Knowledge in Common and the Diversification of Scientific Fields in the Ottoman Worlds: Diffusion, Actors, Epistemologies

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1 Studies on the Ottoman sciences have long emphasised heritage from the past (Greek, Arab, etc.), or the circulation of knowledge as understood exclusively from the European viewpoint, especially starting from the sixteenth century; this is even more evident from the nineteenth century onward. In the case of medicine, thirty years ago Rhoads Murphey (1992) invited historians to consider Ottoman science as an original cross-cultural synthesis that produced knowledge, rather than as a mere receptacle of external and previous scientific developments. This thesis had the merit of emphasising the cohesion and relative autonomy of the field of Ottoman knowledge. However, it also raises questions. Recent renewals of the historiography of knowledge in the Ottoman worlds (Shefer-Mossensohn 2015; Yalçınkaya 2015, 2019) invite us to a deeper interrogation, in directions that have until now been little explored, of the intra-Ottoman dimension of the production and circulation of knowledge.

2 This new history of science and knowledge in the Ottoman worlds also calls into question the paradigm of decline, instead highlighting the importance of sciences, and their production, acquisition and dissemination in Ottoman society, and also of some forms of progress (Shefer-Mossensohn 2015). The central role of the non-Muslim Ottoman elites in the dissemination of knowledge no longer needs to be proven, particularly when it comes to the nineteenth century (Anastassiadou, Heyberger 1999), but the study of the links between religions and sciences, and in particular between Islam and science, has given rise to numerous works in recent years (Asil 2017; Poyraz 2010; Türesay 2018; Yalçınkaya 2011; Sariyannis 2015).
Defining knowledge

Due to the variety of objects, actors, or even methods and techniques, the very definition of “knowledge” is both a question of container (terminology) and contents (what is meant by “knowledge”). The terminology one chooses and the linguistic sensitivity surrounding this terminology relate to geographies, sociologies and histories: the Arabic roots *ayn-lam-mim* and *ayn-ra-fa* are found in Ottoman Turkish through the words *ilim* (a Turkicised version of Arabic *'ilm*) and *maarif* (a plural form derived from the Arabic *ma'rifah*), respectively meaning wisdom/science and knowledge. These two different terms illustrate the importance of semantic variations that spring from a shared intellectual and linguistic base. For example, the Arabic terms *'ilm* and *fenn*, two central concepts in Islamic thought whose meanings are transformed in eighteenth and nineteenth century Ottoman thought, are at first used interchangeably by the Ottomans, or even under a coupled form “ulûm ve fünûn”. Ottoman publications from the 1830s attempted to establish a clearer difference, making *ilim* a more abstract and theoretical science and *fenn* an applied knowledge, technique or practice (Martykánová 2020; Kara 2003; Akyürek 2011). During the 1930s this differentiation was strengthened when the Turkish term *bilim* replaced the Arabic etymological term *ilim*, a substitution that reflects the Republican desire for a secularised concept of science.

The question becomes even more complex if one takes into account the linguistic diversity of the Ottoman Empire, in particular the presence of Greek (with its epistemological tradition and as a Lingua Franca), of Armenian, and of all the other languages that supported the production of knowledge, if only for the institutional and historical needs of the communities that spoke them. A semantic approach to the terms around knowledge testifies to the process of construction and reorganisation of knowledge and scientific disciplines in the Ottoman Empire, certainly often inspired by Europe but aiming for Islamisation and indigenisation of knowledge in order to preserve autonomy in a context of economic globalisation.

