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**STATE DEBATE
KNOWLEDGE
COLLABORATION II**

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Volume 18

State Debate

&

Knowledge Collaboration among Jews,
Christians, Zoroastrians, and Muslims
in the Abbasid Near East, II

Guest Editor:
Nathan P. Gibson

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Editorial

Ingrid Hartl and Walter Pohl

In this year's summer volume, we open the floor for a lively debate, addressing the question whether the concept of »state« can be used meaningfully in the context of medieval studies. A comprehensive essay on the Roman »state« sets the scene from which the author and six further scholars from different fields of Chinese, Byzantine and European medieval history develop a stimulating discussion. In it, they examine, apply, reject and adapt political concepts and approaches in Antiquity and the Middle Ages and engage in a critical discourse on political theory in historical studies.

With this debate we introduce a new format in *Medieval Worlds*. Further contributions to this or suggestions for other topics of interest are warmly invited.

Vibrant scholarship is also tangible in our research articles. Thus, manuscript studies are combined with digital humanities, when a state-of-the-art analysis of manuscripts containing German arithmetic treatises not only offers new ideas about the use of such texts in every-day life in the Late Middle Ages but also present an approach to generating a model for handwritten text recognition for this material. English and Chinese sources provide the basis in our second stand-alone article, in which strategies of peace-making around the turn of the 11th century are compared.

The second instalment of our thematic section on *Knowledge Collaboration among Jews, Christians, Zoroastrians, and Muslims in the Abbasid Near East*, with guest editor Nathan P. Gibson, presents case studies which carefully analyse philosophical texts for evidence of contact with an »other« (religion or philosophy). In addition, two papers explore which digital tools and approaches might be gainfully employed to trace lost books on the one hand and on the other to display complex networks without loss of nuances. Rounding off this section, two projects concerned with knowledge collaboration and machine supported analysis report on their work.

DEBATE

Was There a Medieval »State«?

This debate takes up the question whether the concept of »state« can be used meaningfully in the context of medieval studies. The opening article by Brent D. Shaw addresses the political organization of the Roman empire, and develops a comprehensive argument why even by high standards it should be regarded as a state. The six comments by Nicola Di Cosmo (Chinese History), Stefano Gasparri and Cristina La Rocca, Hans-Werner Goetz, Régine Le Jan (European Medieval History), John Haldon and Yannis Stouraitis (Byzantine History) draw on their own fields of expertise to provide theoretical and pragmatic views on the possible significance of the concept of state for political entities of Antiquity and the Middle Ages.

Keywords: medieval empire, »state«, political theory, Roman empire, Byzantium, Langobard kingdom, Ancient China

WAS THE ROMAN STATE A STATE?

Brent D. Shaw*

Was the Roman empire the type of formal political unit that we call a »state«, about which one can ask rational questions about its essence and its technical makeup as a state? Or was it a peculiar type of premodern entity about which such questions are inapplicable? At first glance, the question might seem to be a little absurd.¹ To some – myself amongst them – it must seem as patent as breathing air and drinking water that the Roman empire was a state. The term has conventionally been used to describe the Roman polities of both the republic and the empire. In a certain sense, the use of the word is, as Nicolet has noted, »a convenience«.² Even so, we might wish to found as fundamental a historical category as »the state« on something firmer than mere convenience – so it is right at least to ask the question. And if the Roman state was not a state, then what was it? Whatever the possible answers to

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1 Because it is in fact absurd. For but one example of a (failed) attempt to make the case, see Anderson, *Nonmodern state?* – he falls (deeply) into what I call the »emic trap« (see below). He defines the state, a priori, as something modern and then sets a selection of hyper-modern criteria for its existence which almost no early modern state, from the age when the word »state« was created, could have met and which very few contemporary states (from the United States to Iran and Thailand) can satisfy (cf. Reynolds at n124 infra).

2 As noted by Nicolet, *L'Empire romain*, 111: »...il faut d'abord constater que les historiens modernes utilisent très fréquemment le mot État à son propos et même à propos de »Rome République«.« And then adds, confessionally, at n. 2: »Moi le premier, naturellement. Dans certains cas, l'emploi du mot est de simple commodité, pour designer en somme la forme d'organisation politique en usage.« For a larger number of German instances, see Walter, *Begriff des Staates*, 12; for the similar defence of the use of the term by historians of »medieval« Europe as based on »common sense« or »reasonableness«, see Davies, *Medieval state*, 283-284.

this question, the claim that it was a state has been seriously doubted by some and so the objection must be faced. The striking claims issue principally from highly regarded political theorists and eminent historians of the Roman empire. What do they mean when they say, for example, that the government of the Roman republic, with its subject territories and institutions, was not »a state«? Since this anti-Leviathan has raised its fearsome head from time to time and threatens to do so again in the future, its claims and implications must be faced head-on. Heeding the words of E. P. Thompson, we cannot glance at the antagonist in a casual way, seeing it as a weird apparition, a freak of intellectual fashion, which, if we close our eyes, will in time go away. It will not. Certain proponents of this view, especially within the field of German-language scholarship, make frequent appeals to the theoretical ideas of Carl Schmitt – ideas that are gaining much wider purchase in recent years (and for understandable reasons).³ Even where such concepts are not openly declared or, perhaps, are not so consciously known or used, they often lay in the deep background of these claims about the nature of Rome’s polity. In Schmitt’s influential analysis, the idea, the concept, and the reality of »the state« was an invention of European developments in the late sixteenth century – ideationally in the aftermath of the influential (even if then somewhat aberrant) ideas of Machiavelli, Jean Bodin and Thomas Hobbes.⁴ Schmitt’s ideas cannot be easily dismissed, not only because of his thorough legal education and his subsequent eminence as a jurist and political theorist, but also because of his personal identification with the Roman past – as someone who could say of himself: »Ich bin Römer nach Herkunft, Tradition und Recht« (»I am Roman by origin, tradition, and Law«).⁵ There is no purpose here, of course, to laud the man himself, but rather to use his clearly expressed ideas as a firm benchmark against which concepts of »state« and »not-state« as applied to the Roman instance might be tested.⁶ Since his concepts are lucidly argued and apply directly to the »state-ness« of any polity, they provide a more severe test of these claims than do, for example, the latent presence of »political culture« (on which more, presently) as a wedge against the assertion that the Roman polity was a state.

3 As for example, Lundgreen *Staatsdiskurse*, 19, cf. 23 (but fundamentally underlying all of his essay); for an early summation, see Schmitt, *The State*, where his concern is focused, as often, on the relationship between »the state«, *der Staat*, and »law«, *Recht* (on which, see pp. 25-29 below).

4 As, for example, by Demandt, *Staatsformen in der Antike*, 57.

5 Niekisch *Gewagtes Leben*, 242: In direct conversation with Ernst Niekisch, beginning with the words »Meine Welt ist nicht die Ihrige«; cf. Bendersky, *Carl Schmitt: Theorist for the Reich*, 4 (my translation is different).

6 That is to say, Schmitt’s explicit adherence to the Nazi state and his blatant anti-Semitism, both well documented: see Bendersky, *The »Crown Jurist« of the Third Reich* (somewhat understanding of »the man«), and Mehring, *In the Belly of the Leviathan* (somewhat bleaker); Schupmann, *Carl Schmitt’s State and Constitutional Theory*, 25-34 (a fairly realistic assessment); and, finally, Tuori, *Empire of Law*, 159-160, 164-165: as Tuori shows, there were many other eminent jurists and Romanists who, when faced with the same challenges took a different path and developed different interpretations of the law’s significance. It must be said, however, that some of them, like Fritz Pringsheim and Fritz Schulz, had little choice in the matter.

In Schmitt's view – one that is shared by most historians – over the long early modern age western Europe became a world of states, a world that was defined by the existence of this special unit of governance: it was the »age of the state«, *das Zeitalter der Staatlichkeit*.⁷ The state was *the* political unit that governed the important social and political orders of the time. Since it was at the leading edge of the future, it was the modern unit of big governance that was deemed to be the political harbinger of the forthcoming age. In a great sea change in his ideational view of the world, Jean Bodin's »republic« was most emphatically not the *res publica* of a Cicero; his *république* designated a new form of governance.⁸ If he wished to point out the type of bad familial-based governance that belonged in the past, he pointed to the kingdoms of Fes and Morocco: old fashioned, backward, and corrupt.⁹ If thinkers from Aristotle to Augustine had imagined the ideal state to have been formed out of a natural cumulation of households, the reverse was now true. If left on its own, familial power, still a strong and fundamental basis of the social order, was potentially threatening to the new polity. In the modern order of things, on the other hand, the state had the standing, the *status*, of being *the* legitimate and beneficial new power of the age. Hence its novel name. Since »the state« was indeed a recent modern innovation of the time, its modes of governance, administration, and ways of dominating others were accepted as defining the leading edge of the future. It was an objective entity that stood separate from individual power holders in its institutions and that stood over and above the people whom it governed. Such a powerful harbinger of ruling the world that was coming into being had a peculiarly exalted status in the minds of men of the time, and not just Bodin.

The result of the process was that then-contemporary thinking about political power reflected a world configured by a set of similarly structured political units organized into a constellation of mutually competing peer polities, the classic Westphalian state system. It was the context within which French juristic thinking developed the terms *souveraineté* (sovereignty) and *état* (from the Latin *status*, »standing«) to describe a new type of established government having a kind of totalizing control over the peoples within defined borders.¹⁰ The word *status*, originally designating the standing or quality of the ruler himself, only gradually, by the late fifteenth and early sixteenth century, shifted to include the instruments of governance used and the territory controlled by a given ruler. In a further development, »state« came to acquire the meaning of an impersonal thing that existed separately

7 Schmitt, Staat als ein konkreter Begriff = Schmitt, *Verfassungsrechtliche Aufsätze*, 375: »In diesem Zeitalter, das vom 16. bis 20. Jahrhundert reicht, ist der Staat der alles beherrschende Ordnungsbegriff der politischen Einheit.«

8 See Skinner, *The State*, 119.

9 See Bodin, *Les six livres* 1, chs. 2-6 (on the family and the state).

10 In Schmitt's view, the king of France was head of the first European state of this kind: France was the prototype of other states of this type and Jean Bodin one of its earliest theorists.

from the managers of governmental power and that existed separately from the bulk of the population; but this concept of »state« only emerged in some seventeenth-century thinkers.¹¹ In creating the new meaning, however, they were reacting to »facts on the ground«. Given the novelty of the term, indeed, for a long time some of them preferred not *status* but the inherited terms of *civitas* and *res publica* to describe the new polity.¹² Koselleck and others have similarly located the explicit appearance of the term »state« to the modern period, although, in his case, dating it slightly later in the eighteenth century.¹³ Armed with the allied concept of »sovereignty«, the political unit designated by this precise term – l'état, stato, estado, the state, der Staat – was a new type of collective and institutionalized power. In this conceptual watershed, if the new large-scale European political structure that emerged had the standing of »a state«, then those that preceded it were necessarily »pre-state«. This is certainly Schmitt's point of view.¹⁴ Even if it might be possible to consider other, more recent interpretations that have suggested that the Roman state – at least the developing and less cohesive structure of the republican polity – did not meet the criteria of a modern state, it seems that the sharper, stronger, more clearly argued theoretical views of Schmitt provide us with a limit case that can be tested against logic and evidence.¹⁵ Furthermore, his ideas can be seen at work in the evaluation of the status of the post-Roman polities of the European west, and so directly implicated in debates over the »status« of the premodern polities in western Europe that Schmitt used as the benchmark for his claims about the emergence of »the state«.¹⁶

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- 11 On all of this, see the compelling analysis of Skinner, *The State*. It is of considerable significance both for an evaluation of »state« and of Schmitt's ideas, since it demonstrates how the dominant modern concept of the »state« emerged from what Skinner calls »the earliest major counter-revolutionary movement in modern European history« (p. 121) that specifically set itself against opposing ideas of popular sovereignty.
- 12 Skinner, *The State*, 119; Hobbes said that *civitas* and »state« were terms designating the same entity as his »common-wealth«: Skinner, *On the person of the state*, 32.
- 13 See Winterling, »Staat« in der griechischen-römischen Antike?, 251; at p. 252, who rightly expresses concerns over the two centuries of »historical baggage« attached to the concept. Much the same concern has been aired by Christian Meier: see Walter, *Begriff des Staates*, 18-19. For a detailed study of the gradual emergence of the terms »Staat« and »Souveränität« in German, see Philipp, *Politische Wortstudien*, III and Brunner, Conze and Koselleck (eds.), *Geschichtliche Grundbegriffe*, confirming in detail the specific modernity of the terms. Although this matter of etymology is true, the more serious matter, given the editors' own historical commitments, is the follow-on claim that these terms necessarily have no justifiable application to premodern cases (pp. 5-6). Koselleck, of course, was a central figure in the *Geschichtliche Grundbegriffe* project that produced the very definitions that he embraced (see n. 30\$ below).
- 14 See Walter, *Begriff des Staates*, 16, referring to Schmitt, *Staat als ein konkreter Begriff* = Schmitt, *Verfassungsrechtliche Aufsätze*, 375-376, 383-384.
- 15 See, for example, Tan, *Rich Rome, poor state*, 3-39, who offers an argument for an attenuated late republican state of truly modest dimensions. Although Tan still allows that the Rome of the time was »a state«, his peculiar construction of it could be taken to sustain a judgement that in Schmittian terms the matter might be questionable.
- 16 See, e.g., Pohl and Wieser, *Der frühmittelalterliche Staat*, ix-x; Strothmann, *Karolingische politische Ordnung*, 51-52 (and 51 n. 3 with specific notation of Carl Schmitt) in his assessment of the nature of the Carolingian »political order«; and Keller, *Internationale Forschung zur Staatlichkeit*, 124, again with specific reference to Schmitt in debating the nature of the *Staatlichkeit* of the Ottonian polity.

Against this standard of estimating the quality of polities, it must also be remembered that the German state itself had emerged relatively late in the nineteenth century out of congeries of principalities, baronies, marches, city-states, and ecclesiastical units. In thinking of what might constitute the premodern, it is this historical background that German thinkers, from Hegel to Schmitt, had in mind. By this measure, when they were analyzing the concept of the state, both Hegel and Schmitt always had in mind the benchmark of the modern western European state.¹⁷ For them, the premodern world of German mini-polities was a litmus test for what constituted a premodern pre-state order. They were not alone. In the different context of France, when he considered his own times against the entire sweep of antiquity, Ernst Renan held the same opinion on the unique nature of the state: »Les nations, entendues de cette manière, sont quelque chose d'assez nouveau dans l'histoire. L'antiquité ne les connut pas.«¹⁸ In his view, premodern polities were small urban centers, city-states, rural assemblages of peoples, and other such congeries; the Persian empire was »une vaste féodalité«, and so on. When it came to the Roman empire, however, Renan hesitated – he had to admit that by sentiment it was indeed a genuine »patrie« and, with its great peace, had many of the required aspects of a state. »Mais un empire, douze fois grand comme la France actuelle, ne saurait former un État dans l'acceptation moderne.«¹⁹ Nevertheless, what precisely a *modern* nation-state was, was something that Renan – »Qu'est-ce qu'une nation?« – felt the need to ask. This comparative approach might not get us very far, however, since it has been commonly admitted by historians of medieval Europe that their age »knew no state of a *modern* type.«²⁰ The more difficult problem of typing their forms of state that has faced medievalists is not whether or not, say, the Frankish *regnum* was a modern state, but whether or not such polities constituted »states« in *any* justifiable form.²¹ The extent to which this question has remained unresolved is some measure of the difference between the early modern and modern periods, for which there is little debate that the polities of these times were indeed states in every technical sense of the term, and the preceding age when the elements of »state-ness« are uncertain enough to raise the question as a serious query.²²

17 See Schwab's remarks at Schmitt, *Concept of the Political*, 19 *ad loc.*, commenting on Schmitt's statement: »In its literal sense and in its historical appearance the state is a specific entity of a people.«: »Schmitt has in mind the modern national sovereign state and not the political entities of the medieval or ancient periods.«

18 Renan, *Qu'est-ce qu'une nation?*, 5-6: he continues, »L'antiquité classique eut des républiques et des royaumes municipales, des confédérations de républiques locales, des empires; elle n'eut guère la nation au sens où nous la comprenons.« Although it is only fair to add that later Renan admits that not all »nations« were »states«.

19 Renan, *Qu'est-ce qu'une nation?*, 6; cf. 15: the empire was also »modern« in that it was not founded on any principles of kinship or kinship groups.

20 E.g. Pohl, *Staat und Herrschaft im Frühmittelalter*, 9: »Daß es im Früh- und Hochmittelalter keinen Staat *im modernen Sinn* gab, darüber besteht in der Forschung weitgehende Einigkeit.« (my italics). And very few would actually claim that the entities concerned although not »modern states« were not »states« at all.

21 I think that the debates are adequately recapitulated and analyzed by Pohl, *Staat und Herrschaft im Frühmittelalter*, with the specific analysis of one of the best attested cases by Keller, *Internationale Forschung zur Staatlichkeit* and Strothmann, *Karolingische politische Ordnung*.

22 See, for example, Jarnut, *Anmerkungen zum Staat des frühen Mittelalters*, for a reasoned analysis of the debates on this question between Johannes Fried, who questions the existence of a »state« (certainly in their terms), and Hans-Werner Goetz, who asserts that »state« formations did exist. Jarnut himself concludes, with Goetz, accepting the device of the Weberian *Idealtypus*, that such polities were indeed »states«. On Fried's claim about how thinking about premodern polities in terms of »states« distorts our historical analysis, see Esders and Schuppert, *Mittelalterliches Regieren*, 14.

A critical problem with all of these comparisons is that the picture of the Roman empire that the nineteenth-century thinkers had in mind – one to a considerable extent inherited by their twentieth-century successors – was a schematic picture of a general entity configured by ideological preconceptions of »republicanism« and »absolutism«. In the nineteenth century, Schmitt claims, Europeans were tempted to extend their novel vocabulary of »state« to the Greek *poleis* and to the Roman *res publica*. In his rehearsal of the historical development, this extension, even if logical and understandable, was a mistake.²³ In terms of the facts, the claim is untrue – Europeans, both historians and philosophers, had conventionally referred to the Roman empire as »a state« almost from the beginning of the modern era.²⁴ It is understandable, however, that a problem arises in Schmitt's terms since the German world of the seventeenth or eighteenth centuries, as just emphasized, could not itself boast of a state. Indeed, with its various feudal arrangements, church domains, and multitudinous baronies and principalities, it was, as Schmitt remarks, »ein Reich und kein Staat«.²⁵ His claim about the before and after distinction was buttressed by the fact that there was no Greek or Latin word that could adequately translate the modern concept of »the state«. This is certainly true, say of *res publica*, which did not mean »republic« in our sense and probably only had a partial overlap with our concept of »state«.²⁶ The same lexical problem of the lack of a contemporary term that can be translated as »state« also bedevils the study of medieval politics.²⁷ This »absence-of-a-word« problem is one which we shall soon have occasion to revisit.

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- 23 Schmitt, *Verfassungsrechtliche Aufsätze*, 383, in his later annotation to this original 1941 essay. Naturally, the four characteristics of the emergent modern state outlined by Winterling, »Staat« in der griechischen-römischen Antike?, 251-252, are not forefronted in premodern states.
- 24 So, for example, David Hume already in the 1740s in his essay on *The Populousness of Ancient Nations* and elsewhere; Adam Ferguson in the 1760s in his *Essay on the History of Civil Society* and elsewhere; Edward Gibbon in the 1770s in *The Decline and Fall of the Roman Empire*, and elsewhere, and, in the same decade Adam Smith in *An Inquiry into the Nature and the Causes of the Wealth of Nations*. That is to say, almost as soon as the term »state« became available in the language to describe a polity of a certain type, it was commonly used to designate it. There is no evidence that these writers were conscious of any special »temptation« to extend the term beyond some confined »legitimate« use.
- 25 Schmitt, Staat als ein konkreter Begriff = Schmitt, *Verfassungsrechtliche Aufsätze*, 375-376; cf. Avineri, *Hegel's Theory*, 36: »The old German empire at the beginning of the eighteenth century was a hodge-podge of kingdoms, principalities, duchies, markgraviates, landgraviates, bishoprics and free cities...« As Hegel remarked at the time, what Germany lacked was precisely »a state«.
- 26 In general, see Demandt, *Staatsformen in der Antike*, 58-61; Winterling, A court without »state«, 11; on the specific significance of *res publica*, see Hodgson, *Res Publica and the Roman Republic*; and Moatti, *Histoire romaine and The notion of Res Publica*, 118-129, who shows that the term, with our meaning of »republic«, only came into common use in western Europe beginning in the fifteenth century. Despite many assertions to the contrary, however, it seems that the words adequately stand in for a Roman concept of their state. There was certainly a consciousness that came close to such an understanding, e.g. *Nov. Theod. 7.3: Nos quidem semper singulis atque univrsis ea provisionum maiestate consulimus, qua res Romana paulatim ad totius orbis terrarum processit imperium* (29 Dec. 440 CE).
- 27 See, e.g., Pohl, *Staat und Herrschaft im Frühmittelalter*, 9: »Oft wurde darauf verwiesen, daß ein zeitgenössisches Wort für »Staat« gar nicht existierte...« – so, an assertion not limited to the Roman case.

In all of this, a species of »medievalism« raises its head. In fact, one can see current debates over the »non-stateness« of the Roman polity as a crossover effect of *Die Neue deutsche Verfassungsgeschichte* of the 30s and 40s of the last century that gained a new impetus in the post-war decades. Once again, it was questions and concerns outside historical method (narrowly speaking) that heavily influenced the ideas. The contesting claims were about whether or how much medieval polities were Roman or Germanic in origin and structure. And it was an especial ideological interest for some historians involved in these debates to want to show that these early societies were based on natural expressions of the *Volk*, on familial and kinship bonds based on trust and honor, and not on the high artificialities of positive law.²⁸ Just how deeply embedded this strand of thinking was in the conservative ideologies of the time has been adequately demonstrated: it was »National Socialist in its very bones«. ²⁹ This ideological background is most significant: it is not merely accidental that it is the same suite of scholars – among them Brunner, Conze, Koselleck and Schmitt – who consistently sustained this position on »the state«. Once again, one of the main prompts and items of evidence was the apparent lack of a term in medieval Latin or early German that could be translated as »state«. ³⁰ In this context, it is hardly surprising that a gigantic work of reference that sought to define the basic concepts of doing history, *geschichtliche Grundbegriffe*, was edited by the same coterie of scholars and that its epic-sized entry on »Staat und Souveränität« reached these same conclusions. The project was grossly ideological in nature, seeking to establish the very terms in which history was to be understood. ³¹ Questions run even deeper than a technical one of semantics. If, for example, not even the leading legal thinkers at the height of the Principate conceived of the empire, the *imperium*, as a unified state, then this was a serious conceptual problem for Roman thinkers themselves. ³² It is perhaps ironic, however, that the proponents of the *Neue ... Verfassungsgeschichte* have not contributed much to debates about the status of the Roman empire, because its proponents accepted Rome as a genuine state against which the Germanic polities (in their terms) were to be measured as alternative types of *Personenverbandsstaaten*. So it is perhaps paradoxical that these debates about »state-ness« in Schmittian political theoretical circles, and in »medieval« and early modern historiography, have had long-term blowback effects amongst Roman historians who see the conclusions of those historians and thinkers as applying to their polity.

28 Mainly under the influential ideas of Otto Brunner, who asserted that we should not be seeing states of the »medieval period« in our terms as a »state«, but rather more dominantly in terms of *Herrschaft*, *Gefolgschaft*, *Treue*, *Schutz*, *Personenverbänden*, and so on; for a recapitulation, see Pohl, *Herrschaft*.

29 On Brunner, who is the pivotal figure, in particular see Miller, *Nazis and Neo-Stoics*, 148-149, 152-158, referring to Gadi Algazi's study of the man and his scholarship (quoted words from p. 150); for its tight connection with political ideology, see p. 155 n. 28.

30 For some of the background, see Pohl, *Herrschaft*; on Schmitt's importance for Brunner, see Algazi, *Otto Brunner – »Konkrete Ordnung« und Sprache der Zeit*, 168, 171-172, 182-183.

31 See Haverkate and Boldt, *Staat und Souveränität*.

32 Marotta, *Roman Jurists and the Empire*, 205: where he wonders whether even if »in the Severan period, the jurists attempted to define the Empire as a legal dimension. I would say no.«

Schmitt's basic claim, however, raises another broader historical question. Given the specific historicity of the concept of the state, is it even legitimate to apply such an apparently Eurocentric term to other global systems of political power?³³ The nomological objection raises a whole series of epistemological debates that are too complex and lengthy to be rehearsed here. Suffice it to say, by way of analogy, that a whole series of terms were invented in the late nineteenth and early twentieth century in the modern science of physics to designate things that had always existed, but which were now to be designated by terms that had only come into existence relatively recently: electron, proton, neutron, neutrino, quanta, quark, and so on. Surely there is no debate here. Although these are arbitrary neologisms of our own times, there is no doubt that they can legitimately be used to designate objects that existed not just thousands of years ago but even millions and tens of millions. The problem of meaning, it might be said, does not exist here because the things so designated have always been more or less the same in quality. The problem for Schmitt is that a word, *Staat*, came into existence in parallel with the emergence of a new type of governance in the fifteenth and sixteenth centuries to designate the *status* of a political entity. The question in this case is: Can the term legitimately be used to describe something from a period thousands of years earlier that might well have been different in kind? An initial answer must lie in the extent of the similarity of qualities that the earlier form of large-scale governance has with the later social organization designated by the term »state«.³⁴ Are they sufficient to justify the use of a common term to designate them?

The answer must also depend on a further criterion: Despite any apparent commonalities, was there some other essence that would deny the appellation to premodern forms of governance like the Roman one? If the initial answer to this question is »yes«, it is then often faced with the objection that the lexical evidence, including terms like *res publica*, show that *they* had no concept of »state« in *their* mind. The strong caution against accepting this assertion as a valid argument, however, is that it is only tangentially relevant to our problem. Whether or not persons of the time had words for a given phenomenon is not part of *our* historical analysis of that thing. We know a parasite-borne disease that we designate with the word »malaria«. It has certain specific identifiable characteristics and elements. These can be specified, and, in historical terms, we can analyze that phenomenon in the past under the modern term »malaria«. We know that many regions of the Mediterranean in the Roman empire experienced this infection and that many persons of the time suffered and died from the disease. They did not know precisely what it was. They sometimes called it »bad air«, and so on. One can study the lexical elements of »bad« and »air« as used by them *ad infinitum*, and so conceivably provide us a better insight into how *they* at the time understood the infection and its causes. But it will not advance *our* historical analysis of the infection of malaria or infringe one whit on our ability to use the term to designate a disease, namely malaria, to use it for our analysis of the disease environment of that remote time and to use it for our historical

33 The question is specifically put by Eich *et al.*, *Der wiederkehrende Leviathan*, 23-25, who make the compelling point that even within its western European early modern signification the term Staat/état/state is variable and covers a wide range of different political structures. The assertion that it is incapable of a reasonable metaphoric extension to polities elsewhere on the globe or earlier in time seems rather weak.

34 See Finley, *Politics in the Ancient World*, 41, for similar problems with the extension of a modern sociological term, »clientage«, derived from the Latin *clientela*, to all similar instances.

analysis of the infection.³⁵ The same pertains to our use of »state« (or »republic« for that matter). It is not unimportant, of course, that we should understand what words and concepts that *they* had of *their* ruling orders and institutions, but endless studies of concept words like these – e.g. *res publica*, *imperium*, *auctoritas* or *potestas* – only gets us so far and no further. To engage solely in this sort of analysis is to fall into what I would call the »emic trap«: the false idea that by exhausting a kind of empathetic understanding of *their* world in *their* terms we have completed a historical analysis of the phenomenon. This road, alas, has no end to it. Like »state«, the word »army« in English and French, used to designate the armed forces of a state, is, similarly, a modern word that emerged in parallel with the early modern state.³⁶ If that is so, should I stop referring to the Roman army as an »army« and instead consistently refer to it only as an *exercitus*? Must we only publish books and articles that assiduously avoid the use of the modern concept word »army« and only use the emically approved Latin *exercitus*?³⁷ The answer to these questions is at once obvious. This is not a semantical or a concept problem.³⁸ The Roman army was certainly an »army« in our conceptual terms. If we were likewise to abandon all similar terms created in the concept-generating mill of the early modern and modern transition, we would have real difficulties in doing history.

Part of the problem, however, is not lexical but cultural, rooted in the German historical and ideological experience of a world that was bereft of a big unitary national state like France or England. Furthermore, German scholarship in particular has been heir to a long tradition of ideas on the state going back to Hegel and neo-Hegelians in which *der Staat* has a very precise and, one might say, an elevated »idealist« sense, but also one that is strongly caught up in debate with the reality of the German experience and ways that condition ideas about statehood.³⁹ The long shadow of Platonist ideas is apparent. In this stream of thinking something as significant as »the state« must have an essence that supervenes any specific

35 Again, it is manifest (and not at issue here) that a word study of *res publica* will surely advance our understanding of *their* ideas and concepts (e.g. of the distinction between the imperial *domus* and the *res publica*), but this is a separate »emic« benefit. Whereas the changing biological makeup of a given pathogen creates difficulties in identifying a given disease across time is a relevant question, but it is not one that will be settled by a terminological issue like the one being considered here.

36 Like »state«, the word »army« is also derived from Latin »originals«. Meaning »a body of men trained and equipped by the state for war« in French by the late fourteenth/early fifteenth century, and in English by the mid-sixteenth century, it, too, is a word that emerges with this meaning in the same early modern synapse.

37 It goes without saying that Italian speakers, armed with *esercito*, are fortunate in this respect.

38 So, for example, »feudal« and »feudalism«, great favourites, canonized in the nineteenth century historiography, would have to go – and, as Elizabeth Brown famously demonstrated, they are infrequently found in the original sources of the time. As also medieval, mittelalterliches, médiévale, along with »Middle Ages«, Mittelalter, Moyen-Age – yet another set of modern confections – would have to be abandoned as terms of historical analysis. No one felt »middling« at the time and no such »proof use« of the word could possibly be found in evidence from the time.

39 I still find the study by Avineri, *Hegel's Theory*, to be the most persuasive analysis of Hegel on the state – which, one should note, Avineri carefully construes as the *modern* state. It is manifest how much the fragmented world of the German politics conditioned Hegel's thinking about what a state should be; hence the long shadow of Plato in suggesting the prominence of a higher ideal. Schmitt, *Begriff des Politischen*, 24, was, of course, well aware of this tradition of thinking: »Die deutsche Staatslehre hielt zunächst noch (unter der Nachwirkung von Hegels staatsphilosophischen System) daran fest, daß der Staat gegenüber der Gesellschaft qualitative verschieden und etwas Höheres sei.«

antecedent parts of it or any institutions that it hails into existence and that are its governing mechanisms. A further problem that is evident in both Hegel and Schmitt when considering the premodern state is the dominance in their thinking about antiquity and, specifically, the nature of the Greek *polis*.⁴⁰ Apart from some general statements culled from Cicero, the actual state apparatuses of the six or seven centuries of the Roman imperial state seem strangely absent from their deliberations. Part of the explanation is not only the higher profile of Greek thinking about ideal forms of the state, but also the high cultural value that Greek studies had in nineteenth century Germany. The gap between thinking about the Greek polis and the realities of the Roman imperial state is immense. The former allows one to exalt an »essence« of state that was being formed by Greek writers and thinkers. On the other hand, it also tends to set a rather limited idea of these premodern polities that enables one to place them on the same limited plane as an Italian city-state of the Renaissance or an early modern German principality. Against this precision, the problem for Anglophone scholars, on the other hand, is a different one. For most English-speakers, who use a much less precise, even *louche*, language, »the state« means not much more than the institutions of governance – plus symbolic add-ons for modern states like a flag, a national anthem, a pervasive nationalist sentiment (and, of course, an army).⁴¹ For them, it does not necessarily have any special »essence«, least of all some exalted one. For others who were not part of either tradition, such essentialist historical differences might not be at issue. For them, the modern state in itself was nothing especially peculiar. It could be seen, for example, as *reviving* the concepts and practices of citizenship that had once existed in the ancient polity.⁴² Even given these diverse cultural perspectives, however, it must surely be possible to resolve the question of the Roman polity's standing in a historically satisfactory fashion.

40 A partial exception in Hegel's case might be his attention to the Roman citizenship, although his valuation of it changed significantly over time: see Rocco Lozano, *Ancient and modern sources*.

41 Skinner, *On the person of the state*, 25-26 and 40-41, traces the origins of this now-dominant idea in the Anglophone world where »state« virtually equates to »government«. Lundgreen, *Staatsdiskurse*, 20-21, sees this problem, drawing attention to laid-back English usages like »empire« and »imperialism« as similarly vague and ill-defined.

42 E.g. Renan, *Qu'est-ce qu'une nation?*, 13: »L'homme était *revenu*, après des siècles d'abaissement, à l'esprit antique, au respect de lui-même, à l'idée de ses droits. Les mots de patrie et de citoyen *avaient repris* leur sens.« (my italics).

What Makes a State?

We might begin with the prosaic elements that were building blocks of such a superior political unit that possesses sovereignty – in Schmitt’s terms the »final decider« of critical matters within its sphere of power.⁴³ Basic social units like families and kinship groups remain discernible and important elements in the structure of any state, including the Roman one. Almost all Greek and Roman theorists, indeed, envisaged the state as evolving out of a cumulative organic growth of household units. Even if subject to the normal (and greater) pressures of personal patronage and family powers typically found in any premodern state, it had a complex governmental structure that had formal criteria for membership and objectively defined terms of positions, official actions and empowerments.⁴⁴ In any event, in Schmittian terms, neither the »scramble for offices« or »the politics of patronage« are sufficient to deny a polity the status of being a state.⁴⁵ As is understood by historians like Theodor Mayer, an order *constructed* by such personal connections must be a real substitute for the impersonal institutions of a state to count as a qualitatively different entity.⁴⁶ The place and role of a purely personal power must rule out the classic model of an *institutionellen Flächenstaat*. By contrast, the Roman state certainly displayed an autonomy of its political structures, including its armed forces, that set the state over and above an accumulation of familial powers. The state’s autonomous governmental apparatus issued formal generally applicable and enforceable norms – *leges, senatus consulta*, decrees of magistrates (and later of emperors) all armed with sanctions against the disobedient. It supported an extensive set of state courts, both central and municipal, that both assessed and enforced its legal ordinances. The government had widespread and widely applicable regulatory structures and norms of some legal complexity that were part of this judicial network. By the systematic extension of miniature models of its own governance, through colonies and municipalities, and the absorption of existing units of local governance (mainly Greek-style poleis in the east), although not only these, enabled the powerful extension of the central state’s instruments of governance and legal practices into local venues throughout the empire.⁴⁷ Although it might have been pragmatic in working with existing modes of governance and taxation in each given region that it took over, in the end the Roman state maintained an effective monitoring of these activities with extensive networks of centralized archives of information on local social relations and on decisions made with respect to its governance not only of Italy but of the provinces by its governors.⁴⁸ Whatever notional or formal autonomy that was left to these urban units, it was only left to them as long as the local elites served the interests of the empire.

43 Schmitt, *Begriff des Politischen*, 19.

44 So Lundgreen, *Staatsdiskurse*, 23-24, points to the work of Walter Eder, who is sceptical of the applicability of the term »state« to the Republican government on the basis that it fails to account for the exceptional powers of the *paterfamilias* and because it draws too sharp a distinction between government and society. But both of these have been conventionally seen as compatible with early modern (and, certainly, »medieval«) forms of the state.

45 Schmitt, *Concept of the Political*, 32, both of the modern state; original, 2015, 30.

46 See Esders and Schuppert, *Mittelalterliches Regieren*, 31-32; and Pohl, *Personenverbandsstaat*, on the concept of the *Personenverbandsstaat*.

47 As rightly emphasized by Ando, *Empire as state*, 178-179.

48 See Díaz Fernández and Pina Polo, *Managing economic public information*, who more than adequately refute strange ideas that the republican state functioned without such banks of information. They discuss »the vastness of the documentation« archived in the *Aerarium* alone, just one of the state archives of the republic. For the empire there can be no doubt; the evidence is simply overwhelming.

The great expansion in number, size and wealth of these »sub-governments« was enabled by the existence of the imperial state, and, as has been rightly noted, they »served as essential nodal points for the extension of metropolitan institutions and the amplification of governmentality«.⁴⁹ Often underestimated in their extent and effect, recent detailed investigations of the banks of information kept by these local units of government and their centralization in provincial »capitals« and at Rome, confirm the extensive competence of the Roman government in this respect.⁵⁰ It had formal means, long-term banks of records, for assessing and collecting tributary payments, i.e., taxes, and it had state treasuries out of which the considerable expenses of the government were maintained. It engaged as a definable entity of organized violent conflicts of long duration and enormous scale, wars that required the training and maintenance of a state army. It committed itself to the organization and expense of long-term public projects of enormous scale like the building of a historically unprecedented network of public roads and the extensive surveying and impersonal legal and administrative designations assigned to units of public lands.⁵¹ More important than this is the application of a census, not just of Roman citizens as in the republic, but in making a count of all of the subjects in each province of the empire.⁵² Furthermore, it is not as if all these items, and many more, existed seriatim and in isolation from each other. It can readily be shown that they were integrated parts of a whole structure of governance. Indeed, a list can be made of such structural requirements for a state more extensive than the more restricted one found in the German philosophical tradition, including Hegel, Marx, and Schmitt – and the Roman polity would fulfil every one of them.⁵³ That is to say, Rome more than adequately fulfils the technical requirements of being a state.

The listing of these characteristics (which could be extended in number) is not trivial since these are the very aspects that Schmitt regards as diagnostically identifying »the state«.⁵⁴

Die spezifischen Organisationsmittel der einheitlichen Staatsgewalt sind bekanntlich: staatliche Armee, staatliche Finanz und staatliche Polizei. Das Recht verwandelt sich immer mehr in staatliches, von der staatlichen Justiz gehandhabtes Gesetz und findet seine sachgemässe Erscheinungsform in staatlichen Gesetzeskodifikationen.

49 The quoted words are from Ando, *Empire as state*, 185.

50 See, e.g., Royo, *Une mémoire fragile*, who reports both on the research project fronted by Claude Nicolet and on other studies that confirm this picture of Roman archiving and administration. Although often underestimated, it should not have been surprising that the Roman state was characterized by a general dependence on record-keeping and on a wide range of fronts, given the fact that, as a state, it would tend to adopt practices of government already put into practice by Greek city-states, on which see Faraguna, *Gli archivi*.

51 The literature is too extensive to be cited here. See Campbell, *Writing of the Roman Land Surveyors*, for the writings of the *agrimensores* or »surveyors« themselves, but archaeology and epigraphy has revealed much more about practices on the ground.

52 See Le Teuff, *Census*, who documents the extraordinary monitoring of the lives of individual subjects by the census, and who (7-8) signals the fundamental change from the counting of citizens under the republic to the counting of subjects under the empire.

53 For example, Nicolet, *L'Empire romain*, 112-113, who, in considering precisely this problem, set the following items as required: a unitary head or body of state, a standing state army, a money system of which it was the sole issuer, a defined territory where its power is recognized, and hierarchical and centralized administration, the extensive use of written records and archiving of them for administrative purposes, and an ideology that expressed its unity and legitimacy. On investigation of these, one by one, he shows that they collectively meet any reasonable definition of statehood.

54 Schmitt, *Staat als ein konkreter Begriff* = Schmitt, *Verfassungsrechtliche Aufsätze*, 379.

That is to say: a centralized state army, a uniform fiscal system, and a policing power over internal civil society. And, finally, very importantly for Schmitt, a law and legal system that comes more and more under the aegis of the polity, is administered by it, and which ends in codification by the government. Schmitt sees these developments as special and modern because they gradually overcame the corporate, feudal, and rank-based relations of earlier medieval times. Of course, even if true, this claim hardly means that these same supervening institutions could not have existed in pre-feudal polities. The post-Roman age in western Europe was perhaps marked in some cases by entities whose central political institutions were so weak that the countervailing loci of regionally powerful families and other corporate bodies, like the church, exercised considerable countervailing force. But was Rome like this? A recent study that has attempted to provide an explanation for the early Roman expansion and control of the Italian peninsula has founded its analysis on an implicit model of such a rather »weak« premodern polity.⁵⁵ But even for this early period, the interpretation has met with manifest scepticism in the eyes of its critical readers precisely because it grossly underestimates the on-going instruments and institutions of power that made the Roman government a political structure independent of personal networks of families and regional interests – among them local loci of government established or recognized by the central state, monumental construction projects, a substantial central treasury, a large national army, systems of registration and record keeping, and many other such aspects of the republican polity.⁵⁶ The Roman state certainly had established governing entities that counted as genuine institutions: they possessed an objective aspect, were reasonably permanent, had non-personal criteria for choice and membership, and had designated governmental tasks that were assigned specifically to them. The senate was but one of these corporate instruments of governance. Despite variations in its membership and the precise powers of its authority, the senate remained the central council of state for at least eight or nine centuries.⁵⁷ Not only the senate, but a range of consistent types of magistracies, and numerous other positions of governance, attest a depth and complexity of institutional development that are typical of a state. I forebear from adding a detailed annotation and discussion of the well-known fact that the Roman state maintained a professional standing army of half a million men for over half a millennium. Nor is it necessary to emphasize the plain fact that violence was marshalled by Rome on an enormous scale, year after year, and not just in the middle and late republic, but throughout the centuries of the Principate, and that this mobilization of force required the organizational capacities and resources of a truly Leviathan-like thing.

55 Terrenato, *Early Roman Expansion*.

56 See Walter, Review: *Early Roman Expansion* and Harris, Roman conquest of Italy, amongst others.

57 For the republic, see Bonnefond-Coudry, *Le Sénat de la République* and *Senatus*; for the high empire, Talbert, *Senate of Imperial Rome*; for both periods and the late empire: Chastagnol, *Le Sénat romain*. These are more than sufficient to demonstrate its consistency as an institution.

The utility of using the criteria outlined above as a yardstick by which the »state-ness« (or not) of Rome is to be measured is that every one of the *specific* developments that Schmitt outlines were the very ones that *characterized* the emergence and development of the Roman imperial polity. Whatever effects a »feudal« or »sub-state« patronage or vested local powers might have had in the operation of its institutions, they did not gainsay the autonomous existence of the instruments of Roman governance. Countervailing extra-state influences like personal patronage were often exploited to acquire advantageous appointment to state posts, to acquire citizenship, to be awarded government contracts, and to avoid aspects of tributary payments or the imposition of other arbitrary demands. But this does not mean that the government posts, citizenship, contracts, taxes, and regimes of formal legal instruments did not exist as autonomous political sites, powers, and privileges that could be mediated by personal or familial interests.⁵⁸ In fact, much of the time patronage was exercised as a means of acquiring privileged access to state resources that existed independently of the powers and resources of the patronal resources of individual families. In these instances (and many more) the mediation of patronage signaled that some separate object was being mediated, and not just yet more personal connections. Neither does the existence of »warlords« either in the late Republic or the late empire gainsay the existence of a »state« – even the modern state has not everywhere escaped from this problem of collective personal power.⁵⁹ Such distinctions could draw on the very influential ideas of Georg Jellinek on the distinction between personal power and statehood, although, again, they raise similar problems about the grounds of the distinctiveness or uniqueness of the Roman situation, but not about its existence as a state as such.⁶⁰ Naturally, because the Roman state was not a modern European state, it could not be part of any Westphalian system. It had gradually developed into a premodern empire which had no boundaries and so it was not part of a system of peer polities or a system of competing states.⁶¹ It was alone in its world. But this solitude should not be interpreted as reducing it to »not being a state« – and especially not because one of its perceptive historians specified a solitude as the state at which the Roman imperial peace was aiming. Because of the concrete historical contexts of their existence, in their own time most premodern empires were not and could not be part of a system of states in the Westphalian manner. But there is surely no theoretical reason that they should have to be such to count as states, or not be a state merely because they happen not to meet the specifics of the early modern and modern European model.

58 The most insightful analysis of the role of personal patronage in the context of the Roman imperial state is Saller, *Personal Patronage under the Early Empire*, who demonstrates that personal relations ordinarily construed as *amicitia*, »friendship«, served as a way of negotiating asymmetrical relations involving persons of lesser power and those holding superior resources, often those of the state.

59 This is where, for example, Lundgreen, *Staatsdiskurse*, 47-50, wishes to draw the line between *Herrschaft* and *Staatlichkeit*. The existence of such »big men« or, another problem for Lundgreen, *Staatsdiskurse*, 43-47, of bandits and pirates, in my view does not void statehood as such, but rather stands in a particular relation to a specific type of state: see the argument in Shaw, *Bandits in the Roman Empire*.

60 Lundgreen, *Staatsdiskurse*, 17 and 36-37, where he is concerned to draw on Jellinek's distinction between *Herrschaft* and *Staatlichkeit*. Whereas it is quite possible in the Roman case to claim that the former always represented a problem and a challenge to the latter, it seems insufficient, on the examples proffered by Lundgreen that elements of *Herrschaft* present at Rome obviated the very existence of a state; see Schupmann, *Carl Schmitt's State and Constitutional Theory*, 72-76, for a more compelling interpretation of the relationship between the two. In any event, as Walter, *Begriff des Staates*, 20-21, adequately demonstrates, on the basis of Jellinek's three basic criteria of statehood there are no good grounds to deny that status to Rome.

61 One can plead the exception of the Parthian and Sasanian states which did have a small land border with Rome; but it is a singular item that is an exception, not the rule.

Even if this debate is limited to the governance of Rome and its empire in the middle and late republican periods, the argument that it was not a state still does not make much sense. One can, of course, artificially limit one's purview to political struggles in the city of Rome and to the institutions of government in the metropolis. If so, then discussions of the important function of political rhetoric and the impressive power of theatricality, display, cityscapes, and traditional customs of public behavior are indeed relevant and very important. But this highly selective perspective of the Roman state is so cramped and myopic that it is pragmatically non-functional as a historical analysis of its »state-ness« as a whole. The entirety of the permanent extra-personal institutions and the diverse instruments of governance, all the way down to small localities in the empire, cannot be reduced to the politicking of its formal decision-making elites in the city of Rome.⁶² In important ways, the injection of the concept of »political culture« into the argument has served to deflect focus away from the state as an entire thing to the modes of competitive politicking and the micro-management by the power elites in its urban center.⁶³ On the one side, a positive one, the new interests in »political culture« have functioned as a necessary supplement to the institutional-structural edifice of the Mommsenian reconstruction of the Roman state.⁶⁴ In doing so, however, such interests tend both to underplay the much broader structures involved in the governance of a Mediterranean empire and to diminish the powerful effect of the long-term *structural* instruments and *participatory* roles of imperial power. The instruments of government were perduring permanent things which, however much they might change over time, long outlasted the lives of the few individuals or families who annually competed for a share of power at the center.

