Indexing Cultures of Practice: Tracking Methods and Materials across Religious and Medical Corpora

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Histories of science and religion are increasingly looking to the movement of materials, rituals and knowledge practices in order to trace and understand the flow of knowledge or culture. The difficulty arises as they move across time, space, language and epistemic communities, and thus escape traditional orders of knowledge, and move beyond the catalogues which earlier generations of scholars created for them. Often grounded in the history of ideas, or in linguistic or nationalistic frameworks, these catalogues fail to capture the fluidity of human practices as they are translated, transported, transposed and transformed into new forms, adapting to, or actively changing the cultural and linguistic orders into which they move.

The historical boundaries of science, medicine and religion are one such site which this research project explores, demonstrating how the boundaries and blurrings of medicine and religion can be revealed through studying the circulation of medical practices in the religious canons of early medieval China.

The history of medicine in China is currently expanding its scope to include a broad variety of religious sects, methods and sources. This shift comes as new critical perspectives have brought attention to the ways in which 'medicine' itself has been differently constructed over time, allowing for the recognition that religious actors and institutions have played major roles in health care in China's past. As these critical lenses shift, so too does the need to organise, catalogue and interpret more, and different, historical data.

The traditional approach has been to produce new edited collections of 'medical' texts as print editions – as shown by major collections of Buddhist and Daoist "medical" texts which have been recently published, or are in the process of being produced by central religious institutions. However, these published collections, as fixed print media, depend entirely on the critical eye of the editors and how they have chosen to define and identify what counts as "medical."

The recent advent of high-quality, open-access, digital editions of the Daoist and Buddhist canons affords an new opportunity to allow scholars a much higher degree of control of what to include or exclude in their selection of sources. While at the Max Planck Institute for the History of Science (MPIWG), I recently completed the first phase of a digital platform, together with the Research Center for Digital Humanities at National Taiwan University (RCDH) and Dharma Drum Institute of Liberal Arts (DILA). This platform provides advanced analytical tools for tracking the distribution of these therapeutic practices, and markup of materials to do with drugs (*yaowu* 藥物) in the Six Dynasties (*liuchao* 六朝) and earlier sources from Daoist, Buddhist and medical text collections.

As an historian of medicine and religion, I have contributed critical methodological approaches for conceptualising this means of tracking cultures of practice, and combined these with the digital toolset developed by NTU. I have drawn heavily from recent developments in actor-network theory and praxeology, or the study of culture, knowledge and communities through analysis of their praxis. For the purposes of this pilot study, I have focussed on materia medica.

This focus has a number of advantages: drugs are fairly easily identified in textual sources; as material objects, they circulated across communities with less epistemological baggage than ritual practices; as ecological products, they were in part defined by their regional geography, including drugs imported via Buddhism from foreign lands; as economic commodities, they were of interest to many different parties, and later on, even impacted state economic policies.

Over the past two years I have been developing a toolset, working process, budget estimates and an initial corpus of marked texts for analysis, in collaboration with the Max Planck Institute for the History of Science, National Taiwan University, and Dharma Drum Institute of Liberal Arts. The first stage involves generating a new text database from *.txt (UTF-8) files. I then apply statistical analyses to show the distribution of drug terms, per chapter (*juan* 卷), using Docusky's Term Stats Analysis Tool. By attaching meta-data to these chapters, I can identify the sectarian affiliations, time period and region of production of the texts, to show how drug knowledge circulated throughout different healing communities in early imperial China.

This significantly changes the way we can approach the history of drugs, which

previously has focussed either on the materia medica (*bencao* 本草) tradition, or on individual, famous great texts. Now we can come to comprehensive statements about the drug knowledge of different Daoist and Buddhist traditions, and make statistical and visual comparisons with the received medical tradition. This allows us to compare entire drug repertoires across communities, changing the way we can talk about drug history. For example, whereas the history of drugs in China has historically argued that drugs from India and Central Asia entered the materia medica (*bencao* 本草) tradition in the Tang Dynasty, we can now clearly see the much earlier entry of knowledge about these drugs within the Buddhist canons.

Using network analysis tools, such as Palladio, I can make quick visualisations of the differences between different traditions, which can reveal their proximity or distance. This has proven extremely useful, for example, in the case of the transmission of Buddhist materia medica knowledge from India. Out of the Buddhist corpus, the texts with the five highest frequencies of drug terms come from the Monastic Codes (skt. *Vināya* Ch. *Lübu* 律部). Although the assumption would be that the codes record quite similar practices, preliminary visualisation reveals that the vocabulary sets are in fact extremely different, with very little overlap. This points to three distinct possibilities to explain the stark differences in knowledge transmission. 1) What we are seeing are distinct local Chinese translation practices for these plant and mineral names. 2) The different different communities which first compiled and wrote down these codes adapted local, regional medical traditions, and used local flora and practices unavailable elsewhere. 3) Some combination of 1 and 2.

The same network visualisation tool, when used to navigate texts in the Chinese Daoist corpus, can reveal the proximity of different drug traditions in individual texts, and entire sectarian genres. Through combining this with the semi-automated markup features of MARKUS, researchers can discover concentrations of drug knowledge that previously escaped notice.

Third, MARKUS has the ability to include GIS tags from online databases such as Harvard CHGIS, or Dharma Drum's Place Name Authority Database. Using Docusky, these tags can be displayed on a map. We have now marked up the entire geographic distribution for the *Bencao jing jizhu* 本草經集注, the foremost materia medica of the period. Using this regional data, we can now study recipe texts from other traditions, and get a rough idea of the distribution of plants and minerals used in these recipes. The examples I will show include striking evidence of plant names in the recently excavated Laoguan shan 老官山 tomb to

corroborate other paleographic, linguistic and mythographic evidence which indicate that the geographic origin of the recipes in the manuscript are not from southwestern Chengdu, where the text was found, but in the northeastern state of Qi 齊.

While the focus for this project is medicine, the vision for the project is broader: to contribute critical methodologies and digital tools for the study of technical or material practices across a broad variety of genres, communities, times and regions, to better understand the circulation of knowledge. There are two target audiences: one is the global history of medicine, and the other is the history of religions in East Asia. Although this pilot study focusses on drugs, the methodology is intended to be applicable to a broad variety of practices, medical or otherwise. Thus ritual actions, building materials, star names, pantheons, acupuncture points – any kind of knowledge which can be identified through a specific vocabulary set—these are all potential areas for research with this tool, which is intended for broad use in the Sinological and wider community. I am currently outreaching to scholars working in other languages, and the two who are next in line for expansion of the project are Arabic and Sanskrit. We are also planning workshops in the US and other locations around the world.

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