We can hypothesise that the definition of “knowledge” includes the vast field of local knowledge, and the entire sociological spectrum, ranging from the knowledge that the inhabitants of a region may have of their natural and human environment and local trades to the learned culture of scholars scattered over a larger territory. It is not a question of giving a normative definition of knowledge, but of observing that different forms of knowledge are the object of organised efforts to communicate them, transmit them, and even to formalise them. To go beyond the classic opposition between learned (or “high”) and popular knowledge and get rid of a hierarchical vision dominated by “the Science”, we should ask ourselves, in a vein of historical anthropology, what “knowledge” meant in the Ottoman Empire and, beyond lexicological questions, how an awareness of possessing, producing and transmitting knowledge manifested itself. In the same way, though the institutionalisation of disciplines may be at the origin of a loss of the knowledge that is neglected as a result, the process can also bring about a recognition of certain old knowledge, or even open the way to the production of new knowledge. For example, the notion of “superstition” is often used to designate not only heterodox beliefs but also local and non-institutionalised knowledge, but it has also made it possible to integrate these forms of knowledge into disciplines that are established or in the process of becoming established. The accumulation of
ethnographic documentation specific to the nineteenth century thus nourished topographical and geographical studies, emerging religious sciences, social anthropology, and debates between these disciplines. This process constantly involved local informants and scholars, both Europeans, such as Ernest Renan, and Ottomans, such as Ziya Gökalp. In the present publication, the dynamics of exchange, cooperation, re-enunciation, selection and creation that characterise the birth of disciplinary fields and their relationship to knowledge are questioned in this context.

**Consistency and Diversity of Knowledge**

This special issue addresses the questions of the foundations of the intellectual autonomy of Ottoman knowledge and the existence (or not) within it of an internal consistency. First, these questions have a strong geographical scope: would the claiming of such coherence amount to presupposing the unity of a scholarly elite producing within recognised academic frameworks, with common epistemological postulates? Such an approach would encourage one to emphasise the connections behind circulations, and hence the major urban centers of scientific production. The trajectory of Ibn Sallum, an Aleppine and Arabic-speaking doctor and transmitter of Paracelsus who travelled to Istanbul in the seventeenth century, is only one illustration of these exchanges (Shefer-Mossensohn 2015). This approach appears to conflict with the idea of external links and influences. However, the geographical approach does not necessarily limit knowledge only to those who belong to this geography (as subjects or citizens): it can include knowledge produced by “outsiders” who are present on imperial/national soil and participate in the production of knowledge within the imperial or national administration. It is therefore important for us to understand the full diversity of the worlds of knowledge in the Ottoman Empire, and the contributions to this volume highlight the intellectual exchanges between scholarly circles operating in different languages (Turkish, Greek, Arabic, Armenian, French, etc.). Are the “Ottoman worlds of knowledge” characterised by a community of knowledge on the scale of the Empire or on the contrary by a differentiation, even a linguistic or geographical partitioning? If there is differentiation, where and how do exchanges take place? Is it even relevant to speak of exchange, whether with regard to the reciprocity of the circulation of knowledge or to the composition (by community, linguistic, etc.) of the environments where this knowledge circulates?

The question of Ottoman epistemological autonomy is also a matter of historicity. It leads one to revisit the historical connection between the overhaul of the sciences in the Ottoman Empire, starting at the end of the eighteenth century, and the process of administrative reform. Berrak Burçak highlighted the “scientist mentality” in the process of Ottoman modernisation, in the sense that the predominant utilitarian outlook towards its production meant knowledge was seen as a tool in the service of collective well-being and therefore in the rescue of the empire (Burçak 2008). The important thing, for some Ottomans, was not necessarily to innovate, create, or discover, but rather to use knowledge (whether it was produced locally or not) wisely, with the aim of modernising the Empire while preserving its autonomy and specificity, in particular as a Muslim empire.

Some of the figures in the transformation of knowledge, such as the doctors Behçet Efendi and Abdülhak Molla, were among the designers of the Tanzimat. These men,
who were trained in Istanbul, produced knowledge locally at the same time as they participated in the creation of new institutional and educational forms. They also tried to think of the innovations they observed arriving from Europe, by means of intellectual tools that already existed in the Ottoman philosophical tradition, swapping Aristotelianism and Galenism for less central references when necessary.