An ancient interpretative frame that perhaps encourages this narrower focus on civic politics is emic, namely the philosophical theorizing of the time, beginning in the fourth century BCE, that sought to explicate the *politeia* and *ta politika* of the Greek city. Both Plato and Aristotle, however, were massively disinterested in the one big force that moved the state of their time – not its internal civic institutions of governance and politicking on which they focused, but the facts of the recruiting, training, logistics, and the practice war on land and sea of its armed forces. In their remorselessly internal focus on a civic model of the state, other than voicing the truism that the Greek city-states were almost always at war with each other, they tended to marginalize such matters in their theorizing. When Polybius attempted to apply Greek theories of the civic state to the Roman state of the republic, as an outside observer he was immediately aware of its shortcomings. He was compelled to add an unusually long section on the army and its organization to explain the obvious importance of this institution to the success of the Roman state. No matter how much it was subverted in Greek

62 Which seems to be the essence of Winterling, »Staat« in der griechischen-römischen Antike?, 253-254.

63 For an explanation and defence, see Hölkeskamp, Politische Kultur and Politics of elitism, who points out that this approach has raised the question if the *res publica* was in fact a state (p. 24).

64 Nicely outlined by Hölkeskamp, Politische Kultur and in Konsens und Konkurrenz.

political theorizing, this aspect was surely also true of the Greek *poleis*, although the intermittent and endlessly indecisive armed conflicts could be consigned to an exterior sphere of »events« by the philosophers. But it simply could not be ignored in the case of a massive conquest state like Rome.⁶⁵ Polybius was compelled to perform the same additions for other not inconsequential matters like unusual aspects of Roman civic and cultural practices that were also not encompassed by Greek theorizing on the polis. And since the cumulation and maintenance of large-scale armed force is admitted by almost all of its modern analysts to have been critical to the formation of the modern state, it is difficult to understand how this could not also be true of the Roman polity.

Whether or not the individual persons involved in the more fluid personal and family-oriented politics at the urban center liked it or not, the control and regulation of something as challenging as peninsular Italy alone required elements of governance that far outstripped the abilities of private individuals and the institutions of the city itself, however flexible. In this sense, we can sensibly speak if not of *der Staat*, then at least of elements that gave the political body a manifest aspect of *Staatlichkeit*. The insistent demands of external threats (perceived or real), the need to maintain a very large armed force, the ability to feed and supply it, to train and arm the men, and, in short, to pay for the continuous large-scale warfare, are directly relevant to »what is a state«, especially a heavily militarized premodern one. In the politicking in the center, whatever the uses of personality (e.g. charisma), aspects of self-presentation, the public spectacles, these aspects were surely very far from coterminous with the whole political-legal-military entity that we call »the state«. It seems that an excessive focus on politicking at the center, whether of a senate or an emperor, leads to this evocation of a world of »ritual« and »spectacle« as »rules of the game«, a largely personal game.⁶⁶ Something as basic as the pragmatics in the designing, planning, and building of an extensive and unprecedented *system* of public roads is rarely, if ever, considered in this context. The same organizational demands on the government applied equally to the costs, building, and operation, say, of the gigantic aqueduct systems. The provision by the government of a *system* of coinage of unprecedented scale for its needs – however irregular the strikings might have been – must, once again, be brought into this argument. So, too, a whole network of subsidiary centrally authorized sub-governmental units – municipalities, colonies, allied communities in Italy; provinces outside Italy that were themselves armed with similar subsidiary units of imperial governance – but their impact on the generality of imperial rule seems hardly ever to be canvassed in debates about the »status« of the Roman state. The list could easily be expanded to a host of other governmental tasks, agencies, and institutions that the managers of the Roman government used to effect their control of Italy and the transmarine territories that its armies acquired.

65 Polyb. 6.19-42, which is an artificial addendum to the classic analysis of the Roman *politeia* that ends at 6.18; similar measures were taken much later by Aelius Aristides in his *Eis Romēn = Or.* 26.72-89, where the inclusion of the army is a set-aside addition to his general laudation of the Roman »constitution«.

66 As in the studies of Althoff (*Die Ottonen* and elsewhere) on the Ottonian »state«: as noted by Esders and Schuppert, *Mittelalterliches Regieren*, 160-161.

If cultural constructs are to be brought into the argument, then it cannot be simply the effectiveness of public rhetoric and the theatrical displays of power that made all these complex long-term institutions and structures function. The myopic focus on the small number of personalities who were quite literally at the center of the state and its government, whether the senate of the republic or the imperial court of the empire can lead to the supposition that they alone counted and literally ran the whole of the empire. Even on the universalizing force frequently ascribed to local elites of the empire in its operation, this makes little sense since the imperial displays of power at Rome, whether in the court, the amphitheater or the circus, were a significant but small element in the day-to-day running of the empire in most of its locales.⁶⁷ If the Ottonian polity of late tenth and early eleventh-century western Europe might be argued to be a kind of »kingship without a state«, *Königsherrschaft ohne Staat*, then the Roman empire could be argued to have a »court without a state«, a *Hof ohne Staat*.⁶⁸ Even with all its allied arguments, however, the former seems dubious, the latter, I would think, almost impossible to confirm. Most strong imperial states like the British empire or Ming Dynasty China, or strong states like Elizabethan England or the France of Louis XIV, had courts and elaborate court societies.⁶⁹ The existence of a court at the center of these other states (normally admitted to be such) has never voided their naming as »states«. The assumption that the courts of medieval polities worked mainly based on a series of personal relationships might well be validated by the evidence. But close examination of the evidence demonstrates that this was not true in the case of the court of the Roman emperor. The *officia* and »bureaux« of the government had personnel that were maintained in place from one emperor to the next; and there is little evidence of personal links with the court determining either the institutional apparatuses or the duties assigned to them.⁷⁰ That the few such men who were close enough and sufficiently known by the emperor or powers around the throne could act as patronal brokers is well known and is hardly surprising, but is not directly pertinent to the specific tasks, for example as controllers of the imperial correspondence or judicial decisions, that they and their staffs had to perform on a daily basis for the government. The administration of the large number of provinces, although staffed by imperial agents in some manner appointed (even if by several removes) and monitored (however lightly) by the court, demonstrably did not function solely as *personal* agents, even as personal agents of the emperor and court. I have considered the dynamics of royal court systems, principally the

67 Often, I think, misconstrued, misrepresented, or simply exaggerated: Shaw, *Global Empires*, 511-524 and Table 1, 512-513.

68 On the former, see, e.g., Althoff, *Die Ottonen*, on which see Esders and Schuppert, *Mittelalterliches Regieren*, 28-29; on the latter, Winterling, A court without »state«, with his detailed study of the imperial court: Winterling, *Aula Caesaris: Studien zur Institutionalisierung*.

69 Indeed, it was the last of these that hailed forth the formative classic analysis of Elias, *Die höfische Gesellschaft*.

70 See Davenport and Kelly, *Administration, finances, and the court*. On just one aspect of the court's administration (p. 117), they note that there were many thousands of slaves and freedmen in the imperial service at any one time and that »the emperor cannot have had personal relations with all of them.«

Herodian court of Judaea, that might seem to have functioned within a system dominated by »personal power«. ⁷¹ Individual persons in these systems managed power in a social system determined by non-institutional relations of kinship, amity, and personal indebtedness that made their polities much closer to a model of a *Personenverbandsstaat* than was Rome. ⁷² These men of power, however, were quite conscious of the fundamental distinctions between the way that they were doing things and the way that they witnessed them being done by a Roman imperial state that was characterized by a more rigid and impersonal system of political command and control, and a more objective administrative apparatus, that they did not possess. In this context, the successful operation of the large and quite complex political entity of the empire was not achieved by a court *per se* – a court that was an after-effect of its power – but by a complicated series of permanent institutional apparatuses in which manifold local persons, high and low, throughout the empire participated. In short, whatever theoretical requirements that we might establish about this side of the question to designate something that we would describe as a state, it appears that the specific instruments of Roman imperial governance more than meet any reasonable objective criteria of indicating the presence of such a complex corporate entity.

An Essence?

But perhaps the distinction between state and not-a-state, at least in a Schmittian view, lies less in the sum of similarities or in the cumulation of various factors than in some »essence« that stigmatizes a thing called »a state«. In this sense, the state becomes something that has an autonomous existence that rises above the individual parts that contribute to its special status. As has been noted of Schmitt, there is »a quasi-Catholic juridical rationality that renders the sovereign a representative person who amounts to something much more qualitatively than the sum total of the wills that created or empowered him«. ⁷³ In response to Hobbes, Schmitt asserts that »the state that came into being in the seventeenth century and prevailed on the continent of Europe is in fact a product of men and *differs from all earlier kinds of political units*« (m.i). It was so, says Schmitt, because the state was like a machine, a product of »a new technological era«. ⁷⁴ Furthermore, he claims, the decisive step in this watershed happened when the state »was conceived as a product of human calculation«. ⁷⁵ That is to say, the state becomes a machine-like apparatus that could be consciously created by deliberate planning. Other than the metaphoric machine-like view of the state, it is difficult to know what is meant precisely by the latter claim, since any human polity must be made by some species of »human calculation«. Even in making these claims, however,

71 See Shaw, *Tyrants, Bandits and Kings* and Shaw, *Roman Power and Responses*, somewhat close, therefore, to Althoff's concepts: Esders and Schuppert, *Mittelalterliches Regieren*, 28-29. I am not now quite as certain of the findings asserted there as I was at the time, but the general outlines will suffice for the argument here.

72 The overriding difference of the larger context in which these personal relations functioned is critical to understand: Pohl, *Personenverbandsstaat*, 215-17.

73 McCormick, *Teaching in vain*, 270 and 282, referring to Schmitt, *Leviathan in the State Theory of Thomas Hobbes*, 31 & 33; to which he adds, »and the irrational element of *myth* that allows individuals to perceive themselves to be part of a collectivity with a historical or providential mission.«

74 Schmitt, *Leviathan in the State Theory of Thomas Hobbes*, 34; see Schmitt, *Der Leviathan in der Staatslehre*, 53: »Der Staat, der im 17. Jahrhundert entstand und sich auf dem europäischen Kontinent durchsetzte, ist in der Tat ein Menschenwerk und von allen früheren Arten der politischen Einheit unterschieden.«

75 Schmitt, *Leviathan in the State Theory of Thomas Hobbes*, 37.

Schmitt repeatedly glosses this state as »the *modern* state«, so one presumes that he latently accepts that there must have been non-modern ones that were perhaps not characterized by such »technological« powers.⁷⁶ Similar analyses that have denied the status of state to the Roman imperium have also retreated into the safe ground of saying that it was not a *modern* state.⁷⁷ In the light of these strong qualifications, even (apparently) by Schmitt, one might reasonably ask: Are these »differences« in and of themselves sufficient to deny the categorization of state *tout court* to the Roman instance? How much, one must ask, was rationality, planning, and calculation so absent in the Roman case that they would void the legitimate use of the name (i.e. of »state«). In this respect, it is important to note that even within the »modern state«, Schmitt recognized various subtypes like the absolutist state of the eighteenth century, the »neutral« (i.e. non-interventionist) state of the nineteenth, and the totalitarian state of the twentieth century.⁷⁸ It is surely reasonable, then, to ask if a similar progression of city-state, territorial state, and imperial state, would not be possible and justifiable for the case of Rome.

Firstly, it should be noted that Schmitt's list of essential characteristics of this »essence« is conventional and is in no way different from how many nineteenth-century thinkers (and twentieth-century historians) defined the new European state of the period. Thinkers like Marx: »The centralized state power, with its ubiquitous organs of standing army, policy, bureaucracy, clergy and judicature – organs wrought after the plan of a systematic and hierarchic division of labour – originates from the days of absolute monarchy.«⁷⁹ So it can be summarily stated: »The Absolute monarchies introduced standing armies, a permanent bureaucracy, national taxation, a codified law, and the beginnings of a unified market.«⁸⁰ The new modern state might well have »introduced« these items as qualitative innovations when compared to its »feudal« predecessors, but it must be protested that they were not »introduced« for the first time, since the Roman imperial state featured every one of these

76 E.g. Schmitt, *Leviathan in the State Theory of Thomas Hobbes*, 31, 56; cf. 1938/1982, 47: »Moderner Staat und moderne Polizei sind zusammen entstanden...«; 85: »der moderne »neutrale« Staat ...«; while the adjective is normally omitted elsewhere, it is manifest from context that it is this specific type of state that Schmitt is considering throughout.

77 For example, Marotta, *Roman Jurists and the Empire*, 228: »... it is not possible to adopt the notion of territorial state in the modern and contemporary sense (m.i.) of homogeneous normative space«; cf. 219 n. 13 where he appeals to Tilly on the modern origins of the term.

78 See, e.g., Schmitt, *Begriff des Politischen*, 23: »Die Entwicklung geht vom absoluten Staat des 18. Jahrhunderts über den neutralen (nicht-interventionistischen) Staat des 19. zum totalen Staat des 20. Jahrhunderts.« Note that these mark developmental stages.

79 Marx had long before singled out these characteristics of the state: as here from *The Eighteenth Brumaire of Louis Napoleon* = Marx, *Surveys from Exile*, 237-238. For moderns, see, e.g., Anderson, *Lineages of the Absolutist State*, 15-17, at 17: »The Absolute monarchies introduced standing armies, a permanent bureaucracy, national taxation, a codified law, and the beginnings of a unified market.«

80 For Rome, concerning a standing army, national taxation, a codified legal system, and so on, there can be no doubt; there might be some justified balking at the presence of an established bureaucracy (although not for the later empire), but it depends very much on what one accepts as »bureaucratic«, the extent and depth of the administrative functionaries, the nature of the administrative system, and so on. There is no reasonable doubt that the Roman state of the earlier Principate had such an administrative infrastructure, even if it was less complex and extensive than the bureaucracies of the most advanced European states of the nineteenth century. It was surely comparable on both grounds, however, with the administrative apparatuses of many modern states, even France, say, of the sixteenth and seventeenth centuries.

characteristics, right down to the »beginnings of a unified market«. In any event, the mantra of »being introduced for the first time« should not distract. There are indeed some aspects of the modern state, especially conceptual ones, that came into existence after the Greek *polis* and the Roman *imperium*, like debates and philosophical constructions about political legitimacy and its grounds. But these are surely new ideas and expectations that arose with a new *type* of state.⁸¹ They do not, as such, prove that a polity lacking these specific concepts about itself was on these grounds alone not a state at all.

Manifestly a very large number of ancient theorists from Plato and Aristotle (most famously) onward were clearly able to envisage a *politeia* or a *res publica* in theoretical terms, to produce ideal (if not entirely mechanical) models of it, or to conceptualize it in terms that allowed refinements and fundamental alterations to existing ones. If the seventeenth century produced theorists like John Locke who could envisage this apparatus and see the state as something separate from and above the society which it enveloped and governed, then surely Cicero was no different. He, too, distinguished the state from the government and, if only in a rudimentary fashion, separated the state from society. And he was the first, long before Locke (despite frequent claims otherwise) to see private property as a fundamental element of the social and political order, and that a prime, if not *the* prime function of the state was to define and to protect private property.⁸² If in all of this thinking about the nature of the state Cicero uses the term *res publica*, it is manifest that the different terminology (not more than the Greek *politeia*) does not exclude that he is thinking, at least in part, about what we call a state. Whatever he was, Cicero was no great theorist – he was mostly describing and justifying what he already knew to exist. As already pointed out above, the Latin *res publica* never designated what we conventionally call »a republic«, but the words certainly overlap with our conceptions of a government and probably with the idea of a state – that is to say, an established government with all the apparatuses of a complex rule that was operationally separate from its individual subjects and which had a »perpetual existence« as juristic thinkers put it.⁸³

If we are to accept Schmitt's claim, reposing on an extreme premise that the critical basis of the state and politics rests finally on the distinction between friend and enemy and that the origins of the modern state, which offers the ideal of almost total protection within its borders to its citizens, is to be coordinated with the emergence of modern police forces, then a gap between the Roman state and the modern one does emerge, although only in some particulars.⁸⁴ In the essence of this definition, it would seem that the difference is truly tenuous and hardly essential. If the essence of politics is the prior existence of the state and this entity reposes, in turn, on the potential for final action for friends and against enemies – the latter construed as peer-state hostiles – then the Roman empire meets even this special,

81 Finley, *Authority and Legitimacy*, with apposite comments by Pleket, *Authority and Legitimacy*; and Finley, *Politics in the Ancient World*, 130-132.

82 I choose Wood, *Idea of the state*, since Wood was an established student of John Locke who had a good basis for assessing the significant differences between Cicero and sixteenth and seventeenth-century thinkers like Bodin and Grotius.

83 See n. 26 above on both of these points.

84 Schmitt, *Leviathan in the State Theory*, 31; it is a critical consequence of holding that the Cartesian essence of the state is *protego ergo obligo*: see Schmitt, *Concept of the Political*, 52; Schmitt, *The Leviathan in the State Theory*, 92.

truly Schmittian, criterion. Indeed, it is striking to see that Schmitt – logically, given his legal training – had recourse to Roman jurists to define precisely what is meant by a »public enemy« *in his terms*.⁸⁵ If, in his view, »In its entirety the state as an organized political entity decides for itself the friend-enemy distinction,« this is a classic statement of how the Roman state, whether as Republic or Principate, behaved. Neither an individual private person nor even an individual senator, could wage war using the combined forces at Rome’s command to battle against his or her personal enemies in Schmitt’s sense. Even on the separate criterion of confronting internal enemies, we must ask if this »essence« is sufficient to deny the category of state to the Roman instance? Although the empire and its provinces, and large urban centers like Rome, Carthage, Antioch, and Alexandria, admittedly did not possess modern police forces, there were modestly effective types of policing that were available to them. And, in terms of policing, there was a gap between the ideal and practice, but not one that is as totalizing as is sometimes imagined.⁸⁶ If Schmitt wishes to co-ordinate the modern state with modern policing, then, even if this policing *began* in the seventeenth century, the full development of police forces that systematically backed the remit of state power in enforcing conditions of peace within its borders did not occur until the latter half of the nineteenth century. The extent and depth of Roman policing, often carried out by militia-like units of the army or by local forces provided by municipalities in the west and by Greek-type city-states in the east, was a critical element of the Roman peace in most provinces of the empire. In the developed, urbanized core provinces of the empire, indeed, it was not much less efficient and effective in terms of policing than was found in most of Schmitt’s states of sixteenth and seventeenth (and, indeed, eighteenth) century western Europe. This is more or less the type of »policing« that Hegel, for example, regarded as consistent with the modern state.⁸⁷ There is no necessity, of course, that the Roman state should meet Schmitt’s peculiar definition of a state as a seat of final authority that enforces this type of civic peace any more than it has to meet his peculiar definition of »sovereignty« – although it does in fact meet both.⁸⁸ It is precisely in the autonomous existence of a supreme law-giving administrative authority armed with a sufficient force and ideological legitimacy to guarantee unusual conditions of peace and civil stability within its lands that the Roman state, along with the premodern dynasties of China, for example, has often been compared to the modern state.⁸⁹

85 See Schmitt, *Concept of the Political*, 27-29, citing *Dig.* 50.16.118 (Pomponius).

86 For the city of Rome, the analysis of Nippel, *Public Order* remains central, but it must be complemented by Sanger, *Zur Organisation des Sicherheitswesens*, Fuhrmann, *Policing the Roman Empire*; Kelly, *Policing and Security*; and Brelaz, *Surveiller le territoire*, who encapsulates much of his earlier work relevant to this question.

87 Avineri, *Hegel’s Theory*, 102.

88 See Schmitt, *Political Theology*, 5, and chapter one *in extenso*, on »sovereignty« as residing in »he who decides on the exception«, that is, as a kind of liminal power (which the Roman emperor certainly possessed). As Elshtain, *Sovereignty, God, State, and Self*, 30-33, 114-117, has pointed out, this view of sovereignty was not original to Schmitt and, in any event, it has been hotly contested.

89 In general, see Genet, *Rome et l’État moderne*; in particular, see, e.g., Nicolet, *L’Empire romain*; Ando, *Ambitions of government and Hannibal’s legacy*, both of whom cite much of the earlier relevant literature.

More to the point in Schmittian terms as one of the state's defining essences is that it is the organizational entity that is capable of waging war on a large scale against entities that *it alone* is capable of designating as »the enemy« (in his terms). If this is so, then the Roman state more than meets this requirement. In these same terms, it was also capable – as richly demonstrated by the historical record – of experiencing true internal or civil wars. In this regard, it is more than interesting that Schmitt sets as a logical corollary of these propositions that it is a necessary task for an institution called a »state« to establish conditions of peace within the territorial remit of its control. This further means that *every state (m.i.)* must have some means of defining an internal enemy – and amongst the category of every state, it is notable that Schmitt specifically refers to Rome and the form of declaring a *hostis publicus* (a state enemy) as a classic illustration of what he means.⁹⁰ In his larger general argument about essence, therefore, he leaves no doubt that Rome must be a classic instance of a state in his terms.

More than this, however, Rome also meets Schmitt's refutation of pluralist constructions of politics and sovereignty in the specific terms of *his* definition of sovereignty. The Roman government was in fact the final decider when it came to designating who were public enemies (i.e. of the state) and in mobilizing huge instruments of warfare against them. Just as in Bismarckian Germany, no professional *collegium*, public municipality, religious organization, or other such lesser corporate unit could prevent it from doing so.⁹¹ Just so, there is no doubt that although Rome either tolerated, accepted, or formally sanctioned lesser corporate bodies within its own body, like professional and religious *collegia*, there was no doubt *at the time* that Rome was not just yet another larger, even much larger, corporate body. The *Res publica* and its highest institutions (as later the emperor) and it alone had final power on matters as existential as waging wars that might threaten the whole of its society. Rome was, in Schmitt's own terms, the political entity, i.e. the state, which was the decisive polity. The political entity that was the Roman state might well have harbored many other corporate entities within it – some of them extensions of its own power, for example the public municipalities of the west or the Greek poleis of the eastern provinces, but, once again, and in Schmitt's own terms, its »political entity was something specifically different, and vis-à-vis other associations, something decisive«. ⁹²

90 Schmitt, *Concept of the Political*, 32-33; 46-47; cf. original, 2015, 31-32, and 43: »In allen Staaten (m.i.) gibt es deshalb in irgendeiner Form das, was das römische Staatsrecht als *hostis*-Erklärung kannte ... der innerstaatlichen *Feinderklärung*.«

91 See Schmitt, *Concept of the Political*, 40-45, in detail; cf. original *Der Begriff des Politischen*, 41: »Die politische Einheit ist eben ihrem Wesen nach die maßgebende Einheit... Sie existiert oder sie existiert nicht. Wenn sie existiert, ist sie die höchste, d. h. im entscheidenden Fall bestimmende Einheit.«

92 Schmitt, *Concept of the Political*, 45; cf. the original 2015, 42: »Die reale Möglichkeit der Gruppierung von Freund und Feind genügt, um über das bloß Gesellschaftlich-Associative hinaus eine maßgebende Einheit zu schaffen, die etwas spezifisch anderes und gegenüber den übrigen Assoziationen etwas Entscheidendes ist.«

The Law

Critical to the Schmittian idea of the state is the place of the law in the function and identity of a polity having the standing of a state. Indeed, it is practically impossible to understand his ideas on the modern and premodern state (and their implications for Rome) without understanding the context of the fundamental legal debates between the so-called »positivists« and »anti-positivists« in German legal circles in Schmitt's own age, as well as before and after it.⁹³ His overarching interpretation of the law is still one that sets out stark parameters of definition, even if it seems difficult to place his contributions in a context of Roman law as such.⁹⁴ In Schmitt's perspective, the state is a kind of supervening entity that emerges from and which, so to speak, embodies a deep pre-existent social schema of law and justice. Although this sequence of developments is surely debatable, at least in terms of the observable historical record, we might still interrogate the relationship between »law« and »state« to see if the Roman case would meet Schmitt's own criteria for the function of a »political unit« to rise to the level of »a state«. An investigation of the linkages between the Roman state and its laws, legal structure, interpretative specialists, and enforcement of its laws surely indicates that this relationship was sufficiently developed along Schmittian lines that a total separation between his idea of »the state« and the Roman empire seems excessive and unjustified. As has been observed, this was one of the critical ways in which the Roman state differed from the Greek polis.⁹⁵ If the law and legal norms are antecedent things that the state upholds, then it is only reasonable to ask what the relationship between the two was conceived to be (and can be argued to be) in the Roman case. Of course, Schmitt's position is one that postulates a vision of »the law« that is somewhat arbitrary, every bit as much as its opposite, »the state of nature«, so favored by some early modern thinkers. Even so, the problem is not at all finally resolved. In fact, it is precisely in the context of the legal thinking of the jurists and the concept of »empire« that the existence of the polity as a »state« has been rejected.⁹⁶ But this is not our problem or, indeed, Schmitt's.

93 This vital context of debates in the law is provided by Schupmann, *Carl Schmitt's State and Constitutional Theory*, 6-25.

94 See, e.g., Schiavone, *Invention of Law*, 37-39, where his words seem, to me, to be truly ambiguous.

95 See Finley, *Politics in the Ancient World*, 31. For a range of studies on the growing professionalism and authority of the jurists, the state-institutional structure of the courts, and the complexity of the law, see Frier, *Rise of the Roman Jurists* to Schiavone, *Invention of Law*; Du Plessis *et al.*, *Handbook of Roman Law*, chs. 12-14, are a sufficient demonstration (as are other contributions in this same collection) of the embedding of this whole »legalism« in the structures of the Roman state.

96 Marotta, *Roman Jurists and the Empire*, 205: Did the jurists ever treat the concept of *civitas* in such a fashion that »the Roman dominion constituted... a territorial state?« and, furthermore, it »makes no sense (sc. in this specific light) to wonder if it (sc. the Roman polity) was by now a State that had had an Empire rather than a State that had an Empire.« He continues in the footnote (n. 56): it might be noted »that this term – State – if used in reference to premodern political syntheses, cannot assume a legal and institutional importance – unless we are satisfied with merely descriptive formulations.« And further (p. 219) »for the jurists, the Roman conquests did not lead to the creation of a territorial state.«

A hard separation between the law of the modern national state (the peculiarities of the Common Law aside) and that of the Roman empire was one widely shared up to a generation or two ago. It was a concept of the legal world of the empire that restricted the purview and effects of specifically Roman laws, the legal measure of the Roman state, as limited to the civic silo of Roman citizens – in this precise sense, Roman law was strictly a »civil law«, *ius civile*. This perspective left the empire as a patchwork quilt, as it were, of social tranches where Roman law applied and where it did not; and, alongside these divides, a varied congeries of local legal systems and customary norms. This weak concept of the law and legal structure of the empire is a view that had serious implications for categorizing the type of the empire as a state. This interpretative perspective on the legal world of the empire, which was a classic view of its nature by both historians and Romanists through the mid-twentieth century, has been strongly modified by different streams of research by both legal scholars and social historians over the last four or five decades. The new picture of the law in the centuries long before its formal systematization in the great written »codes« of the fifth and sixth centuries CE is one of a much more pervasive and deeply penetrating system of ideas, practices and institutions that extended far beyond the limited number of Roman citizens to peoples who were technically outside the formal purview of the *ius civile*. This limited sectional view of the Roman law was upheld by a wide range of Romanists, classically represented by Ludwig Mitteis in his canonical nineteenth-century work on *Reichsrecht und Volksrecht*, and embodied in handbooks on the civil law like the classic works of Max Kaser.⁹⁷ Doubtless, this was the more confined perspective of the purview of the Roman law – a civil law limited to Roman citizens, a system not broadly applied in the whole empire – that Schmitt had absorbed in his initial training in Roman law in Berlin in 1907-08.⁹⁸ This idea of the law remained a real force in the theoretical Romanist underpinnings of the modern European civil law systems. The picture of Roman law as a system of legal regulation restricted by social status, political definition, and by strong cultural barriers, as just noted, is no longer tenable. It is now generally recognized that the influence and application of Roman law was extended over a wide range of subjects of the empire beyond its citizens.⁹⁹ This happened in a number of different ways that encompassed means in addition to the spread of Roman citizenship: by the fictive treatment of non-citizen provincial subjects *as if* they were Roman citizens, so bringing them within the scope of the law; by the widespread propensity of non-citizen provincials to imitate Roman legal forms or to petition Roman court venues in order to have their disputes heard under the aegis of Roman law; or by the propensity, underwritten by orders issued by the emperors themselves, to treat local customary arrangements as legally binding and within the purview of judicial proceedings held by provincial governors or their judicial legates.¹⁰⁰ The concept that Roman legal pronouncements applied to all

97 Mitteis, *Reichsrecht und Volksrecht*; and, on standard legal models, see, e.g., Kaser, *Römisches Privatrecht*.

98 Bendersky, *Carl Schmitt: Theorist for the Reich*, 7.

99 For some of the ways in which this happened, which varied from province to province and, in more strategic terms, between west and east, see the nuanced studies collected in Czajkowski *et al.*, *Law in the Roman Provinces*, with the important analysis of them by Kehoe, *Law and legal institutions*.

100 On these and other aspects, with specific examples, see Kehoe, *Law and legal institutions* (e.g. a Roman governor of Macedonia interpreting the local Greek freeing of slaves *as if* they fell under Roman rules for informal manumissions).

subjects of the imperium or »command« of the Romans is clear in many instances. For example, a decision by the emperor that slaves could not be treated with »excessive savagery« by their owners – such behavior was not permitted »not only for Roman citizens but [is] also [not permitted] for any other men who live under the command (i.e. »in the empire«) of the Roman people«. ¹⁰¹ The Roman empire was, in very important ways, an empire of Roman law.

These and other modes meant that Roman law and, more broadly speaking, legal norms, came to be widespread practices that were an integral part of the imperial state and with which its state-like practices were especially identified. ¹⁰² The use and impact of the general law of the empire is well attested from the extreme southwest in the mountains of the Atlas in present-day Morocco to the extreme northeast of the mountains and mines of Dacia in present-day Romania. And from the extreme northwest in Britannia at Vindolanda and Londinium, to the arid lands of the province of Arabia in the far southeast. ¹⁰³ And in almost every locale in between. In the case of the detailed records of labour and commercial contracts on the wooden tablets recently discovered (and in numbers) from Londinium and those in wax tablets found at Alburnus Minor in Dacia, these are found embedded in normal activities only a generation after the Roman takeover and, in both of these cases (and many others), the forms of Roman law were being imitated and voluntarily adopted by local persons who were not even Roman citizens. ¹⁰⁴

101 Gaius, *Inst.* 1.53: *Sed hoc tempore neque civibus Romanis nec ullis aliis hominibus qui sub imperio populi Romani sunt, licet supra modum et ne causa in servos suos saevire.* (my emphasis); cf. Marotta, *Roman Jurists and the Empire*, 211, who also cites *Dig.* 36.1.27 (Paul) on a *senatus consultum* applying to all cities/communities *quae sub imperio populi Romani sunt*. There are many declarations that elements of the Roman law, as rescripts of the emperor, apply everywhere and at all times in the empire: see, e.g., *Dig.* 47.12.3.5 (Ulpian): *quia generalia sunt rescripta et oportet imperialia statuta suam vim optinere et in omni loco valere.*

102 The literature is now vast. What can be provided here are only some exemplary instances. On the use of legal fictions, see Ando, *Work-Arounds in Roman law* and Ando, *Fact, fiction, and social reality*; on the use of Roman courts and imitation of Roman legal norms, see the use of Roman forms, including a model formula for an action of *tutela*, in the Babatha archive; Czajkowski, *Localized Law*; Humfress, *Law in Practice*, *Law & custom* and especially *Law's empire* on the widespread appeals to Roman law even by non-citizens; on the negotiation with local forms of law and Roman courts, see Humfress, *Thinking through legal pluralism*, Dolganov, *Theory and practice*, and Nótári, *Private Law*.

103 Morocco: manifest in the terms of the *Tabula Banasitana*: Euzennat and Seston, *Un dossier de la chancellerie*; Dacia: Nótári, *Private Law*; on the »Bloomberg tablets« from London, see Tomlin, *Roman London's First Voices*; on Arabia: the well-known Babatha archive is sufficient, on which, see Czajkowski, *Localized Law* (encompassing most earlier studies).

104 On the mimicking of Roman forms in the »Bloomberg tablets«, see, e.g., Tomlin, *Roman London's First Voices*, WT 44, 45, 55, for contracts that are close imitations of the formalities required by Roman law; Kehoe, *Law and legal institutions*, 498-499, notes the well-known sales and labor contracts on wax tablets from the mining district of Alburnus Minor (Dacia), made by persons who, like those at Londinium, were not Roman citizens.

This process of classic *étatisme* is already evident in the application of Roman law by its officials in a rather early age of the formation of the empire. Complex developments in the law produced a set of specifically Roman legal norms and procedures that were being widely applied to the subjects of Roman rule already by the middle Republic – a fact that one should emphasize with some force: not just to its citizens but to its subjects in general.¹⁰⁵ As far as the relationship between the state and its provincial subjects is concerned, there is no doubt that the government's application of its legal norms via its recognized officials – in most cases, provincial governors and their legates, but also lesser officials armed with *iurisdictio* – were seen to be one of the very bases of the political system of the state. As Cicero remarked to his brother Quintus in 60/59 BCE, the Roman imperial rule of the province of Asia »is most especially upheld by the administration of the law, *iurisdictio*«. ¹⁰⁶ Since his brother Quintus was going out to govern one of the wealthiest and most important provinces of the empire at the time, the judgement of a learned fellow senator must bear some significance. It is not just this pragmatic aspect of law and governance that alone counts, but also the conceptual relationship between state and law. In this respect, the long road to formal codification (a specific concern of Schmitt's) does count. In this process, the influence of great monist ideas, like those of Plato in the age of so-called »neo-Platonism« and of Christian ideologues, can be seen as quite congenial to the systematic and imperial nature of the Roman law. Surely this is so because, whatever its apparent disjointed and casuistic actuality, the law had this »universalism« built into its background assumptions, vision, and actual development.¹⁰⁷ When compilers of general law could refer to it both as divinely inspired for the collective and as a *magisterium vitae* for each individual, it is manifest that this was a law-state connectivity of much the same type as Schmitt envisaged.

The extent to which this law not only governed the lives of the subjects of the empire but was also absorbed by them and governed their behavior is demonstrated, in part, by the extensive archiving of court records made by provincial families, for example, for their own legal protection. These records were linked, ultimately, to records kept by the state in its archives, many of which were copied by non-citizen subjects of the state. The state kept them for its own interests – to confirm judicial decisions, to announce awards, to keep records of recruitment, to maintain receipts of tax duties, and so on – but the private individuals kept them or, most frequently, copies of them for reasons that were closely tied to the existence of the state, namely, to protect their property and personal status.¹⁰⁸ Furthermore, this

105 As is evident, for example, from the procedures followed by the Roman governor, Gaius Valerius Flaccus, in adjudicating an irrigation dispute between two Iberian communities in the Ebro Valley in the province of Hispania Citerior as early as 87 BCE: Richardson 1983 (*AE* 1984: 586; ancient Contrebia, modern Botorrita; 15 May 87 BCE). There is no reason to believe that this was the earliest instance of this practice.

106 Cic. *Q. frat.* 1.7.20: *Ac mihi quidem videtur non sane magna varietas esse negotiorum in administranda Asia, sed ea tota iurisdictione maxime sustineri; in qua scientiae, praesertim provincialis, ratio ipsa expedita est...*

107 On the influences of neo-Platonic concepts on the final codification, see Schmidt-Hofner, Plato and the Theodosian Code, 45-60, specifically on the case of the *Codex Theodosianus*; on the important Christian influences, see Letteney, *Christianizing of Knowledge*, appendix 1, with the same case study. For *magisterium vitae*, see *CTh* 1.1.5, which also emphasizes the completeness and universality of the law's application (Theodosius et Valentinianus AA ad Senatum, 429 CE).

108 Bagnall, *The councillor and the clerk*, 212, concerning very well documented cases that we have from Roman Egypt.

ideological impact of the law extended far beyond any formal application of its normative rules in judicial hearings in public courts and other venues. The writings of secular thinkers and belle-lettristes like Apuleius and Christian ideologues like Tertullian, living in the height of the empire, were suffused with concepts of law and legal terminology that typified the Roman state. Both men, who were African subjects of the empire, were about as Roman as one can get; consequently, the law of empire was deeply written into their creative work. Their writings reflect a law, by which is meant specifically Roman imperial law, that was central to the ideas and behaviors of a wide range of persons through the length and breadth of the empire. As far as Tertullian was concerned, both in the formal institutional makeup of its congregations and in its basic concepts, the Christian church was imitating the forms and ideas of the state.¹⁰⁹ More broadly, however, such »state-talk« laced with legalese and with the dramatic scenarios of Roman courts, was central to the invention, construction, and continuity of something as central to early Christian identity as the ideology and practice of martyrdom.¹¹⁰ In this sense, we can witness specific effects of *Staatlichkeit* on individuals that are not limited to the modern instance.

Can the Roman Imperial Polity be Called a State?

Many of the doubts about the typing of the Roman government and its status as »a state« have been focused on the republican state where such doubts might have occasional purchase, albeit only with an exercise of the type of myopia indicated above. I strongly doubt that such claims about the nature even of the less-structured republican polity, in those times for which we have adequate and dependable evidence on its structure, can produce an accurate description of *the whole of its governance*. My principal focus here, however, is on the structure of the mature Roman state of the high empire where, surely, there can be little doubt that the government of the empire met almost all the significant objective criteria of being a state – that its organization possessed a quality of »stateliness«. Naturally, given the growth trajectory of the Roman polity, there were sectors or elements of it that deviate from the perfect Schmittian model of »the state«: state power was not uniformly applied or claimed within the boundaries of the state. There was no perfect Weberian claim to a »monopoly of force« exercised by the state, an item subscribed to by Schmitt as an essential characteristic of a state. Roman law norms and their controls over violence were not literally applied everywhere and in every instance (i.e. there was no general monopoly of state law). Civic policing within the Roman state admittedly fell short of the in-depth policing established with the permanent police forces of the modern state. The economy was not – at least in my estimate – a universal »national economy« that dominated virtually all economic activity within the state's purview characterized by the universal price-setting markets of

109 Documented, in great detail, in the classic work of reference by Gaudemet, *L'Église*.

110 Despite occasional objections to some of the details, the fundamental argument in Bowersock, *Martyrdom and Rome*, is sufficient to demonstrate this point.

modern capitalism. And so on. Whatever the effects of these exceptions, large and small, we might at least settle on the absolute minimum that the state-like structures of the Roman empire were operationally sufficient for our purpose for us to ask: What was this Roman state like and what functions did sub-corporate units have in its structure? In fact, it is in the transition from the republican form of the state to the principate that we find the formation, extension, and regulation of many of the sub-corporate bodies, like public *collegia*, which, even if they had a more informal earlier existence in republican times, were more carefully defined (precisely in legal terms) and reshaped to serve the interests of the Roman state.

On the side of historical concepts, I have already noted that Schmitt, whose theorizing is often appealed to in these matters or is a latent basis for them, makes the claim that the state – as such, and with the attendant vocabulary – is a relatively recent invention coordinated with the emergence of the modern national polities. The subsidiary claim is that the concept of »state« can only designate this specific type of polity. But in the operative non-theoretical terms that I have outlined above, this perspective also seems to be more than a little myopic. Most historians nowadays do not accept the forming of national states in their western European-north Atlantic type as a self-evident unique manifestation of »the state« in global history. They were, rather, the contingent result of the peculiar forces of that time and place.¹¹¹ In following this interpretation, we are obeying Schmitt's own injunction that what is a state has to be seen in historical terms, as a form attached to concrete social and political contexts.¹¹² Even if one accepts the historical peculiarity of this particular type of state, it does not necessarily follow that all governmental apparatuses before the emergence of »the state« in Schmitt's terms, which depends on this peculiar historical episode, do not qualify as what historians can legitimately call a state. One can still accept Schmitt's observation about emergence of a new type of governance with the new term, *der Staat*, to designate it in the sixteenth and seventeenth centuries without being forced wholly to abandon the term as one that is useful in identifying similar units of rule and governance that are found before the emergence of the peculiar modern type.¹¹³ Otherwise we are driven to Schmitt's position,

111 Eich *et al*, *Der wiederkehrende Leviathan*, 11. Oddly enough, this was also, in an important sense, Schmitt's view, based on his acceptance of the *konkrete Ordnung* as being of prior importance in determining specific forms of law and state: Schmitt, *Staat als ein konkreter Begriff* = Schmitt, *Verfassungsrechtliche Aufsätze*, 378-380.

112 See Schmitt, *Staat als ein konkreter Begriff* = Schmitt, *Verfassungsrechtliche Aufsätze*, 376; 2007, 27 & 45; and 2015, 20, 66-67, for the importance of the *konkrete Ordnung* in Schmitt's thinking; see Bendersky, *Carl Schmitt: Theorist for the Reich*, 87-88, 100-101; McCormick, *Teaching in vain*, 277-279; Schupmann, *Carl Schmitt's State and Constitutional Theory*, 94-95, 129-131; for its influence on historians like Brunner, see Algazi, *Otto Brunner – 'Konkrete Ordnung' und Sprache der Zeit*, 171-175.

113 As such, Schmitt's thinking is a part of a range of similar thinking – e.g. Weber on capitalism, Koselleck on historical time, Foucault on disciplinary regimes – that posits a fundamental ideological break located in a modernist watershed in European history. Although there is some analytical benefit in their claims, the extremity of the polarities that they posit is overdrawn in a way that surely impedes longer-term historical analysis. As in Weber's case, although he did draw a mostly true line between the modernity of the eighteenth and nineteenth centuries and the social orders, economies, and polities of the centuries immediately preceding, the uniform extension of the idea backward in time led to a forced and false categorization of *everything* that went before, in his case reducing the Roman state, to something akin to »patrimonial« entities.

namely, to say that pre-state forms of power were a peculiar kind of *Herrschaftsorganisation*. On close examination, if this *Herrschaftsorganisation* proves to have all the hallmarks of what we would call »a state«, it seems both otiose and rather misleading to say that only the one modern western European type is a state, while all the others are not. There seems no point to constructing a definition in such a narrow Eurocentric sense as to exclude most of the other manifest cases in world history.¹¹⁴ In this sense, we are perhaps in danger of making too much of the word »state«, exalting it excessively and making of it too much. It was, admittedly, an early modern neologism that emerged to describe something that was indeed new to the experiences of the persons of the time. It designated a polity that had a certain type of »standing« or status (hence the use of the Latin *status*) that set it apart from most contemporary political or governmental units. This should not be taken to mean, surely, that such units with a comparable status (if not exactly such) had not existed before, outside the immediate experience of moderns.

More significantly, these rhetorical approaches to the word (or its absence) would compel us to abandon all modern-invented concept terms, like »economy«, for which earlier social orders had no word, in our analysis of premodern societies. This would be an obvious fallacy of historical logic and method, leading to the illogical premise that, because there was no equivalent word for »economy« in Latin, the Romans had no economy and no way of recognizing or enacting economic relations.¹¹⁵ This strange assertion that *we* have to function within the scope of *their* words and concepts in order to analyze their society, although congenial to some anti-modernist trends in history, is illogical and not borne out by any actual historical practice.¹¹⁶ Nor is there any need to rescue the emic via too rigorous an application of a Weberian *Idealtypus*, since even Weber himself was able to make the distinction between various types of states (which counted, indeed, as »states«). If a monopoly of violence was a critical measure of statehood, then, he admitted, premodern states had this only in respect to their own regulatory measures. And it is probably true that only some modern states have possessed this »monopoly« in totality of violence as a measure of their self-definition.¹¹⁷ But

114 Although he is criticizing the ideas of Gianfranco Poggi and Martin Van Creveld, and not those of Carl Schmitt, Scheidel, *Studying the state*, 7-8, makes the same point.

115 For this problem of the gap between modern conceptual terms and the »emic« world of the Greek and Roman writers, see Winterling, »Staat« in der griechischen-römischen Antike?, 249-51. His suggested resolution via the Weberian *Idealtypus* is possible but, it seems to me, not necessary. The number of such »modern concepts« that are necessary to our historical analysis is rather large. As both Winterling, »Staat« in der griechischen-römischen Antike? and Lundgreen, *Staatsdiskurse*, 15, emphasize, we (moderns) cannot do history without them. I think that this sufficiently answers Lundgreen's emic worry (*Staatsdiskurse*, 16) about the concerns we should have with how »they« would have described their own polity. We should, of course, be concerned with such an »indigenous« perspective, but it should not be allowed to occlude our own analytical interests or the use of the historian's tools that we need to get the work done.

116 So, for example, the claims by Otto Gierke and Otto Brunner, which one must expect of them, are in part true (e.g. the word »status« in their sources is not equivalent to our »state«), but quite false in the conclusions that they draw (i.e. we cannot use our concept of state to analyze past historical actors). I therefore disagree with an artificial problem on »the state« that seems to be created by Davies 2003, 292-93 (where, in any event, the position is regarded by the author himself as »untenable«).

117 Weber, *Economy and Society*, 135-136; on which, see Scheidel, *Studying the state*, 5 and 5 n. 3 who seems, to me, to have assessed this matter correctly.

this does not mean (as it did not even for Weber) that all polities had to meet this criterion before they could be accounted a state. The very weakness of anti-Leviathan claims like these necessarily directs us to consider a different model of the Roman state that is more appropriate and more functional in its analysis of its instruments of governance, an analysis that shifts from a narrow focus on the functioning of politicking at the center to a wider one on the whole structure of the empire. And less with a fascination with having Rome measure up to the requirements of a *modern* »state« than as exhibiting elements typical of a state of its own type. In this context, we might consider a definition of »state« that claims to exclude the Roman empire from state-ness.¹¹⁸

The state... is a corporation... Above all, it is a corporation in the sense that it possesses a legal *persona* of its own, which means that it has rights and duties and may engage in various activities *as if* it were a real, flesh-and-blood, living individual. The points where the state differs from other corporations are, first, the fact that it authorizes them all but is itself authorized (recognized) solely by others of its kind; secondly, that certain functions (known collectively as the attributes of sovereignty) are reserved for it alone; and, thirdly, that it exercises those functions over a certain territory inside which its jurisdiction is both exclusive and all-embracing.

Van Creveld advances to claim that the state is a subspecies of »the corporation« and that for most of history there existed »governments« but not »states«. In taking this course, he shares a liberal idea of pluralism in political power in which the state is, indeed, just another corporate body.¹¹⁹ He further contends that the state as a corporation was unknown in pre-modern times and that therefore the Roman empire was not a state. The problem is that all these assertions are untrue; in fact, they are especially untrue of the Roman state. The Roman *imperium* manifestly meets van Creveld's three major criteria of »corporateness«. Its proponents had a definition and consciousness of their polity as a corporate body, this state authorized other corporate bodies under its aegis, and it exercised »aspects of sovereignty« – even if this, too, is a modern word – and did so within a territory that it defined, if not with the modern sense of mutual exclusive *shared* »borders« that defined the constellation modern western European states. If, like most empires, it had no firmly established outer borders, the Roman state still had plenty of internal ones between its component units, especially those of the provinces, that functioned similarly and marked out areas of what might be called the remit of the state's juridical, political and military powers.¹²⁰ The empire also had

118 Van Creveld, *Before the state*, 1.

119 In its classic sense, one important to arguments here on competing or alternative locations of »sovereignty«, pluralism is perhaps still best represented by the early work of Harold Laski, e.g. *Problem of Sovereignty and Authority in the Modern State* (of course, Schmitt rejected the »pluralist« construction of the state).

