Arabic astronomical tables in Sanskrit, Latin, and Chinese. An early step in the internationalization of science?: Introduction

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From 2008 to 2013, an international research project entitled “History of Numerical Tables” supported by the French *Agence Nationale de la Recherche* under the directorship of Dominique Tournès gathered specialists from a spectrum of scientific traditions. These scholars, ranging from experts in cultures of inquiry at the advent of literacy to the contemporary digital era focused on the study of numerical tables. A key question that arose from the many interactions of this group concerned the transmission and circulation of numerical tables. Preliminary attempts to understand this transmission resulted in the organization of a two-day workshop on the 24th and 25th of October 2012 in Paris, France. The theme was “The transmission of Arabic astronomical tables in Sanskrit, Latin, and Chinese: an early step in the internationalization of science?”. After highlighted and sharing themes in these areas related to the transmission of numerical tables, the participants wrote up their contributions for this special issue of SUHAYL.

The study of knowledge transmission and circulation is an essential part of the history of science. Secondary literature abounds on this and related topics¹. There are many pertinent aspects to highlight with respect to these processes. These include the issues surrounding copying and translation, adaptation to local circumstances or appropriation, the synthesis and development of the original,

¹ See for instance: A.I Sabra “The appropriation and subsequent naturalization of Greek science in Medieval Islam: a preliminary statement”; *History of Science*, 25, 1987; Ragep and Ragep, *Tradition, transmission, transformation*, Leiden Brill, 1996; Benno van Dalen “Between Orient and Occident”, special issue of the *Annals of science*, 2011.

the compatibility of the material from one domain to the other, the actors involved in the transmission, the creation of technical terminology, and the like. These issues have been considered throughout the following contributions where appropriate. One issue that is particularly relevant to the studies at hand is that of the transmission of numerical tables, and the specific issues that are raised with respect to transmission of this particular genre of text. Are their features of transmission of these texts that are specific to this particular type of text, for instance?

We have focused on the transmission of numerical tables from Arabic sources to the cultures of Inquiry of India, China, and the Latin-West. These latter cultures all had long-standing scientific traditions. How then did the infusion of new material alter the practice of science in these cultures? In particular, the Latin-West was particularly affected by the transmission of new material, inspiring a new enterprise of mathematical astronomy. What conditions contributed to this proliferation? Did this transmission of Arabic astronomical material across Eurasia result in a standardisation of astronomical science or rather did it sustain an ongoing diversification?

These issues are addressed either by specific case studies relevant for one or more of them, or by a general survey of the wide range of sources that were circulating in the various astronomical scenes. Glen van Brummelen's paper accounts for the diversity of the Arabic astronomical traditions themselves and the variety and scope of the numerical tables they produced. This prepares a foundation for two other survey papers by José Chabás and Yunli Shi respectively on the transmission of astronomical tables to Europe and China. The state of the art concerning the study of the second millennium astral sciences in the Indian subcontinent did not allow us to match these surveys with a corresponding one on the relation of Arabic and Sanskrit sources. Yet Clemency Montelle's case study of the first cyclic tables in Sanskrit and their inspiration from Arabic sources reveals the challenges and complexities of further inquiries in this domain. It also instantiates the robustness and flexibility of one type of tabular layout in the transmission process. Finally Li Liang's and Matthieu Husson's contributions constitute a two part case study on the transmission of one type of table layout (*ḥabṭaq* types of tables) and their involved circulation between Arabic, Latin, and Chinese sources between the 10th and the 18th centuries.

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