From a sociological point of view, the epistemological unity of the Ottoman Empire seems to go hand in hand with a rigorous philosophical context, which brings recognised academic and elitist science together with religious knowledge, but leaves aside another mass of knowledge and know-how, especially that relating to everyday life. Nevertheless, the idea of such a unity of Ottoman knowledge has to leave space for the importation of knowledge and technologies from the rest of the world that occurred throughout Ottoman history and intensively from Europe in the nineteenth century (Moulin, Ulman 2010). Since that time and starting from a diversity that was both internal and imported, how did the Empire succeed or fail in re-establishing unity and specificity in Ottoman knowledge?

**Actors, Policies and the Communication of Knowledge**

Faced with such questions, this special issue also examines the tools for communicating knowledge (from the library and the practice of collecting manuscripts/objects/artifacts, to the press and modern schools of the nineteenth century) and the people who handle them. Who are the transmitters of knowledge, the pedagogues of new knowledge, participating in the diversification of knowledge but also in the creation of disciplines and the quest for an Ottoman unity? What role do the material tools of dissemination, and controversies, play in the propagation of this knowledge? Do these various means contribute to the standardisation of epistemological concepts and to their popularisation – for example, in the nineteenth century, to the impregnation of scientistic ideas? How have communication tools, including publishing, printing and the press media among others, been apprehended and used by scholars as means of transmitting knowledge and intensifying its circulation?

The idea of an Ottoman world of knowledge also has a practical political dimension. The dynamics of the foundation of higher education institutions during the reign of Suleiman the Magnificent (r. 1520-1566), the overhaul of the system and the foundation of specialised schools and faculties in Istanbul from the 1820s, and then in such cities as Damascus, Baghdad and Jerusalem in the last decades of the Empire depended on the administration’s need for competence and expertise. But is this only because of utilitarian view of knowledge? The contributors to this issue suggest, on the contrary, that the promotion of scientific research and the organisation of the transmission of knowledge also constitute “tools of Empire”, producing territorial integration. Has this knowledge been used to promote cultural integration through the standardisation of learning, and of scientific and technical skills? It is from this perspective that our contributors question the identity of the extra-state actors involved in science policies.

Finally, this special issue also examines the consequences of the fragmentation of the Empire, starting in the nineteenth century. A questioning of the idea of the epistemological unity of the empire takes place in the nineteenth century and at the beginning of the twentieth century: first in the academic circles of the Balkans, then in the Arab universities, and later in the Turkish academic world, because of its rejection.
of Ottomanism during the Republican era. These milieux were all marked by a rejection of the Ottoman past and by a nationalisation of knowledge that is often perceived as an intellectual renaissance. Each of our contributions proposes to examine the hidden sides of this teleology of “national sciences” and the epistemological conditions necessary for the common understanding of knowledge.

**Articles**

13 The contributors to the present volume embarked on the investigation of various scientific fields from the viewpoint of these many questions, whose common denominator is the attempt to propose an Ottoman perspective on the sciences produced and/or developed at the end of the Ottoman Empire. The various contributions that make up this special issue have not been written with the aim of examining the intra-Ottoman dynamics of the circulation of knowledge in isolation from global dynamics; nor in order to trace the genealogies of knowledge moving away from the ubiquitous Europe-Empire dyad in the history of Ottoman science. They aim to shed light on what makes the locality, the community and the Ottoman-ness of knowledge, in its conception as well as in its uses.

14 Human medicine, the most-studied science in historical research, is at the heart of Ebru Aykut’s contribution, which focuses on the development of tools and techniques for teaching anatomy. She highlights how the prohibition of dissection by Islamic law before 1841 prompted medical schools to find and finance an innovative solution, the papier-mâché models produced by the anatomist T.J. Auzoux and how, from the 1840s, Istanbul gradually became the centre of expertise and of medicalisation in the study of malformations and anomalies in foetuses and new-borns.