120 Ando, *Hannibal's legacy*, esp. 76-78, offers the best analysis of this aspect of the Roman state.

»lines of demarcation« with the external non-Roman world. If you imported things across those lines you would know (as would the state's authorities) because you paid ten times the level of duties imposed on internal frontiers. The Roman empire, in short, had an effective form of sovereignty, even if it was not, say, like that of eighteenth-century France. Most unfortunately, modern theorizing of this kind is not very helpful. A commonly arraigned definition, for example, is that offered by Spruyt in his basic work on the state.¹²¹

If politics is about rule, the modern state is verily unique, for it claims sovereignty and territoriality. It is sovereign in that it claims final authority and recognizes no higher source of jurisdiction. It is territorial in that rule is defined as exclusive authority over a fixed territorial space.

At this point, all that one can do is to issue a strong and hard objection, since in this case, *by these precise definitions*, Rome is either a modern state or the modern state is not unique. The reader will have to make his or her choice, but in doing so will find themselves caught in the internal contradiction of such ahistorical theorizings.

In the end, it is probably more fruitful to accept the fact that, even if it was not a modern absolutist or national state, the Roman empire at least was a kind of organization that we call »a state« and to ask what kind of state it was. This observation directs us back to the dual problems of the nature of the Roman empire's composite makeup, precisely its status as a corporate body, and the function of lesser corpora in the structure of its larger body. Again, Schmitt's overwhelming concern as far as »state« was concerned, and specifically Germany, was to separate modern developments from the world of »medieval« or »feudal« polities where, as he remarks, no prince of a German mini-kingdom or tyrant of a Renaissance city-state in Italy aimed at producing the sort of state of which he is speaking.¹²² This is probably true, but it tells us little about what the managers of other nascent states did in other historical circumstances different from those of »medieval« and early modern western Europe. Instead, we are presented with a rather simple »before and after« scenario in which modern European developments establish a complete and sufficient definition of *everything* that was »before«. Whatever the virtues of this idea as a Schmittian concept, historians and political scientists have had no difficulty in distinguishing the modern absolutist states from earlier »feudal« polities or from Italian city-states *as states*. Nor, for that matter, have they had any difficulty in distinguishing, typologically, early Rome as a city-state, from its later manifestations as a territorial state (dominating Italy) or as an empire that dominated the Mediterranean.¹²³ The same applies to the use of the term to describe other comparable polities in global history.

121 Spruyt, *Sovereign State and Its Competitors*, 34 (what follows on this page and the next does not improve matters); for comment, see Esders and Schuppert, *Mittelalterliches Regieren*, 33-34.

122 Schmitt, Staat als ein konkreter Begriff = Schmitt, *Verfassungsrechtliche Aufsätze*, 378.

123 For modern historians and political scientists, see, e.g., Hall, *States in History*; for ancient historians, see, e.g., the survey by Demandt, *Antike Staatsformen*.

In the light of the arguments made above, the short answer to the question as to whether the Roman state was a state is, surely, »yes«. I might be forgiven if, with others, I quote the words of Susan Reynolds, which are cast less at the level of high theorizing than at what might be fairly described as a kind of English »common sense«.¹²⁴

A good many medieval historians do not merely distinguish the »feudal state,« with its personal bonds, from the modern administrative state. They prefer not to call medieval polities states at all. Since few who reject the word attempt any definition of the state that does not conflate it with modern state, nation state, or sovereign state, it is hard to know whether they do so because medieval kingdoms and lesser lordships lacked fixed boundaries, effective central authority, sovereignty (however defined), or modern technologies of communication. Most discussions, moreover, tend to confuse words (e.g. the use of status and its derivatives), concepts (the supposed modern concept of the state), and phenomena. A definition of the state as a phenomenon, however conceptualized by those within it, that will serve for comparative use seems desirable. I offer the following, which is based on Max Weber, with some modification: a state is an organization of human society within a fixed territory that more or less successfully claims the control (not the monopoly) of the legitimate use of physical force within that territory. If one were to deny statehood on this definition to medieval kingdoms or lesser lordships in general, or even to those of the early middle ages, on grounds of the fluidity of their boundaries, the ineffectiveness of control within them, the autonomy, or partial autonomy, of lesser authorities within them, or their lack of sovereignty (however defined), one would have to deny it to a good many modern states as well.

One can only add »amen« to such plain speaking. But should we choose to disregard Reynolds' words, even when set against the extreme standards of Schmittian theorizing, the mature Roman imperial project, its command or *imperium*, of the second century BCE to the fifth century CE, surely meets all the developmental criteria of *his* more stringent model. Perhaps more important in his terms, it exhibited the *essence* of stateliness as a corporate body that monitored conditions of civility and peace, *pax*, for all of its subjects – all those under its aegis and not just those possessing the formal status of Roman citizens. Within these terms, it was also the final decider in such critical matters as in those of war and peace. In any event, there is no pragmatic reason for historians to be trapped within this mode of »high thinking« of Schmitt's idealist philosophical model. We deal with human matters in what Veyne has called the »sublunary« world in which approximate categories, reasonable fits, good estimates, and rather more mundane standards are most useful for achieving a better understanding of the human past. Generalizations, as Finley pointed out, rather than absolute rigid rules or high-flown concepts that mimic those of the scientist, are the practicing tools of the historian.¹²⁵ In this context, was Finley right in the end and the label – arguing, in this case,

124 Reynolds, *Fiefs and Vassals*, 26-27; see Esders and Schuppert, *Mittelalterliches Regieren*, 35, who note the importance of the words.

125 Still the »workaday« pragmatic concepts that work for this historian: see Finley, *Generalizations in ancient history*, which, although here directed against a different problem – that of the scientific »laws« in history – bears on Schmitt's drive to apply highly refined philosophical ideas to past realities.

about the meaning of the word »empire« – just doesn't matter? The man-in-the-street, he says, uses the term »empire«, somehow knows what it means, and that is sufficient.¹²⁶ This has logical implications for our historical analysis.¹²⁷ And since all historical research as a discipline – as is even admitted by some of the disputants of this question – is done in the present, we necessarily must use the words and concepts that are part of our mental toolkit of understanding. One of these is the early modern neologism of the *status* that described the peculiar historical »standing« or »condition« of the political and military unit, the »government«, that had a sort of »final« standing in the world that emerged in the fifteenth and sixteenth centuries as a way of describing the emerging modern »state« in western Europe.

The Roman imperial state was, admittedly, not a modern absolutist state, not a »constitutional« state, *Rechtsstaat*, nor any of the other modern variants, like the totalitarian states of Europe of the 1930s.¹²⁸ And long-standing debates about how »imperial« the republican polity was or how republican the imperial one was, are interesting, but largely irrelevant since in either case the Roman state remains a state.¹²⁹ Once this has been said, however, and even when all the theoretical caveats have been considered, the Roman *imperium* – and, indeed, the Greek *polis* as well – can rightly be seen as species of the genus. Indeed, over the whole trajectory of its existence, the Roman polity exhibited the typical features of at least three types of state.¹³⁰ This is so not only because we are justified in using the modern term »state« to refer to these earlier political entities, but also because the Roman *imperium* shares all the significant objective conditions of being the thing that we call a »state«. Not only this, but it also meets the Schmittian criterion of possessing the »essence« that typifies a state. To engage in the infelicitous and illogical semantical game of calling it »Lordship«, a »politically organized subjugation«, a *Herrschaftsorganisation*, or, Schmitt's choice, »a kind of political unit« – *eine Art der politischen Einheit* – rather than »a state« simply because it was premodern causes needless confusion and gains the historian nothing in terms of historical analysis.¹³¹

126 Finley, *Empire in the Greek and Roman World*, 1; roughly the difference, therefore, between the »der Purist der Quellsprache« and »der Pragmatiker der Alltagssprache« of Uwe Walter, *Begriff des Staates*, 9.

127 Finley, *Politics in the Ancient World*, 49: »... inquiry into the ancient state and government needs to be lowered from the stratosphere of rarified concepts, by a consideration not only of ideology... of DER STAAT (*his caps.*) ... but also of the material relations among the citizens or classes of citizens...«

128 Schmitt, *Leviathan in the State Theory of Thomas Hobbes*, 65, on the *Rechtsstaat* that succeeds »the Leviathan« (save for the problem of dictatorship, he rarely studied the totalitarian state as a serious type of modern state).

129 The debates are clearly recapitulated and the consequences analyzed by Winterling, *A Court without »state«*, 11-17 (and, more broadly, in the whole contents of Winterling, *Politics and Society in Imperial Rome*); the problem here, however, seems to be with too narrow a concept of »state« that then leads to unnecessary difficulties with the concept itself.

130 Namely a city-state, a territorial state, and an imperial state; to a certain extent, these can be co-ordinated with the finer chronological political periodizations of Roman history, as, e.g., that offered by Flower, *Roman Republics*.

131 »Politically organized subjugation«: Abrams, *Notes on the difficulty*, 63-64.

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COMMENT

PREMODERN STATES: CONCEPTS AND CHALLENGES

John Haldon*

Introduction

Brent Shaw's masterly survey and discussion of the long-running argument over the question of Roman »stateness« offers an excellent opportunity to move our attention away from the Roman empire to other premodern state formations and to raise the question of the degree to which this discussion impinges, or should impinge on, the ways in which we approach and understand premodern socio-political systems. Shaw lucidly describes the discussion about the nature of the »modern« state that originated in the later seventeenth and eighteenth centuries and was taken up by historians and legal historians and applied to Rome. He very effectively demonstrates once again the problems that accompany what he terms the »emic trap«, the notion that by grasping as far as the sources permit an understanding of the world of former cultures in their own terms, this suffices as a historical analysis of those terms, and that we should therefore not use any modern words or terms because they did not exist (or were used to mean something quite different) in the cultures in question. But he also shows very clearly how rooted this whole debate has been in a specifically European, indeed a specifically German philosophical and political-cultural context, and that there is no practical, research-related analytical justification for remaining boxed in by this context. As Shaw emphasises, the early modern neologism »state«, from Lat. *status*, was intended to describe a type of polity that had a specific (and radically different, from the perspective of 17th- and 18th-c. thinkers) standing or status that differentiated it clearly from what had preceded it and distinguished it still from most other political entities of the period, in particular its quality as a nation-state.¹

Shaw invokes Moses Finley and Susan Reynolds to emphasise that what we are, and should be, working with are plausible hypotheses, and to attempt to sum up a complex phenomenon such as any political formation in a single term that has only one very restrictive value inhibits such a process or even renders it impossible. To limit oneself only to terms that were used within the sort of cultures we are studying in order to understand them has always seemed to me to miss the heuristic wood for the terminological trees. As Shaw and many others have pointed out, such a restrictive – and entirely Eurocentric – approach is to exclude most political formations that are neither modern nation-states nor tribal or kinship based political formations. Analysis requires appropriate technical terms through which we can try to characterise the historical phenomena in which we are interested, for whatever period or part of the world we are studying, if only to be able to compare them with other, similar or less similar, polities – which is, of course, precisely why early modern thinkers came up with the term »state« in the first place. We need to find a language that helps us say something

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1 See Giddens, *Nation-State and Violence*.

about the quality and dynamics of particular types of political formation. Perhaps more importantly, we need to move away from European legalist and constitutionalist approaches and think more, perhaps, of power relationships and how the structures of a polity reflect and also nuance and configure such relationships. I see no strong reason not to retain the word state when suitably qualified by terms such as »modern«, »early modern«, »medieval«, »ancient«, »tributary«, »city« or whatever, providing we agree on some really basic characteristics that differentiate »state« from other forms of social-political organisation.

Definitions abound, the majority in fact based on Max Weber's basic criteria: see the work of commentators such as Skalník and Claessen, Krader, Michael Mann or W. G. Runciman.² Walter Scheidel has produced a very useful survey of the state of the discussion about »stateness« – arriving at the end at a primarily pragmatic definition that offers a heuristic starting-point for thinking about states and what differentiates them from non-states and from one another.³ All commentators seem to agree on some basic points: a state represents a set of institutions and personnel, concentrated spatially at a single point, claiming and/or exerting a monopoly of legitimate authority over a territorially distinct area, the people who inhabit it and the human and material resources it includes. This says nothing about specific forms of rulership and governance nor about the effectiveness or not of institutions, the law, kinship, distribution of power and so forth, but it does something to differentiate a state from a tribe, group or temporary confederation of clans, tribes or other kinship-based social organisations; and it implies both institutional and functional elements pertaining to the appearance of organisational aspects of a state as well as to the impacts of these structures.⁴

I would add the following: (1) territorial identity includes the possibility of the lands being dispersed and geographically separated; (2) state authority is vested in a centre, whether geographically fixed or mobile, from which state-level authority and, at least notionally, state-level administrative management emanates; (3) the ruling authority and its agents should claim and assert a monopoly over the use of coercion; (4) states evolve mechanisms through which they can reproduce themselves institutionally and over more than one or perhaps two generations;⁵ and (5) they develop and maintain systems of recording information about resources – land, population, products, revenues and expenditures, the military and so forth; (6) states develop an ideological life not necessarily tied to their actual political and institutional efficacy or power. Such political and symbolic systems tend to attribute to the state (usually symbolized by the ruling house or set of public institutions) a degree of permanence. The state becomes in itself the logic of existence, and along with ideological/religious institutions represents the form through which the vested interests present in the social formation can be understood and given expression.⁶

2 Mann, *Autonomous power of the state*; Claessen and Skalník, *Early state: theories and hypotheses*, 3-29 with other chapters in section 3 of the same volume.

3 Scheidel, *Studying the state*, with extensive literature.

4 Mann, *Autonomous power of the state*, 112. The problem of »tribal« identities is complex and extended. See, e.g. Godelier, *The concept of the »tribe«*; and Houry and Kostiner (eds.), *Tribes and State Formation*. Further discussion in Fried, *Notion of Tribe*; Sahlins, *Tribesmen*; Crone, *Tribe and the state*. See also the critical discussion of Tapper, *Anthropologists, historians, and tribespeople*, 48-73.

5 As a case study of the »bureaucracy« of the east Roman state, see Haldon, *Bureaucracies, elites and clans*.

6 See Goldstone and Haldon, *Ancient states, empires and exploitation*.

State formations clearly vary qualitatively in the degree of their »stateness«, and there are huge differences in the ways in which the institutional structures, patterns of administration, forms of surplus extraction and so on operate in different states. As Steinmetz pointed out, states are not static entities but constantly evolving, however imperceptibly.⁷ For this reason as well as because of the vast range of historical state-like political entities, I follow Scheidel in using the term »state formation« as a less restrictive analytical description of what we are dealing with. Human social organisation is never neatly bounded and functionally determinate. The zone of societal evolution between states and not-states or between effective premodern bureaucratic states and more recent nation-states involves both fuzziness and asymmetrical processes of institutional, social and economic development. How and whether tribes, bands and groups transformed into states has been the source of much discussion. As Crone pointed out, in the context of managing resources and risk, tribal organisation is generally as much an alternative to state formation as a necessary precondition for it.⁸

Quite apart from the distinctions drawn between the early modern state as understood by Enlightenment writers and what went before, an even more significant distinction has to be made between precapitalist state formations and societies and those with which we are familiar today in a globalised capitalist market economic system. In capitalist formations, it remains in the interests of states not to hinder or adversely intervene in the process of surplus extraction, and therefore in the fundamental relations of production of capitalist social formations – the sale of labour-power and its conversion into surplus value. While governments or rulers may therefore intervene from time to time to modify the particular institutional or juridical forms characteristic of capitalist production relations in a given state formation (in order to alter the relations of surplus distribution, for example), they normally also act in a way consonant with the fundamental mode of capitalist appropriation. Capitalist states use tax as a means of redistributing to themselves surplus produced by economic means through the operations of the capitalist labour market and the creation of relative surplus value. The extraction of tax, as an institution for the redistribution of surplus value, is therefore an indirect or secondary form of surplus appropriation, a form which can only occur after the process of primary appropriation through the creation of relative surplus value has already taken place. States in the capitalist world are maintained ultimately not through their power to tax as such, but rather through the maintenance of those production relations which promote the extraction of relative surplus value. The state itself might have little or no impact on these relations, except in a regulating or supervisory capacity, or in a period of temporary crisis.

In stark contrast to capitalist economies, precapitalist elites and states both function at the same level of primary appropriation, directly extracting surplus in various forms from the producers through their monopoly of various forms of non-economic coercion – the law, custom, threat of violence. It is this particular characteristic which differentiates them from modern states. Rulers and socio-economic elites more widely have an equally powerful vested interest in the maintenance of those relations of production to which they owe their

7 Steinmetz, Introduction: culture and the state.

8 Crone, *Tribe and the state*; Friedman, *Tribes, states and transformations*; see the summary in Scheidel, *Studying the state*, 9-14; also Cohen, *State origins: a re-appraisal*; Cohen and Service (eds.), *Origins of the State*; Khoury and Kostiner (eds.), *Tribes and State Formation*. See also Scheidel, *Studying the state*, 5-9; also, and from a different critical perspective, Perlin, *State formation reconsidered*.

position, just as in capitalist economies. But because of the direct nature of primary surplus extraction, the relationship between the ruler or ruling elite and those who actually appropriate surplus on their behalf (whether an aristocracy, a »noblesse de robe« or a salaried clerical establishment or a combination of these) is always potentially antagonistic. Both state and elites must attempt to appropriate surplus themselves, or ensure that an adequate portion of such surplus is passed on to them, to be certain of their survival. Direct coercive pressure exerted by the state and the elite determined the rate of exploitation and the possibilities for surplus extraction.⁹

The very existence of state formations means that surplus extraction and distribution are foci for competition. Precapitalist rulers and elites compete directly for control over the means of production, and hence the material basis for their continued existence, to the extent that one side may attempt (and even temporarily succeed) in destroying or so weakening the other that no further opposition is forthcoming. The direct and primary role of states and elites in the process of surplus appropriation informs both the nature of the structural tension between exploiting and exploited classes as well as the configuration of the political relations of distribution within the elite and state. The point of access to understanding the fundamental dynamics of any premodern state formation is through an examination of the relationship between rulers, government and court, and those upon whom these depended to maintain their revenues and authority.

9 Discussion in Haldon, *State and the Tributary Mode of Production*, esp.140-158.

COMMENT

THE ORGANISATION AND PECULIARITIES OF THE LOMBARD STATE IN THE 8TH CENTURY

Stefano Gasparri and Cristina La Rocca*

If we deny the Roman empire the qualification of »state«, we would deprive the early medieval kingdoms of a clear point of comparison against which historians can try to define the polities they deal with. This is one of the reasons why we subscribe to Brent Shaw's general conclusion, whose answer to the question – »was the Roman state a state?« – is clearly »yes, it is«. From this starting point, our examination of one of the early medieval polities, the Lombard kingdom, shall carry on taking into account some of the categories listed by Shaw, traditionally included as components of the definition of a state in the Western world. We are aware of the problems associated with a Eurocentric perspective, and consequently we do not consider this type of state an ideal model, nor of course the only possible one. We will do so for simple reasons of opportunity: comparing the Roman empire, the early medieval kingdoms and the modern Western state allows us to examine a chain of political constructions that took place – in part at least – on the same territory. Thus, they transmitted some of their experiences between each other, and are consequently mutually comparable.

Among all the post-Roman kingdoms, the Lombard kingdom appears to be the most closely connected to the Roman past. It is only a seeming contradiction that the Lombards are presented in many sources – and in much 19th- and 20th-century historiography – as the most barbaric of the barbarians, as the enemy of Rome par excellence. This is a distorting mirror that stems from the nature of the sources used, be they papal or Byzantine. If one uses sources from within the kingdom, instead, the resulting image is very different, and evidence of the connection to Roman heritage emerges. Moreover, if one considers that Italy was the heart of the western empire, this is not surprising: if anything, the opposite would be so.

The only word by which the Lombard political community is defined by the sources is *regnum*. Among its general features we can list a defined territorial sphere, albeit mobile in the course of time, a reference people (the *populus Langobardorum*), the exercise of power by a political centre, the kingship, represented by the king and his officials. To these elements we can also add the temporal duration of more than two centuries. However, it must be admitted that the Lombard kingdom certainly did not have the stable characteristics of the state as it was formed in the West both in Roman times and in the modern age.

First of all, the kingdom had no real borders: only in the mid-eighth century was there an attempt to introduce a form of border regulation. However, this very attempt was linked to a particular moment, characterised by exceptional external threats from the Franks. Another important issue concerns the nature of the *populus Langobardorum*, whose identity was defined by the law, since we have set aside the idea that the Lombards were a closed ethnic community. Actually, the Lombards were the men and the women, inhabitants of the kingdom, living according to Lombard law, issued by the kings in a series of edicts, in imitation of

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Roman provincial officials. We can therefore define Lombard law as territorial, even though in the 8th century there were groups living according to Roman law within the territory of the kingdom. These were the inhabitants of the regions of Byzantine Italy, conquered first of all by King Liutprand in 726/727, namely Emilia (with Bologna) and some cities in Romagna and Marche, and then by Aistulf, who conquered Ravenna and the exarchate in 750/751. As a consequence of this situation, problems could arise. For example, marriages between people who followed different laws could sometimes create complex situations, particularly for the status of women, which could change following a marriage: according to a law issued by Liutprand in 731, a Lombard woman marrying a Roman man became Roman. However, in the archival documentation there is no presence of Romans, except for one case in 758, which concerns a woman, Gundeperga *romana mulier*, living in Piacenza: it is safer to assume that cases similar to those envisaged by Liutprand in 731 were rare. Members of the clergy were also allowed to live according to Roman law, although this was probably not always the case: this is shown, at the highest social level, by the example of Walprand, bishop of Lucca, who in 754 – as was the duty of the Lombard freemen – obeyed the command of King Aistulf and left with his army to fight the Franks; moreover, on that occasion the bishop made a donation-testament in favour of his brothers drawn up according to Lombard law.

This legal diversity, which – as we said – nonetheless concerned very limited groups of the population and maybe specific situations, was unified by the actions of the king and his officials, dukes and gastalds in the first place. Actually, other powers besides that of the king were present in the territory, namely the local officers (the *actores*), who had to administer the royal *curtes*, the lands that formed the patrimonial basis of royal power. This was a fundamental task, since the Lombard state was a no-tax state. There was, at least in the final years of the Lombard kingdom, a clear distinction between public property and the property that directly served the sustenance of the royal palace; the latter was divided between the king's property and the part which was at the queen's disposal and which was administered by her officials (*gastalds* and *actores domnae reginae*).

The *actores* could try to act for their own interests in connection with the local élites, by handing over land to private individuals to build their patronage networks. Liutprand issued provisions against these illicit activities, the *Notitia de actoribus regis* (733). Subsequent kings (Ratchis, Aistulf, Desiderius), in order to protect royal property from the corruption of the *actores*, granted important assets of fiscal lands to monasteries of royal foundation (such as S. Salvatore di Brescia) or to already existing monasteries (such as Nonantola, Farfa, S. Salvatore al Monte Amiata), whose abbots could be easily controlled by royal power.

The landed wealth of the episcopal churches within the Lombard kingdom also grew considerably during the 8th century. However, this growth was due to a considerable number of donations from free landowners, as can clearly be seen in the case of the episcopal church of Lucca, and not to concessions of landed estates or immunities by the Lombard monarchy, as was the case for instance in the Merovingian kingdom of the 7th century, according to the model of the »temple society« described by Ian Wood; consequently, the Church's role in the redistribution of wealth was also minor.¹ Moreover, the bishops never exercised jurisdictional or administrative activities in their cities. Despite their wealth, and the existence of a dense network which linked the free landowners to the ecclesiastical institutions, the Church was not a political player of decisive importance within the Lombard kingdom.

1 Wood, *The Christian Economy*.

The archival documentation of the 8th century allows us to see the public officials in action in the different regions of the kingdom, where they judged disputes of a different nature, involving fiscal lands but also matters of ecclesiastical jurisdiction. In the face of royal intervention, the population appears homogeneous and not divided between Lombards and Romans: in a dispute about the borders between the Tuscan dioceses of Arezzo and Siena (714-715), the witnesses are only listed as »inhabitants of Siena« and »inhabitants of Arezzo«. In the same *iudicatum*, it is noteworthy what one of the many witnesses, the priest Romanus, says to the king's envoy, the notary Gunteram, »Now you have found me, and I cannot resist you«, before King Liutprand's envoy, Romanus is forced to tell the truth, despite the threats from the gastald of Siena, who wanted to influence his testimony. This means that sometimes the gastalds (and the dukes) too could try to act for their local interests. However, as is evident in this case, in the 8th century, at the height of the Lombard kingship's development, the local powers could not resist that of the king, whose authority was respected throughout the kingdom: only southern Italy (the Duchy of Benevento) had a more autonomous position.

At this point, we can try to answer to another important question: Did the exercise of power in the Lombard kingdom respond to criteria of impersonality, or was everything based on bonds of kin and lordship, that is, on personal relations between the king and his officials, and between these and their subordinates? This is the old problem of the »Roman« or »Germanic« nature of barbarian kingdoms. However, we do not believe it should be approached in this way. The low bureaucratic development of the public (impersonal) institutions did indeed also require the use of personal ties to consolidate them, but within political structures that were new creations and not heirs to an alleged tribal past. The process of militarisation is also a new phenomenon, taking place in the post-Roman era. The army thus became perhaps one of the most important institutions of the early mediaeval polities: in the Lombard kingdom even mere freemen were in a direct relationship with the king as members of the army.

The Lombard kingdom was not a *Personenverbandstaat*: the oath made to the king by freemen (*iudices* and *actores* in the first place) was proof of the public nature of his power. Moreover, the clearly Roman elements are prevalent. Here we can only list some of them: the existence of a royal seat, Pavia, which was a true capital with a *palatium*, which was also the seat of political assemblies; the extensive use of writing; the monopoly on the issue of money; the presence in the main cities of officials, the *iudices*, who had to ensure the continuous functioning of justice. Lastly, the impersonal nature of power was in part at least ensured by the (although difficult) functioning of the administrative machinery of the fiscal estate; by the existence of palatine offices (as shown by the existence of royal notaries) and court rituals, also linked to the king's election itself. The latter we unfortunately know very little about: we catch a glimpse of them behind the *obsequia palatina* (the palace staff?) and the *regia dignitas* (the symbols of royal power, perhaps the lance?) that were presented to King Perctarit when he returned to Pavia (672). Regarding the lance, the existence of a king's lance-bearer, that could even be at the head of the army in the king's absence, proves to some extent the impersonal nature of royal power, guaranteed by a symbol that went beyond the person of the king himself.

To conclude, the Lombard kingdom was an original creation, with many elements of Roman tradition reinterpreted, however, in the different social and economic context of the early medieval centuries. It was shaped by the process of militarisation, which involved the very identity of the royal powers and aristocracy, as well as that of large strata of the male population, and by the development of strong networks of personal ties. The kingdom was also confronted with the emergence of alternative poles of power, represented by ecclesiastical

institutions, yet managed to keep them under control and sometimes, as in the case of monasteries, to use them as instruments of government. Despite all its profound differences, both with the Roman empire and with the modern western state, we are driven toward the conclusion that the Lombard kingdom was indeed a state, at least in the 8th century. It was a state with a simplified functioning: a ›no-tax state‹; without a standing army, but one that had to be mobilised according to established rules; and capable of effectively exercising its sovereignty within its territory. Lastly, the Lombard kingdom was a structure that not only survived the (sometimes) violent succession struggles of its rulers, but also the Frankish conquest of 774: Charlemagne and his followers took the title of *rex Langobardorum*, and the kingdom retained its fundamental characteristics at least throughout the 9th century.

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COMMENT

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Historians of the early Middle Ages may find the question of whether the Roman empire was a true state paradoxical, insofar as they take it for granted that it was, while questioning whether the state continued to exist and what forms of statehood took place in the post-Roman kingdoms, including the Carolingian empire.¹ Shaw's article is a timely reminder of the extent to which premodern periods still suffer from the historiographical constraints that lead historians of other periods to define the state exclusively in its »modern« form. He even demonstrates point by point that the republic and the Roman empire met the Weberian criteria defining the state: a permanent army and the monopoly of force, the control of the territory, a common law applying to all citizens, resources included in a global market, etc. Patronage itself was part of the Roman state structure, as a means of access to public resources.

There have been many discussions on the qualification of early medieval political entities. By defining the Ottonian and Salian empire (10th-12th centuries) as a *Personenverbandstaat*, Gerd Althoff did not deny it the privilege of being a state, but a state grounded on personal ties and rituality.² In contrast, the kingdom of France in the same period was defined by Patrick Geary as »a stateless France«, devoted to »private wars« and the settlement of disputes outside of any judicial context.³ Since then, with the help of anthropology, historians of the Carolingian period have emphasized the continuity of infra-judicial, mediation and intercession processes,⁴ but it remains difficult to qualify the Carolingian empire.

As early as 1939, Marc Bloch emphasized the primacy of personal ties in early medieval societies, firstly kinship, then fidelity in its vassal form.⁵ To this should be added friendship, which, in egalitarian and hierarchical, parental and non-parental forms, had largely contributed to the maintenance of the Roman state as well as of all medieval political constructions. If we consider France (and also Germany and Italy), it is true that the failure of the Carolingian empire led in the 10th and 11th centuries (Marc Bloch's first feudal age) to the progressive weakening of central powers, to a polarization of powers in castral lordships, before kings and princes reasserted their power in the 12th century by establishing a real feudal hierarchy and by the rediscovery of Roman law, leading to monarchies in the 13th century. But Bloch, Duby and other historians of the feudal period considered the Carolingian political construction as a strong one, a revival of the Roman empire; and that is only partly true: there was no permanent army and police, no general taxation, and even if there was a public justice with courts and judges, there was no strict separation between public and private, religious and secular. Nevertheless, in terms of ideological construction, the Carolingian empire was a real state.

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1 Airlie, Pohl and Reimitz, *Staat im frühen Mittelalter*; Pohl and Wieser, *Der frühmittelalterliche Staat*.

2 Althoff, *Die Ottonen*.

3 Geary, *Vivre en conflit dans une France sans Etat*.

4 Le Jan, *Politique et contrôle social*; Gilsdorf, *Favor of Friends*.

5 Bloch, *La société féodale*, translated into English as *Feudal Society* in 1961.

The Church was almost entirely absent from Marc Bloch's perspective, and also from that of Marxist and post-Marxist historians. But in the last decades, it took a central place in recent works without clarifying the reflection on the state and statehood. Mayke de Jong has perfectly demonstrated how Carolingian kings and thinkers defined the empire (*imperium*) as an *ecclesia*, that is an Empire-Church.⁶ *Ecclesia* as empire was both an ideal and structuring horizon, with a strong interpenetration of public and private, religious and secular spheres. Dominique Iogna-Prat has also insisted on the Carolingian matrix of changes that led to including all social relations in an ecclesial society (a Church society) in the 12th century.⁷ By contrast, other historians downplay the role of the Carolingian ideology and construction, affirming that the Gregorian reform at the end of the 11th century was a real revolution which drastically transformed society by separating the ecclesiastical and secular spheres and by claiming the absolute primacy of the spiritual over the temporal.⁸ The basic tendency of all these works is to leave aside the question of the State, which is replaced by the *Ecclesia*. Nevertheless, a discussion has developed in France on the almost antinomic relationship between kinship and spatiality, which is directly inspired by the work of Max Weber, for whom the spatialization of social relations was a fundamental element in the development of modern states, whereas in premodern societies kinship was the organizational element of societies. For French church historians, a process of territorialization and rooting of communities and powers, also concerning the Church, would have led to the inclusion of all forms of personal relations into an all-encompassing and inclusive whole, which the pope claimed to dominate alone from the end of the eleventh century.⁹ It assumes that a process of deterritorialization and of *parentélisation* worked at the end of the Roman empire, followed by a process of territorialization and deparentélisation in the feudal period, and that remains to be demonstrated.

Clearly, French and Anglo-Saxon early medieval historians have avoided the question of the State, whereas German historians have taken up the issue, while disagreeing on its definition. Shaw takes up Susan Reynolds' flexible definition that »a state is an organization of human society within a fixed territory that more or less successfully claims the control (not the monopoly) of the legitimate use of physical force within that territory«. Reynolds added that this definition was relevant to medieval kingdoms or lesser lordships in general, or even to those of the early Middle Ages. However, it does not help to understand the nature or essence of early medieval political constructions as states. Shaw rightly points out that global history allows us to consider other political constructions and other developments that do not fall under the model of the modern state. That is true. But from an anthropological point of view, we also have to consider the ontologies in which states developed. As Descola demonstrated, the »modern state« is itself part of an ontology that operates a separation and a dualistic opposition between nature and culture, material and spiritual, savage and civilized.¹⁰ He adds that this mode of identification is unique and only became definitively established in Europe in the second half of the 19th century, at the same time as the decline of religion and the triumph of science disenchanting the world, to use the Weberian concept.

6 de Jong, *Penitential State*; de Jong, Carolingian political discourse and the biblical past.

7 Iogna-Prat, *Ordonner et exclure*; Iogna-Prat, *La Maison Dieu*.

8 Mazel, *Nouvelle histoire du Moyen Âge*.

9 Morsel, *L'histoire (du Moyen Âge) est un sport de combat...*, Online lamop.univ-paris1.fr. Dominique Iogna-Prat, *La Maison Dieu*; Mazel, *L'évêque et le territoire*.

10 Descola, *Beyond Nature and Culture*.

In the rest of the world, the relationship of humans with the universe was governed by other analogies that didn't separate nature and culture. According to Descola, in premodern Europe, as in China or India, an analogical mode of identification made it possible to unify the cosmos by thinking of it as an organic and hierarchical whole made up of fixed segments but linked together by analogy, with deities being the object of worship in specific places where they receive offerings and prayers at specific times. Each analogical collective took diverse politico-religious forms, but tended to become a totalitarian whole, since it contained within itself all the relations necessary for its existence, and its elements existed only in relation to the whole, which is itself in order when it is closed in the manner of a dwelling.¹¹ It also presupposes the existence of a politico-religious power able to maintain each element in its assigned place by developing hierarchical links and ensuring peace and eventually expansion of the group, a program which was that of the great extra-European empires, but also of the Roman and of the Carolingian empires, deeply inspired by the Augustinian City of God. After the fall of the Carolingian empire, there was no change in ideology, even if political structures were weakening. Only Gregorian reformers diminished the role of the emperors and kings, giving the pope and his priests a dominant position. In any case, in medieval times, what we call a state cannot be separated from its analogical ontology nor the political from the religious power that gave it legitimacy and strength.

11 Marcel Granet on the Chinese collective, quoted by Descola, *Beyond Nature and Culture*, 517.

COMMENT

Nicola Di Cosmo*

Initially, my response to Walter Pohl's kind invitation to comment on Brent Shaw's essay was tentative, uneasy, and frankly unenthusiastic, for two main reasons: first and foremost, I do not feel qualified to discuss the Roman empire in any of its forms; second, any intervention on my part required a tremendous amount of work to trace most of the references, many unknown to me, and address a sprawling, unwieldy, massively overextended debate over »what is a state?« that historians, political scientists, sociologists and philosophers have debated for decades if not centuries. Pressed by Walter, I re-read the piece, seeking in it some foothold that might allow me to say something useful while still being conscious of my shortcomings. This requires a few caveats. The first caveat is that what I have to say may not seem to be directly relevant to the case presented by Brent, although it may lead to some peripheral reflections, and is offered exactly in that spirit. The second is that my comments are largely impressionistic, that is, they are not based on a systematic review of any of the topics touched on in Brent's essay and associated literature. The third is that my own area of research necessarily provides a set of references that may not be altogether familiar to a Roman historian, and that these are mostly running in the background because an accurate reckoning of them would require an extensive discussion on their relevance to the case at hand (the Roman state), which is not possible in the space of a comment. I should probably list even more caveats, but these may suffice.

The question posed by Brent, »Was the Roman State a State?«, could well be asked about any other premodern political formation. Such questions are often presented as an ontological controversy at the core of which is the question of the existence of the state and the status of the concept itself. Getting an answer may result in an exercise consisting of establishing what a state should look like, listing a series of components in the shape of as many boxes to be ticked and then proceeding to place green check signs on them. Except, this seems a rather futile exercise, given that definitions of the »state« – running the gamut from minimalist to maximalist – can fill any number of historical cases, and are easily tailored to fit just about every one of them. In fact, limiting the definition to Schmittian concepts is in itself a subjective choice that could be challenged in favor of other theorists. Moreover, historical cases, even within the realm of early modern Europe are likely to raise questions about the meaningfulness of the Treaty of Westphalia in defining the modern state. Was, say, the Republic of Venice a non-state before 1648 and a modern nation-state afterwards? I realize that this type of reasoning risks trivializing the matter, but that reasoning *ad absurdum* may still be useful to focus on a question that is, in my mind, more fruitful, namely »What kind of a state was the Roman state?«

Brent's essay, towards the end, indeed affirms as much, because when we add a qualifier to the term state (city, early, territorial, imperial), we indicate a qualitative difference. For instance, in the transition from the republic to the principate we assume a change in the nature of the state. If boxes need to be ticked, it may be more productive to look into such transitions, which are at the heart of historical periodizations, as Brent also reminds us by reference to Harriet Flower's work.

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Moving from time to space, there is no point, in my view, in repeating that global and comparative history have shown that, while certain political entities, processes, and phenomena have been registered and theorized *qua* European phenomena, they also apply to non-European experiences. The »early state« and the »city-state« for instance, have been studied in both European and non-European contexts.¹ The collective conclusions of these enterprises have long shown both the extensibility of certain concepts (such as »state«) beyond Europe and the profitability of comparative approaches. Therefore, for me the conclusion that the Roman state was, indeed, a state, appears, *prima facie*, as an antechamber to the broader question of how the Roman state changed over time, at least in light of the preponderance of evidence in favor of a broad and inclusive approach to what a »state« is.

Simply advocating to move beyond the picture of the Roman state and into the movie of how it changed, however, does not, in itself, provide an entryway into what I see as the heart of the matter. To flesh out what I mean, I will refer to a minor point mentioned by Brent – and a footnote – because it speaks to what is, to my mind, the real crux of the matter and the true watershed between the modern nation-state and other states, especially those which, like Rome, acquired an imperial dimension. The passage is the following: »Naturally, because the Roman state was not a modern European state, it could not be part of any Westphalian system. It had gradually developed into a premodern empire which had no boundaries and so it was not part of a system of peer polities or a system of competing states« (p. 16). Footnote 61 reads: »One can plead the exception of the Parthian and Sasanian states which did have a small land border with Rome; but it is a singular item that is an exception, not the rule.«

Indeed, the main significance of the birth of the modern nation-state at the Peace of Westphalia (1648) is the death of claims of universal rulership (at least in the secular realm) by a political entity. As I understand it, the two pillars upon which that »death« was predicated were (1) a sovereignty limited to the territorial borders of the state, and to its body politic; (2) a notion of legitimate rule that, even on the purely ideological plane, could no longer be universal. In political practice, these two critical developments sanctioned with the Treaty of Westphalia meant that any state depended on the recognition of other sovereign peer states as a condition of its own existence as a state. Furthermore, limited and non-exclusive sovereignty and legitimate rulership spawned deep changes in international relations and laws, and while divine right to rule could be and was claimed within a state, it did not prevent other rulers from claiming the same for their internal consumption.

This development separates modern conceptions of the state from older ones (but also some modern would-be states, if we consider the political claims of ISIS as an Islamic State), which never excluded the possibility of universal rulership, no matter how unrealistic it was. A competing authority may be tolerated in practice, but was ideologically incompatible with the very notion of legitimate rulership. Based on an analogy drawn from Chinese imperial history, I suspect that the claim to universal rulership expressed by Rome worked on a double track, the ideological and the political, and when it was patently untenable, it had to be modified, tempered, and rhetorically adjusted to the political reality. This was not an exception but something like »an ideology in reserve«. A similar situation can be found in the

1 For instance, the classic Claessen and Skalnik (eds.) *The Early State* and Hansen, *A Comparative Study of Thirty City-State Cultures*.

Chinese, Inner Asian, and Islamic political traditions. If we take the renunciation of universal rulership, which we may term »the Westphalian moment«, as the chief defining historical characteristic of the modern state, we can more securely separate it from appearances of the »state« in other contexts (ancient, early, non-European, etc.). In the Chinese case, this question has been explored for the past half century, starting with *The Chinese World Order* edited by John K. Fairbank, in which some contributors presented instances of the gap between the ideology of universal rulership and the political reality of a »treaty system«. There is a vast literature on this subject, which of course includes also the »tribute system« as another form of constructing a world order ideally aligned with concepts of universal rulership. Qing China was clearly not ready to abandon such claims in dealings with European powers, with the fraught consequences that we know, but the translation into Chinese of Henry Wheaton's *Elements of International Law* in the 1860s (an imperially supported project) indicates a profound change through the recognition that participation in inter-state relations depended on the recognition of other countries' sovereignty, no less full than one's own.

In the 1920s some scholars and legal historians began to look for a »Westphalian moment« in Chinese history, with the goal of showing that China, too, had a tradition in which a system of peer states emerged and prospered.² This was found in the pre-imperial period, when different independent states vied with each other. The question has been revisited more recently by Victoria Tin-Bor Hui, with specific reference to the Westphalian world order in *War and State Formation in Ancient China and Early Modern Europe* (2005). The comparative model she proposes is worth mentioning as an example of a direct comparison between ancient China and early modern Europe that may be germane to the concerns about »Rome as a state« in relation to the critical aspect of how it positioned itself *vis-à-vis* other states.

Moving to Inner Asia, the situation is somewhat more complex, because Inner Asian nomads excelled, in their regular existence, in »conflict resolution«, and steppe political traditions present a rich array of diplomatic instruments (pacts, oaths, treaties, marriages) that regulated relations among the different polities. One might imagine that in this context the emergence of a notion of »peer states« (or whatever we wish to call such political formations) would be the natural state of being, but nevertheless universal claims did appear in concomitance with »imperializing« projects. The most obvious of these is undoubtedly the Mongol empire. During the Mongol conquest the diplomacy of the khans, surely not a model of subtlety, was likewise based on notions of world dominance, in the name of all-powerful Tengri, the sky god. »Either surrender or die« was the default message to their opponents, usually followed by practical demonstrations of what that meant. These non-European examples seem to point to a situation in which claims to universal rulership surely existed but may not have been the only ways in which sovereignty and legitimate rule were constructed, and the same claims were often attenuated and muffled in favor of a *realpolitik* that required formal recognition of other peer states.

2 E.g., R. Britton, Chinese interstate intercourse before 700 BC; Shih-tsai, Equality of states in ancient China; Ch'eng, International law in early China.

Returning to the Roman state, the issue I am driving at is, in essence, one question: If »scale« or »type« ought to be considered as we try to qualify a state (again, the matter of what attribute we place before the word), how and when did a claim to universal rulership become part of the Roman construction of its »state«? I realize there is a vast literature on Roman foreign relations, diplomacy, frontiers and the like. What I do not know is whether that literature has been brought to bear on the question of what sort of a state Rome was at various stages of its history. On that account I would suggest that if, after having established – as Brent has – that the Roman state was indeed a state, the discussion should move to an analysis of the various instantiations of the »Roman state«, and start by looking into how Rome as a city-state, territorial state or imperial state interacted with other polities, with the purpose of exploring how the respective ideological underpinnings inflected the nature of the state. Put it in a different way, we may ask: What was the relationship between ideological claims and political practice in the construction of key elements of the state such as sovereignty and legitimate rule?

I thank Brent for his insightful essay, from which I have learned a great deal.

COMMENT

Hans-Werner Goetz*

One might think that the debate on the »state« in the Middle Ages has by now been exhausted. It had a long tradition resulting from the legal definition of the state in the nineteenth century that seemed hardly applicable to premodern times. Particularly in Germany, the so-called »New German Constitutional History« (*Neue deutsche Verfassungsgeschichte*), beginning in the late 1920s and dominating medieval history until the late 1970s, regarded »*Herrschaft*« (lordship) as the decisive element of the early medieval *Verfassung* on all levels of social and political life. Later on, therefore, many German medievalists avoided the term »*Staat*« (state) and preferred to use *Staatlichkeit* as a more open term, which, however, can hardly be adequately and unequivocally translated into English or other leading languages. That was probably one reason why *Staat* is being used more and more as an open (defining) term – in German this is called an *Ordnungsbegriff* – for any political order, while its concrete form and its political order have, of course, to be described for each epoch, region and level individually.

Therefore, somehow it comes as a surprise that Brent Shaw has now opened a new debate on this subject concerning the late antique Roman empire (which, compared to the Middle Ages, traditionally had been much more readily accepted as being a state). In fact, I have no great problems with Shaw's argumentation and no problems at all with his conclusion that the Late Roman empire should be accepted as having been a state, even from modern standards, although my agreement results from somehow different reasons.

That said and acknowledged, I shall not discuss his detailed arguments, but rather comment on some general implications of his essay. First of all, Shaw's question: Was the Late Roman State a state or was it »a peculiar type of premodern entity about which such questions are inapplicable«? On the one hand, it is compatible with the more or less recent insight that the development from Antiquity to the Middle Ages has to be seen as a longer (and in some respects even a very long) process of »transformation«.¹ On the other hand, however, it still implies subliminally that the Middle Ages were a »premodern« epoch to which the concept of *state* is *not* applicable. Such an assumption does not conform to the state of research of medieval studies. The result should rather be: as for the Middle Ages, thus as early as (or simply: equally) for the Late Roman empire, »state« is an adequate term.

Shaw attempts to prove that modern categories and elements of the state (such as a centralized army, a uniform fiscal system, a policing power over internal civil society, and a legal system) are also characteristic for the Late Roman empire. Granted this, one might nevertheless ask whether the definition by Carl Schmitt who (regardless of his involvement in the Nazi system) undoubtedly was one of leading experts on jurisprudence and constitution of his time, is the right »model« against which premodern epochs and other cultures should be

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1 Cf. the volumes of the ESF project »The Transformation of the Roman Empire«; for political aspects and »states«, cf. particularly Goetz, Jarnut and Pohl (eds.), *Regna and gentes*.

measured. It would have been more appropriate, I think, to use current models, the more so as legal historians have also long since changed their perspectives and opinions on characterizing the early medieval »state«. Shaw finds all the essentials of Schmitt's definitions of the (modern) state applicable and fulfilled with regard to the Late Roman empire. For a medievalist such an answer is not really satisfying. In the final analysis, I would rather say that it does not matter if Schmitt's or anybody else's modern concepts are fulfilled. What is really important is the analysis of the political order of former epochs.

Thus, in this context, I would also like to contradict Shaw's opinion that the analysis of the terminology used by people in Late Antiquity and of *their* understanding of *their* world would not effectually contribute to solving the problem. Certainly, such an analysis does not provide a final solution, and medieval terminology is no substitute for modern denominations, as Otto Brunner thought. However, to check how far modern concepts are applicable to and appropriate for former epochs such as Late Antiquity or the Middle Ages and to what extent they accord with *their* perceptions is certainly the only (or best) method to comprehend a past political order through the ideas and concepts of the contemporary people of that epoch. For historians, this should be an indispensable objective of research.

The question of whether a former political order can be called a state is completely dependent on the pre-existing (and presupposed) definition of »state« and will be answered positively or negatively according to this definition. Even today the criteria for this are not self-evident (nor is it unambiguous whether certain modern states can really be comprised under this term). Therefore, I wonder how justified it is to judge former epochs by our modern standards (and what is to be gained by this). For me, this somehow resembles the attitude of former generations of scholars who thought that peoples hardly changed in the course of history (and thus, for example, assumed continuity from the Germanic peoples to the modern Germans). In my opinion, historians should rather try to analyse and judge former states by their own standards, certainly not neglecting similarities, but also deliberately emphasizing the existing differences. It is much more important for our present times to learn from historical studies that our systems and our standards are not the only ones possible (and certainly not the best ones). In any case, the most important question is how the political order of former times, such as Late Antiquity (or the Middle Ages), and former civilizations were shaped and politically organized and how they »worked« in practice, independent of the question of what we call them and how far they conform to present concepts.

COMMENT

THE ROMAN STATE FROM A BYZANTINE PERSPECTIVE

Yannis Stouraitis*

It is always a pleasure to read an argument whose main premises one agrees with. It can become rather challenging to provide a useful comment on such an argument, however, since there is always the danger that one might just end up eulogizing it. For me, there is little doubt that Brent Shaw's thesis that the Roman empire fulfilled all basic criteria for its characterization as a state is correct. As someone who is not specializing in ancient imperial Rome, but in what is in fact the unbroken continuation of the ancient Roman empire in the Middle Ages, the so-called Byzantine empire, I have nothing to add to the specific historical arguments in favour of the view that imperial Rome was a state. For this reason, I have decided to contribute to the discussion that his paper seeks to open in two ways. Firstly, I would like to offer some thoughts on the issue of how historians should make use of categories of analysis, an issue which Shaw's argument raises emphatically in my view. This is an important issue insofar as it is interrelated with the question of to what extent and how historians want to work in a comparative and interdisciplinary manner; that is, to engage not only in cross-cultural research in time and space, but also in direct dialogue with the social sciences – in particular, with the very relevant field of historical sociology. Secondly, I intend to add the perspective of my own field of specialization, since I believe that the medieval Roman empire of Constantinople offers a very good counterargument to a myopic Eurocentrism when it comes to the application of the concept of the state to medieval cultures.

At the epicentre of Shaw's argument is Schmitt's definition of the state. While showing that even by Schmitt's narrow definition imperial Rome could still be counted as a state, Shaw criticizes modern arguments that tend to bind a social phenomenon to the period in which a term was invented for the first time to conceptualize it. This points at the heart of the problem of Schmitt's approach, which is one endorsed by some present-day historians as well. They tend to make the »state« as an analytical category dependent upon the very characteristics of the states that emerged in Europe in the course of early modernity; the very period when the term »state« appeared as a lay category, a category of practice, to designate those political entities. If a historicist approach can be useful in helping us understand when, how, and why the term »state« came into being, it can hardly be of any help if we want to use »state« as an analytical concept for heuristic purposes.

Shaw gives a series of examples of other modern concepts that did not exist in the vocabulary of premodern societies but are nonetheless broadly used by historians today to help us think about and explore heuristically the existence of relevant phenomena in the past. This is a compelling argument which, in my view, could have profited from a reference to large-scale works of historical sociology. For instance, both Walter G. Runciman and Michael Mann in their respective large-scale analyses of the function and historical evolution of human societies seem to have no doubt that imperial Rome should be viewed as a state in terms of socio-historical analysis.¹ In his own theoretical approach to the state, Michael Mann has,

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1 Mann, *Sources of Social Power* I, ch. 9; Runciman, *Treatise of Social Theory* II, 11.

in fact, suggested a heuristic distinction between four types of state: *feudal*, *imperial*, *bureaucratic*, and *authoritarian*.² One may agree or disagree with that typology, but it shows one thing: for historical sociologists there is no direct link between the historical existence of a social phenomenon and its terminological conceptualization.

In light of this, the real question seems to me to be not whether we are allowed to apply the analytical concept »state« to premodern societies, but rather how we can define the concept in a fashion that does not render it analytically toothless. There are numerous modern definitions of the »state«, and we can be fairly certain that scholars will never agree on one single definition that will be universally accepted and applied.³ Given that Weber's definition has probably been among the most influential ones – if not the most influential – it is worth pointing out that many scholars have sought to provide nuanced versions of that definition in order to make it less narrow for heuristic purposes. Michael Mann, for instance, has argued that a more flexible approach to the issue of the state's monopoly of the means of physical violence is needed.⁴ Another good example is John Haldon's definition: »a set of institutions and personnel, concentrated spatially at a single point, and exerting authority over a territorially distinct area«. ⁵ Haldon has qualified that short definition further by adding that the central point of the state may be mobile, that state authority ultimately relies on coercion, and that the degree of its effectiveness is dependent upon the territorial extent of the state as well as the existence or not of a central bureaucracy.

The reason I am drawing attention to Haldon's definition here is that it comes from someone whose expertise is in Byzantine history and culture. Byzantine Studies has been a field where, contrary to Medieval Studies, the existence of the premodern state has been taken for granted and has never been an issue of debate; not least because the so-called Byzantine empire had inherited the sophisticated institutional and administrative culture of imperial Rome. Suffice it to mention that one of the classics of Byzantinist scholarship, the first comprehensive history of the Byzantine empire from the fourth to the fifteenth century published by Georg Ostrogorsky in 1940, bears the title *Geschichte des Byzantinischen Staates*. This general stance was also one of the main reasons – besides a certain aversion to theory within the field for most of the previous century – for which Byzantinists rarely considered it necessary to provide their own, or to employ existing, definitions of the »state« when applying the concept to the Byzantine empire; Haldon being a notable exception in the context of a scholarly paradigm shift that started taking place within the field in the last quarter of the twentieth century. The only issue of discussion and debate was and remains the Byzantine imperial state's bureaucratic nature.⁶

2 Mann, *Autonomous Power of the State*, 115; Mann, *Sources of Social Power II*, 54-63.

3 A good sample of the various modern definitions of the »state« can be found in Scheidel, *Studying the State*, 5-9.

4 See Mann, *Autonomous Power of the State*, 112; but see, also, the relevant comment in Scheidel, *Studying the State*, 5: »Weber speaks very specifically of a claim to legitimate force in the enforcement of state rules, and does not envision an effective monopoly on physical coercion *per se*.«

5 Haldon, *The State and the Tributary Mode*, 33-34.

6 Lilie, *Zentralbürokratie und die Provinzen*, 100-123; Cheynet, *L'efficacité administrative*, 7-16. Neville, *Authority in Byzantine provincial society*, 99-135.

For most of its history after the fall of the western parts of the Roman empire and up to 1204, when it disintegrated, the medieval East Roman empire fulfilled the basic criteria of many heuristic definitions of the »state«, since it consisted of a complex set of institutions and administrative offices through which the emperor enforced centralized judicial, economic, and military authority over a territory that was demarcated by the limits of that authority. A number of treatises, the so-called lists of precedence enumerating titles and offices, from the ninth and tenth century testify to an established hierarchy of a salaried officialdom that held administrative positions which outlived the individuals that served in them.⁷

If Byzantium is certainly not a unique such case in the medieval period, it is nonetheless an interesting case study because in Byzantine terminology the content of certain terms, such as the term *politeia*, seems in certain instances to come very close to that of the modern term state. As is well known, *politeia* is a term that Byzantine authors often used as a translation of the Latin term *res publica*.⁸ That the meaning of the term changed considerably over the centuries, that is from the time of the ancient Greeks through the Middle Ages and up to the modern times, becomes evident if we consider that in modern Greek *politeia* literally means »state« – another, more frequently used, term for state in modern Greek is *kratos*, whereas the term *dêmosio* is also used to refer particularly to the ensemble of the state apparatuses. While *kratos* in medieval Greek translates as power or authority, in certain contexts *politeia* could acquire a nuanced meaning from that of a *res publica* as a type of political regime.

The early tenth-century military handbook *Taktika*, written by the emperor Leo VI, provides an interesting insight into such a nuanced meaning of the term. When referring to the archenemy of his empire at the time, the Muslims, the emperor stated that »this people that borders on Our *politeia* causes us no less trouble now than the Persian people of old did to former emperors. They cause harm to Our subjects every day. It is for this reason that we have undertaken the present task of formulating instructions for war.«⁹ *Politeia* here acquires a distinctly territorial image, designating a political-territorial entity within which the emperor exercised sovereign authority over his subjects and was responsible for their protection. If this points to an overlap of the concept of *politeia* with that of empire, since the emperor refers to His *politeia*,¹⁰ in other parts of the text it is made clear that the governance of this political-territorial entity was carried out through a set of apparatuses of public administration (*dêmosies dioikêseis*), which are explicitly mentioned as responsible for the building of public works such as fortresses, ships, bridges, and roads.¹¹ On top of that, it is stated that the soldiers of the imperial army, one of the central institutions of the imperial

7 For the nature and function of the imperial bureaucracy, see Haldon, *Bureaucracies, elites and clans*.

8 Beck, *Res Publica Romana*, 13.

9 Leo VI *Tactica* 18.135, ed. Dennis, 488.

10 Haldon has pointed out that, often, there was little conceptual differentiation between *politeia* and empire in Byzantine thinking, see Haldon, *The Empire That Would Not Die*, 60.

11 Leo VI *Tactica* 20.71, ed. Dennis, 560.

state, were entitled to »rewards and benefactions from the emperor and to a salary for their loyalty to the *politeia*«. ¹² This distinction between a personal reward by the emperor and an ordinary compensation due to their loyalty to the *politeia* seems to be interrelated with the established distinction in Byzantium between the emperor's privy purse and the public treasury (labelled *dêmosios* in Byzantine terminology). The soldiers here are presented as servants of the imperial *politeia*, whose regular pay came from the public resources due to their loyal service.

To sum up, in the context of the *Taktika*, *politeia* seems to have been used by the author to conceptualize a demarcated political-territorial entity which was autonomous and distinct from others, and which consisted of a set of centralized institutions and administrative apparatuses that enforced rules. This is a concept whose content aligns with the content of the modern concept »state«. Based on that, one might rightfully argue that Byzantium is not simply a premodern social order to which the concept of the »state« can justifiably be applied in heuristic terms. It also provides a good case study about the potential use of termini in premodern cultures, which came very close to conceptualizing the phenomenon »state«.

12 Leo VI *Tactica* 13.4, ed. Dennis, 278.

COMMENTS ON THE COMMENTATORS

Brent D. Shaw

A good point of departure is John Haldon's historically useful definition of the state as a kind of large corporate body that aims at controlling peoples, lands, and resources by means that are different from alternatives, like those found in so-called »tribal« social orders. Although in some instances this definition might also apply to large private business enterprises, it is sufficient for our purposes here. As he emphasizes, the institutional arrangements forming this peculiar human organization construct »the state« as an autonomous entity that generates the logic of its own existence and, usually, an attendant ideology. The autonomous nature of the state is also emphasized by Stouraitis in his consideration of the Byzantine polity. The fact of this autonomy raises questions about the state's relationship to other systems of exploitative domination. Haldon rightly draws attention to the need to understand the relationship of the state to other systems that stand outside its structures – economic forces and personal relations being among the more important amongst them. Given the definition he offers, one can add other externals that the state's managers strove to control. These include, at least, demographic resources and the communicative instruments necessary to overcome spatial constraints, both of which any state must attempt to control. This relative autonomy must therefore be a fundamental essence of the state and must also define its modes of operation.

If Haldon's model and his list of additional criteria might be disputed in part or revised by some, Stefano Gasparri and Cristina La Rocca justify the use of its parameters as a good heuristic tool or, as they put it, »for simple reasons of opportunity«. Within this context, and with specific reference to the Lombard regnum, they raise another important Haldon-like question. What is the relationship of the state to the realm of personal relations and powers? The question is complicated by the emergence of new institutions, like churches, often created by individuals independently of the state. The existence of these other corporations logically raises Hobbes' question about the status of »worms in the entrails« of the body politic. They rightly argue that a measure of »state-ness« is delimited both by the role of competing corporate bodies and by the exercise of personal powers. If the effect of the state's impersonal institutions is to create a structure whose existence is somehow separate from the personalities, friendship links, and patronage influences of individual power holders, then the relationship between the two should provide a sharper idea of the state's configuration. The state does not obviate personal powers, however. It restrains, harnesses, and exploits them. The integration of the personal with the state is demonstrated, for example, by the continuing presence of oaths, which in the Roman state anchored everything from court procedure to the emperor's power. In cases like these, however, the personal elements function within the state, which effectively uses them for its own ends. As Régine Le Jan points out, since Marc Bloch, at least, this has been one of the main axes along which the degree of »state-ness« or of its absence has been postulated for the post-Roman states of western Europe. The problem, again, is that kinship – just one of the forms of personal power – has serious functions not just in premodern societies but also within modern ones, including the operation of state structures. Sorting out the relationship between the relatively impersonal structures that define states and the function of various types of personal powers and ideologies is critical. I must confess that I am rather unconvinced of the utility of Descola's ideas on the supposed non-separation of nature and culture in premodern societies, an »organic

wholeness« already postulated long ago by Collingwood, as offering a solution to this problem. Even if one concedes this ontology, it is difficult to explain the significant variety of state structures, the intense bureaucratic-administrative structures that some of them developed, or, to consider religion, the emergence of a mass unitary ideology like Christianity in the Roman empire – an ideology which Haldon has elsewhere accepted as critically important to the survival of the Byzantine state. The utility of investigating the nature of the separation between the impersonal structures of the state and various types of non-state organizations and personal powers, however, should be testable in the context of extra-European and pre-modern states, like that of China.

There are at least two ways in which I strongly empathize with Nicola Di Cosmo's anxieties. If someone asked me to join in debates amongst historians of China about concepts, say, of rulership in the Tang or Song dynasties, I would not just be unenthusiastic, but riven with a real fear and would surely desist. I also share his justified apprehension of questions that are just too immense and too baggy to be useful in historical analysis. For the most part and for most of my practice as an historian – consider how I write – I must agree. But sometimes even the hardest of hard-edged fact-oriented researchers, physicists amongst them, still engage with »big picture« questions. They deal not just with sub-atomic particles, the neutrinos and quarks, but with the much grander matters of cosmology. Even if we historians, in our sublunary world, have reasoned doubts about the utility of doing so, we must also grapple with these big issues on occasion. In my eyes, Nicola's intervention shows the utility of seeing our problems from another historical perspective. I select just one of his main insights: his focus on the problematic link between »state-ness« and concepts of universal rule. This is surely important because concepts of universalism reflect the ideal of achieving a peculiar type of state power and also the relation between the polity aiming at that achievement and »the universal«. An awareness of universal rule as a possibility can be projected by different types of state powers – as it seems to have been by thinkers of »cosmopolitanism« in the post-Alexander the Great kingdoms in the Mediterranean. Chinese thinkers of the similarly fragmented and competitive powers of the Warring States period could envisage the possibility, indeed desirability, of a power of *tianxia* or »All-Under-Heaven«. In the Roman case, by contrast, the concept of »ruling over everything« seems to have emerged only after the empire had already been formed. In any event, whether proleptically or after-the-fact, very large premodern states configured their existence in this fashion in a world where there was no longer a formally well-defined »sovereign area« of their own that could be defined in opposition to that of others. They had everything that mattered to them. Most of the more modest city-states of the time, Greek and Phoenician amongst them, however, did have clearly defined borders, even if the presence of borders seems to have encouraged constant struggle and warfare. Indeed, it is the existence of comparable constellations of competing states that made Victoria Tin-Bor Hui's insightful study of state formation in the Warring States-Qin transition and the states of early modern Europe so do-able. It appears that reaching a point of »having no borders« is a signal that what we call a »state« possesses something that we call an »empire« – although the latter could morph into the former as, I think, happened with both China and Rome. In this case, however, it seems that we are at the »upper end« of the problem: the point at which major states are transforming into a single state that dominates all other states in their own ecology. This proven capacity to morph does raise Nicola's »more interesting« question about the changing nature of a state over time and our willingness to tolerate changing terms to describe the different phases.

But no objective set of terms or definitions alone will bring us full historical understanding. I could not agree more with Hans-Werner Goetz. The emic or local expressions of what they were experiencing, in this case the instruments and aura that we define as a »state«, are very important for us to understand, if only because how they conceived their governance must have considerably affected how they acted. This is certainly »an indispensable objective of research«. And the fact that they did not have concept words that we have does also matter in historical analysis and might well impair our liberal use of the word »state«. I could take the Romans and our concept of »teenager«, which emerged first in the 20s and 30s or the last century, but only took hold in a big way in America in the decades after the 1950s. The Romans certainly had young people between the ages of 13 and 19, a simple demographic fact, and had ideas about them which are found in both literary and epigraphical texts. But it is safe to say that they lacked an equivalent to the modern word and concept and, in this case, the verbal absence tells us that the thing itself did not exist. Such matters must remain constantly under review. Every time the eminent Roman historian Fergus Millar used the modern word, and therefore concept, of »sovereignty« to describe the nature of the Roman republican state's authority, I always stopped in my tracks and hesitated. It just didn't feel »right«. I remain dubious, although somewhat less so than I once was.

The operational difficulty here perhaps is less with the concepts themselves, as Yannis Stouraitis makes abundantly clear from his useful outsider's perspective, than with a peculiar historicizing of them. As he shows, the Byzantine Greeks used the word *politeia*, an inherited concept which was itself undergoing change and which only has a partial overlap with our term »state«. The same has been remarked of the Latin *res publica*. The problem here, I think, is not the simple one that exists with »teenager«, but rather one of measuring the gap that exists between the concept, both emic and our modern one, and the actuality of the state »out there«. As with the concept and word »empire«, however, there is another dimension of this problem that is implicit in Stouraitis' argument, namely the moral and emotional content of the words as they were spoken and written by the persons at the time. The claim to have a thing like a *politeia* had an emotive element to it that cannot be ignored. So this, too, bedevils our analyses. Someone might claim the Central African Republic to be an »empire« and its ruler to be an »emperor«, as Jean-Bédél Bokassa did in the latter decades of the twentieth century. He wished to have an empire and to be an emperor, both very desirable things in his eyes. On the other hand, others, while actually possessing such a thing »objectively«, like America or the Russian Federation, for these same moral and emotive reasons might wish to abjure the fact. Like »empire«, the concept of »state« is similarly fraught because it signals a certain highly valued status that everyone, from the tiny islands of Vanuatu and Tuvalu to the People's Republic of China, desires to have. Emic claims, or the lack of them, might not be a fully reliable guide to the reality.

Finally, I sense that there is another emic issue at play, one that I alluded to in my essay. To say the obvious, it is that we ourselves have emic issues with our own concepts. One that is certainly at issue here is not only the difference between Euro-American ideas and those found elsewhere in the world, but within the confines of our own concepts. When discussing this problem with colleagues and friends from German-speaking lands, I felt that we were always speaking at cross-purposes, that the ways that they and I saw this problem were not converging in the same conceptual circle. I conclude by quoting from comments made in an e-letter to me on this issue by a fellow Roman historian, Lisa Pilar Eberle from Tübingen (I thank her for her permission to replay her words here):

As I contemplate calling the Roman polity a »Staat« in German, I still shudder. And not because I am a Schmittian, but because, unlike the English »state« (at least to me), the word simply has such concrete, modernist connotations. In German something is »ein Staat« because there is something that one can identify as »der Staat« (which anchors the concept firmly in the present). It's where the emic and the etic intersect and make »Staat« as a category of historical analysis so strange for me, I think. That being said, my English mind completely agrees with you. I think there was a time when in my research I also stopped speaking of »the state« (especially as the subject of a clause) because that seemed to elide too many interesting questions...

With Lisa, I now also shudder. In other words, our terms require their own internal translation, a process which itself might indicate that equivalent usages are not possible. I, too, am no Schmittian, either as a devotee of his values or as an admirer of his public career. I selected him for a number of reasons. One is that, whether one likes it or not, he has been central to the best-developed historical arguments that have been carried on mainly amongst German-speaking scholars, principally medievalists, but which ought to be more widely known, especially among Roman historians who are my special concern. He is also – in my judgment only – the most acute analyst of the nature of the particular type of state that was the focus of his inquiries, of the complex deliberations about it in the past, and of what are the »essences« that characterized it. So although his ideas are Eurocentric (they surely are), they are still the most coherent and incisive analysis of a given type of state that can guide our understanding of other types.

I cannot sufficiently thank all of the respondents. I have learned from them all. Much more could be said in further discussion of each of their responses, but to go on at length would try the endurance of the most patient reader. I am reminded of a graffito from Pompeii where the wit wrote that he wondered at the strength of a wall able to bear the strain of so much scribbling.

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Abbreviations

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Handwritten Arithmetic Treatises in German (1400-1550). A First Assessment of the Sources Based on the Exemplary Corpus Held by the Austrian National Library

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The ERC Starting Grant project ARITHMETIC focuses on editing, describing, and analyzing handwritten arithmetic treatises in German from the 15th and 16th centuries. This paper is the result of a first preliminary study on the material that was conducted at the Austrian National Library, where an exemplary corpus of seven manuscripts was analyzed in detail. The results of this short study on a selective but representative corpus will serve as a basis for the upcoming work on the almost 140 manuscripts that form the complete research corpus of the ERC project. This article focuses on two main aspects in detail: On the one hand, the methodological approaches concerning the description of the manuscripts and the transcription of the arithmetic texts will be reviewed. In addition, the transcription software Transkribus, which serves as a support tool for the project, is used to generate a suitable model for handwritten text recognition (HTR) that will be used on large parts of the corpus. On the other hand, first hypotheses on the material will be tested and result in short analyses of the sources concerning questions on the process of translation from Latin to German, the relevance of the context handed down with arithmetic texts in miscellanies, the dichotomy of theoretical texts and practical teachings, and the importance of mnemotechnical tools in pragmatic texts of the Late Middle Ages.

Keywords: Late medieval mathematics, practical knowledge, translation culture (Latin–German), emergence of a German mathematical jargon, development of HTR models for arithmetic texts using Transkribus, description of arithmetic texts, late medieval mnemonics, late medieval knowledge culture

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Introduction

The ERC Starting Grant project ARITHMETIC¹ was kicked off in September 2022 at the Institute for Medieval Studies at the Austrian Academy of Sciences. The overall goal of this research project is to answer questions on the development of non-academic (mathematical) education in the Late Middle Ages, on the generation of a bourgeois knowledge society, and on the development of a vernacular mathematical jargon. Even though Latin was the lingua franca of medieval European scholarship, the rising independence of craftsmen, merchants and the bourgeoisie in the 15th and 16th centuries led to a need for education in the vernacular and therefore to the production and distribution of vernacular textbooks that are still largely unknown.² ARITHMETIC aims to focus on these early vernacular sources and will, in its first research step, collect, describe, transcribe, and digitally edit handwritten arithmetic texts in German with the goal of generating a detailed text base for further study. To get acquainted with the source material in question, a small exemplary corpus held by the Austrian National Library was examined in more detail. The goal was to determine whether these 10 manuscripts of arithmetic texts in German could inform us on what to expect when dealing with the complete corpus of roughly 140 manuscripts distributed over 60 cities throughout the world.

To sufficiently describe the overall rise of mathematical knowledge, the appropriation of the cultural technique of calculating with pen and paper and the enormous influence it had on society, culture, and education, it is necessary to look beyond the known Latin sources that are rooted in the academic circles. The fact that the rising independence of craftsmen, merchants and the bourgeoisie in the 15th and 16th centuries led to a different self-awareness and a need for education in the vernacular is still very much overlooked. This has led to a skewed, or at least incomplete picture of a late medieval knowledge society³ in Europe, especially when we are looking at the proliferation of mathematical knowledge. We can tackle this problem by directing our attention to the vernacular sources, and by doing so, we will be able to contribute to and expand our current understanding of late medieval and early modern knowledge in a vernacular environment. This ERC project intends to focus on the German-speaking world as a first in-depth model study and will furthermore concentrate on the manuscript culture. We will pay attention to the time before the printing press helped

1 Further information on the project: www.oeaw.ac.at/imaf/forschung/historische-identitaetsforschung/projekte/arithmetic

2 Wedell, Numbers, 1205-1260, 1242-1243.

3 The late medieval knowledge society suffers from a poor reputation for scientific progress, intellectual achievement and innovation, even though it laid many of the foundations for the modern knowledge society. Moreover, the pursuit of a »circulation of knowledge« through diverse cultural and social levels is gradually replacing the earlier view of a top-down transmission of knowledge from a high level of production to a passive secondary audience. See, for example, Daum, Varieties of popular science; Lässig, History of knowledge; Roberts, Circulation of knowledge.

a wider audience to easily access all types of books, a time where we can already see a steep rise in vernacular scholarly texts written by hand all over Europe, clearly catering to an audience not rooted in the universities or monastic circles. For the arithmetic treatises alone, which are only a fraction of the didactic texts on mathematics in the 15th and 16th centuries, we can currently identify almost 140 manuscripts that contain texts in German and were loosely written between 1400 and 1550.⁴

This number is the result of in-depth research using the latest, often reworked and newly edited catalogs and databases.⁵ In total we have collected data on over 300 manuscripts that contain handwritten mathematical texts in German that can be categorized as arithmetic, geometric or algebraic; computus treatises or astronomy were not even taken into consideration. Almost half of these manuscripts include content that can be classified as arithmetic and therefore deal with the art of calculating, to distinguish it from geometry, which is the art of measuring, and algebra, which is the art of calculating with closed sets. Arithmetic can be considered the foundation of mathematics, especially when it comes to the cultural technique of calculating with pen and paper built on the use of the Hindu-Arabic numerals and the positional notation system.⁶ Without understanding the rules of arithmetic, no other number-based calculation can be conducted. This is one of the main reasons why arithmetical treatises are our first target of research; the basics of calculating need to be understood to use that knowledge continuously in adjacent fields.

The manuscripts from our corpus contain texts that deal with the art of calculating on different levels and through different types of texts: At first glance we need to distinguish between longer treatises that aim at giving thorough information on the art of arithmetic, like a reckoning book, and shorter texts that simply gather dense information or specifically teach very practical knowledge, like a reckoning example. This leads to a second distinction that

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- 4 The initial cut-off date that was also given in the project-proposal was 1522, which is the year Adam Ries published his widely influential and often reprinted reckoning book (*Rechenung auff der linihen und federn in zal, maß und gewicht auff allerley handierung gemacht und zusammen gelesen durch Adam Riesen von Staffelstein Rechenmeyster zu Erffurdt im 1522 Jar*). The argument for that cut-off date was that after that print publication, the importance of printed reckoning books started to outweigh the handwritten tradition. That is true insofar as we can see a surge of printed textbooks; but what we overlooked at that time is that not only the printed but also the handwritten tradition is picking up: handwritten reckoning books are popping up everywhere and are an important factor in the distribution of mathematical knowledge in the 16th century. Therefore, we extended the cut-off date to c. 1550, a time when the printed reckoning books started to multiply and flood the German markets.
 - 5 We started our research with an initial corpus of 80 manuscripts based on the Jordanus database hosted by the Bavarian Academy of Sciences (ptolemaeus.badw.de/jordanus/start). This database is the result of extensive research by Prof. Menso Folkerts and Gerhard Brey, who roughly 40 years ago collected data on mathematical, astronomical, and computational manuscripts of the Middle Ages in all Western languages with a strong focus on Latin manuscripts. The Jordanus database is incorporated into the Ptolemaios Latinus project (ptolemaeus.badw.de/start) currently undertaken by the Bavarian Academy of Sciences, but it has not been updated since the 1990s. This means that the Jordanus database, due to its outdated information, can only be considered a starting point for future research. Relying on new catalogs and databases, we were able to add over 60 manuscripts to our corpus and almost doubled the initial research corpus.
 - 6 For more information on the history of mathematics with a focus on the development of mathematical theory and practice in medieval Europe, see, for example, Juschkeiwitsch, *Geschichte der Mathematik*; Herrmann, *Mathematik im Mittelalter*; Wußing, *6000 Jahre Mathematik* 1.

stands in juxtaposition to the first one: There are, on the one hand, the theoretical texts like the Sacrobosco »Algorithm« or the introductions to the different »species«⁷ in the reckoning books that use hardly any examples and rely on a descriptive approach to the topic. On the other hand, we find highly practical texts that are explicitly interested in the »how-to« aspect of practical arithmetic, explaining steps of calculations not only with words but also giving lengthy examples and sample calculations. What we find is a highly heterogeneous collection of texts that contains information on the development of late medieval mathematics and of a German mathematical jargon, but also on late medieval history and culture.

To get a better understanding of what we can expect from our quite large research corpus, we decided to examine the 10 relevant manuscripts held by the Austrian National Library more closely. The goal was to determine whether our research focus was adequate, our questions on the material answerable, and whether we might have overlooked problems that need attention. Furthermore, working with a small corpus at first will give us information on what to expect from the process of manuscript description as well as the transcription process in terms of necessary attention to detail and the associated time management. This paper will give information on the exemplary corpus and our connected questions. We will firstly give a list of the manuscripts in question, adding some basic information on when the manuscripts were written/compiled and their content. In a second step we will test our mode of manuscript description on our corpus, focusing not on a detailed catalog entry but rather on an inclusive description of the arithmetic content that uses extant catalog entries and existing descriptions to give the needed paleographical and codicological information. Thirdly, we will concentrate on the challenges of transcribing arithmetic manuscripts. For this project we are using the transcription software Transkribus, which enables us to use its handwritten text recognition (HTR) tool and to train HTR models that explicitly cater to our needs (mathematical content of the Late Middle Ages). In this paper we will discuss the process of creating and improving such a model based on our exemplary corpus. We consider the description and the transcription of the sources as two necessary preliminary steps to ultimately focus on the fourth step for this paper: the analysis of the sources regarding historical, cultural and social questions as well as by language. There are four bigger topics that need to be tackled using our sources: we will look at the context in which the arithmetic texts are embedded, the problems of translation from Latin to German, the dichotomy of theoretical and practical arithmetic and their portrayal in the sources, and the use of mnemotechnical tools to learn and remember the Hindu-Arabic numerals and the positional notation system.

7 »Species« is the name given to the basic arithmetical operations, of which medieval scholars distinguished 9 – in contrast to our 4 today (addition, subtraction, multiplication and division): *Numeratio, Additio, Subtractio, Multiplicatio, Divisio, Mediatio, Duplatio, Progressio, Radicum Extractio*; see, for example, Schirmer, *Wortschatz der Mathematik*, 67-68.

The Late Medieval and Early Modern Arithmetic Manuscripts of The Austrian National Library Written in German.

The ten manuscripts we examined at the Austrian National Library are all dated to the 15th and 16th centuries. Five of those manuscripts have already been digitized (Cod. 3029, Cod. 5206, Cod. 5277, Cod. 3528 and Cod. 5184), whereas the other half of the corpus (Cod. 10788, Cod. 10753, Cod. 10939, Cod. 2976 and Cod. 3502) needed to be examined in more detail to determine whether the manuscripts were relevant for the research project. Three manuscripts, Cod. 10753, Cod. 10939 and Cod. 10788 were written in the later 16th century and therefore after the cut-off date we set for this research project. What is interesting about these manuscripts, though, is the fact that they are not built like »classical« reckoning books. They are very obviously made for traders and everyday use, but they neither include theoretical and practical information on the nine species, nor do they give an abundance of reckoning examples as other reckoning books from the 15th and early 16th century do. They are rather built as reference books. They contain mainly conversion tables for currencies and weights of different German and even European cities. The books are utilizing the skills taught by reckoning masters but do not fall into the category of a reckoning book, even though conversion tables and information on currencies and weights are integral parts of earlier reckoning books as well. The difference is that in a reckoning book that functions as an instructive manual, the economic information is embedded into the educational objective of teaching the art of arithmetic with pen and paper. What seems to have happened is that over time the instruction in theoretical and practical arithmetic was detached from the everyday application of the learned skills as a support for the working merchant. What the exemplary corpus of the Austrian National Library shows is the development of a handwritten tradition that builds on the knowledge taught by reckoning masters and that does not need to dwell on the teaching of arithmetic skills anymore. Being able to read and use the Hindu-Arabic numerals is the prerequisite for writing and utilizing books like Cod. 10753, Cod. 10939 and Cod. 10788, which indicates that in the second half of the 16th century the positional notation system and the cultural technique of calculating with pen and paper have fully arrived in the vernacular society.⁸

The other seven manuscripts we studied in more detail were all incorporated into our research corpus. More information on the codices in question is given below in chronological order, starting with the oldest manuscript of our exemplary corpus:⁹

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- 8 This observation is only valid for the area of southern Germany. The expansion of the Hindu-Arabic numerals is different throughout Europe: Italy had already developed reckoning schools and vernacular textbooks in the 14th century and German traders sent their children to Italy to learn the positional notation system long before the first reckoning schools were established in Germany in around 1500. In northern Germany, on the other hand, we have no evidence of the use of Hindu-Arabic numerals before the second half of the 16th century. The dispersion of knowledge on the Hindu-Arabic numerals started in the south and slowly made its way up north. The expansion of this knowledge and the connected practices is linked to a rise in economic activity due to the easier method of calculation. Cf. Danna, *et al.*, Numerical revolution.
- 9 The information on the following manuscripts was gathered using the existing catalogs and databases that are further described and used in the section »Description of Manuscripts«, namely in footnote 15 in detail. The main two sources are: Menhardt, *Verzeichnis* and *Tabulae codicum manu scriptorum*, ed. Academia Caesarea, vol. II: Cod. 2001-3500.

Other literature consulted: Curtze, *Eine Studienreise*, at 287 and fn. 61; *Algorismus Ratisbonensis*, ed. Vogel; Reiner, *Terminologie der ältesten mathematischen Werke*, 17; Brey, *Deutsche mathematische Texte des 15. Jahrhunderts*; Glaßner, *Katalog der deutschen Handschriften*, 640; Wiesinger, »Als der algorifmus spricht ...«, 7-25.

Codex 3029 is the oldest of the ten examined manuscripts and was written in the first half of the 15th century; Hermann Menhardt loosely dates the codex between 1425 and 1452. We are looking at a very early German reckoning book that directly caters to readers who must use arithmetic on a very practical level – merchants or craftsmen – and gives information and examples on how to calculate with integers and fractions. This manuscript is a stand-alone reckoning book that is not bound together with any other texts and was apparently used to inform the readers on the practical use of the Hindu-Arabic numerals in detail. Codex 3029 is closely connected to the Bamberger Rechenbuch, printed in 1483 in Nürnberg.¹⁰ Both texts are linked to the *Algorismus Ratisbonensis*, a very early (1st half of the 15th century) reckoning book written in St. Emmeram in a mixture of German and Latin that can be traced back to Fibonacci's *Liber Abaci* and the European beginnings of the reckoning book tradition.

The next oldest manuscript is Codex 3502, a miscellany which can be dated to the second half of the 15th century. It combines a variety of texts in Latin and German covering topics on grammar and lexicology, rhetoric, the art of writing letters, treatises on the computus, the calendar, and of course, several texts on the art of arithmetic. One of them is one of the seven known German translations of the introduction to the art of reckoning with Hindu-Arabic numerals, better known as the »Algorism«, by Johannes de Sacrobosco¹¹ on folio 270r-277r. A Latin version of the Sacrobosco »Algorism«¹² overloaded with Latin glosses can be found in the same manuscript on folios 148r-167v; two more algorism treatises, not following the Sacrobosco tradition, can also be found in the miscellany. More German mathematical text fragments and reckoning examples are distributed incoherently throughout the whole manuscript. One double page (folios 147v and 148r) contains very dense information on how to do calculations using the Hindu-Arabic numerals and with a counting frame. The analysis of the watermarks shows that the parts of the miscellany that contain German arithmetic texts can be dated between 1474 and 1488.

10 Rath, *Über ein deutsches Rechenbuch*.

11 The original title of this treatise was »De arte numerandi«, the art of numeracy, written between 1225 and 1230. It was the first treatise on the Hindu-Arabic numerals that got introduced into the university curriculum, where it was studied well into the 16th century as the basic information on the art of arithmetic (Smith and Karpinsky, *Hindu-Arabic Numerals*, 58-59). F. Saaby Pedersen attempted to edit this text mainly based on the Copenhagen manuscript (København, Kgl. Bibl., Ny kgl. Saml. 275³,4^o. Vellum, 20 ½ x 14 ½, ff.85, late 13th c.) and additionally on both the Oxford and the Stockholm manuscripts; *Petri Philomenae de Dacia et Petri de S. Audomaro opera quadrivialia*, ed. Pedersen, 174-201). An edition using all extant sources seems almost impossible given the ubiquity of the source material. Pedersen argues that there might be more than 50 »Algorisms« in Latin; information from the Jordanus database, which was established roughly 10 years after Pedersen published his edition, leads us to believe, that we are dealing with a far bigger corpus with hundreds of extant manuscripts. The name »Algorism« stems from a malapropism of the Arabic name Al-Khwarizmi and soon became the expression under which the general introduction to the Hindu-Arabic numerals was known.

12 The algorism texts that follow Sacrobosco's treatise can easily be identified via the incipit that reads *Omnia, quae a primaeva rerum origine processerunt [...]* (cf. *Petri Philomenae de Dacia et Petri de S. Audomaro opera quadrivialia*, ed. Pedersen, 174).

Cod. 5206 was written in the second half of the 15th century in Latin and for the most part in German. It contains medical, alchemical, and astronomical treatises as well as a treatise on the art of memory, recipes, and roughly 20 pages of reckoning examples in German (folios 81r-94v). On folio 39r a German reckoning example was added to a Latin text on arithmetic (folios 36r-41r) and can almost be considered as a form of commentary because the vernacular example is given in accordance with the content of the Latin text and thematically connected to four passages on the page via a token. The miscellany Cod. 3528 was compiled over the course of 60 years between 1480 and 1540. It contains, among other things, historical, astronomical and astrological treatises in Latin and German, including a computus and rules for good health in the latter language. Even though there are no mathematical texts in Latin handed down in this miscellany, we can identify two German mathematical texts that are connected to the realm of trade: The first is an instruction on how to make a measuring rod accompanied by several illustrations. Those texts known as »Visiertraktate« in German are part of the geometrical tradition and transmit very practical knowledge.¹³ The second mathematical text is a compilation of reckoning examples on folios 205r to 210r. They mainly cover the rule of three, exemplified by trade problems and adorned by small illustrations that refer to the content of the corresponding reckoning example.

The manuscript with the shelf mark Cod. 2976 contains treatises from 1481 and later years. It is again a bilingual (Latin and German) miscellany that contains texts on several different topics including astronomy, rules for good health, information on the weather, the black death, and several treatises on the calendar. Most of the manuscript is written in German, including the arithmetic treatise, which is a reckoning book (*Nürnberger Rechenbuch*) on how to calculate with a counting frame (»Linienrechnen«, which means reckoning on the lines [of the abacus]).

Cod. 5184 can be dated to 1485 and only contains one short piece of text that has a loose connection to arithmetic: On folio 60v we can find a mnemonic on the shape of the Hindu-Arabic numerals known as »vnvm dat vinger«. It is a bilingual mnemonic that helps to memorize the shape of the numbers via everyday items of similar form. Other German parts of the miscellany deal with astronomy and medicine; a large part of the manuscript is written in Latin and mainly deals with astronomical problems.

Codex 5277 was written in the first half of the 16th century¹⁴ and can be considered a mathematical manuscript mainly written in Latin. It contains information on arithmetic, geometry, and algebra; German parts are embedded in the first text, a treatise on algebra which is regularly interrupted by German reckoning examples that deal with arithmetic and algebraic problems. Those are inserted by the same hand that wrote the Latin treatise.

13 Folkerts, *Die Faßmessung (Visierkunst)*.

14 Two exact dates (2 November 1520 and 25 October 1525) can be found in the manuscript on the folios 100v and 236v (cf. Unterkircher *et al.*, *Datierte Handschriften in Wien*, 52-53).

Description of Manuscripts

First Considerations

These seven ÖNB manuscripts serve as an exemplary corpus to undertake initial considerations about how all our manuscripts can be described. A classical catalog is out of the question for two reasons: firstly, because the textual witnesses are scattered throughout the entire German-speaking area and beyond, making it basically impossible to examine all of them, and secondly, because the focus of the project – namely the edition of the German-language arithmetical components of these manuscripts – does not require in-depth indexing. Therefore, the first step will be to produce short descriptions based on existing descriptive sources which can then be supplemented by individual observations that result from personal inspection of manuscripts or from findings that can be gathered from digital copies. A strong focus of the description will be on the arithmetic parts/treatises of the manuscripts.

A fundamental problem with this approach is the disparate and unfortunately often deficient existing descriptions of the individual manuscripts. In particular, paper codices from the late Middle Ages, which are rarely illuminated and in many cases constitute complex miscellanies, are usually only poorly cataloged as many cataloging projects proceed chronologically or thematically and do not include the group just described. This problem also affects the seven manuscripts of the Austrian National Library that are relevant to our project. They are recorded in the following catalogs/databases:¹⁵

Shelf mark	ONB online	Tabulae	Dat. Hss.	Menhardt	manu-scripta	HS-Census	Jordanus
Cod. 2976	x	x	x	x	x	x	x
Cod. 3029	x	x		x	x	x	x
Cod. 3502	x	x	x	x	x	x	x
Cod. 3528	x	x	x	x	x	x	x
Cod. 5206	x	x	x	x	x	x	x
Cod. 5277	x	x	x		x		x
Cod. 5184	x	x	x	x	x	x	x

All seven codices can be accessed via the online catalog of the ÖNB.¹⁶ The information on these manuscripts listed there was taken from the *Tabulae codicum manu scriptorum*¹⁷ from 1886, which at least provides basic data. The entries on *manuscripta.at* also follow the *Tabulae*. Although the texts are all named, they are not identified according to today's standards. Foliation, *incipia* and many codicological details are missing. Six of the seven codices contain datings and are thus included in the *Catalogue of Dated Manuscripts* by Franz Unterkirchner,

15 www.onb.ac.at/bibliothek/sammlungen; *Tabulae codicum manu scriptorum*, ed. Academia Caesarea; Unterkircher et al., *Datierte Handschriften in Wien*; Menhardt, *Verzeichnis*; manuscripta.at; handschriftencensus.de; ptolemaeus.badw.de/jordanus/start.

16 www.onb.ac.at/ (accessed on 13 March 2023).

17 *Tabulae codicum manu scriptorum*, ed. Academia Caesarea, vol. II: Cod. 2001-3500.

where they were summarily described and depicted. For those five manuscripts where the *Tabulae* list German-language texts, we have entries in Menhardt's *Catalog of German Manuscripts* as well as articles in the Handschriftencensus – both, however, concentrate on the German-language entries and disregard the Latin ones. There is further literature on some of the codices, but it is devoted to the contents of individual texts, not to the manuscripts.

For a repertory within the ARITHMETIC online edition, a very fundamental decision must therefore be made right at the beginning: is it legitimate to generate entries of widely varying detail, or is it better to limit oneself to a few basic data (such as place of storage, material, size, dating, summary of contents, or the like), which must be compulsorily collected for all manuscripts and are thus valid? The Jordanus database, an initiated index of all vernacular mathematical texts, in which all seven ÖNB manuscripts appear, has chosen the latter path. The entries there differ in length and quality but make their sources transparent and traceable. However, since the database has not been hosted for years, the entries, some of which have also not been edited, are unfortunately not a reliable basis. Nevertheless, this approach – bringing together the relevant information from different sources – seems like a sensible decision. After all, omitting already existing information just to ensure conformity of the catalog entries would be wasteful. In either case it will be important to clearly identify the sources and to contextualize them to enable the recipients of the database to classify them. But this approach also raises new questions. First, the »relevant« information mentioned above. What is this in the context of the ARITHMETIC project, which not only wants to generate a list of manuscripts but also to interpret the arithmetical texts in a multi-perspective context?

Basic Data and Non-Arithmetical Content

The focus of the descriptions is on the content of the manuscripts, but how is this to be reproduced in the repertory? Most textual witnesses are miscellanies that contain many texts. And these do not all deal with arithmetic and are not all German. An exact determination and description of all the texts contained would mean an enormous consumption of time and is not of primary importance for the question of the arithmetic texts. Nevertheless, the surrounding texts are significant when it comes to knowledge systems, reading matter, usage, or possible recipients of the mathematical components.

Due to this initial situation, the project team has decided to keep the descriptions of the manuscripts short, to collect the existing basic data in a headline (shelf mark, place of storage, dating, size, material, extent) and to supplement them if necessary. This headline should be followed by the fields »Provenance« and »History/Owners«. Here, data on the origin, dialect, previous owners, olim shelf marks, etc. can be collected. A »Characteristics« field gathers information on the textual environment and places the entire manuscript in a larger context (e.g., university, monastery, trade, etc.) based on the combined codicological and content-related findings. After these short descriptions, references to databases and literature are given. The last field is devoted to special features concerning the writing in the German-language arithmetical texts. Here, deviations from the general edition guidelines are noted individually for each manuscript.¹⁸

18 At this point in time within the project duration, it is not yet possible to determine the exact way in which the German-language arithmetic texts will be included in the repository. These decisions will be made when the corpus has been reviewed and analyzed in its entirety.

Draft of a description for the repository:

Wien, Österreichische Nationalbibliothek Cod. 3502

2nd half of the 15th century (1472-77, with supplements until 1499), paper, 220×155 mm, III+278 folios

Provenance:	Ingolstadt (?); Upper Franconian dialect (Menhardt)
History/Owners:	Johannes Franciscus ex Eschenbach (fol. IIIv): scholar in Gmünd, 1472-1472 student in Ingolstadt (Unterkircher) Wolfgangus Plessinger ex Eschenbach (fol. IIIv, 278r; c. 1500). (Unterkircher) Vienna, Old University Library (after 1623 - until 1756): Olim signature <i>Univ. 496</i> .
Characteristic:	Predominantly Latin miscellany with grammar, rhetoric, astronomy, a computus, mnemonics, a Latin algorism as well as a love letter from a student to a bourgeois woman by Samuel Karoch von Lichtenberg. Not only through its previous owners, but also through this text (the author himself was a magister at the newly founded university in 1472; see DB), the manuscript shows a strong connection to the university in Ingolstadt. The codicological structure of the manuscript, consisting of several bound fascicles with individual texts written by 12 scribes, is also appropriate for a university manuscript. The manuscript is rubricated throughout, but is otherwise free of decoration.
Databases:	https://manuscripta.at/hs_detail.php?ID=6954 https://handschriftencensus.de/11585 https://ptolemaeus.badw.de/jordanus/ms/11745
Literature:	Hermann Menhardt, Verzeichnis der altdeutschen literarischen Handschriften der Österreichischen Nationalbibliothek. Bd. 2 (Veröffentlichungen des Instituts für deutsche Sprache und Literatur [der] Deutsche[n] Akademie der Wissenschaften zu Berlin 13). Berlin 1961. [...]
Notes on the edition:	[...]