15 The other contributions examine disciplines such as botany and zoology, veterinary knowledge, psychology, topography, linguistics, engineering sciences and economics. Two of them adopt very different methods to question the notion of nature and its metamorphoses in the nineteenth century, as well as the borders commonly used to delimit knowledge about nature. Şeyma Afacan explores the interest in psychology among specialists and laypeople in the last decades of the Ottoman Empire. Although it is conceptualised as a science, in the public’s mind the discipline of psychology escapes the effects of authority involved by the organisation of knowledge into sciences, and so lends itself to constantly renewed appropriation by lay authors. This article demonstrates that Ottoman elites were far from having completed the process of demarcation between disciplines. The example of psychology reveals the plurality of the debates that agitate Ottoman learned society across time, and thus reveals the pluralism of that society.

16 Nurçin İleri uses the now-dispersed collection of the natural science museum of Robert College (Istanbul) to unravel the web of actors who participated in the scientific institutions in the Ottoman era and contributed to the acquisitions of artifacts for the museum. Scientists were not the only ones involved in these processes, and other demarcations, both between nationalities/communities and between disciplinary specialisations, were being eroded. This convergence of collection and classification activities occurs in an Ottoman geography and partly builds on Ottoman materials, creating a real botanical sub-genre, that of the censuses of flora in imperial space. The identification, through these objects of research, of the many actors involved in the
production of knowledge, and of the historical and community strata involved, is also the subject of Philippe Bourmaud’s contribution. He studies the scientific production of the Jesuits who settled in Anatolia from 1881, and asks whether the missionaries of the Society of Jesus took the Ottoman political framework into account in their work. The Jesuits’ approach appears at first sight to be inspired by a form of Ottomanism calling for the coexistence of communities and for an understanding of the variety of strata that are present in the objects of the Anatolian past. However, the Jesuits’ publications reveal that the intellectual framework is less that of the Ottoman Empire than that of the Eastern Churches whose space extends beyond that of the Empire.

The last two contributions transcend classical chronological limits, making the transition from the Empire to the Republic part of their study on the professionalisation of veterinarians for one and on the international configuration of economic expertise for the other. Meriç Tanık studies the veterinary profession and its reconfiguration through new certification procedures to describe the experiences common to specialists in this often-underestimated branch of medicine. Her article describes the reluctance of members of an institutionalised social group with regard to the provision of appointments in the provinces for young graduates, whose training abroad or in Istanbul was seen as reflecting cosmopolitanism. There is a wide gap between the expectations of members of a profession that is socially characterised as a scientific activity and the daily reality in the Ottoman provinces, where traditional veterinarians were in constant competition with those expectations. This divergence sheds light on the social effects of people’s impressions of what science is and should be, and on the professional disillusionments that are an inevitable reverse.

Aykız Doğan’s contribution, devoted to the international co-production of economic expertise in the early days of the Republic of Turkey, allows us to step back from the historiography that sees the Kemalist era as a period of national homogenisation. The new Turkish state was not content to rely on its own forces, and resorted, like its Ottoman antecedent, to the juxtaposition of expertises to build its centralised economic tools.

The image of knowledge in the Ottoman world as it emerges throughout this special issue is kaleidoscopic: those who produce and use this knowledge are identified by differentiated cultural affiliations and referents, combining in mechanisms that are constantly being recomposed. This recomposition is carried out against a background of common knowledge, the Ottoman “normal science”, to borrow the expression of Thomas O. Kuhn (2012), although in many disciplines this has been contested and then replaced, in a voluntarist way, by imported epistemological mechanisms. Rather than creating exchanges of knowledge within discrete community groups, the Imperial context creates convergences in which various forms of affiliations may constitute distinct pieces in the construction of knowledge about a single object. This type of convergence is not in itself Ottoman; it continues to occur within the Turkish Republican framework. However, its components do reflect both the diversity and the growing degree of cultural penetration in this empire.
BIBLIOGRAPHY


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