The non-arithmetic texts will be described only summarily in a first step, focusing on their general fields of knowledge (e.g., astronomy, medicine, geometry, philosophy, etc.). Even if these data are only summarily recorded, they still have significance, for it makes a difference whether a manuscript »only« transmits a reckoning book with a strong reference to trade, or whether the mathematical contents stand in the context of computistics or perhaps academic scholarship.¹⁹ If towards the end of the project time allows, the transmitted texts will be defined more precisely by indicating the *incipia* or even by being identified.

19 Further considerations on the context of transmission are elaborated in the section »German Arithmetic Manuscripts of the Austrian National Library: Texts and Context«.

The History of Ownership and the Context of Transmission

Using an example from the manuscripts examined in the ÖNB, the relevance of the history of ownership for our project can be illustrated:

Cod. 5206 is a scientific manuscript compiled from the second half of the 15th century to the beginning of the 16th century.²⁰ It contains 179 folia of recipes, memorial art, astronomical, mantic, medical and mathematical texts, most of which are in German. The composition of the texts is remotely reminiscent of a so-called house book. House books belong to the nobility or bourgeoisie, and that is where one would look for the provenance of this miscellany. Although the manuscript itself has no written evidence of its previous owners, it can nevertheless be assigned. Together with Cod. 5277, it reached the then Wiener Hofbibliothek in 1655, when the descendants of Georg and his son Philipp Eduard Fugger sold about 300 volumes of their large collection to the Austrian emperor.²¹ Part of the sold Fugger library was also the majority of the book collection of Johannes Schöner, a Nuremberg geographer, astronomer, mathematician and clergyman,²² who not only collected scientific literature but also copied it personally, published it as a printer, and even wrote it himself.²³ But he had also drawn from another collection: his library contained several books from the estate of Johannes Regiomontanus, which included the latter's own works (partly as autographs) but also texts by Georg von Peurbach.²⁴

This single manuscript alone makes it clear that German-language arithmetical texts cannot be considered without their context of transmission. The ownership history of Cod. 5206 reveals an entire network of scholars in which mathematical texts circulated. However, it also shows the textual environments in which they can be found, and how the composition of the content can provide clues to their owners. Therefore, it will be important to highlight this information when describing the manuscripts. One way of doing this would be to include a text that provides a brief characterization of the manuscript in addition to the collection of basic data and the textual environment. Here, reflections on the context of transmission within the manuscript, but also within the collection from which it comes, could be included and the provenance history, if it can be reconstructed, could be discussed.

20 Cf. Menhardt, *Verzeichnis*, 1110.

21 Franz, *Handschriften aus dem Besitz des Philipp Eduard Fugger*, 61-62.

22 www.deutsche-digitale-bibliothek.de/person/gnd/118795341.

23 Maruska and Schöner, »*Homo est nescio qualis*«, 113-150.

24 Maruska and Schöner, »*Homo est nescio qualis*«, 78.

Process of Transcription

In this paper, we have already discussed the heterogeneity of our whole and also our exemplary corpus in detail. The texts vary between theoretical treatises with comparatively few reckoning examples or tables and whole reckoning books with often more than 100 folios full of practical mathematical knowledge and the corresponding reckoning examples and calculations. This lack of uniformity in our sources poses a problem when it comes to the process of editing and transcribing them. Editing and transcription techniques that have been established and improved over the last two decades and can be considered well-known by now²⁵ can be used to edit theoretical treatises that are usually constructed as »simple« text and only rarely use calculation, tables, or diagrams. Our problems begin when we are confronted with more than just running text: the embedding of calculations, figures, tables, glosses and other forms of paratext poses a difficulty that calls for custom solutions, which we will develop in collaboration with the Center for Information Modelling based at the University of Graz.²⁶ Our small corpus from the Austrian National Library can be considered to be the perfect example for the problems we are dealing with, which we will elaborate in more detail below.

25 On the benefits and implementation of text-based transcriptions and (digital) editions in the field of German studies and history, see, for example, Bein, *Editionsprinzipien für deutsche Texte*; Thumser, *Verfahrensweisen*; Huygens (ed.), *Ars edendi. A practical introduction*; Nott-Kofoth, *Editionswissenschaft*; Sahle, *Digitale Editionsformen 1*; Bleier *et al.*, *Digitale Mediävistik*. But also guidelines for transcription and edition should be mentioned, such as *Empfehlungen zur Edition frühneuzeitlicher Texte des Arbeitskreises »Editionsprobleme der Frühen Neuzeit«* (AHF), accessed on 28 March 2023: www.heimatforschung-regensburg.de/280/ or *Transkriptionsrichtlinie Archivschule Marburg (Mittelalter/Frühe Neuzeit)*, accessed on 28 March 2023: www.archivschule.de/DE/ausbildung/transkriptionsrichtlinie/.

26 The ZIM (Zentrum für Informationsmodellierung – Austrian Center of Digital Humanities) located at the University of Graz (informationsmodellierung.uni-graz.at/de/) and led by Georg Vogeler (online.uni-graz.at/kfu_online/wbForschungsportal.cbShowPortal?pPersonNr=80075) focuses on the research field of digital editions, which are understood as a generally applicable humanities method for the semantic and formal indexing of cultural artefacts. Long-term archiving is also a major interest of ZIM's research fields. The planned digital edition of the project is to be published via GAMS (Geisteswissenschaftliches Asset Management System), which is managed by ZIM. GAMS is an OAIS (Open Archival Information System)-compliant asset management system for the management, publication and long-term archiving of digital resources from the humanities (gams.uni-graz.at/context:gams?locale=en). A project which ARITHMETIC is methodically oriented towards is CoReMA (Cooking Recipes of the Middle Ages), supervised by GAMS (gams.uni-graz.at/context:corema).

Our research corpus, consisting of almost 140 manuscripts, is quite substantial. This means that we need HTR support to transcribe and subsequently digitally edit all the relevant texts. We have chosen to work with Transkribus²⁷ because after years of intensive use by scholars and regular updates, it is not only user friendly and offers many helpful tools but it also provides a support team we can turn to. Furthermore, the process of semantic enrichment can already be started in Transkribus and allows for an easy conversion into a TEI.²⁸ The program offers an extensive selection of existing tags that can be used for further processing, but there is the possibility of creating customized tags as well. While working with Transkribus on our exemplary corpus we were able to observe that our problems with the software are due to the analysis of complicated layouts and the unsuitability of publicly available HTR models for most of our primary sources. Therefore, we made the choice to train our own HTR models²⁹ to support the transcription process, which we will describe further below. Another issue we observed while dealing with our exemplary corpus is that Transkribus' strong focus on (running) scripture requires specific model training to allow for a somewhat successful recognition of mathematical parts, i.e., numerals or fractions.

To facilitate a wide use of our transcription for various disciplines we decided to stick to the handwritten text as closely as possible during the transcription process. This means that we do not interfere with the scribe's language, and we do not change the syntax. We also do not interfere with grammar or punctuation; upper- and lower-case letters are adopted from the text, regardless of syntax; and the scribe's characters are adopted, as well as every letter form used in the texts: long S (ſ), the Z forms (z, 3,); and neither I or J nor U or V will be normalized. Superscripts are also adopted. Interventions are only made when it comes to the i-dots, which are systematically set; the y-dots (ÿ) are not depicted in the transcription because they are not used consistently and do not have any phonetic meaning.

27 Transkribus (readcoop.eu/transkribus/) is a text recognition software whose primary goal is to support work with historical documents. Originally, the software was developed within the framework of an EU FP7 project and subsequently developed further within an EU project »READ« (Recognition and Enrichment of Archival Documents) led by the University of Innsbruck (www.uibk.ac.at/de/) in 2020. Now it is being continued by a European Cooperative Society (SCE). The AI provides recognition of text, layout and structure. Furthermore, it is possible to train the AI by yourself, i.e., to use your own material for text and layout recognition training. For a systematic review of the platform, see Nockels *et al.*, Understanding the application of handwritten technology, accessed on 29 March 2023: doi.org/10.1007/s10502-022-09397-0.

28 TEI (Text Encoding Initiative) is a set of rules on which manual annotation in the XML (eXtensible Markup Language) editor Oxygen is based. The TEI consists of an XML-based markup language that humanities disciplines have been using since the early 2000s as a tool for digital annotation and description of texts. See, for example, Sahle, *Digitale Editionsformen 3*, or Driscoll and Pierazzo (eds.), *Digital Scholarly Editing*. See the guidelines for TEI at www.tei-c.org (accessed on 11 January 2023).

29 Although model training in Transkribus is very uncomplicated, some disadvantages should be pointed out: First, the trained model cannot be exported from Transkribus. Thus, the model will be lost if something should happen to the software. Second, Transkribus charges an average of 1 credit for reading a page with the AI (you get 500 credits for free after initial registration). Once the credits have been used up, you have to buy more from the platform, so it is not completely free of charge.

The Transcription Process: First Experiences

Our initial approach to the process of handwritten text recognition was to use one of the publicly available HTR models for the recognition of 15th-century German handwritings provided by Transkribus and to test it on our exemplary corpus. We quickly encountered problems with the recognition of various symbols and graphics, but also (and especially) with mathematical figures such as numbers, fractions etc. In terms of recognizing written text besides numbers and mathematical symbols, the public model achieved viable results for Codex 3029 but could hardly read the German Sacrobosco »Algorism« in Codex 3502, even though both texts were written in the middle of the 15th century. This led to the decision to use our exemplary corpus to start the process of working on a customized HTR model that supports the recognition of numbers and mathematical symbols a little better than the publicly available model.

Another first observation we made while working on our exemplary corpus concerned layout problems of arithmetical manuscripts and the impact of these on the transcription process: As mentioned before, HTR models work well when they are confronted with continuous text and do not have to read mathematical figures and numbers. In our corpus the theoretical treatises like the Sacrobosco »Algorism« (Cod. 3502, figure 1) fall into that category; these texts explain the arithmetical problems on a very abstract level, using hardly any numbers and not giving sample calculations. The scribe follows a predefined set of lines and sticks to them, with only some exceptions: sometimes we are confronted with additions, corrections, or annotations in the margins, but these do not pose any great difficulties for further processing in Transkribus or later in the XML editor. These texts work like any other medieval treatise usually edited following the guidelines of TEI.

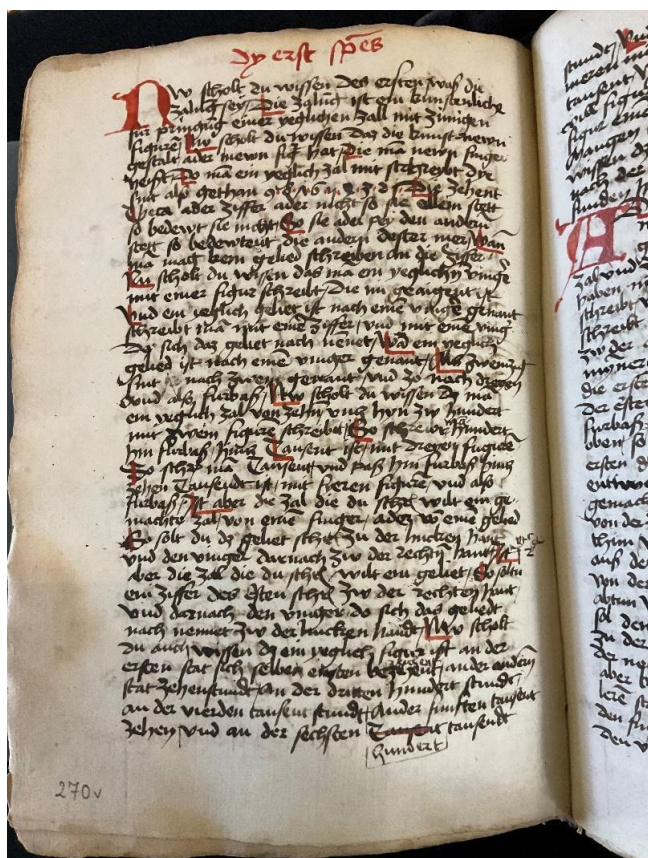


Figure 1: Vienna, Austrian National Library, Cod. 3502

This extraordinary layout is exemplary for the various difficulties we will be dealing with during this project. In contrast to Figure 1, the scribe does not follow any structure. The order of the lines cannot be determined with certainty and the scribe uses a series of cross-references that are either connected to figural/symbolic depictions or to other text passages which do not necessarily have to be on the same page. Between the very short descriptions of the individual species on folio 147v (*numeracio*, *addicio*, *mediacio*, *duplacio*, *multiplicacio*),³⁰ we can see rhyming explanations on fractions, which presumably enhance memorization.³¹ Right next to that, line calculations can be traced on the abacus.

A pyramid of numbers with Roman and Hindu-Arabic numerals can be found in the upper left margin of the page and an illustration was inserted next to it, possibly depicting a fanciful coat of arms. Although this gives the impression that these pages have no structure, exactly the opposite is the case. Using only two pages, the writer summarizes everything a person needs to know about numbers: the abacus and the species of *numeratio* with Hindu-Arabic numerals are introduced; fractions are explained; the most important species are summarized; and conversions of measures, weights and currencies are offered – in short, everything a merchant in the 15th century needed to know to carry out his business daily. A solution for how to transcribe and digitally edit this sheet still needs to be developed. Problems are not only caused by notational issues, such as the introduction of fractions or the depiction of line calculations on the abacus, but also by cross-references that can refer to content on other pages. An example for that is the pyramid on folio 147v. Next to this figure we can see three symbols of the same type followed by a text connected to the pyramid. These little symbols can also be found on folio 148r and serve as references that connect content from both pages. However, Transkribus unfortunately does not offer the technical possibility to transcribe cross-references over more than one page, which can pose a problem for the transcription of some texts, including several from our corpus.

Another problem we have encountered with the software is connected to the layout analysis Transkribus offers. We can define certain text fields by the content they contain, but we cannot further process or even transcribe the data. For example, Transkribus offers a specific text field named »Maths«. If we identify mathematical operations via this text field and start the layout recognition, the field is not considered and is ignored. The situation is very similar when it comes to tables. We can find tables in many manuscripts throughout our whole corpus and need to develop a transcription process to deal with the different shapes and forms of tables we find in arithmetical texts. The simplest form of a table, such as a multiplication table realized as a simple grid holding numbers in its cells, should not cause too much trouble in the editing process since Transkribus offers a table function explicitly trying to ease the process of transcribing such »classic« tables. But we can also find tables that predominantly contain text or are structured like tables but lack the grid that defines the table. Conversion tables fall into that category and can be quite difficult to handle. For those cases, mathematical operations and figures, representations of line reckoning, and tables, we are working on necessary individual solutions with the ZIM.

³⁰ The species *diuisio* is added on fol. 175r in the manuscript.

³¹ For example: *dye grosser zal am anfang ausricht / dye clainern darnach auch bedicht*. Vienna, Austrian National Library, Cod. 3502, fol. 148r.

Another problem we have encountered that is loosely linked to the layout issues mentioned above is the special characters we are confronted with in historic arithmetic texts: we have various abbreviations, signs for units of measurement, weights, and currencies, and even the development of arithmetic operators and signs for punctuation can be a problem. Some of these difficulties can be shown in Cod. 3029 (figure 3), a stand-alone reckoning book and the oldest manuscript in our Viennese corpus.

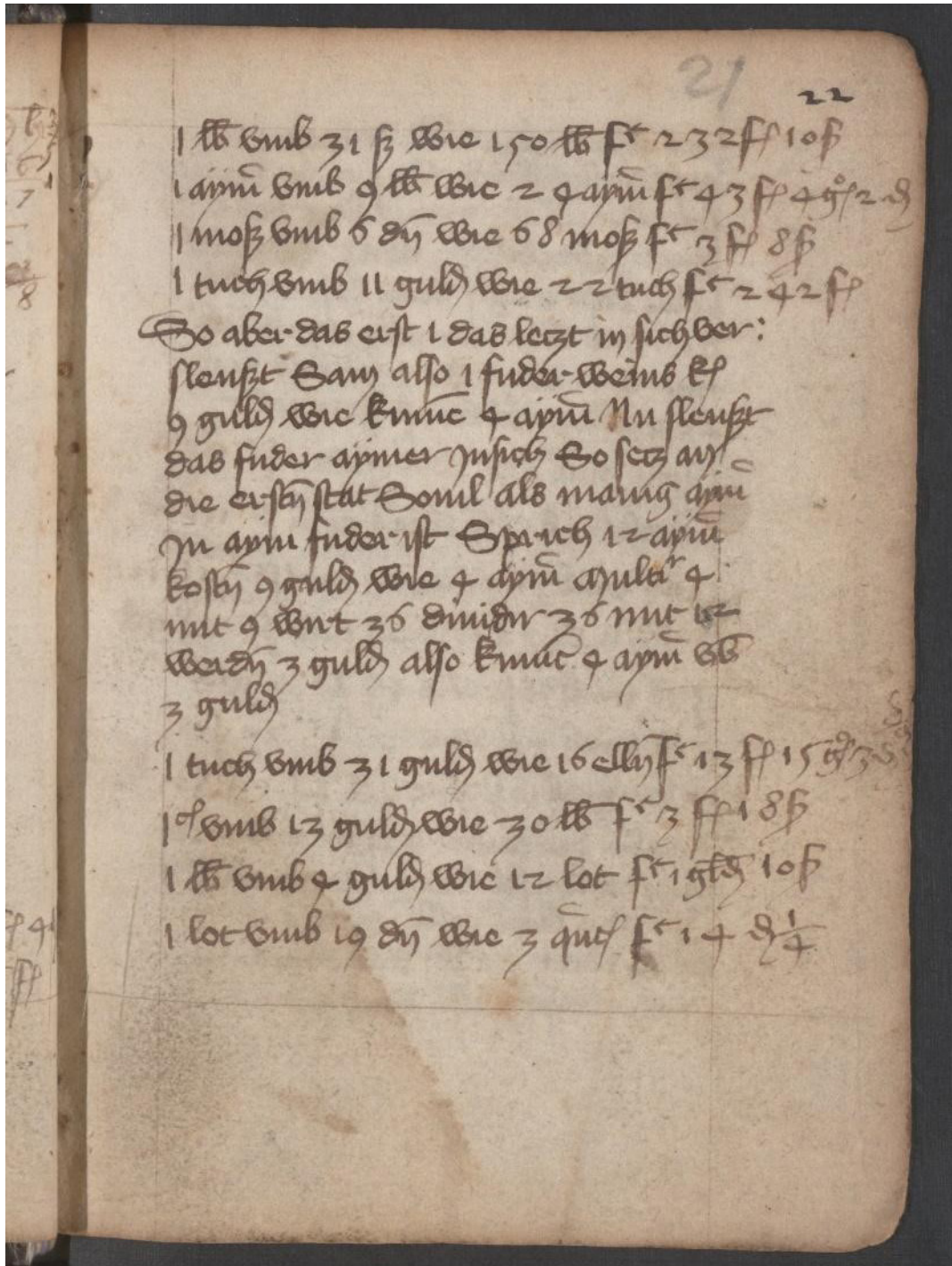


Figure 3: Vienna, Austrian National Library, Cod. 3029, fol. 22r

On folio 22r we can see single letters functioning as abbreviations for whole words, signs for currencies, units of measure as well as abbreviations of those: the abbreviations for pound (lb), gulden (gulđ), denarius (dñ), solidi or schilling (s) and groschen (gr̄ſ) can be seen in the first four lines. Even though the abbreviations are mostly stable within one manuscript, variations can and do occur when the corpus is a little bigger. We are even confronted with abbreviations and special characters for units we cannot identify. When it comes to transcribing those special characters and abbreviations, we currently rely on the characters developed by the Medieval Unicode Font Initiative (MUFİ).³² Even though the MUFİ develops new characters constantly and those are also regularly integrated into the Transkribus software, we will still need to develop several characters with a graphic designer in collaboration with the ZIM.

HTR Training

Since the public HTR model did not perform well for the manuscripts in our exemplary corpus, we decided to invest more time in creating our own model for the whole project. We started by focusing on the 15th-century manuscripts of our exemplary corpus, building our HTR model around those first codices. The question of a reasonable method for the HTR-model training arose and influenced our decision on what manuscripts to transcribe first. Since a homogeneous corpus, preferably a whole manuscript written by one hand, is recommended for the best training results, we had to adapt our method. We only have a handful of manuscripts dated to the 15th century that fit this description; mostly we are dealing with several leaves of text in a miscellany and creating an HTR model for those kinds of texts requires the inclusion of a wider range of manuscripts. Therefore, we decided to start by partially transcribing five texts written in the 15th century as a basis for the whole model and work on improving our results step by step by including more transcriptions, amending mistakes and correcting base lines.

The very first model was our test model. We knew even before we started the training process that the probability of creating a successful HTR model was very low. We used Codex 3029 from the Austrian National Library as the basis for this test model, and our main goal was to test how machine learning works and how it deals with very few pages that fall massively short of the recommended amount of at least 10,000 perfectly transcribed words for training purposes. The training set³³ consisted of 33 pages and the validation set³⁴ of only 5 pages. The error rate of the validation set was 11.40%. The model achieved surprisingly good results for this one manuscript, but of course we could not use it for any other manuscripts.

32 MUFİ (Medieval Unicode Font Initiative) was founded back in 2001 and now consists of a group of scientists and font designers who have committed themselves to finding solutions for the encoding and display of special characters in medieval texts written in the Latin alphabet; accessed on 30 March 2023: mufi.info/m.php?p=mufi.

33 This set is used by the AI to learn the text, layout and structure of your documents used for the model training.

34 The validation set contains leaves from the same manuscripts used as training set but they are not part of said training set. The trained AI will use this set of leaves to evaluate the performance of the model.

The second model was the one that constitutes the basis for all of our further training. It contained 130 pages in total from four different 15th-century manuscripts. The corpus consisted of two manuscripts from the Austrian National Library, Cod. 3029³⁵ and Cod. 3502³⁶; one manuscript from the Wrocław University Library with the shelf mark B akc. 1948/207³⁷; and one manuscript from the State Library Bamberg with the shelf mark Inc. typ. Inc. I 44.³⁸ This model had an error rate of 9.70% which is not too bad. However, this model was not suitable for further use since we made some rookie mistakes: We did not pay especially close attention to the baselines,³⁹ but drawing those precisely from the exact beginning to the end of every line is crucial to getting good results from the text recognition process. In addition, it is suggested that you use almost perfect transcriptions for the HTR training, as every mistake in the transcription can falsify the actual result.

As a next step, we accurately proofread our transcriptions, stuck very closely to the recommended guidelines, checked our spelling, and precisely adapted the baselines. After that we trained our first working HTR model. The first and most important thing we noticed with this model was that Transkribus has big problems with recognizing and reading fractions in the running text. They are either not identified as such at all, misread, or the baseline and/or the line region⁴⁰ is split in two or completely out of place. To guarantee better accuracy for the overall text recognition, we decided to set the fractions to *unclear*, which omits the fraction from the training. Our corpus was a little different in this try compared to the last training attempt due to some difficulties we had with the digital copies of the Wrocław manuscript. We had to exchange this text for a reckoning book from the Canton Library Aargau with the shelf mark Ms. ZQ 27⁴¹. A total number of 123 pages were used as our training set and 31 pages were in the validation set for this model. It was possible to improve the accuracy of the validation set by 2%, to 7.60%.

Since our aim was to train a model that can read fractions more reliably, we thought about what steps would be necessary to achieve this goal. We wanted to include the fractions in this step of the training and therefore avoid complications with the baselines and the line regions. We experimented with enclosing the fractions with the baseline so that in the best possible case the model would recognize the fractions as one symbol. This training set consisted of the same manuscripts plus one addition: we added a manuscript from the Berlin National Library with the shelf mark Ms. Germ. Oct. 375.⁴² However, this model did not meet our expectations at all. The fractions were not recognized, and subsequently the automatic text recognition was worse than in the last model. This higher error rate could be caused by

35 Pages edited: 2r-38r; dating: first half of the 15th century.

36 Pages edited: 270r-277r; dating: second half of the 15th century. Watermarks in this miscellany were dated to 1474-1488, see Menhardt, *Verzeichnis*, 2, 914.

37 Pages edited: 3r-10r; dating: 1415.

38 Pages edited: 1r-21r; dating: between 1460 and 1470.

39 The baseline acts as a reference point for the text recognition and characterizes a polyline that runs along the bottom of the text line.

40 Similar to the baseline, the line regions are also inside the text region; however, they do not consist of a polyline, but are polygons that enclose the entire handwritten text in a line.

41 Pages edited: 1r-14v, dating: 15th century.

42 Pages edited: 1r-20v; dating: 15th century.

several things, but we strongly suspect that it is mainly due to the enclosing of the fractions and the newly drawn baselines, which were no longer straight and might have thrown off the general text recognition. In addition to that, the newly added Berlin codex could also influence the overall accuracy. The general result of this training was that including the fractions severely affected the accuracy of our model as this was the first training where they were included and not set to *unclear*. Enclosing the fractions with the baselines did not lead to the desired goal of better text recognition; on the contrary, the training set had an error rate of 4.10% and the validation set of 14.01%, doubling the overall error rate.

After this setback, we trained our last model for the moment. We straightened the baselines and had them run through the fraction lines, no longer enclosing the fractions. We wanted the baseline to sit exactly on the fraction bar with the numerator above and the denominator below the baseline, giving the machine the chance to maybe recognize separate numerals above and below. Furthermore, we added the Wrocław⁴³ manuscript back into the training set, making for a total of 6 codices, 164 training pages in the set and 41 pages in the validation set. This is now our base model for any further training. Due to diligent work and meticulous adjusting, we were able to reduce the error rate to 7.50% again. This model works very well with other hands that are like the ones in our training set but are not part of the training corpus; it also achieves promising results on manuscripts dated before 1520 overall, which is very reassuring. We are still trying to improve our results on the recognition of fractions by adding pages from different manuscripts that show a high density of fractions. We noticed that over time Transkribus recognizes simple fractions like $1/2$, $2/3$ or $3/4$ quite well through regular training. However, more complicated fractions, even though the recognition process is getting better, still cause problems.

Potential Fields of Research

German Arithmetic Manuscripts of the Austrian National Library: Texts and Context

Our final corpus from the Austrian National Library shows that only one manuscript (Cod. 3029) is a stand-alone book that explicitly and exclusively deals with the teaching of arithmetic in German. The other six sources we have examined are miscellanies that bind various treatises in Latin and German together, with arithmetic being only one of many topics we could identify throughout the manuscripts.

The one stand-alone book can be defined as a traditional handwritten reckoning book that has a strong focus on teaching practical arithmetic. That is done by offering very short snippets of theory when a new basic arithmetic operation is introduced, but the focus of this book is on giving one example after another and showing in detail how to operate with integers and fractions. The reckoning examples mainly revolve around the practical implications of trade, touching among other things on conversions, distribution problems, and most of all, account settlement. The size of the book, a small octavo in format, leads to the conclusion that it could not only be read at a library or in a study but was small enough to be carried around and used for the intended purpose: to learn, study, and practice arithmetic at a time when printed reckoning books were not yet widely available.

43 Pages edited: 3r-7r; dating: 1415.

The other German arithmetic texts are a lot less easy to grasp:⁴⁴ we have groups of, or sometimes single reckoning examples attached to Latin treatises, short but very precise explanations on various mathematical topics dispersed throughout a whole manuscript or shortened versions of reckoning books bound together with treatises of heterogeneous content. All of the miscellanies we studied have in common that they contain texts in German and in Latin, often significantly more Latin texts than German passages. When we look at the context in which those German arithmetic treatises are transmitted, we can loosely identify three main groups of content that surround these mathematical texts. Identifying those three groups of transmission can shed light on what other fields of knowledge complemented the mathematical texts and were handed down, read, and studied with them: The first are miscellanies with a focus on quadrivium treatises. The quadrivium consists of geometry, arithmetic, music, and astronomy – and most of the treatises transmitted with arithmetic texts in German are other mathematical treatises in Latin and astronomical texts in either German or Latin. Other mathematical disciplines like geometry or algebra can be found in those miscellanies; it also happens that Latin treatises are interspersed with German text portions, as is the case with Codex 5277, when a Latin algebra treatise is repeatedly interrupted by German reckoning examples, written in the same hand. This context group is what we would intuitively expect to be handed down with German arithmetic texts: Latin templates of the vernacular versions of the arithmetic texts, other functional and instructive texts that use mathematical skills (e.g., astronomy, computus, calendar) or explain them further (e.g. other mathematical disciplines like geometry, surveying or trigonometry), and practical skills that utilize numbers and calculation.

A second group of manuscripts is codices that contain texts on medicine, the conservation of good health and (medicinal) recipes. In terms of content these texts are a little further removed from the quadrivium manuscripts of group one, but we can still argue pretty easily that numbers and medicine are two topics that relate to each other: recipes contain indications of quantity, and medicinal advice correlates with astronomical issues.⁴⁵ Therefore it is not surprising to find the odd mathematical text in miscellanies that transmit medicinal information, because knowledge of Hindu-Arabic numerals and of mathematics in general allows for an easier understanding of relevant fields of knowledge. Compared to the first group of transmission, we can observe that far fewer manuscripts can be assigned to group two.

44 We have looked at the whole research corpus to get an understanding of how arithmetical texts are joined together with other texts; our small exemplary corpus from the Austrian National Library fits right into the observations we were able to make on our big corpus.

45 The doctrine of microcosm and macrocosm helps to show the world as available and transparent and to link the role of the individual with the universe. Microcosm (*mundus minor*, human being) and macrocosm (*mundus maior*, universe) thereby stand in a unity and interaction that allow larger structures to be used as models of human order. Finckh, *Minor Mundus Homo*. See also: Riha, *Mikrokosmos Mensch*.

A third and even smaller group of miscellanies is again even further removed from the original mathematical context, but nevertheless we encounter this distinct group of manuscripts on a regular basis throughout the corpus: miscellanies that, from a modern perspective, contain texts we would attribute to the general field of humanities (the trivium [grammar, rhetoric, dialectic], philosophy, history, and the art of memory). They sometimes transmit small arithmetic treatises or other snippets of mathematical content like mnemonics or short reckoning examples. In those codices the contextual environment is a little different and arithmetic texts can serve a whole other purpose than just to inform about mathematics: There is the case of simply needing to fill blank pages; arithmetic texts in these environments are often addenda that make use of an empty space. We also have the case of the university manuscript where different subjects of instruction are pooled together, with arithmetic being just one of them and far from the most important. The result is a heterogeneous manuscript that shows how eclectic collections of knowledge in the 15th and 16th centuries can be.

What does this mean for the practical use of handwritten arithmetic texts in German? For our exemplary corpus we can see that there is only one stand-alone arithmetic manuscript out of the 7 relevant codices in our research period. When we compare this to our full research corpus, we have a different picture: About a quarter of all the manuscripts in our final research corpus are stand-alone handwritten reckoning books in German. The significantly higher number might be connected to the nature of different collections, mainly because other libraries hold more younger texts, and the number of stand-alone reckoning books increases in the first half of the 16th century, at a time when the need for mathematical education in the vernacular increases and leads to the rise of the reckoning schools and the later flood of printed reckoning books. The stand-alone handwritten manuscripts serve the same purpose as the printed books: they are a tool for learning and mastering the art of calculating and people working in trade are their very specific target audience. They can be considered work equipment, something you need for everyday use to help you do your job well. Stand-alone arithmetic manuscripts like Codex 3029 are always reckoning books, they almost always come in a small format like octavo, could therefore have easily been put in a bag or a pocket, and they also show that they have been used. They transmit practical knowledge, are full of application examples, conversion tables, and often contain supplements and glosses.

The arithmetic texts transmitted in miscellanies paint a different picture when it comes to theories about their intended use. Even though we can still see a strong focus on practical arithmetic, the texts overall serve a different purpose: They can be considered collections of a certain degree of knowledge at a moment in time. That includes the transmission of scholarly content in Latin and its vernacular translation and/or revision in the same codex. The miscellanies of our corpus show that in the 15th and 16th centuries some fields of knowledge needed to be expanded by vernacular versions of relevant texts. In the case of mathematical content, we can also see a conflation of theoretical treatises in Latin and the more practical instructions in German that are handed down in the same manuscript. In such an environment the vernacular mathematical texts often serve as complementary knowledge and are either added as a form of commentary to other texts or can be found as addenda where empty space in manuscripts is filled with potentially useful content.

Translation (Latin – German)

The German arithmetical texts in our corpus cannot be examined without their Latin templates in mind especially when it comes to an analysis of the language and the (instructive) style. The earliest German texts we have are either very much dependent on their Latin templates or even multilingual.⁴⁶ There we can see the beginnings of a German arithmetical jargon that depends heavily on Latin vocabulary, loanwords, and creative translations into German. In our exemplary corpus we can observe several mechanisms of transmission from Latin to German and the subsequent development of an arithmetical jargon in the vernacular. We want to exemplify that a little further by focusing on one specific manuscript:

The oldest miscellany of our corpus, Codex 3502, hands down several arithmetical texts, two of them being the Latin and German version of the »Algorism« by Johannes de Sacrobosco, which means that the Latin version is in the same manuscript as its German translation. Cases like this one are perfect to examine transfer processes from Latin to German because a well-known treatise that is stable in terms of its transmission can be found in two languages in one miscellany.⁴⁷ We can determine what parts of the Latin text were omitted, changed, or even extended and how technical terms were translated. To illustrate that a little further, I want to give two short examples from the beginning of the treatise:

The Latin version of the Sacrobosco »Algorism« goes into detail about what the term algorism might mean and gives three different explanations. Every interpretation concludes that the word algorism consists of two terms that were later connected and can be translated as »the art of numbers« or »the art of enumeration«.⁴⁸ The German translation of this passage works very differently: The three different possible explanations are not mentioned. All we have is a statement that the book is called »die kurzen kunst von der zal« (»the short art of the number«) naming the art after its inventor »Algus«. This is given as a fact, but in the Latin version that is just one of the three possible interpretations of the word *algorismus*. Here we can see that this process of thinking about and explaining terminology, a rather scholarly way of detailing how one comes to certain conclusions, is totally omitted in the German translation. Furthermore, the Latin version in Codex 3502 is heavily annotated. We find Latin glosses everywhere: in the margins of the page on the sides, on the bottom, on top, and interlinear glosses as well. The interlinear glosses comment on single words used in the text, while the glosses in the margins give more information on the content of the treatise. It is a text that has been thought about, worked on, improved, and expanded.

46 Cf. Habermann, *Deutsche Fachtexte der frühen Neuzeit*; Keil, *Deutsch und Latein*; Fürbeth, *Selektion und Transformation*.

47 In addition to that, the two treatises need to be examined more closely in terms of paleography. At a first glance it is possible that the same hand wrote the Latin as well as the German version of the Sacrobosco Algorism. Significant letters like »d«, »g« or »p« are executed in the exact same style, and the flow of the writing and the structure of the page are conspicuously similar. It also seems like the initials were not done by a professional illustrator but by the same hand that wrote the running text; those are noticeably similar as well.

48 In the Latin version, which starts on folio 148r, it reads: *Est autem nomen eius algorismus, et dicitur ab »algos«, quod est ars, et »rithmus«, quod est numerus: inde »algorismus« quasi ars numerandi. Vel dicitur ab »an«, quod est in, et »gogos«, ductio, et »rismus«, numerus, quasi inductio in numerum. Tertio modo dicitur ab Algo inventore et »rismus«.*

This treatise, with all its glosses written in several hands, is a subject of scholarly dispute, unlike the German »Algorism«, which is almost not annotated at all. All we can see are a couple of Latin glosses that sometimes re-translate a German term back into Latin, possibly for the sake of accuracy. One example for that is on folio 270r, where the German expressions for the different number categories are given in red ink in Latin in the right margin of the page. This leads to the second observation that concerns the direct translation of Latin mathematical terminology into German. In the Latin text we are introduced to the three categories of numbers. Sacrobosco distinguishes the *digitus*, the single digit, the *articulus*, which is any multiple of ten, and the *numerus compositus*, which defines all other numbers that can be made by joining a *digitus* and an *articulus* together. The German version of the »Algorism« does not use the Latin terminology but translates those terms as »vinger« (»finger«), »geliet« (»limb«), and »gemachte zal« (»done« or »made number«). We can observe the attempt at creating a distinct jargon in the vernacular while building upon the Latin terminology. For the *digitus* the single digit, the »vinger« is a literal translation. The *articulus* translates to »joint« or »knuckle«. The Middle High German word »gelit«⁴⁹ mainly refers to a limb but can also mean »joint«. Here the terminology is connected to the process of finger counting: first the whole finger is used to name a single digit, and in a second step, another part of the hand, the knuckle or the joint (specifically the joints of the hand)⁵⁰ signifies the multiples of ten. The *numerus compositus* translates to »composite number« and refers to something that is connected from different parts – in our case from a *digitus* and an *articulus*. The German »gemacht« is a difficult translation because the Middle High German »machen«⁵¹ rather means to »create« or »generate«. The Latin meaning is implied and can be explained by the fact that things need to be worked on or »made« up to join them together. Here we can observe this process of concept formation by studying two versions of the same text. The German terminology by itself is not easy to grasp; in connection with the Latin templates the terms make sense and can be situated in the realm of arithmetic. The fact that in the German translation of the »Algorism« the Latin terms for the different number categories are given as glosses on the right margin of the page support this hypothesis that due to the newness of the topic in the vernacular and the lack of an already existing and working terminology, German terminology needs a strong retrospective dependence on the Latin model.

49 On the term »gelit«/»glit« in Middle High German: According to the Middle High German Dictionary by Matthias Lexer, it refers to »glied, gelenk« (Lexer, Middle High German Hand Dictionary, digitized in the dictionary network of the Trier Center for Digital Humanities, version 01/21, accessed on 30 March 2023: woerterbuchnetz.de/?sigle=Lexer#2).

50 Cf. Menninger, *Zahlwort und Ziffer*.

51 The word »machen« takes on several meanings in Middle High German: According to Lexer, Middle High German Dictionary, it refers primarily in a general sense to »hervorbringen, erschaffen, erzeugen (gebären)« (bring forth, create, generate [give birth]), and in a broader sense also to »machen, bewirken, bereiten, anstellen, zu wege bringen« (make, effect, prepare, set up, accomplish); Lexer, Middle High German Hand Dictionary, accessed on 30 March 2023: woerterbuchnetz.de/?sigle=Lexer#3.

But Codex 3502 is also a great example for how this process of conceptualization and the development of a German mathematical jargon succeeds by creating a terminology that becomes an inherent part of the German language. Even more so, we can observe that a certain phrasing becomes part of these arithmetic texts and functions as a structuring tool. In the German Sacrobosco »Algorism« – but also in other German arithmetical texts like the reckoning book Codex 3029⁵² – every single species is introduced by first giving the Latin term followed by a German translation and a short explanation of what this species entails. This is the case for every introductory text in German that seeks to explain the basic arithmetic calculations. In Codex 3502 we can read on folio 271v: »Svstraccio heißt ein vnte zziehung / oder ein abnehmung / vnd lert wie man ein zal von der anderen zihen sol oder nemen scholl«⁵³ First the reader gets a translation of the Latin word *Svstraccio* and learns that it is a »deduction« or a »removal«. Furthermore, the literal translation is followed by an explanation of what the term means from a practical point of view: In this case a subtraction is defined as the teaching on how to subtract one number from another. This sentence is the beginning of the passage on the species of subtraction and ends one and a half pages later with an explanation of how to check the solution of a subtraction. The next species after that is again introduced using the same pattern and phrasing: »Mediacio heisset ein halbung / vnd lert wie man ein zall in zwey teilen soll [...]« (»Mediacio is called a bisection and teaches how to divide a number in two [...]).

What we can observe is not only a stable process of translation when it comes to the most important and widespread terms of arithmetic but also a tool to ease the process of composing such educational texts. The fact that translation, explanation and phrasing are intertwined with the textual structure increases the traceability of the passages on the species not only in this codex but in all German and Latin arithmetic texts that follow this structural pattern – and so far, we can state that all of them do. Therefore, the translation process in arithmetic texts is not only of value for the definition of a German mathematical jargon but also serves as a tool to understand the structural framework of pragmatic arithmetic texts of the Late Middle Ages in general.

52 On this topic, see the passage »Theory – Practice« in this paper.

53 This loosely translates to: »A subtraction is a deduction or a removal and teaches how to take away one number from another.«

Theory – Practice

As mentioned at the beginning of this paper, we can see a difference in our sources when it comes to the question of what kind of approach to the topic of arithmetic is taken: We can distinguish between a more theoretical take on mathematics in treatises like the »Algorism« by Johannes de Sacrobosco or a very practical implementation of the rules on arithmetic focusing on examples and model calculation. When we look at our German sources, we can quickly say that in the 15th and 16th centuries the vernacular occupation with arithmetic concentrated on its practical aspect. The Austrian National Library only holds one purely theoretical text on arithmetic in German which is the translation of the »Algorism« by Johannes de Sacrobosco, a text used to teach arithmetic at European universities from the 13th until the 16th century and therefore so ubiquitously known that we still do not know how many copies of the Latin version are extant.⁵⁴ We still have seven translations into German⁵⁵ and one of them – a text in the miscellany Cod. 3502 – is in Vienna and part of our research corpus as it was written at the end of the 15th century. As we discussed above, other theoretical texts are solely part of larger reckoning books that hold mainly practical arithmetic but give short theoretical introductions when a new basic arithmetic operation is introduced, following the same tradition as the »Algorism«. Therefore, we can identify the theoretical texts in our exemplary corpus as rooted in the Latin algorism tradition as it was used and perpetuated at the universities for nearly 300 centuries: they are translations, abbreviations, and revisions of those well-known algorism treatises. That affinity between the Sacrobosco »Algorism« and the theoretical parts of reckoning books can be verified by looking at two manuscripts of our exemplary corpus: The one stand-alone reckoning book out of the seven sources we investigated (Cod. 3029), that gives information on all the relevant species, deals with integers, and fractions, and also explains the different mathematical »regulae«, uses similar phrasings as the Sacrobosco »Algorism« in Cod. 5277 when a basic arithmetic operation is introduced.

54 Search results from the Jordanus database lead to the probable assumption that several hundreds of these manuscripts exist.

55 Berlin, National Library, MS germ. fol. 1278 (14th/15th century); Berlin, National Library, MS lat.qu.577 (1408-1428); Munich, Bavarian National Library, Clm 4162 (15th century); Vienna, Austrian National Library, Cod. 3502 (4th quarter of the 15th century); Wrocław, University Library, HS B akc. 1948/207 (15th century); New Haven, Yale Beinecke Library, MS 1024 (14th to mid-15th century); Pommersfelden, Count Schönborns' library, MS 158 (15th century).

Cod. 3029 explains the introduction of the addition as follows: »addirn haist zu sam geben vnd ist / so du ein zal zu der andern gibst« (»to add is to put together and means that you give one number to another«).⁵⁶ The »Algorism« in Cod. 5277 phrases the introduction to this species (following the pattern identified in the previous section) as such: »Addicio das ist ein zu gebung / vnd lert wie / man ein zal zw der andern reiten vnd / geben sol« (»Addicio is an addition and teaches how to reckon and give one number to another«).⁵⁷ The similarity between those two sentences is evident, differences occur out of the tone of the instruction that correlates with an intended audience and the overall purpose of the texts: The reckoning book is directing its instruction at a reckoner, a reader, who is interacting with the text and all the calculation examples the manuscript gives. It uses a language that sounds like spoken German, full of colloquialisms and direct requests like »sprich« (»say«), »mach« (»do«), or »nym« (»take«) that mimic a real conversation or at least a proper teaching experience. Therefore the »du«, the »you« is used to directly address the recipient who can be identified as the student, learning from a reckoning master who recorded his teachings in this colloquial manner in a book. In the Sacrobosco »Algorism« the reader is, on the contrary, hardly ever addressed directly. The treatise uses a more neutral language and resorts mostly to the indefinite pronoun »man«, or in English: »one«. The sentences are longer and more complex, also mirrored by the use of a more complex vocabulary in the vernacular. Even though both texts follow the same structure and use similar phrasing, we can see that even the more theoretical parts in the reckoning books are subordinated to the overall purpose of teaching practical arithmetic. This is the reason why the language is more direct, more approachable, why the reader is immediately involved, and why the theoretical involvement with arithmetic is hardly worth mentioning.

This short example already shows that the difference between theory and practice is not only relevant in terms of content but also in the way language is used in a text. Another noteworthy first observation concerns bilingual texts that deal with mathematics. Codex 5277 transmits an algebra treatise in Latin and German written in the first half of the 16th century. The text is written by one hand and functions as an instruction about algebra. It is set up like all functional mathematical texts are structured, with an introduction to the different basic calculation operations followed by examples that convey the practical side of the teaching. That is not particularly special, but Codex 5277 gives its rather extensive theory in Latin and most of its examples in German, therefore dividing the text not only into a theoretical and a practical part but also distinguishing between an academic and a vernacular mode of teaching that directly correlates with the former: theory and the scholarly language Latin are as connected as the practical side of mathematics and the vernacular German.

56 Vienna, Austrian National Library, Cod. 3029, fol. 2r.

57 Vienna, Austrian National Library, Cod. 5277, fol. 277.

Due to the great number of German reckoning examples, we can determine that the target audience for most of the texts in our corpus must have been students or merchants on the one hand, but also people working in trade or adjacent fields who needed to use practical arithmetic daily on the other hand:⁵⁸ the reckoning examples in our exemplary corpus can serve as a pool of templates when they mathematically introduce the most important arithmetic operations but also, in terms of content, cover a lot of situations in which mathematical skills were required for a merchant or working commoner. We can read about trading different goods (spices, livestock, metals...) at different European markets with one or more trading partners. Among many other topics, we learn about how to start a business with one or more partners, how to calculate interest when going into debt or when lending money, how to make a profit from buying and selling, and how to barter without getting scammed. This very practical side of arithmetic is also strongly connected to the region where the reckoning book or the example calculations were used: examples work with regional currencies and places of trade as well as trade routes, and the traded goods correlate with the actual geographical reality and show that reckoning books are more strongly connected to and give more information on cultural and social history than we would assume at first glance.⁵⁹

58 In her project »Geometria Deutsch. Druckwerke der praktischen Geometrie bis gegen Ende des 16. Jahrhunderts«, Christina Lechtermann determined that when it comes to printed works of geometry, the practical use of those texts was only one of many purposes: the aspect of collecting books and building a collection, of the aesthetics of printed texts, and also the philological aspects are as much and sometimes even more so part of the use and function of practical geometry as the didactic purpose of the printed book (see the project website for further information: gepris.dfg.de/gepris/projekt/381793985/ergebnisse).

When we look at handwritten arithmetic texts in miscellanies, we can determine that the practical use of those texts was sometimes not the main reason for collecting them: the books can be considered collections of knowledge, e.g. in a university setting; they can also serve the purpose of commenting on other texts when, for example, German and Latin treatises are transmitted in one miscellany and both texts are referencing each other. One difference we can observe when it comes to handwritten mathematical texts in contrast to the printed books, is that the collection and the aesthetics aspect of stand-alone reckoning books is not as important as it is going to be for the printed versions later on. There, mistakes in examples are often reproduced, leading to the question of whether the books were actually used to learn practical arithmetic or whether they fulfilled a different purpose, just as the printed geometry treatises studied in the »Geometria Deutsch«-project suggest. Handwritten stand-alone books are often not »pretty«; they show significant signs of use; they come in a small format; and they are heavily glossed, corrected and added to. We can therefore assume that at a time before the printing press solved the problem of accessibility to teaching materials, those sources of practical arithmetic did actually fulfill the purpose of teaching the skill of mathematics; the strong focus on problems of trade and commerce does suggest, that the target audience for those specific reckoning books was (future) merchants, craftsmen and people working in adjacent fields.

59 Wiesinger, *Regula virginum*.

Mnemotechnical Aspects

The sources of our exemplary corpus show one additional very interesting aspect we want to discuss further: In Codex 5184, a Latin miscellany composed of texts that are rooted in the quadrivium, we can only find three small snippets of German. One of those short texts, added after a Latin text on geometry, is only a couple of verses long, written in a mixture of Latin and German, and refers to the shape of the Hindu-Arabic numerals by connecting them to objects of utility. We know of at least 22 codices⁶⁰ that contain that small text, which can be identified via its incipit »vnm dat vinger«, »the finger gives you the one«. ⁶¹ This already shows how the process of referencing works: a known object, which is given in German, that resembles the shape of a Hindu-Arabic numeral is connected to said numeral, which is sometimes introduced in Latin, sometimes in German. The finger is connected to the symbol for the number one; stairs or a crutch⁶² are the reference object for the two; the pigtail is the shape connected to the Hindu-Arabic numeral three, and so forth. Some of the reference objects are of a rather curious nature or can even be considered a little bold: the symbol for the number zero, the very well-known circle, is in several manuscripts introduced as »bruochring«, which translates to the small loops in a medieval pair of underpants, through which some kind of string was threaded and tied up in order to keep the garment from slipping down the body. Even mentioning underpants in the Late Middle Ages can be considered a breach of taboo. At that time underpants were a solely male item of clothing and in addition to that, they were also part of the private realm. Talking about or even showing them was scandalous and usually connected to deliberate provocation or even used in a sexualized way.⁶³ Using such funny, weird, or even outrageous images to recall the shapes of the Hindu-Arabic numerals is therefore interesting and bold – but nothing new. It follows a well-known tradition that both Mary Carruthers and Frances Yates explain in their standard works on the ancient and medieval art of memory.⁶⁴ They can show that already in ancient Greece and Rome, the memory was believed to be reinforced by triggering emotional connections.

60 The 22 manuscripts are: Annaberg-Buchholz Erzgebirgsmuseum M 001; Basel University Library FVIII 16; Basel University Library FVII 12; Berlin National Library Ms. Lat. Qu. 2; Dessau City Library GB 866.8 Grad (Georg HS); Dresden Saxonia State Library C 80; Erfurt Bibliotheca Amploniana Ampl. Oct. 80; Gotha Research Library Chart B. 445; Graz University Library 275; Kremsmünster Monastery Library fragment; Leipzig University Library 1470; Michelstadt Evangelische Kirchenbibliothek D 692; Munich Bavarian National Library Clm 24539; Munich University Library 4 Cod. Ms 649; Salzburg St. Peter B IX14; Salzburg St. Peter B III 32; Straßburg Bibliothèque Nationale et Universitaire C 102 (burnt); Vatikan/Heidelberg Vat. Pal. Lat 1452; Weimar Bibliothek der nat. Forsch. u Gedenkstätte O 110e; Vienna Austrian National Library 5184; Wolfenbüttel Herzog August Library Cod. Guelf. 1189 Helmst.; Wolfenbüttel Herzog August Library 16.1 Astronom 4°.

61 A monograph written by Michaela Wiesinger and Christina Jackel on this mnemonic is currently on its way and will be published in 2024/25.

62 The reference objects for the shape of the numerals are not stable; several objects (the finger for the number one, the pigtail for the number three can be found in all known versions of the mnemonic, but the other objects of reference vary throughout the manuscripts. There could be several reasons for this: The shapes of the Hindu-Arabic numerals were not stable throughout the Late Middle Ages and the early modern period. We can observe a change in how the numbers were recorded in different areas and at different times until the invention of the printing press brought easier reproducibility and therefore a certain stability. The changing shapes could have been mirrored by changing reference objects in the mnemonic; more so because our 22 sources have been put down in writing over the span of 250 years. Another possible explanation for the changing reference objects could be a misreading or a new interpretation of a template. We can see that in case of the zero, when the »ring« is changed into the »brouchring« to add a new and very specific meaning.

63 Nutz and Stadler, *Gebrauchsgegenstand und Symbol*; Jaritz, *Die Bruoch*.

64 Cf. Carruthers, *Book of Memory*; Yates, *Art of Memory*.

A mental marker does not need to be pretty or even elegant, it needs to work, and the more absurd, the more violent, grotesque or even obscene the marker, the more likely our brains do not forget. Carruthers explicitly says that those markers can even overlap to form one big image that holds all the necessary information to remember a certain set of things. She says that »The disgusting and the silly, the noble and the violent, the grotesque and the beautiful, the scatological and the sexual [...]«⁶⁵ can all be utilized to generate an image or images that help us to remember.⁶⁶ That seems to be the case when it comes to the »*vnum dat vinger*«. The funny, absurd, and vulgar images are certainly a way to avoid forgetting the mnemonic itself, but also a way to avoid forgetting the items that need to be remembered: in our case the shape of the Hindu-Arabic numerals and therefore the numerals themselves.

Another application of mnemonic tactics can be observed in Codex 3528. The miscellany holds 10 pages of reckoning examples that mainly address the rule of three. On several of those 10 pages we can find small illustrations in the margins right next to the reckoning examples. Every image is linked to one specific example, usually depicting the object that is the pivot of said example. When livestock is traded, a little sheep adorns that part of the page. When a house is bought, we can see the image of a small house; the buying and selling of goods in barrels is accompanied by an illustration of a barrel. Even though the images are pretty and make the text look more interesting, there is more to them than just sprucing up the page. Collections of reckoning examples in manuscripts or even sparsely distributed examples throughout a miscellany are given for a reason: They are sample problems that touch on different mathematical problems but mainly cover different economic settings and several trades with different goods. The reckoning examples in Codex 3528 are all calculated carefully: they do not just give the problem and the solution; the solution path is also part of every example. This could mean that this collection of reckoning examples served as a kind of template for other problems with similar methodological and content-related issues. Having a small pool of examples as reference for additional mathematical problems is advantageous in terms of the practical application of calculation rules. Using a template saves time and is especially useful in an economic setting because actual transactions and deals call for quick problem solving and good calculation skills. The little images next to the reckoning examples in Codex 3528 could easily serve that purpose: to help remember a sample calculation that deals with skills needed to solve problems of similar content. Remembering the traded goods mentioned in those examples is easier than remembering the reckoning method itself because an image of a wheel or of a piece of fruit is more tangible than the rule of three on its own. The illustrations serve as mnemonic devices that conceptually connect the content of a reckoning example with the mathematical skills needed to solve the given problem. In terms of practical implementation that could mean, for example, to tackle a mathematical problem like the »sheep example«, invoking a reckoning method via a mnemonic marker, in this case a small and funny looking illustration.

65 Cf. Carruthers, *Book of Memory*, 171 (see footnote 61)

66 Cf. Carruthers, *Book of Memory*, 168-184 (see footnote 61)

Conclusion

Editing, describing, and analyzing almost 140 texts is not a small feat. Our chosen approach of starting with a small exemplary corpus to test our initial hypotheses, find feasible workflows, and show first results has proven valuable. It showed us in more detail what we can expect from our sources in terms of problems, questions, and feasibility. It also led to the identification of the main areas of research we need to deal with in the process of this research project: First, there is the beginning of an evolution of a mathematical jargon in the vernacular that we will study in combination with the Latin sources handed down with the German texts. Second, we have found that our focus on the development and diffusion of practical knowledge in order to distinguish it from the Latin theoretical tradition will be a major field of investigation that contributes to the current research focus in the field of history of science focusing on practical knowledge.⁶⁷ And third, we cannot underestimate the cultural and social aspects that led to the formation of this very distinct category of practical literature, created its own discourse, and mutually refers to and incorporates other discourses.

But looking at our exemplary corpus not only helped to carve out our overall research questions in more detail but also contributed to testing and sharpening our methodological approach: we were able to agree upon a functioning method to describe our corpus in the necessary detail without having to produce in-depth catalog entries. We were also able to test out and get to know our transcription software Transkribus and establish a very useful HTR model specifically for mathematical texts to help with the transcription process.

Having reached these first integral goals, we will now tackle the edition and description of the rest of the corpus, starting in chronological order. It is necessary to generate a stable and sound edition as a coherent basis for our further contextual and content-related research. With an increasing number of edited primary sources, we are hoping for an even more detailed and better suited process of description as well as a consistently refined HTR model due to the ever-growing number of transcribed pages we can add to the existing model as further training data.

Overall, we can say that especially at the beginning of a research project dealing with a large and pretty much unknown corpus, the examination of a small exemplary corpus was immensely helpful in focusing our attention on the process of methodology development and analytical approach. Our first findings are not only exciting and motivational but also serve as a basis for our further research on the topic, creating a baseline for broader questions that might even be more interdisciplinary in nature.

67 A new book on that topic was just published: Smith, *From Lived Experience to the Written Word*.

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Abbreviations

ÖNB = Austrian National Library

ZIM = Zentrum für Informationsmodellierung, Austrian Center of Digital Humanities, University of Graz

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List of Figures and Tables

Table 1: Draft of a description for the repository

Figure 1: Vienna, Austrian National Library, Cod. 3502

Figure 2: Vienna, Austrian National Library, Cod. 3502, fol. 147v

Figure 3: Vienna, Austrian National Library, Cod. 3029, fol. 22r

Peacemaking after Defeat in England in 991 and Northern Song China in 1005

Andrew Wareham*

This article uses a global history framework to compare peacemaking at the turn of the eleventh century between the English and the Vikings with that of the Northern Song and Kitan Liao dynasties in China. The article investigates the factors which shaped peacemaking after the English and the Northern Song dynasty suffered defeats, and the political influences which led to the decision to pay tribute to the Vikings and the Liao Empire respectively. The strategies of chief councillor Kou Zhun (1004-1006 CE) in advising Song Zhenzong (997-1022) provide a point of reference to identify salient points for further investigation on the English side. The Chinese data highlights the importance of religiously sanctioned letters, the nature of political scapegoating, and the cultural and tactical advantages enjoyed by the Liao Empire in the negotiations. A more extensive discussion follows on the English side with detailed investigation of annals to show how the peace agreement after the Battle of Maldon was re-evaluated between c. 1000 and c. 1020, and how Sigeric, archbishop of Canterbury (990-94), became a political scapegoat for tribute payments to the Vikings during the reign of Æthelred II, king of the English (978-1016). Ecclesiastical letters and lists of authority are then used to understand the political stance and strategy of Sigeric, linked to discussion of diplomatic missions between the papacy, England and Normandy. The article adopts a comparative approach to take fuller account of the influences upon advisers and domestic politics in explaining the issues at stake in peacemaking after the English and Northern Song were defeated by those they regarded as »barbarians«, and shows how global history can be used to deepen understanding of the factors at work in peacemaking in different regions of Asia and Europe.

Keywords: Chanyuan, Covenant of; China; England; Kou Zhun chief councillor; Kitans; Liao Empire; Maldon, Battle of; Sigeric, archbishop of Canterbury; tribute; Vikings

A global history approach offers an opportunity to assess the factors which shaped the peace agreement after the Battle of Maldon in 991 and the Chanyuan Covenant in 1005, following the raids of Vikings and the Kitan Liao deep into the English kingdom and the Northern Song empire respectively. It is important to begin by assessing the model, firstly, because it will provide context, and, secondly, because we need to identify the advantages which follow from micro as well as macro perspectives. Sebastian Conrad set out three subtypes of global history:¹

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1 Conrad, *What is Global History?*, 3-11; see also Belich *et al.*, Introduction: Prospect of Global History.

1. surveys of the past encompassing everything from the history of humankind to themes such as empires, kingship, commodities etc.
2. understanding of exchanges and connections dealing with mobility and interaction, which demonstrate different phases of interconnectedness and integration.
3. the use of global transformations to provide contexts for understanding local and national challenges which typically are placed in national contexts.

This model is not necessarily better than any other,² but it provides an alternative to regional (typically »Eurocentric«) and national perspectives for analysing the history of medieval England or middle-period China in a comparative framework. In the interests of full disclosure, the present writer and Dominic Goodall used the methods adopted in this article to compare the strategies of ninth-century rulers in the Mercian kingdom and »Khmer Empire« in the granting of fiscal privileges of immunity to monasteries in charters and inscriptions.³ Conrad suggests the third approach offers the greatest potential because it enables historians to analyse how distinctive local trajectories fit within a global context. This article combines the first and third subtypes.

Victor Lieberman's *Strange Parallels: Southeast Asia in Global Perspective* and Jonathan Scott's *Against the Grain: A Deep History of the State* address the theme of state formation in Asia and Europe by contrasting charter (Lieberman) and sedentary (Scott) states, whose elites controlled ceremonial centres, capital cultures, systems of taxation and cereal-based systems of agriculture, with the organisation of nomadic peoples and societies dependent upon pastoralism and various forms of hunter-gatherer exploitation.⁴ They argue that consolidation and periodic contraction of charter/sedentary states arose from the intersection of ecological, environmental and epidemic factors with the threats posed by the raids, invasions and other activities of »barbarians«, the Mongols and other mobile non-state peoples.⁵ Both challenge fiscal state historians (who view fiscal growth as the »*prime mobile* for the development of the state«),⁶ and the literature on the collapse of the states,⁷ and each has its

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- 2 For a reign-based comparison of rulership and Vikings in England, see Keynes, *Tale of two kings*.
 - 3 Goodall and Wareham, *Gifts of Power*. For comparisons of kinship structures in late tenth- and early eleventh-century England and China, see Wareham, *Transformation of kinship*.
 - 4 Scott, *Against the Grain*; Lieberman, *Strange Parallels* Vols. 1-2; for the historical geography approach, see Bates, *Prosperity and Violence*.
 - 5 Lieberman, *Strange Parallels* 1, 43-67, 236-41; 2, 184-192, 212-217; Scott, *Against the Grain*, 93-106, 183-256.
 - 6 For global perspectives, see Yun-Casalilla *et al.* (eds.), *Rise of Fiscal States*; Bonney, *Limits of Absolutism*, ix (quotation). For discussion of revenue and taxation systems in early eleventh-century England and Northern and Southern Song China (1127-1279), see Wareham, *Fiscal Policies*, and Liu, *Making of a Fiscal State* respectively. Liu argues for the sustainability of the Northern Song fiscal regime. Tribute did not have a detrimental impact upon the Song revenue system and its economy, but it did lead to tax evasion and pressures to undertake administrative reform (Kuhn, *Die Song Dynastie*, 89-90.) The present writer suggests the English experiment was not sustainable because of a weak institutional framework. Higham and Ryan, *Anglo-Saxon World*, 345 estimate that 55 percent of newly-issued English coins between 1012 and 1014 went into the pockets of the Vikings either to be buried, lost or taken back to Scandinavia.
 - 7 There is a substantial literature on the environment and the state in China. For key themes, see Elvin, *Retreat of the Elephants*, 87-128; and on the state's role in an environmental crisis, see Zhang, *River, Plain and State*.

distinctive arguments. Scott argues that the barbarians posed the greatest threat to sedentary states,⁸ and Lieberman argues that the rimlands of Europe and Asia were protected by geographical and environmental advantages, and benefited from progressively shorter periods of disruption than states in exposed zones lying in between.⁹ But, the general similarities between Scott's and Lieberman's work open up perspectives by which to compare and contrast some of the problems that states faced in their dealings with non-charter/sedentary states and societies. Lieberman's and Scott's works provide a general model from which to examine politics around peacemaking in a comparative framework.

In addition to the similarities in conclusions, Lieberman's and Scott's books share a key methodological feature. Because of their focus upon identification of global transitions, the archaeological and historical data is set out in a flat analysis without engagement with historiographical debates from national/regional contexts and/or difficulties with primary sources. For example, Scott conceptualises the era between the eighth and eleventh centuries as an era of Viking barbarian sea-borne invasions.¹⁰ There is much additional evidence to support the view that the Vikings and the Rus reached high points of expansion in the late tenth and early eleventh centuries during a phase of favourable climatic conditions for long-distance trade and settlement, as well as raids.¹¹ Moreover, the richness of the archaeological data demonstrates the role of the Rus in the trading and international exchange of commodities such as silk, linking China to Europe and Britain, in line with Conrad's second subtype of global history.¹² But, transformation identified by Scott as arising from Viking sea-borne invasions should also be understood as being connected to the roles played by Khazar trade networks and relationships between exchange and elite demand linking Europe with the Mediterranean.¹³ As regards protected rimlands, there is a synchronicity between many processes of state formation, but questions arise over whether ideas and systems were pushed into the periphery as new ideas took shape in the core, rather than because of special features of the former.¹⁴

8 Scott, *Against the Grain*, 222-227.

9 For a summary, see Lieberman, Protected rimlands.

10 Scott, *Against the Grain*, 254-255.

11 E.g. Bolton, *Empire of Cnut*; Franklin and Shepard, *Emergence of the Rus*, 139-244. On medieval warming period data, see Helama *et al.*, Summer temperature variations; Stuiver *et al.*, GISP2 δ18O Climate Record; and for a general survey, see Lamb, *Climate, History*, 171-182. On ship design and exploitation of environment, see Bill, *Viking Age Ships*; for the transformation of Vikings and Rus into other identities and diasporas (i.e. *Normanni* from Vikings to Normans), see Skiba *et al.*, *Norman Connections*.

12 For the consumption of silk in England, the burgeoning of markets in the Low Countries, and production and uses in Northern Song China, see respectively, Fleming, *Acquiring, flaunting and destroying silk*; Ablaster, *History of the Low Countries*, 36, 59; Kuhn, *Die Song-Dynastie*, 128-129, 145, 166, 172, 184, 326-330, 381-392. For a map, see Hedenstierna-Jonson, *Farmer, raider, 57* (map 5). For China and Silk Roads in a general context, see Jarman, *River Kings*, 172-173.

13 Franklin and Shepard, *Emergence of the Rus*, 71-180; Wickham, *Framing the Early Middle Ages*, 693-824. It is important to observe that Scott's model of barbarian raids and interactions differs from nineteenth- and twentieth-century views of Vikings as agents of destruction in Europe, with the former emphasising the ways in which a range of interconnections and trade, as well as raids, led to transitions rather than the collapse of states/empires.

14 Those with a South Asian or Irish background who have studied Irish or Sanskrit, respectively, will be aware of closer connections between Irish and Sanskrit than between English and Sanskrit. For an introductory survey of Sanskrit, see Pollock, *Language of the Gods*.

At a general level this article concords with the views of Lieberman and Scott, but differs by undertaking more detailed investigation of primary sources and engaging with historiographical debates.¹⁵ Consequently, whether England and China were on similar trajectories of patterns of war and peace, or the degrees to which these states concurred with charter/sedentary state models lies beyond our scope.¹⁶ Rather, our concern is to look at the micro level, comparing two peace treaties, which have been chosen, firstly, because they are close in chronology, and, secondly, because the historical sources are broadly comparable, albeit with some divergences. Our focus for the Northern Song materials is upon the tripartite, religiously sanctioned oath letters setting out the terms of the Chanyuan Covenant and chronicles written in the late eleventh and twelfth centuries.¹⁷ For the English material, we will draw not only upon letters relating to diplomacy and politics, but also upon contemporary annals, charters and lists of authority.¹⁸ At a general level, the Maldon and Chanyuan agreements set into motion policies which committed English and Chinese rulers to pay substantial sums as tribute to the Vikings and Kitan Liao respectively, and were soon regarded as political errors in strategy,¹⁹ although they were less damaging to the English and Song economies than might be assumed.²⁰ Broadly speaking, the Northern Song Empire (960-1127) lay between the Yellow River and the borders of Vietnam and Yunnan, and the Kitan Empire (907-1125) lay to its north, based in south-east Mongolia. The Kitan khanate was established in 907, and in 947 the dynasty changed its name to the Liao and then the Greater Liao.²¹ Part I of this article looks at the dynamics of Song-Liao relations and the role of chief councillor Kou Zhun (1004-1006) in advising Song Zhenzong (997-1022). Parts II to IV consider changes in evaluations of the peace agreement after Maldon between c. 1000 and c. 1020, and the influences on and political initiatives of Archbishop Sigeric of Canterbury (990-94), who provided advice for the tribute strategy during the reign of Æthelred II the »unready« or »ill-advised« (*unrædas*) (978-1016).²²

15 Standen, *Unbounded Loyalty*, xii, 107, 149 drew upon Prof. Jinty Nelson's work on ninth-century annals, and chronicles and sagas.

16 For example, in the tenth century, both England and Northern Song China expanded from small state units (Wessex and Later Zhou respectively) to create unified states with new systems of administration, which separated them from their predecessors and with significant links to the English and Chinese states in the medieval/middle and modern periods. But caveats are also required. The Northern Song looked back to the Tang Empire as well as the Later Zhou, whereas Wessex was only one kingdom in a »heptarchy« of early English kingdoms. That said, the Five Dynasty and Ten Kingdoms period (907-960) compares with struggles for power during the era of the »heptarchy«.

17 On letters, see below, n. 48.

18 Below, sections Peace-making and its Evaluation and Influences upon Archbishop Sigeric.

19 Wright, *From War to Diplomatic Parity*, 92 citing Fu Pi (1004-1083) in the 1040s; *ASC MS C*, ed. O'Keeffe, 86, compiled in the 1020s, with further discussion in section Peace-making and its Evaluation.

20 Campbell, England c. 991, 3-4; Wareham, Fiscal policies, 921-922; Lau and Huang, Founding and consolidation, 268; Zhang, *River, Plain and State*, 84.

21 In 983 the name was changed back to Kitan, but in 1066 there was reversion to Liao.

22 For discussions of politics, see Abels, Æthelred, 61-67, 85-86; Keynes, *Diplomas*, 174-176, 182-193, 211-213, 229-230; Williams, Æthelred, 22-30, 69-70, 111-113. For the preference for »ill-advised« over »unready«, see Fletcher, *Bloodfeud*, 64; Williams, Æthelred, 19.

The War of 1004-1005 and the Chanyuan Covenant

Lorge argues that »there was no ›China‹ without war«, and that military strategy at »an immense cost in blood« built and maintained the pre-modern Chinese state, rather than the precociousness of its civil bureaucracy, or the strength of its market economies, and consequently that conquests and defeats stemmed from dynasties' failures in military strategy.²³ We will test this argument in relation to the conflict over the Sixteen Prefectures (in which modern Beijing lies) in north-east China. By 979 the Northern Song dynasty (960-1127) had succeeded in reconquering much of the territory formerly ruled over by the Tang dynasty (618-907),²⁴ but a notable exception was the Sixteen Prefectures south of the Great Wall, covering around 84,000 km². The territory was of strategic importance to both sides because it controlled a corridor between China and the steppe,²⁵ and additionally to the Kitan Liao because of the location of its Southern Capital there and its agricultural wealth.²⁶ The Sixteen Prefectures were a source of conflict between Chinese and Kitan dynasties for 67 years, until the Chanyuan Covenant in 1005 heralded a peace of 117 years.

In 938 the Sixteen Prefectures were ceded to the Kitans in return for military assistance by the Later Jin dynasty (936-947).²⁷ However, after improvements in waterways and embankments on the southern side of the border, the area known as Guannan (approximately congruent with Hebei), comprising two prefectures and three passes, was conquered from the Liao in 959 by the Later Zhou dynasty (951-960).²⁸ Song efforts to continue with the conquest (from a Song perspective, a reconquest) in 979 and 986-988 met with failure.²⁹ Song Zhenzong had no experience of war and had not held a senior administrative role before becoming emperor,³⁰ but in 1000 he accepted advice to extend the waterway network westwards along the Song-Liao border and to invest in the construction of water fields to prevent the advance of the Kitan cavalry.³¹ From a Song viewpoint, this represented fulfilment of a long-term objective to improve defences, but for the Liao it was reminiscent of the prelude to the 959 conquest of Guannan under the military command of Zhao Guangyin (928-976), who used this victory to seize power and to found the Northern Song dynasty.³² At this time the Liao dowager empress Cheng T'ien and her son Liao Shengzong (982-1031) responded with four raids upon Guannan between 999 and 1003, with the raid of 1001 being led by

23 Lorge, *War, Politics and Society*, esp. 1-17, 139-57 (quotations at 13, 178). For reservations on the civil reforms of the Northern Song, see *ibid.*, 33; cf. Kuhn, *Age of Confucian Rule*; Liu, *Chinese Market Economy*.

24 The intervening five dynasties are as follows: Later Liang (907-923), Later Tang (923-936), Later Jin (936-947), Later Han (947-951) and Later Zhou (951-960).

25 For a map, see Marsone, *La steppe et L'empire*, 162 (Carte des Seize prefectures).

26 Lorge, *Reunification of China*, 14; Wright, *From War to Diplomatic Parity*, 46.

27 Wright, *From War to Diplomatic Parity*, 42.

28 Lorge, *Reunification of China*, 98-101; Wright, *From War to Diplomatic Parity*, 46-47.

29 Lorge, *Reunification of China*, 193-194, 212-225; Wright, *From War to Diplomatic Parity*, 44-45.

30 Lau and Huang, *Founding and consolidation*, 260.

31 Lorge, *Reunification of China*, 242-245; Wright, *From War to Diplomatic Parity*, 48-49.

32 On the aftermath of Gaoping and its role in the Northern Song coup, see Lorge, *Reunification of China*, 53-54.

Shengzong himself.³³ Song forces responded vigorously, driving home to the Liao the tactical need for deep-penetrating attacks,³⁴ and in September 1004 the Liao launched a major invasion of the eastern part of Guannan, deploying a force of 200,000 Kitan cavalry on 24th October.³⁵ In 1004 Kou Zhun (961-1023) succeeded Li Hang (947-1004) as Song chief councillor, and he provided Zhenzong with the advice to advance to Chanyuan in the war zone, around 100 km north-east of the Song capital at Kaifeng.³⁶ In advocating this policy, he faced opposition from Wang Qinruo (926-1025), who argued that the emperor should seek safety around 900 km south-west of Kaifeng.³⁷ Kou Zhun drove home his argument:

Your advisers are cowardly and timid. They talk ignorantly, no different from the farmers and the old women. The invaders are now nearby and danger surrounds us. Your majesty can advance a foot but not retreat an inch. Those who have devised such plans for your majesty should be condemned and beheaded [...] How could we wish to abandon our ancestral temples and our altars to the spirit of the land and go as far as away as Ch'u (Kiangnan) or Shu (Szeschwan).³⁸

The arrival of Zhenzong at Chanyuan on 9th January 1005 strengthened Song resolve, and paved the way for peace negotiations.³⁹

The Chanyuan Covenant, agreed to on 24th January 1005 and proclaimed on 5th February, set out in religiously sanctioned letters issued by each side, resulted in Song recognition of the Liao Empire, demilitarised the border along the Juma river, and recognised the mutual sovereignty of the Liao over the Sixteen Prefectures and of the Song over Guannan.⁴⁰ In addition, the Song agreed to pay »annual military assistance payments« of 200,000 bolts of raw silk and 100,000 taels of silver to the Liao Empire.⁴¹ Kou Zhun was viewed as the architect of the agreement and acquired considerable political capital.⁴² But, by 1006 problems with the treaty were already apparent, in terms of the damage to Song status and morale, and Kou Zhun was demoted from chief councillor to governor of T'ien-hsiung in the Guannan area,⁴³ though the fortunes of the chief negotiator, Cao Liyong (971-1029), continued to prosper until the death of Song Zhenzong in 1022.⁴⁴ The advance of Kitan forces to within striking

33 Lorge, *Reunification of China*, 247-262; Wright, *From War to Diplomatic Parity*, 46-47.

34 Lorge, *Reunification of China*, 257.

35 Lorge, *Reunification of China*, 262-264, 268; Wright, *From War to Diplomatic Parity*, 47, 50-55 (at 253 for 200,000 Kitan cavalry citing Lau, *Making war for peace?*, 180).

36 Lorge, *Reunification of China*, 264-267; Wright, *From War to Diplomatic Parity*, 55-56, 59-60.

37 Wright, *From War to Diplomatic Parity*, 56-57.

38 Lorge, *Reunification of China*, 267; Wright, *From War to Diplomatic Parity*, 57 (citation and trans. of Li Tao, *Xu Zishi Tongjian Changbian*).

39 Lorge, *Reunification of China*, 268; Wright, *From War to Diplomatic Parity*, 62-64.

40 For texts and discussion of letters, see Wright, *From War to Diplomatic Parity*, 54, 74-76.

41 Wright, *From War to Diplomatic Parity*, 74-76. This payment remained in place until 1042, when as a result of the war between the Song with the Hsia, the military assistance to the Liao was increased by a further 100,000 bolts of silk and 100,000 ounces of silver (Wright, *From War to Diplomatic Parity*, 217).

42 Lorge, *Reunification of China*, 30, 276.

43 Lorge, *Reunification of China*, 30; Wright, *From War to Diplomatic Parity*, 88.

44 Ji, *Politics and Conservatism in Northern Song China*, 29-30.

distance of Kaifeng and the terms of the covenant can make it seem that they had defeated the Song,⁴⁵ but heavy casualties meant that they also wished to come to the negotiating table.⁴⁶ Audits of war, though, provide only a partial explanation for the Song handling of the crisis, and historians have given much emphasis to Song perceptions of their own status as a dynasty and perceptions of the Kitans.

A twelfth-century history of the Northern Song dynasty depicted the Kitans as barbarians,⁴⁷ and this view was compounded by the Song dynasty's own insecurity.⁴⁸ It fostered the mistaken belief that the Liao aimed to destroy the Song,⁴⁹ but the Liao were aware of Song society and institutions and also had an understanding of Song objectives.⁵⁰ In 1004-1005 the Liao wanted to bring the Song to the negotiating table, and their raids were undertaken to achieve this objective.⁵¹ Naomi Standen suggested that ethnicity did not act as a barrier for those wishing to take up service at the Liao court,⁵² and the Liao chief negotiator was a former senior Song official.⁵³ In addition to these tactical advantages, political and cultural factors may also have been at work. Among Northern Song ideas was the concept that to cede land signalled political subservience, and the concession of Guannan would therefore have indicated weakness.⁵⁴ But the Liao approach was more flexible,⁵⁵ and a willingness to concede Guannan provided an opportunity to negotiate significant gains in other areas, notably in securing full political recognition and annual tribute payments, as well as sovereignty over the Sixteen Prefectures. David Wright sums up the situation well: »It is difficult for me to regard the conclusion of the Covenant of Chanyuan as anything but a significant victory for the Liao«,⁵⁶ which arose from a combination of factors within the negotiating process, as well as the Liao military advances.

The strategy of Song Zhenzong lends support to Lorge's view on the centrality of military affairs in the making of the Chinese state, but failure lay as much in the peace negotiations as in the strategy of war. We can speculate to what degree Song insecurity and reservations over the Liao as »barbarians« played a role in the decision to concede annual military assistance payments, presented as tribute from the Liao perspective. Similarly, how much benefit derived from tactical advantages accruing to the Liao in terms of greater knowledge of opponents' objectives is hard to quantify. More concretely, we can take notice of two outcomes. Firstly, the architect (Kou Zhun) of the Chanyuan Covenant was blamed for the failings, and secondly, in order to move attention away from it, Song Zhenzong fabricated the dispatch

45 Zhang, *River, Plain and the State*, 58.

46 Lorge, *Reunification of China*, 19, 271-272.

47 Ji, *Politics and Conservatism in Northern Song China*, 134; Lorge, *Reunification of China*, 14 (citation and trans. of Li Tao, *Xu Zishi Tongjian Changbian*).

48 Zhang, *River, Plain and State*, 53-57.

49 Lorge, *Reunification of China*, 18; Lorge, *War, Politics and Society*, 47.

50 Lorge, *Reunification of China*, 19; Twitchett and Tietze, *Liao*, 87-98.

51 Lorge, *Reunification of China*, 16-18; Wright, *From War to Diplomatic Parity*, 84-85.

52 Standen, *Unbounded Loyalty*, 26-32.

53 Schwarz-Schilling, *Treaty of Shanyuan*, 12-14; cf. Wright, *From War to Diplomatic Parity*, 60-62.

54 Lorge, *Reunification of China*, 19, 268.

55 Lorge, *Reunification of China*, 271-272; Wright, *From War to Diplomatic Parity*, 71, 83.

56 Wright, *From War to Diplomatic Parity*, 94.

of a divine text and held a religious ceremony at Mount Tai to »subdue the entire nation and show off to foreign states«. ⁵⁷ Investment in sacral power after defeat in negotiations provided new political capital. The demotion of Kou Zhun sent out a political message, but the need to maintain stable diplomatic ties may explain Cao Liyong's retention of office. In this reading, defeat lay at the negotiating table as well as in war, perhaps causing a particular sense of humiliation, which required investment in sacred festivals and rituals emphasising overlordship. ⁵⁸

Peacemaking and its Evaluation after the Battle of Maldon

In 991 a Viking force established a camp on Northey Island, opposite the *burh* of Maldon, with the force having access to the resources on the Blackwater estuary to support itself. ⁵⁹ It remained there until the arrival of an English army led by Ealdorman Byrhtnoth of Essex, ⁶⁰ precipitating the Battle of Maldon on 10th or 11th August. The Vikings killed Byrhtnoth, defeated his army, and took possession of the battlefield. ⁶¹ It was a major defeat of the English, but it did not mark a collapse of the English state. ⁶² The most evocative source is the poem, *The Battle of Maldon*, written in the early eleventh century to commemorate the death of Byrhtnoth and his companions, ⁶³ but it is the so-called »Anglo-Saxon Chronicle«, better referred to as the *Old English Royal Annals*, which describes and evaluates the defeat and peace agreement in two extant versions. ⁶⁴ The A version's account was written at Winchester from the court of King Alfred »the great« (870-899), but it was moved to Canterbury in 1006. ⁶⁵ The entry for 991 on Maldon was written c. 1000x1006, and no later than 1006. ⁶⁶ The source for the accounts in the C, D and E versions, covering the period between c. 983 and c. 1023, were written up in the early 1020s, with minimal differences between each version. ⁶⁷ Research has advanced significantly in the last few decades, due mainly to the publication of a collaborative series, ⁶⁸ and we will restrict ourselves to two observations. Hindsight enabled

57 Zhu, *Festivals*, 729.

58 For the role of the Chanyuan Covenant in the Bow and Arrow martial arts society, see Wang and Cai, *Entertainment and sports*, 468-467.

59 On Viking leaders, see Keynes, *Historical context*, 90; Roach, *Æthelred*, 117-122; Scragg, *Return of the Vikings*, 65-69, 74-75; cf. Abels, *Æthelred*, 113 n. 4; Howard, *Sweyn Forkbeard's Invasions*, 36. On the Blackwater estuary, see Mirrington, *Transformations of Identity*, 168-169.

60 On Byrhtnoth as the second most senior ealdorman c. 983-989, see Keynes, *Diplomas*, table 6.

61 *ASC MS. A*, ed. Bately, 79.

62 On the battle and its sources, see *Battle of Maldon*, ed. Scragg; Scragg, *Return of the Vikings*; see also Howard, *Swein Forkbeard's invasions*, 35-37; Lavelle, *Æthelred*, 66-67; Roach, *Æthelred*, 117-121.

63 *Battle of Maldon*; on dating and as a historical source, see Scragg, *Battle of Maldon: fact or fiction?*.

64 Brooks, 'Anglo-Saxon Chronicle(s)' or 'Old English Royal Annals'.

65 *ASC MS. A*, ed. Bately, xiv.

66 *ASC MS. A*, ed. Bately, 79 (Bately's »hand 5«); Scragg, *Return of the Vikings*, 56 dates it to around 1000.

67 Stafford, *After Alfred*, 175-176 (including discussion of 991 as the start date for this block of annals). For a list of major and minor differences between the C, D and E versions, see *ibid.*, 340-341. Neither category applies to 991, but there is a difference in the spelling of Byrhtnoth, rendered as Brihtnoð in the C and E versions, but as Byrihtnoð in D (see below, n. 95).

68 This has been undertaken under the general editorship of David Dumville and Simon Keynes.

the writer of the annals which were copied into the C, D and E versions to craft a narrative which explained the English defeat and the subsequent Danish conquest of England in terms of the poor counsel provided by the king's advisers and divisions within the English ranks.⁶⁹ Furthermore, a continued model of central annalistic production from the 890s with periodic dissemination from the royal household to monastic scriptoria accounts for the variations between the different versions, while connections between manuscripts and local centres of writing were less important than might be assumed.⁷⁰

The A version provides an evaluation of the battle of Maldon and its aftermath within a decade of the battle, placing emphasis upon the role of Olaf Tryggvason, later king of Norway (995-1000).

In this year Olaf came with 93 ships to Folkestone, and ravaged round about it, and then from there went to Sandwich, and so from there to Ipswich, and overran it all, and so to Maldon. And Ealdorman Byrhtnoth came against him there with his army and fought against him; and they killed the ealdorman there and had control of the field. And afterwards peace was made between them and the king stood sponsor to him afterwards at his confirmation.⁷¹

The annal has a complex layout,⁷² and the most likely explanation is that the entry above relates to 991 but that »the last sentence belongs to the year 994 when peace was made with Olaf«. ⁷³ Consequently, we can regard the entry as a summation of the events in 991, which was viewed as having a connection with Æthelred II standing sponsor to Olaf at his confirmation in 994.⁷⁴ At this point in time there was no political scapegoat on the English side, and nor was the language of the annal dramatic in its depiction of the Viking raid, restricting itself to statements on ship numbers, the ravaging of four towns and the nature of the Viking victory.

The peace treaty *II Æthelred* provides further insight into the peace agreement.⁷⁵ It is traditionally dated to 991, but 994 is gaining greater authority.⁷⁶ The opening clause explained it was »according to the terms which Archbishop Sigeric, Ealdorman Æthelweard and Ealdorman Ælfric made, when they obtained permission from the king to purchase peace for the districts which they rule over, under the king«. ⁷⁷ The problem stems from the inclusion

69 On the context of the composition and impact of the source for the C, D and E versions, see Keynes, *Declining reputation*.

70 Brooks, *Why is the Anglo-Saxon Chronicle about kings?*, esp. 45, 53 emphasising the importance of common materials; cf. Higham and Ryan, *Anglo-Saxon Word*, 276, who summarise the alternative view. For discussion of where the source of the C, D and E versions emanated from, see Stafford, *After Alfred*, 177.

71 *ASC MS. A*, ed. Bately, 79, trans. Whitelock *et al.*, *ASC*, 82.

72 Bately, *Anglo-Saxon Chronicle*, 38-39, 43-44.

73 Scragg, *Return of the Vikings*, 56-57, 75 (quotation), 103, 179; *ASC*, trans. Whitelock *et al.*, 82 n. 3; cf. Bately, *Anglo-Saxon Chronicle*, 43-44; *ASC MS. A*, ed. Bately, lix-lxii.

74 For further discussion on events at Andover and the suggestion that Ealdorman Æthelweard was involved in the 994 sponsorship, see Lavelle, *Law, death and peacemaking*, 126-129.

75 *II Æthelred*, ed. Liebermann; trans. Whitelock, 437-439.

76 Whitelock, *EHD*, 437; cf. Keynes, *Historical context*, 103-04; Lavelle, *Law, death and peacemaking*, 125-126.

77 *II Æthelred*, ed. Liebermann, 220; trans. Whitelock, 437-438. For discussion of the roles of Ealdormen Æthelweard and Ælfric, see Lavelle, *Law, death and peacemaking*, 127-129.

as the lead negotiator of Archbishop Sigeric, who died on 28th or 31st of October 994,⁷⁸ before the end of the 994 raid. If *II Æthelred* is to be dated to 994, it is significant that both it and the A version of the *Old English Royal Annals* draw upon data from earlier and later years respectively, in the case of the former referring to Archbishop Sigeric's role in the peace negotiations of 991, and in the latter linking the peace agreement in 991 to the royal sponsorship of Olaf in 994.⁷⁹ In short, when viewed from the perspective of c. 1000x1006, a link was perceived between peacemaking after the 991 and 994 raids in which the key to the peace was the transition of Olaf Tryggvason from Viking raider to friend of the English,⁸⁰ but by the early 1020s, the C (D & E) versions of the *Old English Royal Annals* provided a different assessment.

In this year Ipswich was ravaged, and very soon afterwards Ealdorman Byrhtnoth was killed at Maldon. And in that year it was determined that tribute should first be paid to the Danish men because of the great terror (*micel brōga*) they were causing along the coast. The first payment was 10,000 pounds. Archbishop Sigeric first advised that course.⁸¹

Here the focus is upon explaining the factors behind the decision to pay tribute, namely the killing of Ealdorman Byrhtnoth and the »great terror« along a coast of unspecified dimensions.⁸² Moreover, Sigeric, archbishop of Canterbury (990-994), was blamed for a series of tributes paid to the Vikings beginning in 991 and ending in 1018, comprising 206,000 pounds at the national level and 13,500 pounds at the local level.⁸³ What had begun as a tribute in line with those paid to Vikings in the ninth century ended up with Kings Æthelred II

78 Brooks and Kelly, *Charters of Christ Church*, 213-214.

79 It is likely that baptism and confirmation occurred close to each other, perhaps even on the same day. Separation of baptism and confirmation was connected to the rise of infant baptism in early medieval Europe, leading to the need for sponsors. But once established this framework of thought was applied to adults, even though they could vouch for themselves. Confirmation moved from strengthening "what was already there" to granting to those confirmed what they could not possess themselves before the sacrament. Hence there were liturgical reasons for recording confirmation of Olaf to cover both sacraments in the C (D and E) version of the *Old English Royal Annals* under 994 (ASC, trans. Whitelock et al., 83) rather than either baptism or baptism and confirmation. Thus, in 994 Æthelred II and Olaf would have been perceived to have created a bond with one another through their two roles as sponsor and candidate in the two sacraments. For further discussion of changes in Christian initiation and a diminishing emphasis upon baptism, see Cramer, *Baptism and Change*, 179-206 (quotation at 182); Fisher, *Christian Initiation: Baptism*, 1-30; Fisher, *Christian Initiation: Reformation*, 159-162.

80 For Olaf's role in the 994 raid and peace agreement, see Abels, *Æthelred*, 49-50; Brooks, *Early History*, 283; Lavelle, Law, death and peacemaking, 129. English tributes were used to establish his rule as king of Norway between 995 and 1000 (Bagge, *From Viking Stronghold to Christian Kingdom*, 37-31). This perhaps provided the context for the later tradition that in 1014 King Olaf helped King Æthelred II to expel the Danes from London (Sturluson, The History of St Olav in: Sturluson, *Heimskringla*, ed. Monsen and trans. Smith, 223-224).

81 *ASC MS. C*, ed. O'Keeffe, 86; *ASC*, trans. Whitelock et al., 82; see also, *ASC MS. D*, ed. Cubbin, 48; *ASC MS. E*, ed. Irvine, 61.

82 *ASC MS C*, ed. O'Keeffe, 86; *ASC*, trans. Whitelock et al., 82 (s.a. 991 C version). This can be linked to the language used in the contemporary poem *The Battle of Maldon*, which described the Vikings as »wolves of slaughter« (*wælwulfas*) and the Danes as a »hateful race«: in *Battle of Maldon*, ed. Scragg, 22, line 96; 20, line 90.

83 For data and a review of the debate on authenticity, see Wareham, Fiscal Policies, 916-919 (Table 1 at 919). This figure includes £21,000 paid as stipends (*heregeld*) in 1014.

and Cnut (1016-1035) raising more in taxation than most of their late medieval successors.⁸⁴ Criticism of Sigeric gained momentum in the Anglo-Norman period. A post-Conquest scribe added to the A version of the *Old English Royal Annals* entry for 991 that the peace was made »through the advice of Sigeric, bishop of the people of Kent, and of Ælfheah, bishop of Winchester«,⁸⁵ and Henry of Huntingdon wrote of the *consilium infaustum* of Sigeric.⁸⁶ But these views only began to take shape in the 1020s and did not reflect contemporary evaluation.⁸⁷ We can dig deeper to draw upon contemporary sources' descriptions of other aspects of the politics of the period and the role of Archbishop Sigeric, firstly, to explain his political stance, and secondly, how his concerns with domestic politics shaped his approaches to international diplomacy and the Vikings.

Influences upon Archbishop Sigeric of Canterbury and Domestic Politics

Sigeric became a monk at Glastonbury and received his monastic education under St Dunstan, abbot of Glastonbury (c. 943-988) and archbishop of Canterbury (959-988),⁸⁸ and of the six archbishops elected between 988 and 1035 who had formerly been monks, Sigeric had the strongest connections with Dunstan and Glastonbury.⁸⁹ Sigeric became abbot of St. Augustine's Canterbury in 980, bishop of Ramsbury in 985 and archbishop of Canterbury in 990.⁹⁰ There is no evidence for the view that he was made archbishop at an advanced age or that he had an extended period of ill health.⁹¹ Nicholas Brooks argued that Sigeric was a poor adviser to King Æthelred II in dealing with the Vikings, and that his main achievements lay within church affairs.⁹² This framework has served to understand Sigeric's role more generally, whether setting out the case for the effectiveness of King Æthelred II and the witan, taking a more critical view of the king and his advisers, or focusing upon the church and society in discussing the archbishops of Canterbury.⁹³ Five letters enable us to look at the influences upon Sigeric, the nature of the political challenges that he faced before Maldon, and the strategies which he used in domestic and international politics.

84 Campbell, *England c. 991*, 160; cf. Gillingham, »Most precious jewel«, 375-378.

85 *ASC MS. A*, ed. Bately, 79 (Bately hand 7a), trans. Whitelock *et al.*, *ASC*, 82 n. 5. The scribe may have reflected upon some post-Conquest views of the role of Archbishop Sigeric at a local level as a result of the payment of tribute in 994; or perhaps, given the mention of Bishop Ælfheah, the intention was to highlight Sigeric's role in *II Æthelred*.

86 Henry of Huntingdon, *Historia Anglorum*, ed. Greenway, 326-328; see also *Chronicle of John of Worcester*, ed. Darlington *et al.*, 438.

87 Cf. above, pp. 116-117 n. 71-79.

88 Brooks and Kelly, *Charters of Christ Church*, 212.

89 Mason, Sigeric; Brooks and Kelly, *Charters of Christ Church*, 211-212, 214; Crick, *Charters of St Albans*, 18-21.

90 Brooks and Kelly, *Charters of Christ Church*, 212; Mason, Sigeric.

91 Cf. Brooks, *Early History*, 279-280; Mason, Sigeric. Ælfheah was appointed as archbishop of Canterbury in 1005 at the age of around 53 (Rumble, *Winchester to Canterbury*, 168), and a similar age would fit for Sigeric's appointment.

92 Brooks, *Early History*, 278-283.

93 For a view emphasising Sigeric's skills and calibre, see Keynes, *Diplomas*, 189-190; Keynes, *Wulfstige*, 60; Roach, *Æthelred*, 137, 158; for a critical view, see Mount, *Everyday Life*, 48; for emphasis on his role in church affairs, see Mason, Sigeric.

Two letters of exhortation provide some insights on advice he received.⁹⁴ One, perhaps written by the secular clerk B., better known as the author of the *Vita Dunstani*, need not detain us too long.⁹⁵ Lavished with sycophantic praise for Sigeric, it requested that he should look after the interests of the secular clergy and maintain his reputation for incorruptibility.⁹⁶ Of much greater interest is the *Epistola Elfwerdi Abbatis ad Sigericum Archiepiscopum*, written by Ælfweard, abbot of Glastonbury (988-1009).⁹⁷ There are similarities with Alcuin's letter to Archbishop Æthelheard of Canterbury (793-805),⁹⁸ and it is worth testing the degree of the match to consider its value as a source for political history.

Alcuin had written to Archbishop Æthelheard in 793 during an era of Viking raids and at the time when King Offa of Mercia (757-796) was seeking to divide the archbishopric of Canterbury into two and to transfer authority to the new archbishopric of Lichfield.⁹⁹ The selection of the letter as a model suggests that events in 793, when the Vikings had launched a devastating attack on Lindisfarne as recorded in the *Old English Royal Annals*, applied to the situation in 990.¹⁰⁰ Viking raids had begun again in 980 with attacks on Cheshire and Thanet and continued through the 980s,¹⁰¹ and it might be expected that this was the key factor in guiding the selection of this letter, but comparison shows that concerns over the threat to the church from royal power were reckoned to pose the greater threat. Both letters called upon the recipients to act as heralds of salvation, to be shepherds rather than hirelings, to have no fear of men who carried swords, and to remember the mystery of the cross in standing up for the rights of the Church.¹⁰² But even within these passages there are significant differences: Ælfweard's comments are much more extensive and direct, using the personal form »you« to address Sigeric:

94 For the text and translation of a letter from Odbert, abbot of St Bertin, to Sigeric, see Vanderputten, *Canterbury and Flanders*, 242-244.

95 *Epistola ad Sigericum*, ed. Stubbs, 399-400 (BL Cotton Tiberius A. XV, fol. 164) uses a similar style and syntax to B's letter to Archbishop Æthelgar (*Epistola B. ad Æthelgarum*, ed. Stubbs, 385-388; cf. Lapidge, *Hermeneutic style*, 97. On B's life and work, see Winterbottom and Lapidge, *Introduction*, lxiv-lxxxviii).

96 For B's efforts to secure patronage, see Cubitt, *Archbishop Dunstan*, 148; Winterbottom and Lapidge, *Introduction*, lxxxvii-iii.

97 *Epistola Elfwerdi Abbatis ad Sigericum*, ed. Stubbs, 400-403 (BL Cotton Tiberius A. XV, fol. 170r-172v); on Abbot Ælfweard, see Kelly, *Charters of Abingdon*, 178-179.

98 Alcuin, *Epistola* 17, ed. Dümmler, 45-49. For observations on similarities, see Brooks, *Early History*, 281; Brooks and Kelly, *Charters of Canterbury*, 212-213.

99 Brooks, *Early History*, 120-127; Brooks and Kelly, *Charters of Canterbury*, 197-198.

100 *EHD*, ed. Whitelock, 181 (s.a. 793 D and E versions).

101 Abels, *Æthelred*, 32-33; Keynes, *Historical Context*, 85-86; Lavelle, *Æthelred*, 51-54; Roach, *Æthelred*, 116; Williams, *Æthelred*, 43. For a discussion of charter evidence to suggest that raids began in the late 970s, see Insley, *Athelstan, charters and the English*, 21-23.

102 Alcuin, *Epistola* 17, ed. Dümmler, 45; *Epistola Elfwerdi Abbatis ad Sigericum*, ed. Stubbs, 401 (BL Cotton Tiberius A. XV, fol. 170v-171r).

Why do you fear man on account of the sword? You received the key of the kingdom from Christ; remember that he died for you and you do not dare to speak out for Him. He, for love of you, having been pierced with nails, hung on the cross and if you [...] of your own dignity should keep silent on account of the fear of man, he knows, father, he knows; but just as he has loved, so love him also. The one who works more shall receive more reward. If [you punish] the erring ones, your reward is with the Lord and perfect salvation, even if [the sinner] will hate the one reprimanding.¹⁰³

Ælfweard intensified Alcuin's message that anything that a prelate suffered on behalf of the faith was negligible when compared to the suffering of Christ on the cross, and added that the Lord would know if Sigeric kept silent in refusing to punish those who had erred. After discussing almsgiving and prayer, Ælfweard continued:

We have discovered one precious pearl, let us give away everything which we have and let us buy it. [...] Let not power and earthly fragility dismay, let not secular ambition restrain pontifical severity. Do not fear those who are able to destroy the body but are not able [to destroy] the spirit. Be unwilling to sell the doves of God, give that which you have freely received.¹⁰⁴

The text on having no fear in protecting the church and needing to sacrifice everything is striking. The precious pearl (*pretiosa margarita*) drew attention both to the kingdom of heaven (Matthew 13:44-46) and the idea of protecting God's work (Genesis 1:1-14), and the doves of God (Luke 2: 24) seem to refer to the consecration of Jesus to God at his presentation at the Temple and by extension, Sigeric's consecration as a follower of Christ, priest and bishop.¹⁰⁵

There are also important differences with no overlapping content between the letters. Alcuin's letter drew attention to Gildas's work on how the Britons, through their wickedness, had brought ruin upon themselves,¹⁰⁶ but Ælfweard was unconcerned with these lessons from history and analogies with the sins of the English people and their connection with Viking raids as a warning from God to reform. The omission of this stock explanation of the causes and remedies for the Viking raids meant that there was a sharper focus on the threat posed by secular power and the need to ensure unity within the church. On the latter, Ælfweard may have been keen to ensure that the problems with the anti-monastic reaction in the late 970s should be healed, and, thus, as regards the monastic reform programme suggested that Sigeric should limit his concerns to ensuring that the monks in his charge should dress and

103 *Epistola Elfwerdi Abbatis ad Sigericum*, ed. Stubbs, 401 (BL Cotton Tiberius A. XV, fol. 170v-171r): *Quid times hominem propter glad(ium) (cla)vem regni accepisti a Christo; recordare quia passus est pro te et non metuas loqui pro Illo. Illo pro tuo amore clavis confixus pependit in cruce et tu si [...] dignitatis tuae ob timorem hominis tacueris [...] novit, pater, novit; sed, sicut Ille dilexit, ita dilige et Illum. Qui plus laborat plus mercedis accipiet. Si [corrigis] deliquentes, tibi est merces apud Dominum et summa salus [peccator] odieret increpantem.*

104 *Epistola Elfwerdi Abbatis ad Sigericum*, ed. Stubbs, 402 (BL Cotton Tiberius A. XV, fol. 171r): *Invenimus unam pretiosam margaritam, demus omnia quae habemus et emamus illam. [...] Non terrena fragilitatis terreat potestas, non saecularis ambitio pontificalem severitatem compescat. Noli timere eos qui corpus possunt occidere, animam autem non possent [repetition of occidere implied]. Noli columbas vendere Dei; da quod gratis accepisti.*

105 It is important to distinguish the doves from the dove of God. The latter has different meanings in Genesis 8:11, Matthew 3:16 (see also Mark 1:10; Luke 3:22; John 1:32), and Matthew 10:16.

106 Alcuin, *Epistola* 17, ed. Dümmler, 47.

eat with moderation,¹⁰⁷ but he made no call upon Sigeric to reconstitute the monastic community at Canterbury as a Benedictine house in line with the tenth-century reform movement. The letters of Alcuin and Ælfweard to Archbishops Æthelheard and Sigeric shared some common ground in part because of the applicability of the circumstances in 793 to events in 990, but there are important differences. Alcuin's letter covered a broad number of themes, including the need to stand up to secular power, but this was not the central theme of his letter. The clear message from Ælfweard was that Sigeric had to take up the duty of defending the English church, and that carrying forward expulsion of secular clerks from Canterbury should not be a priority. Sigeric placed monastic life on a firm footing at Canterbury,¹⁰⁸ but did not bring Canterbury into line with the progress of monastic reform at Winchester,¹⁰⁹ and it would not be until 1002 that Canterbury would be reformed by replacing secular clerks with monks.¹¹⁰ Ælfweard's letter of advice (and perhaps also B.'s request to look after the interests of the secular clergy) may have played a role in persuading Sigeric to avoid this course of action in order to focus his attention upon the threat posed by secular power, and to move attention away from a general diagnosis of the poor moral standards acting as a cause of God's judgment as expressed through the Viking raids.

A third letter, namely an exhortation letter written to St Wulfsgie, bishop of Sherborne (c. 993-1002), by an archbishop of Canterbury, whose personal name is no longer visible, provides insight into how this message was communicated.¹¹¹ This letter was written either by Sigeric c. 993, or by Ælfric c. 995.¹¹² Sigeric and Wulfsgie had been monks at Glastonbury and both had further links with Dunstan via Canterbury and Westminster respectively,¹¹³ but there was no such connection between Ælfric and Wulfsgie. The letter has connections with Alcuin's letter to Eanbald II, archbishop of York (fl. 796-803).¹¹⁴ The first and second parts were taken from Alcuin's letter, setting aside some minor variations in organisation of the materials and Alcuin's reflections upon old age.¹¹⁵ But these sections only make up around a quarter of Alcuin's letter, which goes on to explore a range of other themes mainly to do with Eanbald's duties towards the secular clergy.¹¹⁶ However, the final part of the letter to Wulfsgie set out the need to admonish an ealdorman (*dux*) and all secular rulers (*omnes saeculares principes*) to ensure that they were pure in heart in following God.¹¹⁷ The ealdorman

107 *Epistola Elfwerdi Abbatis ad Sigericum*, ed. Stubbs, 403.

108 Brooks, *Early History*, 277-278.

109 Yorke, Introduction, 3-6.

110 S 914; Brooks and Kelly, *Charters of Canterbury*, 1019-1034.

111 *Epistola*, 41, ed. Whitelock *et al.*, 226-229.

112 For *periculosus et laboriosissimis temporibus* (*Epistola*, 41, ed. Whitelock *et al.*, 228) referring to 995, see Hill, Wulfsgie, 149-150; Keynes, Wulfsgie, 63. It could equally refer to 991.

113 Brooks and Kelly, *Charters of Canterbury*, 212; Hill, Wulfsgie, 48-49; Keynes, Wulfsgie, 55-58.

114 Alcuin, *Epistola* 114, ed. Dümmler, 166-170. For other discussions on connections, see Brooks and Kelly, *Charters of Canterbury*, 212 n. 417; Hill, Wulfsgie, 150; Keynes, Wulfsgie, 63; Roach, Æthelred, 156; *Epistola*, 41, ed. Whitelock *et al.*, 227.

115 As far as *qui te elegit sibi sacerdotem* in Alcuin, *Epistola* 114, ed. Dümmler, 167-168, l.5; *Epistola*, 41, ed. Whitelock *et al.*, 228-229.

116 Alcuin, *Epistola* 114, ed. Dümmler, 168, l.5-171 from *qui te elegit sibi sacerdotem*.

117 *Epistola*, 41, ed. Whitelock *et al.*, 229.

was probably Æthelweard of the western provinces.¹¹⁸ The letter also shows an interest in encouraging secular engagement with Christian values. Instead of reminding Wulfsgie of his duties towards widows and orphans in the manner of Alcuin's advice, Wulfsgie was to ensure that secular rulers showed mercy.¹¹⁹ This echoed Ælfweard's letter to Sigeric. If this letter was indeed written by Sigeric it suggests that his tactic was to encourage bishops to become involved in the struggle against the threat posed to the church by powerful men, and that he used the same methods of exhortation as Abbot Ælfweard had used.

A fourth letter, *Epistola Johannis Papae ad Elfricum Ducem*, written by Pope John XV (985-996) demanded that Ealdorman Ælfric should cease from *avida cupiditate* in seizing the lands of Glastonbury Abbey, threatening him with excommunication and eternal hell-fire.¹²⁰ The letter was addressed either to Ælfric *cild*, who served as an ealdorman between 983 and his exile in 985, or Ealdorman Ælfric of Hampshire, leaving a more open dating of c. 983-996.¹²¹ Ælfric *cild* had been behind the appointment as abbot of Abingdon of his brother Eadwine, who ran down the abbey's estates,¹²² while Ælfric of Hampshire was the third English negotiator for *II Æthelred*.¹²³ Given that the letter notes that Ælfric's proximity to the abbey (*cum propinquus habitando effectus es*) provided him with the opportunity to despoil Glastonbury,¹²⁴ England's wealthiest abbey, it seems more likely that it was Ælfric *cild*, who perhaps received estates and favours from his brother in advance of these losses. If so, this highlights the extent of the challenge faced by the church in the mid-980s, as it grappled with the consequences of the seizure of great monastic houses by aristocratic families, who also exercised control over public power in the localities.

The threats that Ealdormen Æthelweard and Ælfric posed to Sherborne and Glastonbury respectively are but two examples of a series of attacks on ecclesiastical lands and properties by powerful officials during the late 980s, demonstrating that the threat identified in Ælfweard's letter was real. Research on the anti-ecclesiastical politics has shown firstly, that King Æthelred II was personally involved in some of the devastations, and secondly, that conflicts between court factions were a major cause of the attacks, following the death of Bishop Æthelwold of Winchester (963-984), who had guided Æthelred II during his minority.¹²⁵ The attacks could not be resolved by simple measures, or by letting the storm run its course. The advent of small Viking raids during the 980s, comprising attacks on Cheshire and Thanet in 980, Padstow in 981, Portland in 982 and Watchet in 988,¹²⁶ perhaps added a further dimension to the problem from the church's perspective. Following the example of

118 Keynes, Wulfsgie, 63.

119 *Epistola*, 41, ed. Whitelock *et al.*, 229. For a discussion of clemency in practice, see below at nn. 244-247.

120 *Epistola Johannis Papae ad Elfricum Ducem*, ed. Stubbs, 396-397 (BL Cotton Tiberius A. XV, fol. 169v-170r).

121 Keynes, *Diplomas*, 182 n. 104.

122 Roach, Æthelred, 101-102.

123 *II Æthelred*, c. 1, ed. Liebermann, 220; trans. Whitelock, 437-438; for a discussion of Ælfric's role, see Lavelle, Law, death and peacemaking, 128-129.

124 *Epistola Johannis Papae ad Elfricum Ducem*, ed. Stubbs, 396.

125 Abels, Æthelred, 29-31; Keynes, *Diplomas*, 176-186; Lavelle, Æthelred, 50-51; Roach, Æthelred, 100-111; Williams, Æthelred, 26-29.

126 Abels, Æthelred, 32-33; Keynes, *Historical Context*, 85-86; Lavelle, Æthelred, 53-54; Roach, Æthelred, 116; Williams, Æthelred, 43.

King Alfred, a claim could be made to transfer lands held by the church which the Crown exercised some rights over to the secular aristocracy to strengthen their resources in fighting against the Vikings.¹²⁷ Looked at from this perspective, it was in the interests of the English Church to bring an end to these Viking raids before they increased in size in order to argue against the case for maintaining the status quo on the secularization of church lands and perhaps even increasing the programme.

In the late 980s Archbishop Dunstan had used prophecies of doom, criticisms of the king and cursing to defend church property.¹²⁸ Catherine Cubitt has shown that these accounts, first recorded in *Vita Dunstani* and written in the first decade of the eleventh century, were developed by later writers, who wished to emphasise Dunstan's credentials as a saint, behind which there was an authentic tradition.¹²⁹ But these curses did not put a stop to the anti-ecclesiastical policies during the late 980s, and as Cubitt has shown, the solution was worked out via the politics of royal remorse from c. 993.¹³⁰ We can assess Sigeric's contribution to the resolution of the conflict not only through letters but also via other ecclesiastical history sources. While serving as archbishop, Sigeric may have had a real interest in preaching. Ælfric the homilist (fl. c. 950-1010) asked Sigeric to make suggestions and improvements to his two volumes of 40 *Catholic Homilies*, which benefited the clergy in liturgy and prayer and encouraged the laity to engage with devotion with the precepts of the church.¹³¹ The request shows Sigeric's connections with different areas of church life, which had the scope to bring anti-ecclesiastical policies into relief and thereby to argue for change.

Another way to apply these tactics was through involvement in local politics, and given the brevity of Sigeric's career as archbishop, we are well-served, with two case studies, one arising in Berkshire and the other in Essex. A charter c. 990x992 recorded how a widow, Wynflæd, sought to conduct a property exchange, but her rights were challenged and the case was taken to the Berkshire shire court.¹³² Rather than enlisting a local network of secular power, Wynflæd enlisted the support of Archbishop Sigeric and the diocesan bishop, Ordbrigt, enabling her to call witnesses, including Queen dowager Ælfthryth, with the case being resolved in Wynflæd's favour.¹³³ The case shows the willingness of Sigeric to become involved in local politics beyond the hinterland of Canterbury, and we can view this as evidence of his strengthening power as a political leader.

The will of Æthelric recorded the gift of Bocking in Essex to Canterbury, together with other grants by him to the church.¹³⁴ The absence of any gifts to lay beneficiaries (with the caveat of a life interest to his wife Leofwynn) sets this will apart from other East Anglian wills,¹³⁵ and its terms may have been shaped by the events described in a charter drawn up in 995x999.¹³⁶ The charter recorded that many years before, Æthelric »was in the plot that

127 Fleming, *Monastic lands*, 250-5, 261-4; cf. Dumville, *Ecclesiastical lands*.

128 Cubitt, *Archbishop Dunstan*, 149-156.

129 Cubitt, *Archbishop Dunstan*, 149-156.

130 Cubitt, *Politics of remorse*; for further comment, see Roach, *Æthelred*, 137-146.

131 Brooks and Kelly, *Charters of Canterbury*, 213.

132 Brooks and Kelly, *Charters of Canterbury*, 990.

133 Brooks and Kelly, *Charters of Canterbury*, 988.

134 S 1501.

135 S 1483, 1486, 1494, 1527, 1538.

136 S 939; Brooks and Kelly, *Charters of Canterbury*, 1002.

Sweyn was to be received in Essex when he first came thither with a fleet«, probably referring to the otherwise unrecorded leadership of Sweyn Forkbeard, king of Denmark (c. 987-1014) in the 991 raid, or to his role in the 994 raid.¹³⁷ The charter recorded that »the King, before many witnesses made it known to Archbishop Sigeric, who was his advocate for the sake of the estate of Bocking«. ¹³⁸ Sigeric was willing to take up the defence of Æthelric, but after the deaths of Æthelric and Sigeric, the case reopened, and Archbishop Ælfric took over the role of advocate of the widow Leofwynn. By 995x999 Æthelred II had little sympathy with the way in which the case had been handled, but in 991 (or 994) Sigeric had taken the risk of being willing to stand up to royal power to defend Æthelric. Such an approach showed that the advice from Abbot Ælfweard had stuck and how Sigeric was willing to become involved in local politics for the benefit of the church. To understand how he came to occupy such a position, we need to turn our attention to his journey to Rome and connections between the English and Norman courts in the year before Maldon.

Lists of Authority and International Diplomacy in 990

Archbishop Sigeric's journey to Rome in 990 to receive his pallium led to the compilation of a source of major importance to ecclesiastical historians, namely a two-part list of 23 churches which he visited in Rome (*Adventus Archiepiscopi nostri Sigerici ad Romam*) and 54 places that he stopped at on the return journey to Canterbury (*Submansiones de Roma usque ad mare*). It was copied into BL Cotton Tiberius B.V Part I (more famous for Ælfric's *De Temporibus Anni* and the »Wonders of the East«).¹³⁹ The two sublists are important because they provide a catalogue of churches in Rome in 990,¹⁴⁰ and the itinerary of the *Via Francigena*.¹⁴¹ But the visit to Rome may also have been used to achieve political objectives, notably in dealing with the linked problem of anti-ecclesiastical policies emanating from the royal court and bringing to an end a new phase of Viking raids.

In Rome Sigeric may have met or heard about Leo, bishop of Trevi, as he visited the church of the Holy Apostles of Trevi. Leo was appointed as papal legate in late 990 to broker peace between Duke Richard I of Normandy (942-996) and King Æthelred II of England, but it is unclear whether Pope John XV or Archbishop Sigeric was the instigator of this strategy.¹⁴² Nonetheless, the benefits to both parties may have been quickly apparent. Pope John XV would be able to strengthen his hold over the papacy by gaining a reputation as an international peacemaker, while Sigeric could hope that he would gain credit for removing Viking access to the Normandy ports. The events are set out in the fifth letter, namely a universal papal letter, in which Æthelred II is addressed as king of Wessex (*rex Saxonum Occidentali-um*), rather than as king of the English.¹⁴³ This may have been used to create less of a sharp

137 S 939; Brooks and Kelly, *Charters of Canterbury*, 1004. For views in favour of 991, see Brooks and Kelly, *Charters of Canterbury*, 1006; Howard, *Swein Forkbeard's Invasions*, 37; Lavelle, Æthelred, 70; Roach, Æthelred, 121-122; Scragg, *Return of the Vikings*, 68-69.

138 Brooks and Kelly, *Charters of Canterbury*, 1005.

139 *Adventus Archiepiscopi nostri Sigerici ad Romam*, ed. Stubbs, 391-392; *Istae sunt submansiones de Roma usque ad mare*, ed. Stubbs, 392-395.

140 Ortenburg, Archbishop Sigeric's journey; *eadem*, *English Church*, 144-146, 176-177, 235-236.

141 Birch, *Pilgrimage to Rome*, 41-43; Champ, *English Pilgrimage*, 28-30.

142 Tinti, England and the papacy, 92.

143 *Epistola Johannis papae XVmi*, ed. Stubbs, 397-398 (BL Cotton Tiberius A. XV, fol. 172v-173r). On the significance of changes of titles from kings of Wessex to England and rulers of Britain, see Molyneux, *Formation of the English Kingdom*, 206-12. For texts of coronation ordines, see Pratt, *English Coronation Ordines*.

distinction between King Æthelred II and Duke Richard I, or to remind Æthelred II that the status of his royal title was partly linked to papal recognition. John XV recorded that by Christmas Day 990 the papal legate had reached the court of King Æthelred II, who summoned a royal council, with his secular advisers and wiser counsellors from the two orders (i.e. the monastic and secular clergy) to hear the pope's letter.¹⁴⁴ A mission, headed by Bishop Æthelsige of Ramsbury and two secular courtiers, was despatched to the court of Duke Richard I, and by March 991 a peace treaty had been agreed in which both parties agreed not to give aid to each other's enemies.¹⁴⁵ Following this diplomatic breakthrough, the English court may have thought that it was in a powerful position to bring an end to the Viking raids, and this peacemaking process probably strengthened the political power of Archbishop Sigeric. For a reflection of these developments, we need to turn to lists of office-holders in BL Cotton Tiberius B.V Part 1.

The list of Sigeric's visits to churches in Rome and his itinerary is one of 39 lists between folios 19r and 23v, the remainder of which are lists of secular and ecclesiastical office-holders. The lists were based upon an original source written at Canterbury or Glastonbury by a scribe close to Archbishop Sigeric, and the epithet *amicus Dei* (friend of God) was attached to Sigeric's name.¹⁴⁶ The 39 lists begin with the bishops of Rome until 884/5, the 72 disciples of Christ and the Roman emperors from Augustus to Otto III (980-1002).¹⁴⁷ By then listing the bishops of Jerusalem, Alexandria and Antioch, the scribe indicated the authority of the bishop of Rome over the Eastern Christian churches,¹⁴⁸ and by then copying the list of the archbishops of Canterbury, he signalled similar transmission of authority to Canterbury.¹⁴⁹ The primacy of Canterbury over the English Church was made clear by the geographical organisation of the lists of English bishoprics.¹⁵⁰ For example, the list for the bishops of the South Saxons (Selsey) was ahead of Worcester and York, even though Selsey had only been founded in the early eighth century, in contrast to the unbroken traditions of religious life at Worcester and York from the seventh century.¹⁵¹ The ordering of the lists demonstrated that ecclesiastical authority was transmitted from Canterbury southwards, westwards and northwards. By placing the list of the kings of Wessex and England next, at folio 22r, in the same opening as the bishops of England, the scribe sought the same effect as at opening 20v-21r as at 19v-20r, where lists of popes, disciples of Christ and the Roman emperors appeared in one opening.¹⁵² Only on the following opening does the reader come to the genealogies of other Anglo-Saxon kingdoms, commencing with the Northumbrian kings, followed by the next opening with lists of abbots of Glastonbury, tenth-century popes from John X (914-928) to

144 *Epistola Johannis papae XVmi*, ed. Stubbs, 397-398 (BL Cotton Tiberius A. XV, fol. 172v-173r): *moxque ex parte nostra salutato obtulit litteras, quas ille miseramus; qui accersitis cunctis sui regni fidelibus utriusque ordinis sapientioribus.*

145 Williams, Æthelred, 46, 48; Lebeq and Gautier, *Routeways*, 27.

146 Dumville, *Catalogue texts*, 55-56; Howe, *Writing the Map*, 157; Ker, *Catalogue*, 255-256.

147 *Eleventh Century Miscellany*, ed. McGurk *et al.*, 66-67 (plates section: BL Cotton Tiberius B. V Part 1, fols. 19v-20r).

148 *Eleventh Century Miscellany*, ed. McGurk *et al.*, 68-69 (plates section: BL Cotton Tiberius B. V Part 1, fols. 20v-21r).

149 *Eleventh Century Miscellany*, ed. McGurk *et al.*, 69 (plates section: BL Cotton Tiberius B. V Part 1, fol. 21r).

150 *Eleventh Century Miscellany*, ed. McGurk *et al.*, 69-71 (plates section: BL Cotton Tiberius B. V Part 1, fols. 21r-22r).

151 Lapidge *et al.*, *Blackwell Encyclopaedia*, 415, 488-490, 497-499.

152 *Eleventh Century Miscellany*, ed. McGurk *et al.*, 66-67, 70-71 (plates section: BL Cotton Tiberius B. V Part 1, fols. 19v-20r, 21v-22r).

John XV and Sigeric's two-part list as a result of his journey to Rome.¹⁵³ The organisation of the lists served to make two political points. Firstly, Sigeric's journey had served to strengthen connections with papal power in the contemporary era, and, secondly, authority from Canterbury and Rome strengthened the case for King Æthelred II in claiming lordship over the whole of Britain. This provided a powerful message and could have started to persuade the king to abandon anti-ecclesiastical policies and to work with Archbishop Sigeric in framing domestic and international policies.

Careers can be shaped by responding to the leading figures from the previous generation. Sigeric followed the example of Archbishop Dunstan in seeking to reverse anti-ecclesiastical policies, but achieved this end through different tactics. Exhortation letters have been neglected as sources for understanding the context of Viking raids and peacemaking at the turn of the 990s, partly perhaps because of the richness of the other historical sources and partly because of their religious content. But it is clear there was an active process of reception and modification. Abbot Ælfweard encouraged Sigeric not to flinch in the struggle to reverse attacks against the church, and the letter to Wulfsige shows how other bishops were exhorted to join in this programme. Sigeric found ways both to stand up to secular power and to involve *saeculares principes* in these initiatives, whether through encouraging the laity to engage with the church via sermons or through direct involvement in local politics, and hence to turn the tide of anti-ecclesiastical policies.

Conclusion

Two decades have passed since Lieberman set out his model on parallels in state formation and their elites' control of accoutrements of power for sedentary states in western Europe and South-East Asia, in contrast to developments in the steppe and other landscapes less suited to supporting agricultural economies.¹⁵⁴ In this model, the diffusion of ideas and practices is less significant than the emphasis upon the intersection between different ecologies and environments with the threats posed by »barbarians«, nomads and other non-sedentary states and societies.¹⁵⁵ Scott's work has served to extend this model both chronologically and geographically, and given greater emphasis to the role of »barbarians« and nomadic groups in the formation of sedentary states.¹⁵⁶ Our approach uses the work of Lieberman and Scott as context, but in addition to Conrad's first subtype of comparative global history with its emphasis on themes, in this case on the development of charter and sedentary states and their relationships with non-agrarian states and peoples, this article embeds Conrad's third subtype, concerned with how global transformations provide a context for local/national challenges with distinct pasts and outcomes.¹⁵⁷ As a result, in our approach there is more

153 *Eleventh Century Miscellany*, ed. McGurk *et al.*, 57, 72-75 (plates section: BL Cotton Tiberius B. V Part 1, fols. 22v-24r).

154 Lieberman, *Strange Parallels* Vols. 1-2.

155 For discussion, see above, nn. 4-14.

156 Scott, *Against the Grain*; discussion, see above, nn. 3-13.

157 Conrad, *What is Global History?*, 3-11. On differences in the outcomes from a fiscal-state perspective above, see n. 6. On distinctions between »vertical« treaties, emphasising the superiority of the Chinese empire, and »horizontal« treaties, where sovereignty was shared (as with the Northern Song and Liao empires), see Wang, *Harmony and War*, 57; Wright, *From War to Diplomatic Parity*, 100.

concern with national and regional historiographical debates and the weighing up of primary sources than is needed for the first subtype on its own. Our comparison points to common patterns in peacemaking at the turn of the eleventh century, and our discussion of the Chanyuan Covenant and its immediate aftermath leads to three observations:

1. Chief councillor Kou Zhun played a decisive role in shaping new strategies in dealing with the Liao, but once it became clear that the strategy had not been successful, he lost favour.
2. A more pragmatic approach gave the Liao the upper hand in the peace negotiations, and paved the way for a significant loss of status for the Northern Song dynasty through tribute payments.
3. Religiously sanctioned letters are important sources for political history and the making of peace agreements, as well as for the study of sacred rituals and religion.

With these in mind, our focus in analysing peacemaking for England has been upon three themes, namely the stance taken by Archbishop Sigeric, whose advice led to the use of tribute payments in making peace with the Vikings;¹⁵⁸ reviewing contemporary changes in the evaluation of the peace agreement between the A version of the *Old English Royal Annals* and that two decades later in the C (D and E) versions; and using religious letters and ecclesiastical lists of authority as sources for political history. Discussion of these sources is used for looking at parallels between the peacemaking of the Northern Song with the Liao Empire and of the English with the Vikings,¹⁵⁹ as distinct from the longer-term consequences of these agreements upon the organisation of state structures.

Perceptions of the Kitans and Vikings as »barbarians« probably played into Northern Song and English senses of insecurity, in contrast to the actual goals of the former, which on the Kitan Liao side can be shown to have been more limited than wishing to destroy the Northern Song. Substantial raids by the Vikings in 991 and Kitan Liao in 1004, involving the mobilisation of 93 ships and around 200,000 cavalry, respectively, were enough to convince English and Northern Song negotiators that peace with considerable concessions was the best option available. But to put the emphasis upon the specifics of the raids at the expense of the build-up misses a key point. In each case large raids came after major advances in the political and military positions of the supposed adversary, i.e. the Northern Song or the English. The strengthening of defences in 1000, perhaps as a prelude to an invasion of the Sixteen Prefectures, and the 990/991 peace agreement between England and Normandy probably had the effect of narrowing the political options of the Liao Empire and the Vikings. The last time a Chinese state south of the Liao Empire had strengthened its waterway defences, there had been a loss of prefectures and passes in Guannan, and the substantially greater power of the Northern Song dynasty by 1000, as compared to the Later Zhou in 959, could have compounded fear that the Sixteen Prefectures were about to be lost, unless the Liao Empire

158 The events between 992 and Sigeric's death in 994 are outside the scope of this article, notably his role in *II Æthelred*, S 880 (994), in which privileges were granted to the bishopric of Cornwall, S 882 (994) dealing with the payment of tribute to Vikings, and the linking of his death to a comet (*ASC*, trans. Whitelock *et al.*, 84).

159 For Lieberman's assessment of Song state and military/political relationships with steppe peoples, see *idem*, *Strange Parallels* 2, 500; for comment on state organisation, see *ibid.*, 513.

responded forcefully and quickly. Likewise, loss of access to Normandy for the Vikings would have meant that they would have lost connections with the only Viking polity which had established itself in the axis between England and continental Europe. In this reading, the strategies adopted by the English and Northern Song had the undesired effect of forcing the hands of their opponents to launch major raids in 991 and 1004 respectively, and following the victories of the latter, peace using tribute became the political solution.

Peacemaking is often viewed through the lens of the outcomes. Decisions to pay tribute in 991 and 1005 came to be viewed as errors from the perspective of charter/sedentary states. For the Northern Song dynasty it brought with it a burden of political inferiority (independent of its achievements in culture, society and economy), and put pressure on Northern Song rulers to undertake administrative reforms.¹⁶⁰ In England the political cost was also high. The kings of Wessex between the late ninth and the mid-tenth century changed their status from rulers of one region to become the kings of the English, but the tribute strategy came to be viewed as the key factor in explaining the ending of this dynasty's power and prestige, first with its exile in 1016 and then, 50 years later, with the Norman conquest. Eadmer set out the problem posed by the Viking raids during the reign of Æthelred II from an outcomes perspective succinctly:

The king instead of meeting them in arms panic-stricken shamelessly offered them money sueing for peace; where-upon they accepted the price and retired to their homes, only to return in still greater numbers and still more ruthless, from renewed invasion to receive increased rewards.¹⁶¹

In this context, it seems reasonable to place the blame upon the ineptitude and laziness of the ruler, as indeed Eadmer did and others have since done, or to take a different tack and suggest that the problem lay with the advisers and negotiators, who were not up to the task of providing the ruler with sound advice. But the framework in which rulers and negotiators worked was not a blank canvas, and another way to address these problems is to look at the limited nature of the political options that were available. To cede territory in the form of a legal agreement, along the lines of the *Alfred-Guthrum* treaty,¹⁶² or to set up the Vikings in a vassal state, along the lines of the foundation of Normandy, were less palatable options.¹⁶³ This leaves us with two alternatives – either rulers and advisers had a precocious understanding of how tribute payments could be accommodated economically, or we come back to the question of what led to the decision to agree to peace so soon.

At this point, we can see if it is possible to take a counterfactual position and suggest that calculations related to trade may have meant that peace linked to tribute was viewed as a low-cost solution. Arguments that peace would support trade and profits, hence paying for the tribute, could have been made at both courts. The evidence does not record deliberations at the witan, but Northern Song evidence provides some insights into these debates. When Kou Zhun wished to continue with the conflict, Song Zhenzong replied: »Several tens of

160 For these themes, see above, nn. 6, 23.

161 *Eadmer's History of Recent Events*, ed. Bosanquet, 4.

162 Whitelock, ed., *EHD*, 416-417.

163 For ninth-century criticisms of the creation of vassalage relationships with Viking leaders, see Nelson (ed.), *Annals of St-Bertin*, 51.

years later, someone will emerge capable of stemming their attacks. I cannot stand the sight of our people's suffering, so just accept their peace overtures.«¹⁶⁴ This view may have been informed by fear of the forced movement of Han Chinese populations. Patricia Ebrey argues that between the tenth and the thirteenth centuries, the Song dynasties were exceptional in not seeking to resettle large groups of captives as a state policy after victories in war, and in Song society disconnection from the graves and lands of ancestors was regarded as one of the harshest losses to be suffered.¹⁶⁵ This suggests that arguments on the benefits of trade were not remembered as being of pivotal importance in bringing the Northern Song to the negotiating table, and it seems unlikely that it played much of a role in England. Instead, a parallel process is much easier to envisage, in which advisers such as Archbishop Sigeric, and perhaps King Æthelred himself were keen to ensure that the path of violence which would follow from large Viking raids did not occur. If then, fear of the destruction, rather than economic calculations of the low overall costs, was of greater importance, this takes us back to the advice given and in particular to the role played in an English context by Archbishop Sigeric of Canterbury. In a memoir of the Anglo-Irish agreement of 1985, David Goodall reflected upon »the universal tendency of elected governments to view international negotiations through the prism of their own domestic political preoccupations«. ¹⁶⁶ This perspective can be used to recognise the issues at stake in the events leading up to and immediately after the English defeat at the Battle of Maldon. For the archbishops of Canterbury, pressure upon the church from secular families, fused with the divisions within the royal court, was the pressing domestic political issue.

Despite Sigeric's close connections with Archbishop Dunstan, he followed different tactics in dealing with the anti-ecclesiastical policies of the late 980s. Sigeric seems to have acted upon the agenda set out in part in contemporary letters in the early 990s, whereby the threat to the English church from the royal court had to be confronted through a series of initiatives in domestic politics: bishops were encouraged to become more involved in local politics in standing up to secular power; monastic reform at Canterbury was placed on hold; and the laity were encouraged to engage with the values in homilies. The copying of lists of authority into BL Cotton Tiberius B. V Part 1 provides one indication of this political programme, in which it was shown how religious authority could be used to bolster the status of King Æthelred as ruler of the English. Another is provided by the order in which three letters were copied into BL Cotton Tiberius A. XV. The letter setting out Ealdorman Ælfric's despoilation of Glastonbury was followed by Abbot Ælfweard's letter of exhortation to Sigeric, and Pope John XV's letter setting out the peace agreement between England and Normandy.¹⁶⁷ The first letter in this sequence identified the nature of the threat faced by the English church from attacks organised by an ealdorman; the second set out the political programme and frame of mind needed to overcome this challenge through adaption of Alcuin's letter to Archbishop Æthelheard; and the third recorded the international political settlement which should have

164 Fang, *Power Structures*, 136 (citation and trans. of Li, *Xu Zishi Tongjian Changbian*).

165 Ebrey, State-forced relocations in China.

166 Goodall, Making of the Anglo-Irish agreement, 30.

167 BL Cotton Tiberius A. XV, fol. 169v-173r.

brought an end to the small Viking raids. But the strategy can be viewed as a mistake, in a comparative framework, because by forging an alliance between England and Normandy, the Vikings were potentially cut off from moving between England and continental Europe, in the same way as the strengthening of the waterways along the Song-Liao border represented a significant threat to the Kitans. Nonetheless Sigeric's actions on the international stage and his handling of domestic politics meant, firstly, that he was well-placed to take the lead in the negotiations after the English defeat, and, secondly, that he had a strong incentive to ensure that the strategy of overturning the seizure of church properties and rights was protected, perhaps explaining the epithet of »friend of God«. ¹⁶⁸

The advice provided by Kou Zhun and Sigeric, archbishop of Canterbury, shaped political strategies designed to deal with the Liao Empire and the Vikings respectively at the turn of the eleventh century. The ways in which these common patterns played out suggests that the models of Lieberman and Scott can be applied to the early Middle Ages. Global comparison suggests that the provocative policies adopted by the English and the Northern Song, compounded by senses of insecurity and tactical disadvantages, played a decisive role in the factors which led to raids in 991 and 1004 and the nature of the peacemaking after defeat.

In this comparative framework, we are not concerned with whether King Æthelred II and Song Zhenzong were ill-prepared for rulership on account of their accession at a young age, and/or whether they became rulers of good or poor judgment. Our focus is upon the events and political processes before the military defeats which shaped political decision making after Maldon and Chanyuan, and in particular with the political programme of Sigeric and his advisers to push back against the seizure of church lands through letters, domestic politics and diplomatic initiatives. Tribute had a clear rationale. It not only protected the church from further Viking attacks and a resumption of anti-ecclesiastical politics within the English kingdom, but it may have been used to argue against the view that Viking victories were momentous messages from God setting out judgments on current political policies. By the end of the reign of Æthelred II, however, evaluation of the peace-agreement of 991 had changed, in much the same way as the Chanyuan Covenant soon »began its downward slide« from which it arguably never recovered. ¹⁶⁹ The retrospective clarity provided by sources shaped by Cnut's seizure of the English kingdom provides fascinating insights into a contemporary re-evaluation of the past, but despite these criticisms and subsequent commentaries, we can reject the view that tribute after defeat was »the least desirable option«. ¹⁷⁰

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¹⁶⁸ Above, n. 146.

¹⁶⁹ Lorge, *Reunification of China*, 30.

¹⁷⁰ Tao, *Two Sons of Heaven*, 16 commenting on tribute payment after the Chanyuan covenant.

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Abbreviations

ASC: *Anglo-Saxon Chronicle*

BL: British Library

EHD: *English Historical Documents*

MGH: *Monumenta Germaniae Historica*

S: Electronic Sawyer: Accessed on 6 September 2021 esawyer.lib.cam.ac.uk/about/index.html.

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Sleepy Animals: Barhebraeus (1226-1286 CE) on Sleeping and Dreaming among Animals

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This paper investigates which animals sleep and wake in general and which, in addition, are also able to dream, according to Barhebraeus (Bar 'Ebroyo, Arabic: Ibn al-'Ibrī, 1226-1286 CE), the famous Syrian Orthodox polymath and theologian. Attention is also given to the authors who are his primary sources, namely, Avicenna and Aristotle. Parallel examples include Albert the Great as another author who is dependent on some of the same sources and Pliny the Elder as a Latin author without Arabic influences. Roughly, Avicenna and Barhebraeus can be understood as allowing for or stating the observation of far more dreaming animals than Aristotle himself did explicitly, while Albert allows for even fewer. The question of why on this matter Barhebraeus relied primarily on these two authors as his sources, though not on other post-Avicennan Arabic authors as he did in many of his other philosophical and even theological works, will also be briefly discussed. This select reliance could be connected to a historical change in the topics dealt with in the scientific curriculum, with the lack of coverage of zoological topics by Barhebraeus's favorite source authors being one of the reasons that led him to rely on the older texts by Avicenna and Aristotle. However, this cannot be generalized as a rule, as there are at least two contrary cases in Barhebraeus's works on physiognomics where he has had recourse to an older text rather than a treatise by one of his otherwise preferred source authors.

Keywords: Barhebraeus/Bar Hebraeus (Bar 'Ebroyo, Arabic: Ibn al-'Ibrī, 1226-1286 CE), Aristotelian philosophy, Syriac philosophical works, Arabic philosophical works, Aristotle, Avicenna, Albert the Great, animals, sleeping, waking, dreaming, viviparous quadrupeds, mammals, physiognomics

Introduction

Avicenna (Ibn Sīnā, 980-1037 CE), Barhebraeus (Bar 'Ebroyo, Arabic: Ibn al-'Ibrī, 1226-1286 CE), and Latin authors such as Pliny the Elder (d. 79 CE) and Albert the Great (d. 1280 CE) depend heavily upon Aristotle for their treatment of sleeping, waking, and dreaming among animals, copying passages from him verbatim, regardless of whether and in which translation the text was accessed. In the following, the stance of Barhebraeus will be briefly recapitulated concerning the species or classes of animals observed to sleep, wake, and dream,

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though not the rich tradition of Arabic oneirocritic literature,¹ the assumed physiological or psychological processes involved in producing or having dreams,² veridical dreams and the role of universals in them,³ trying to define sleep and waking or dreaming,⁴ or philosophical challenges by a dreamer's statements about dreaming.⁵ Before looking into the reason for the unexpected absence of post-classical or contemporary Arabic sources from Barhebraeus's works on this topic, his identifiable sources will be investigated, a prerequisite for assessing the changes he himself introduced.

Aristotle

According to Aristotle's *Historia Animalium* (*History of Animals*), 4.10, all footed⁶ and blooded animals sleep and wake, and those with eyelids additionally close them while sleeping. Man and viviparous quadrupeds are also able to dream, which he illustrates with horses, dogs, oxen, sheep, and goats. A testimony for the ability of dogs to dream is seen in their barking during sleep.⁷ Oviparous (egg-laying) animals as well as fish, cephalopods (marine molluscs), and crustacea (hard-shelled animals) are said to spend little time asleep (βραχύσπννα),⁸ while the ability to dream is unclear for oviparous animals and water animals. Aristotle then elaborates on the sleep of fish. Humans are said to dream most among all animals, with an onset of dreaming around four or five years of age. While some humans have an onset of dreaming only later in life, some never dream at all.

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- 1 Introductions into this vast literature are, for example, given by Fahd, *La divination arabe*, 247-367; Lamoreaux, *Early Muslim Tradition*; and Lory, *Le rêve*. Besides the influential Arabic translation of Artemidorus's Greek text (*Kitāb Ta'bir al-ru'yā*), Ibn Sirin's (d. 728 CE) *Tafsīr al-aḥlām* (*Interpretation of Dreams*) in particular gained some fame (though see Lamoreaux, *Early Muslim Tradition*, 19-25, on some doubts on the authenticity of extant texts ascribed to him).
 - 2 For example, an overview is given by Gallop, *Aristotle: On Sleep and Dreams*, 6-32; see also Hansberger, Representation of which reality?, for imagined objects in dreaming according to the Arabic *Parva Naturalia* tradition.
 - 3 See, for example, Struck, *Divination*, 91-170, for the case of Aristotle; Hansberger, Averroes on divinatory dreaming; and *eadem*, How Aristotle came to believe.
 - 4 Aristotle defines sleep as not being conscious of some stimulus in his *On Sleep in Parva Naturalia*, trans. Hett, 321, on which see also van der Eijk, *Medicine and Philosophy*, 176-177; bodily characteristics are discussed in Moorcroft and Clothier, An overview of the body.
 - 5 Challenges posed by being aware of dreaming during a dream, that is, lucid dreaming, have been discussed by Malcolm, *Dreaming*; see for an overview Green and McCreery, *Lucid Dreaming*, and also Hobson, *Dreaming*, 126-127, and, for bodily characteristics, Moffitt and Hoffmann, On dream psychophysiology, 151-154. A similarity is also found in Papachristou, Aristotle's theory of »sleep and dreams«, 16, regarding Sophonias's elaboration of Aristotle's distinction between dream and phantasm.
 - 6 Ὅσα πεζᾶ, Aristotle, *Historia Animalium*, ed. Balme, 536b24-25. (Bekker numbers are used for citations of Aristotle, here and throughout.) Footed and walking animals are assumed as equivalent in this context.
 - 7 The extant Arabic translation, ed. Filius, 212, reads: »All blooded [and] walking animals ... This is clear due to sensation. All animals having eyelids close them during sleep. This is obvious. We get to (the point) that some animals dream in their sleep, not only man, but the horse, dog, ox, goat, and all [animals] that are related to those animals that have four legs and give birth to animals like them. This is obvious by the barking of dogs when they have dreams.«
 - 8 Aristotle, *Historia Animalium*, trans. Peck, 2.83-89; *Arabic Version*, ed. Filius, 212: »Animals that lay eggs sleep lightly (*da'ifan*). Marine animals, such as fish and those with a soft shell, have a light (*yasir*) sleep. All those [animals] that we have described as sleeping do so in an obvious manner.« *Yasir* is a bit ambiguous and can also, in the sense of »little«, denote a sleep of a short duration.

However, among his list of dreaming animals, the case of humans is the most obvious, as other viviparous quadrupeds are said to seem⁹ to dream: as already noted, Aristotle argues that dogs' barking during their sleep manifests dream activity.¹⁰ Similarly, sleeping and waking as found with footed and blooded animals is argued for from observation,¹¹ which is usual for the *Historia*. While Aristotle voices more uncertainty about oviparous animals' ability to dream than for viviparous quadrupeds, he asserts that humans, nonetheless, dream most, with the exception of children. However, oviparous animals as well as insects and marine animals¹² have, according to Aristotle, at least some sort of sleeping and waking with a sleep of a short duration.

Additionally, one might understand from at least two further statements in the *Parva Naturalia* corpus that Aristotle allowed there for more animals dreaming than he did in the *Historia*. In *De Insomniis* (*On Dreams*, 461a26), he speaks of dreaming in blooded animals generally, where the blood is responsible for the persistence of sense images, which leads, in turn, to actually undergoing external perception.¹³

In *De Divinatione per Somnum* (*On Prophecy in Sleep*, 463b12), he states that »some of the other animals« do dream,¹⁴ and, therefore, dreams cannot be sent by God, even though they have a divine origin.¹⁵

However, assuming the *Historia* passage to be more elaborate and therefore to be upheld in cases of deviations between the texts, the *Parva Naturalia* parts could be understood not as allowing for animals besides viviparous quadrupeds to dream, including, perhaps, oviparous animals, but, rather, as being formulated loosely.

Nonetheless, sleep in general also recurs briefly as a topic within the biological works in the *De Generatione Animalium* (*Generation of Animals*, 5.1 778b), and this passage could be understood as granting all animals at least the ability to sleep. For the young of all animals (πάντων), especially those with imperfect offspring (τῶν ἀτελῶν),¹⁶ are prone to sleep after having acquired sensation.¹⁷

9 Φαίνονται, Aristotle, *Historia Animalium*, ed. Balme, 536b27.

10 Windt, *Dreaming*, 45, has questioned whether the barking of a dog during sleep contradicts Aristotle's own definition of sleep. (Gallop's translation as »whining«, Aristotle, *De Somno et Vigilia in Parva Naturalia*, trans. Gallop, 175, would not make a difference in this regard. According to Liddell et al., *Greek-English Lexicon*, however, the Greek ὑλαγμός is usually »barking«.) Looking at classical literature on this topic, Seafeld, *Literature and Curiosity of Dreams*, 2.36-37, cites Macnish as also mentioning the neighing of a horse during its sleeping. Macnish assumes dreaming actually to be found with nearly all animals, *Philosophy of Sleep*, 45-46. Seafeld, *Literature and Curiosity of Dreams*, 37-38, further cites Dendy, *Philosophy of Mystery*, 274, as assuming that birds sometimes sing when dreaming, thus adding to the Aristotelian list.

11 Φανερόν ... κατά τὴν αἴσθησιν, Aristotle, *Historia Animalium*, ed. Balme, 536b25-26.

12 These animals seem to include fishes, cephalopods, and crustacea here, though possibly not cetacea, as some are discussed later on in the text.

13 Aristotle, *Parva Naturalia*, trans. Hett, 363-365.

14 Τῶν ἄλλων ζῴων ... τινά, which Hett translates in this context as »lower animals«, Aristotle, *Parva Naturalia*, trans. Hett, 379. The contrast, however, seems to be with humans generally. In that case, Aristotle would intend that some non-human animals do also dream.

15 Aristotle, *Parva Naturalia*, trans. Hett, 379.

16 That is, further nascence is required; cf. *De Generatione Animalium*, trans. Peck, ii.1; Peck's translation is based on his own conjecture, 488 n. 1.

17 Aristotle, *De Generatione Animalium*, trans. Peck, 489.

Again, one could also assume the more elaborate discussion of the *Historia* to be decisive for animals' ability to sleep in case of diverging statements. However, in chapter I of *De Somno et Vigilia (On Sleep)* from the *Parva Naturalia*, he opens with a discussion that can be understood as granting all animals a returning period of sleep as a necessary rest for their sense organs (454a20-25). After this theoretical consideration, he states that nearly all (σχεδὸν πάντα, 454b15) animals have been observed (ὤπται, 454b17) to sleep, except for testacea (shelled molluscs), which had not been directly observed.¹⁸ This would then point to the *Historia's* passage being concerned with a list of observations that do not have to be exclusive and are not necessarily opposed to granting all animals the ability to sleep.¹⁹

Avicenna

Similar to its treatment in Aristotle's *Historia*, the topic of animals sleeping and dreaming is also covered in Avicenna's *Animals* in his most extensive Arabic *summa*, the *Book of Healing*,²⁰ where he comes up with the following on sleeping, waking, and dreaming:

With regard to the sleeping of animals, all blooded [and] walking animals sleep and wake. All having an eyelid close it during sleep. Also, others besides humans [lit., man] dream. Among quadrupeds, this is obvious from their characters, motions, and voices during sleep. The sleep of oviparous animals is light (*khafīf*), not deep (*ghayr ghariq*). And similarly for the crustacea (*layyin al-khazaf*),²¹ even though their sleep is not obvious by their eyes, as their eyes do not have eyelids (*ashfār*). Rather, their sleep is detected by their tranquility and [by the fact] that they may sometimes be caught by the hand while they are inattentive or that they get hit by a trident. All fish sleep more at night than during the day. Some marine animals sleep on the ground, some on the sand, some on rocks, some in a pit, and some in a rock channel at the shore (*shatṭiyya*). For those sleeping in the sand, a form will arise in the sand that signifies their being hidden in it, thus, they will be hit by a trident.²² The ray (*salāsī*)²³ might sometimes be sunken into sleep such that it will be caught by hand. The dolphin sleeps while its blowhole is protruding, and it breathes through it. Its snoring is heard while it sleeps. Insects also sleep. Their rest and quietness signifies this.

A juvenile person does not dream in a way considered as such until [reaching the age of] four years. Some humans [lit., men] do not dream until they get older, though others do not dream at all.²⁴

18 Again, βαχχύπτηνα is used for the sleep of insects and »hard-eyed animals«.

19 For example, Kroker, *The Sleep of Others*, 32, stresses the fact that the list of dreaming animals in the *Historia* consists of domesticated animals only (and thus ones which might be subject to closer observation). Gallop, *Aristotle: On Sleep and Dreams*, 35, considers sleep to pertain generally to all animals, though dreams only selectively.

20 The general title *Animals* is a reference to the Arabic tradition that combines Aristotle's *Historia Animalium*, *De Partibus Animalium (On the Parts of Animals)*, and *De Generatione Animalium* into one single book. His other biological treatises such as *De Motu Animalium (Movement of Animals)* are not attested in Arabic, though their title is mentioned in some instances; see Kruk's Introduction in Filius, *Arabic Version*. The *Parva Naturalia* texts had been freely translated into Arabic (see Hansberger, *Kitāb al-Ḥiss wa-l-maḥsūs*; she is also preparing an edition), but do not seem to have influenced Avicenna in this particular part of the *Animals*. Yet they do elsewhere, probably also influencing Barhebraeus indirectly (see below).

21 According to Filius's *Arabic Version*, Glossary, s.v., these are malacostraca.

22 *Mishqaṣ*, lit. »arrow«, though here short for the abovementioned arrow with three bent spikes, rendered as »trident«.

23 Cf. Filius, *Arabic Version*, Glossary.

24 Avicenna, *Animals*, ed. Muntaşar et al., 64-65 (my translation).

Avicenna follows Aristotle in keeping bloodedness and having feet (or the ability to walk) as the requirement for sleeping and waking. Like Aristotle, he includes other animals, such as marine animals, insects, and oviparous animals, as having at least lighter forms of sleep and waking. He also speaks of a light (*khafīf*) sleep of oviparous animals,²⁵ though he omits Aristotle's doubts as to whether they might be able to dream at all. Similarly to Aristotle, the case of dreaming is only said to be *obvious* for quadrupeds, though, taken literally, it is not necessarily limited to them. Being viviparous has been entirely dropped as a requirement. Theoretically, this would allow for oviparous quadrupeds, such as turtles, to be included. In place of the viviparous/oviparous distinction, he seems to have combined Aristotle's primary group of dreaming animals with the example of the dreaming dog. Therefore, Avicenna could be understood as allowing for more animals to dream than Aristotle does, with quadrupeds being only the most obvious case.

Regarding human dreams, a late onset of dreaming (or at least the awareness of it) is not connected to health.

In the *Interpretation of Dreams*, whose authorship by Avicenna has been called into question by Gutas,²⁶ who attributes it to Abū Sahl al-Masīhī instead,²⁷ the author explains sleep similarly to Aristotle as a necessary rest for those organs that the soul in an animal uses in order to recover. This can be understood as including all animals here as well.²⁸

On What Sleep Is and Why the Animal Needs It

An animal's body and organs, though being instruments that the soul uses, are not instruments that can be used permanently. For the power of those organs is finite, becoming exhausted, weak, and unable to perform. When they are weak and incapable, they require rest and relaxation for their power to be restored. Afterward, the soul will employ them again. This rest and relaxation that they have is sleep.²⁹

As all animals have a soul, at least an animal and a vegetative one, and also a body, this seems to be intended as applicable to all animals. Thus, all animals would be considered to need sleep after a certain time, perhaps a span that varies individually or by species.

As with the case of Aristotle, one could grant the more elaborate Avicennan passage – that of the *Animals* – a decisive role that further limits the group of sleeping animals or those able to sleep over against the more general statement in the epistle on the *Interpretation of Dreams* (regardless of its true author). But, again, a possible approach would also be to see the *Animals* passage as a limited observation of a general, theoretical rule or requirement.

25 Avicenna distinguishes deep sleep (*ghariq*), at least for humans, in his *Canon*, ed. al-Ḍanāwī, 1.241, as the best (kind of) sleep (a translation of this passage is also found in *Canon*, trans. Abu Asab *et al.*, 297-299). His treatment of the topic in the *Canon* is heavily influenced by Galen and does not consider animals.

26 See Gutas, *Avicenna and the Aristotelian Tradition*, 208-209 and 526. In his *Study of Avicenna*, 51, he bases this suggestion on a list of contradictions with other works as well as a lack of older manuscripts.

27 Gutas, *Study of Avicenna*, 51, refers to the list of works by Abū Sahl al-Masīhī as found, for example, in Ibn Abī Uṣaybi'a, *Uyūn al-anbā' fī ṭabaqāt al-aṭibbā'*, ed. and trans. Savage-Smith *et al.*, no. 11.12 (ed. 2-2.808; trans. 3-2.894-895), where such a title is listed. This argument, however, might be less than compelling, as several authors wrote on this topic.

28 This general statement seems to be influenced by the transmission of the *Parva Naturalia*, whose influence on Avicenna was already suggested by Pines and corroborated later by Hansberger, *How Aristotle came to believe*, 65-66. The requirement of sleep for all animals in this tradition is also found, for example, in al-Kindī's *De Somno et Visione*, ed. Abū Rīda, 306, 12.

29 Avicenna, *Interpretation of Dreams*, ed. Khan, 280 (my translation); see Lamoreaux, *Early Muslim Tradition*, 70, for this passage; 72-75 for a general dependence on Artemidorus regarding the interpretive part.

Barhebraeus

Turning to the Syriac reception of both Aristotle and Avicenna, the similarly corresponding passage in Barhebraeus's as yet unedited *Book on Animals* in his Avicennan *summa*, the *Cream of Wisdom*, reads as follows:³⁰

Sixth [theory]. All walking and blooded animals sleep and wake. Many of them have eyelids and close [them]. They also dream (*w-āf ḥālmān*), as, for example, the horse, ox, dog, sheep, and goat. Regarding oviparous animals, the truth of the matter is not clear, yet they do sleep. Fishes and molluscs sleep little (*z'or*). Though they don't have eyelids, their sleep is known by their rest, when they move their tails [only] a little bit. They sleep more at night, some of them underneath rocks, some in the depth of the sea, and some in mud or sand. Rays sleep so soundly that they are oftentimes even captured by hand.

Seventh [theory]. Also insects sleep. They remain without motion then. Therefore, as they do not see at night, they rest. They all have eyes with dim sight and are afraid of the light of a lamp.

Humans [lit., man] dream most among all animals. They do not dream as infants but begin to dream in the fifth or [even] fourth year. Many men and women have never had a dream at all. [Some] people have dreams [only] after being much advanced in age. A Greek (*hellenikos*) says that there are people in Libya who don't dream at all.³¹

Although Barhebraeus presents, in contrast to Avicenna, examples of the Aristotelian animals that may dream, he drops any reference to viviparous quadrupeds and could be understood as allowing for far more animals to dream when compared with Avicenna, namely, depending on whether the group of animals referred to by »they also dream« consists of either all animals that sleep or at least – and this understanding is preferable – those sleeping animals having eyelids that they close. Nonetheless, Barhebraeus is in many instances closer in wording to Aristotle's text than to Avicenna's. Also, he keeps the Aristotelian uncertainty regarding whether oviparous animals dream, which Avicenna had dropped completely. He does not, however, include fishes in this uncertainty, but only comments on the duration, rather than the intensity, of their sleep, which brings him back closer to Aristotle. Therefore, he could even allow for all walking and blooded animals to dream. This would then include walking oviparous animals such as lizards (to take a case not mentioned by Barhebraeus),³² or at least those walking and blooded animals with eyelids. Even if birds were also partially included as walking animals, they might also be considered able to dream, bearing in mind the doubts about oviparous animals. With regard to the overlapping groups into which birds might fall, Aristotle says that bats can walk and some birds have feet as well, even though they are not of much use.³³ Barhebraeus does not go into further detail here, though, since he classifies animals as walking, flying, and swimming in his *Physics*, this overlap of classifications is probably not intended. (Aristotle's phrase is no less ambiguous, literally, »having feet«.) If, on the other hand, the ability to dream is granted to all animals having eyelids

30 An edition with English translation and determination of the main sources is currently under preparation by Martina Galatello (Roma Tre).

31 Florence, Biblioteca Medicea Laurenziana, orientali 83, fol. 93v; cf. Midyat, Mor Baršawmo Library, 14, 178v (my translation).

32 Being cold-blooded in the modern sense could still allow for being blooded in the Aristotelian sense.

33 Aristotle, *Historia Animalium*, ed. Balme, 487b24; *Arabic Version*, ed. Filius, 114. The Arabic says more clearly that all birds walk, though see also Pellegrin, *Aristotle's Classification of Animals*, 45.

broadly defined, dolphins and whales, for example, might also be included. However, if Barhebraeus considers them fish,³⁴ which he says do not have eyelids, then they would not be able to dream, since according to him they neither have eyelids nor walk.³⁵

A shorter version with a peculiar combination of sleeping and dreaming due to this abridgment is found in Barhebraeus's *Sanctuary Lamp*:

All animals that are quadrupeds and viviparous sleep and dream. Man, however, dreams most, though after the fourth year. A Greek (*hellenikos*) says that there is a tribe in Libya that never has dreams at all.³⁶

There is evidence for the existence of an independent, though lost, treatise on dreams by Barhebraeus.³⁷ If he used the text ascribed to Avicenna as a source for it and included the same generalization of all animals being able to sleep in it (similar to Aristotle's *Parva Naturalia*), the same interpretative struggles between theoretical generality and limited observation could arise. He does, however, deal with veridical dreaming and its causes in at least two places, in the book *On the Soul*, contained within the *Cream of Wisdom*, as well as in the *Sanctuary Lamp*.³⁸ However, the discussion there only refers to the rational soul and thus does not affect animals, who might, therefore, be considered non-receptive to this kind of dream.

Excurses: Albert the Great, Pliny the Elder, and Ibn Abī l-Ash'ath

A similar treatment is found in Albert the Great's *De Animalibus (Animals)*,³⁹ which is, like Barhebraeus's writing on the subject, primarily influenced by both Aristotle and Avicenna and will be mentioned here briefly only for the sake of comparison. Besides these shared sources, Albert is not only a representative of the Medieval Latin tradition, but also roughly contemporary with Barhebraeus. According to Albert, all walking and blooded animals sleep and wake. Although he opens as Avicenna does by initially allowing other animals to dream, he subsequently limits these perhaps even further than Aristotle's viviparous quadrupeds, since he only speaks of »many« animals, not necessarily implying all of them. Albert also completely drops the mention of at least doubt about oviparous animals being able to dream (which might negate any ability to dream). However, he is similar to Avicenna in extending

34 Aristotle considers them to be cetacea (large marine mammals, especially whales and dolphins) rather than fish; Barhebraeus, however, lists, for example, dolphins with eels among fish when discriminating by the number of gills (Florence, Biblioteca Medicea Laurenziana, orientali 83, 88v); the role of cetacea in Barhebraeus's classification of animals will be dealt with in a forthcoming paper *Fishy dolphins*. Likely, they are implicitly distinguished from fish nonetheless.

35 Whales and dolphins do, in fact, have eyelids, as they are mammals.

36 Barhebraeus, *Sanctuary Lamp*, ed. Çiçek, col. 162 (my translation).

37 Takahashi, *Barhebraeus*, 85, no. 30; there might be one manuscript containing this work or parts of it, *ibid.*, 387, no. B.30. For a Syriac text on dream interpretation, see Furlani, *Une clef des songes*, and Mavroudi, *A Byzantine Book on Dream Interpretation*, 237-240.

38 See the paraphrasing translations in Furlani, *Psicologia*, 49-50 ([26]-[27]), and in his *Barhebreo sull' anima razionale* (pt. 2), 112-113.

39 He does not treat the topic in his *Quaestiones super De Animalibus (Questions on Animals)*.

the Aristotelian example of the barking dog to sounds that other animals might utter when dreaming, though the barking itself is explained not as connected with dreams, but with sleeping. By this change that excludes birds, he would allow for the least number of animals to be able to dream, even fewer than Aristotle. He also posits the absence of any dreaming in children before they reach the Aristotelian age threshold.⁴⁰

Regarding sleeping, however, he seems to immediately extend the group of sleeping animals to include all animals, after beginning by bringing in the Aristotelian walking and blooded animals. The motivation for this subsequent generalization, which does not seem to be based on a manuscript gloss, is not clear.⁴¹ This broadening contrasts with his narrowing of dreaming animals.⁴² The sleep of fish and oviparous animals is assumed to be temporally short (*modicum*),⁴³ without information on its intensity. As with Aristotle, a late onset of dreaming might be connected with approaching the end of one's life. Additionally, however, the absence of dreaming in infants is physiologically explained by an excess of moisture.

It is useful to compare Albert's ideas to an ancient Latin author whose use of Aristotle was prior to any Arabic reception. Pliny the Elder briefly discusses sleep and waking in animals in his *Naturalis Historia* (*Natural History*), 10.97-98.⁴⁴

Here we find the sleep of all land animals having eyelids, the sleep of aquatic animals with a short duration, and the sleep of insects. Unless they are considered land animals, birds are omitted from the list. Having eyelids is given as a reason for sleep, rather than their closure being a means of indicating a period of sleep. Humans sleep most after birth with the duration of sleep shortening afterward. In contrast to Aristotle, infants also immediately dream.⁴⁵ Again, some humans do not dream at all; with others, a late occurrence of dreams is a potentially fatal sign. The Aristotelian exemplary animals, namely, horses, dogs, oxen, sheep, and goats, also appear in Pliny's text. Dreaming is granted to all viviparous animals and, with some doubts, also to oviparous animals. Dropping the quadruped requirement for dreaming is a noticeable shift, opposite Avicenna's omission of viviparity but preservation of four-footedness. Pliny would thus consider viviparous snakes, such as the garter snake, to be able to dream, contrary to Avicenna, who would not, supposing that no further distinction between ovoviviparity (which would apply to the snake) and simple viviparity applies here.

40 Albert, *De Animalibus*, 4.3, trans. Kitchell and Resnick, 1.482-483.

41 It might be due to his treatment of sleep in his *On Sleep and Waking*, where he can be understood as granting all animals the ability to sleep and wake, similar to the case of Aristotle's original treatise; see Donati, *Albert the Great as a commentator*, 177.

42 Albert's *On Sleep and Waking* has a remark about dreaming animals besides humans similar to one of Aristotle in his *De Divinatione per Somnum*. According to this, dreaming animals do not have access to divinatory dreams, but humans do. See Donati, *Dreams and divinatory dreams*, 203.

43 Albert, *De Animalibus*, ed. Stadler, 1.402.

44 Pliny the Elder, *Naturalis Historia*, trans. Bostock and Riley, 2.552-553. This passage was also selected by Seafeld, *Literature and Curiosity of Dreams*, 33-34.

45 As already noted by the translator in Pliny the Elder, *Naturalis Historia*, trans. Bostock and Riley, 553 n. 67. However, one might wonder whether this is influenced by the passage in Aristotle's *De Generatione Animalium* (778b, see above) on infants' immediate onset of sleeping, though not dreaming, and perhaps due to a combination of both Aristotle's *Historia* and *De Generatione Animalium* passages.

In contrast to Aristotelian discussions of animals sleeping and dreaming, there are also other treatments that are not noticeably Aristotelian. The Arabic philosophical writer Ibn Abī l-Ash'ath (d. ca. 970 CE, Iraq), who treats the topic in his *Animals*, was influenced instead by Galen.⁴⁶ Due to this, he will be included here for comparison with a representative of a different Arabic tradition. Due to the differing sources and structure, there is no coherent treatment of sleeping and dreaming in the *Animals* as in Aristotle.⁴⁷ However, there is, for example, a statement about dogs' sleep, relating it to humoral temperaments: since their brain is cold, they sleep much, but since it is also dry, their sleep is not deep, producing heavy breathing and evil dreams.⁴⁸ This is roughly similar to Aristotle's barking dog.⁴⁹

The Egyptian zoographical writer al-Waṭwāt (late twelfth to early thirteenth century CE) frequently reuses Ibn Abī l-Ash'ath's text, directly and without ascription as well as indirectly in his *Pleasures of Thoughts (Mabāhij al-fīkar wa-manāhij al-ibar)*.⁵⁰ According to him, to dream and to have dream visions is said to be in the dog's nature.⁵¹ Also, the dog's lightness (*khiffa*) of sleep leads to being attentive during sleep and to not fully closing the eyelid.⁵² This contrasts with what Aristotle says about all animals with eyelids closing them during sleep and about dogs moving due to dreaming. The reason for the lightness, however, is the dog's brain being colder than that of a human.⁵³ (Ibn Abī l-Ash'ath's reason was the brain's dryness relative to humans.⁵⁴) In addition, horses are said to dream like humans,⁵⁵ and hares to sleep with open eyes.⁵⁶

46 Kruk, Ibn Abī l-Ash'ath's *Kitāb al-Ḥayawān*, 126.

47 However, he also wrote an *Epistle on Sleeping and Waking* that is preserved in at least one manuscript (see Sezgin, *Geschichte des arabischen Schrifttums*, 3.302 and Ibn Abī Uṣaybi'a, *'Uyūn al-anbā' fī ṭabaqāt al-aṭibbā'*, ed. and trans. Savage-Smith *et al.*, 10.46.4, no. 14). An edition of this text, which is not concerned with animals at all, is forthcoming. It is by content primarily dependent on Galen.

48 Ibn Abī l-Ash'ath, *Animals*, ed. al-Ḥarbī, 245, trans. Kruk, Ibn Abī l-Ash'ath's *Kitāb al-Ḥayawān*, 144. An overview of scattered Galenic passages on temperaments and their relation to sleep has been given by Hulskamp, *Sleep and Dreams*.

49 This might indicate that he used Aristotle's *Historia*, at least in an indirect manner. Ibn Abī l-Ash'ath, however, has reduced Aristotle's neutral dreaming of the dog as indicated by barking during sleep to something negative: evil dreams accompanied by heavy breathing. Galen discusses a connection between dryness and humors in the stomach with dreams; see Hulskamp, *Value of dream diagnosis*, 64-65.

50 As has been noted by Kruk, Ibn Abī l-Ash'ath's *Kitāb al-Ḥayawān*, 161; see also Schmitt, *Always by your side*, 23-24, for a direct case.

51 Al-Waṭwāt, *Mabāhij al-fīkar*, ed. al-Ḥarbī, 185.

52 Al-Waṭwāt, *Mabāhij al-fīkar*, ed. al-Ḥarbī, 186-187.

53 Al-Waṭwāt, *Mabāhij al-fīkar*, ed. al-Ḥarbī, 187.

54 Ibn Abī l-Ash'ath, *Animals*, ed. al-Ḥarbī, 245. This is not necessarily faulty, as Galen, *On Mixtures*, trans. Singer and van den Eijk, 72, uses the example of the dog for illustrating the relativity of qualities (dry in relation to a human, though wet to an ant, hot to a human, but also cold to a lion).

55 *Mabāhij al-fīkar*, ed. al-Ḥarbī, 299. This Aristotelian thought might derive from Timothy of Gaza's *Animals*, trans. Bodenheimer and Rabinowitz, 34. Dreaming horses, though, are not mentioned by Ibn Abī l-Ash'ath in his discussion of horses in *Animals*.

56 Al-Waṭwāt, *Mabāhij al-fīkar*, ed. al-Ḥarbī, 282. As they are mammals, and thus have eyelids, this would be in contrast with Aristotle. However, he gives as a reason peculiarities of their bones, that is, the circumorbital rings. This statement is found in the same manner also in al-Nuwayrī's *Nihāyat al-arab*, ed. Qamiḥa, 9.205.

Roughly, this yields to the following:

	Aristotle	Avicenna	Barhebraeus, <i>Animals</i>	Barhebraeus, <i>Sanctuary Lamp</i>	Albert the Great	Pliny the Elder	Ibn Abi al-Ash'ath	Al-Watwāt
Animals that sleep and wake	Walking and blooded; ovipara, aquatic animals, insects	Walking and blooded; ovipara, aquatic animals, insects	Walking and blooded, ovipara, fishes, insects	Viviparous quadrupeds	Walking and blooded, but also: all animals Further: ovipara, aquatic animals, insects	Land animals with eyelids, aquatic animals, insects, ovipara		
Animal eyelids	Closed when sleeping	Closed when sleeping	[Among blooded and walking animals] Closed when sleeping		Closed when sleeping	Indicate sleep in land animals		
Animals that dream	Viviparous quadrupeds	Others besides humans	Blooded and walking animals with eyelids (?) (examples: horse, ox, dog, sheep, goat)	Viviparous quadrupeds	Many animals besides humans (horse, bull, goat, dog, many other viviparous quadrupeds)	Besides humans Obvious: horse, dog, ox, sheep, goat Supposed: viviparous	Mentioned regarding dogs (evil dreams)	Mentioned regarding dogs and horses
Onset of dreaming in humans	4-5	4 (earlier not considered dreaming)	4-5	4	4-5	Immediate		
Significance of late dreaming onset in humans	Indicates physical changes				Indicates physical changes, fatal sign	Fatal sign		

Situating Barhebraeus among the Authors

So far for the reception of Aristotelian (and Galenic) lore in differing traditions. It seems, based on this comparison, that Barhebraeus has not just simplified the range of animals that are able to dream, but deliberately broadened it. If simplification were his main concern, he could have easily dropped the Aristotelian examples as well as the discussion about the sleep of fish and their hiding places. This broadening in general is perhaps due to Avicenna's version. However, if the mammalian trait of having eyelids is Barhebraeus's distinguishing criterion for being able to dream, then the discussion has undergone something like a »mammalization«. On the other hand, since Barhebraeus still sticks to Aristotle's exemplary animals, it is also possible, but less likely, that he approves the criterion of being a viviparous quadruped without expressly mentioning it, as he does mention walking and blooded animals in the opening lines and could have easily referred to viviparous quadrupeds as well.

The significant shift from short sleep in the Greek Aristotle to light sleep in Avicenna is explicable by the extant Arabic translation of Aristotle.⁵⁷

If taken at face value, however, the short version in the *Sanctuary Lamp* could be limiting even sleeping to viviparous quadrupeds only. Also, the onset of human dreaming is already at the age of four, as in Avicenna (unless one were to read the sentence as humans surpassing all other animals in dreaming after the age of four, despite perhaps already dreaming earlier, yet to a lesser degree; this, though, is not the most likely understanding of this sentence).

Dreaming, if understood in modern terms as showing certain brain activation or rapid eye movement (REM) phases in sleep, is indeed attested for many mammals as well as non-mammals.⁵⁸ However, it is suggested that dreaming also occurs during non-REM phases of sleep.⁵⁹

What is the logic behind the above authors' taxonomies of dreaming animals? Even though they do not discuss this in detail, one wonders whether Aristotle and later authors assume a loose, general connection between intellectual capacities and the ability to dream or the frequency of dreaming.⁶⁰ That humans are said to dream most may refer to either the frequency or the length of their respective dream period during sleep. Also, the other animals that are

57 See note 8 above. In traditional modern sleep research, Kleitman, *Sleep and Wakefulness*, 108-113, lists several ways to investigate the depth of sleep, all of which usually focus on one variable, such as the loudness of a certain sound needed to awaken a sleeping person. It has also been proposed to take both depth and duration into account by forming a product of both.

58 See Hobson, *Dreaming*, 51-52, and Kleitman, *Sleep and Wakefulness*, 102-103; Gallop, *Aristotle: On Sleep and Dreams*, 35-38, also lists cases of non-mammals. Karmanova and Oganessian, *Sleep*, 7-12, see in the extended periods of motionless rest of fish an early evolutionary state of sleeping, which allows them to remain undetected by potential predators.

59 Hobson, *Dreaming*, 38-39.

60 Tertullian, *De Anima*, 49, ed. Waszink, 67 (see the commentary, 514-518), understood Herodotus's remark on the non-dreaming Libyan tribe as an unfavorable characterization. Historically, Dendy, *Philosophy of Mystery*, 274, assumed the ability to dream among some quadrupeds with higher intellectual powers, while Macnish, *Philosophy of Sleep*, 46, saw a general connection between an animal's intellectual capacities and its proneness to dream. However, Gallop, *Aristotle: On Sleep and Dreams*, 35, notes that there is no connection between the onset of dreaming or its absence and intellectual performance. This topic is connected with the question of whether dreaming serves any purpose at all according to Aristotle, which has recently been affirmed by Segev, Teleological significance, based on the usefulness of both bodily and intellectual »residues« (a concept used in Aristotle's biological works) for animals. A summary of several modern assumptions is given by Hobson, *Dreaming*, 77-79.

expressly mentioned as dreaming could perhaps be considered animals with higher mental abilities, unless they are understood as just those that are observed daily. However, humans' superior dreaming cannot be explained by their sense impressions lasting longer, since the acuteness of most animal senses besides touch surpasses that of humans according to Aristotle, and this is subsequently affirmed by Avicenna and Barhebraeus. Thus, the difference would perhaps be the inner senses' handling of these impressions.

A remaining problem in the relationship between intellectual capacity and dreaming is why smaller children are thought not to dream at all rather than just less frequently. Were they considered to be not yet fully rationally humans? Yet the presence of the rational soul should not be necessary for dreaming, since it is not present in animals, not even those that dream. That Avicenna alone among these authors allows a dream-like state among young children (in place of dreaming proper) relates to this. Nonetheless, the Aristotelian age limit also has some empirical evidence.⁶¹ In fact, the other authors deny any actual dreaming at all, not just the infant's ability to recall a dream and report its contents.⁶² The latter would require a certain level of rationality but would not be a necessary condition of dreaming itself. Since animals cannot report their dreams either, it must be the case that authors relied on behavior observed during sleep for their theories about dreaming.

In spite of these problems, a general connection between intellectual abilities and dreaming could be upheld in light of the way Aristotle explains bodily hindrances as being responsible for children and some adults not dreaming, as given at the very end of *De Insomniis* (462b).⁶³ The animal soul would nevertheless be sufficient for dreaming.⁶⁴ However, this comes with some uncertainty, as certain authors omit Aristotelian passages that could help interpret them.

Assessment of Barhebraeus's Sources

So far, Barhebraeus's identifiable primary sources for the *Book on Animals* are Aristotle and Avicenna,⁶⁵ besides an assumed third one of Greek origin regarding the report on a non-dreaming tribe in Libya. Even though this report is found in Herodotus,⁶⁶ it is unlikely that Barhebraeus used this source directly. Rather, he might have drawn from a *scholion* (especially as the citation is merely ascribed to a *hellenikos*, »Greek«) or from some other text with ancient roots.⁶⁷

61 Hobson, *Dreaming*, 66; see also Kleitman, *Sleep and Wakefulness*, 102.

62 See Papachristou, Aristotle's theory of »sleep and dreams«, 16 n. 77, on Aristotle raising the question in *De Somno et Vigilia*, 453b18-20, of whether every human dreams even though some are unable to recall their dreams. See also Dentan, *Ethnographic considerations*, 319, for cultural barriers hindering a dreamer's truthful rendering of a dream's content to the person recording it.

63 Referring also to Aristotle, *De Insomniis*, 461a8-25, where an excess in heat due to food is responsible for non-dreaming.

64 Aristotle, *De Insomniis*, 459a.

65 Generally, usage of Avicenna's *Animals* is seen in the structure and the section headings, even though the case is less clear regarding the part on sleeping and dreaming considered here. For the afterlife of Aristotle's text in Syriac, see now also Hugonnard-Roche, *Les Livres sur les animaux d'Aristote*.

66 Herodotus, *Histories*, 4.184.4; see also Liverani, *The Libyan caravan road*.

67 The name Herodotus appears near the relevant text in the *Sanctuary Lamp* (ed. Çiçek, col. 162), so it cannot be the case that it was anonymized intentionally.

The usage of other ancient, late antique, or Byzantine texts in translation is currently unclear. Two texts of Nicolaus Damascenus in particular, *Plants* and his *Compendium*, were used by Barhebraeus in some works, the latter especially in the *Meteorology*, as noted by the respective editors.⁶⁸ Though the extant portions of the *Compendium* do not include Aristotle's biological works, Barhebraeus might nonetheless have had a complete version at his disposal for this particular passage. He does not, at least according to a first impression, seem to have made use of some of the older Syriac and Arabic texts that could have been available to him.⁶⁹

The similarity between Barhebraeus's text and the Greek text of Aristotle regarding the depth of sleep, departing from the extant Arabic translation and Avicenna on this point – that is, short rather than light sleep – might indicate that the translation at Barhebraeus's disposal of Aristotle's *Historia* or, rather, *Animals* as a single book in the Arabic tradition was not the extant one, but one closer to the Greek.⁷⁰

Rather, what is at first sight peculiar in Barhebraeus's *Book on Animals* is the unexpected absence of post-Avicennan philosophical sources, in contrast to his extensive use of these in most of his other works, especially the works that make up the *Cream of Wisdom*. For instead of Avicenna himself, whose texts he used to a lesser degree, Barhebraeus is frequently indebted to Fakhr al-Dīn al-Rāzī (d. 1209 CE, not to be confused with the earlier Abū Bakr Muḥammad b. Zakariyyā' al-Rāzī), Naṣīr al-Dīn al-Ṭūsī, Abū l-Barakāt al-Baghdādī, al-Abhari, Ibn Kammūna, and, at least in one instance, even al-Suhrawardī.⁷¹

68 For example, in his *Plants* (ed. Drossaart Lulofs and Poortman, 35-36), Barhebraeus made use of a Syriac version of the *Compendium* of Aristotle's philosophy by Nicolaus Damascenus and did so also in the *Meteorology*, in combination with Olympiodorus, as shown by Takahashi. (Whether the *Plants* was an independent work by Nicolaus besides the summary in the *Compendium* is not fully clear, see Takahashi, Nicolaus of Damascus). However, there is no part of Aristotle's *Historia Animalium* in the extant parts of Nicolaus's *Compendium* (partial ed. and trans. Drossaart Lulofs; a complete Syriac edition is being prepared by Takahashi). However, in his Aristotle, Bar Hebraeus, and Nicolaus Damascenus on animals, 345-357, 353, Drossaart Lulofs suggests Barhebraeus used the *Compendium* in the zoological part of his *Lantern* (his short citations do not seem to require the use of Aristotle directly). Barhebraeus probably did not have sufficient knowledge of Greek to directly access Greek texts. In other instances, such as in his biblical commentary, »in the Greek«, etc., refers to Syriac versions of Greek texts, such as of the *Septuagint*. However, the Arabic zoographer al-Marwazī introduces some of his citations of Timothy of Gaza by similarly referring to »the Greek«, as noticed by Kruk (Timotheus of Gaza's *On Animals*, 376-377), who also assumes some of al-Marwazī's source texts were Syriac (360). Yet this obviously does not seem to require a usage of Timothy in this regard by Barhebraeus, as the places in al-Marwazī refer to certain animal species.

69 Such as, at least according to first soundings, Job of Edessa's *Book of Treasures*, ed. and trans. Mingana, 70-71, where the true sleep of humans is distinguished from animal sleep that only resembles sleep (I am indebted to Michael Payne for drawing my attention to this passage); the Syriac *Book on Natural Things* (a work in the *Physiologus* tradition containing a bestiary that has been identified as a limited partial source in the *Sanctuary Lamp* by Bakoš, Quellenanalyse der Zoologie, 270); or further Arabic zoographical literature, such as, for example, al-Jāhīz, Ibn Abī l-Ash'ath, or al-Marwazī. This also applies to »Western« texts on animals, for example, by Ibn Rushd (Averroes) or Ibn Bājja, which might not have been easily available to him.

70 See also my forthcoming article Touchy animals for a further instance of that in the *Animals*. Similar observations have been made, for example, by Watt for Barhebraeus's *Rhetoric*, 24, regarding Greek loanwords. Drossaart Lulofs, however, as mentioned above, assumes usage of Aristotle by means of Nicolaus's *Compendium* only (Drossaart Lulofs, Aristotle, Bar Hebraeus, and Nicolaus Damascenus on animals). This, in principle, could explain both the deviation from Aristotle as well as the Herodotian addition, yet the lengthy and detailed parallel with Aristotle might suggest he additionally used a translation, for the extant parts of the *Compendium* are quite brief on each section.

71 This applies for the former authors, for example, to the *Physics*, while al-Suhrawardī seems to have been used at least in the *Tractate* for the distinction between essence and existence, which will be addressed in a forthcoming paper.

In addition to incorporating these texts, Barhebraeus was, as is well known, personally acquainted with many Muslim scholars, especially at Maragha, and there in particular with Naṣīr al-Dīn al-Ṭūsī, which is suggested by reports in his Syriac *Chronicle*.⁷² The circle of the Maragha observatory might also have influenced his own astronomical works. Recently, Roggema also wondered about a possible personal encounter with Ibn Kammūna,⁷³ an author whose texts Barhebraeus also uses in his *Physics*. In addition to that, he also prepared a translation of al-Abharī's *Zubdat al-asrār* (the title of which might have influenced that of his own *Cream of Wisdom*). Brentjes suggested al-Abharī was possibly a classmate of Barhebraeus.⁷⁴ He is also well aware of many post-Avicennan philosophers' scholarly dependencies.⁷⁵

Thus, as an initial hypothesis, the absence of post-Avicennan source texts in Barhebraeus's *Book of Animals*, in contrast to many of his other works, might perhaps be explained by a shift in the philosophical curriculum away from biological works after Avicenna.⁷⁶ Reliable information about such a shift is sparse, however. What can be observed, for example, is that some philosophical texts joined those read in the more theological teaching at the *madāris* (sg. *madrasa*).⁷⁷ Nonetheless, medical works, especially Avicenna's *Qānūn (Canon)*, continued to be studied, primarily at medical academies, such as hospitals,⁷⁸ but also at medical *madāris*.⁷⁹

Most of Barhebraeus's post-Avicennan philosophical source texts are also in the form of Avicennan *summae*, which do not usually comprise the biological or at least animal themes as found in Avicenna's *Book of Healing*.⁸⁰ Where later philosophical authors treated topics related to the natural sciences, however, Barhebraeus did indeed make use of these. One example is Fakhr al-Dīn al-Rāzī's treatment of meteorology in the *Eastern Investigations*, which Barhebraeus drew from for his own *Meteorology*.⁸¹

That is, as a preliminary conjecture, Barhebraeus used the available texts on the topic, which in this case were older ones only due to an absence of contemporary texts. This explanation is roughly the converse of Rassi's recent suggestion about Bar Shakkō, another representative of the Syriac Renaissance. The latter generally relied on both Syriac and Arabic logical texts, but employed recent Arabic ones only in those cases where no Syriac text was

72 See his Preface to the work in Barhebraeus, *Chronicon Syriacum*, ed. and trans. Budge, 1.2. The acquaintance is further suggested by manuscript notes, see Takahashi, Barhebraeus: Gregory Abū al-Faraj.

73 Roggema, Ibn Kammūna's and Ibn al-'Ibrī's responses.

74 Brentjes, *Teaching and Learning*, 104.

75 See also Endress's graphical rendition in his Reading Avicenna, based on Barhebraeus's reports in his Arabic *Chronicle*.

76 Kruk, Ibn Sīnā on animals, 325, discusses possible reasons why Avicenna himself left the zoological part until last in writing his *Book of Healing*.

77 See Eichner, *Post-Avicennian Philosophical Tradition*, 419, for changes already made by Bahmanyār; see also Endress, Reading Avicenna; and Makdisi, *Rise of Colleges*, 250. However, Brentjes, *Teaching and Learning*, 71, suggests that natural sciences were also taught.

78 Makdisi, *Rise of Colleges*, 27; Brentjes, *Teaching and Learning*, 115-131.

79 Brentjes, *Teaching and Learning*, 91-98.

80 However, Brentjes, *Teaching and Learning*, 76, 148, 208, and 210, has some information on later teaching about animals.

81 See the Index Loc. in Takahashi's edition.

available.⁸² Barhebraeus's selection would, at first sight, point to the opposite case here, namely, taking recourse to Syriac or older Arabic texts only in cases where no contemporary Arabic versions were available. In addition, he perhaps focused intentionally on certain philosophical authors of the Islamic East (primarily, those mentioned above, some of whom he knew personally) who were not very interested in biological themes.

Indeed, where one of his often cited authors, Naṣīr al-Dīn al-Ṭūsī, does deal with the Aristotelian scale of nature – though in his *Nasirean Ethics* (a work that Barhebraeus made use of in his own *Ethics* in the *Cream of Wisdom*) rather than in a biological work – Barhebraeus renders this particular passage into Syriac as well.⁸³ Even though he does not seem to have included it in his *Book on Animals*, his use of it would still support the above hypothesis that he used recent works where available.

Yet this basic conjecture fails as a general explanation, since there are two clear counter-examples to be found in his treatments of physiognomics. Even though Avicenna does not dedicate an independent treatise to physiognomics, Barhebraeus discusses it in his practical philosophy in the *Cream of Wisdom*, namely, in his book *Economics*. As Furlani suggested and Zonta and Joosse (in his edition of the Syriac text) later corroborated,⁸⁴ Barhebraeus likely made use of a Syriac version of Polemon's text on physiognomics. However, in this case, an independent Arabic treatise on physiognomics by Fakhr al-Dīn al-Rāzī, one of Barhebraeus's frequently used source authors of the post-Avicennan period, is indeed extant.⁸⁵ Therefore, one would, according to the abovementioned hypothesis, expect Barhebraeus to have made use of it instead of Polemon's older text, or at least in addition to it. Yet this does not seem to be the case. Rather, he even cites the names of ancient persons as they are found in Polemon. Neither from the structure of the section in Barhebraeus nor by its content is there any clear indication that he drew on Fakhr al-Dīn al-Rāzī's text on physiognomics. A similar situation is also found regarding the short chapter on physiognomics in Barhebraeus's *Amusing Stories*.⁸⁶ Even though Marzolph traced most other passages of this work by Barhebraeus to Abū Sa'd al-Abī's Arabic anthology *Scattered Pearls* (*Nathr al-durr*),⁸⁷ there is no parallel for the physiognomical part.⁸⁸ Weitz, however, later found some parallels with the pseudo-Aristotelian work *Physiognomics*.⁸⁹ But again, there is not much in common with al-Rāzī's text.

82 Rassi, *From Greco-Syrian to Syro-Arabic thought*, 359.

83 Barhebraeus, *Ethics* 1.3.3, ed. and trans. Joosse, 22-23.

84 Furlani, *A short physiognomic treatise*, 289; Barhebraeus, *Ethics*, ed. and trans. Joosse, 8-9; *idem*, ch. 3, ed. and trans. Joosse, 118-131; Zonta, *Fonti greche e orientali*.

85 Fakhr al-Dīn al-Rāzī, *Kitāb al-firāsa*, ed. Mourad.

86 Ch. 20.

87 Also known as *Prose Pearls*.

88 Marzolph, *Die Quelle der Ergötzlichen Erzählungen*, 111. The chapter on physiognomics is the final one in Barhebraeus's work, following a chapter on dreams and their interpretation (though without taking animals into account, except for their appearance in dreams).

89 Weitz, *Al-Ghazālī, Bar Hebraeus, and the »good wife«*, 213 n. 43. Barhebraeus indeed even mentions Aristotle by name here. An additional parallel is also found in his list of different peoples.

Three possible explanations arise for this. First, Barhebraeus might not have been aware of al-Rāzī's text due to limited availability, whether because too few manuscript copies were circulating or because it was not in the libraries Barhebraeus had access to.⁹⁰ In this case, the initial hypothesis could be upheld in a modified form (if no such texts were extant or at least were not available to Barhebraeus). Second, Barhebraeus might have been aware of this text, but intentionally refrained from using it in favor of Polemon's text or the pseudo-Aristotelian one, for example, because the latter were more renowned. This would be against the initial hypothesis and at odds with many other instances. A deliberate neglect due to concerns regarding the content is not likely, either, as al-Rāzī even opens in a very structured manner and would have been suited for similar concise approaches by Barhebraeus. In addition, Barhebraeus incorporates pieces and examples elsewhere even when he does not agree with the author's main thesis. Third, an exception could be conceded if Barhebraeus considered this work spurious, not trusting the ascription to al-Rāzī,⁹¹ or if he did not know its authorship (for example, because the manuscript did not mention it, although Barhebraeus showed with the statement about dreaming in Libya mentioned earlier that he was willing to include sources anonymously).⁹²

Conclusion

To sum up briefly, Barhebraeus and possibly also Avicenna (though less explicitly) allow for more animals to be able to dream than Aristotle does, namely, perhaps all animals having eyelids or even all animals in general. Otherwise, if it is all walking and blooded animals that are intended, then they may have implicitly added oviparous quadrupeds to Aristotle's dreaming animals, which constituted, at least without doubt, viviparous quadrupeds only. They may also have accepted birds as dreamers, either with some doubts or in the category of walking animals.

Despite having abbreviated and systematized the material that he combined out of at least two sources identified so far, namely, Aristotle's *Historia Animalium* (either an older Arabic or a Syriac translation) and Avicenna's *Animals* from the *Book of Healing*, Barhebraeus seems to have made these alterations to the categories of dreaming animals intentionally.

That he took recourse to older authors, skipping contemporary post-Avicennan philosophers, cannot be explained solely by the fact that his favorite authors, philosophers of the Islamic East, partially omitted biological themes. It may also be that Barhebraeus still focused on the Aristotelian or Avicennan curriculum of science, while his contemporaries shifted their focus, for example, to logic and ontology (often within a theological context), a change that might have begun right after Avicenna. If there were more zoological texts by his preferred authors, he would likely have relied primarily on these instead of having recourse to older ones.⁹³ Yet this supposition surely cannot be generalized, as the two treatments of physiognomics signify. The most likely explanation for these cases, though, is his unawareness of the respective texts.

90 Mourad, *La physiognomie arabe*, 69-70, based his edition on three different manuscripts.

91 However, since Ibn Abī Uṣaybi'a mentions the work among al-Rāzī's output (*Uyūn al-anbā' fī ṭabaqāt al-aṭibbā'*, ed. and trans. Savage-Smith *et al.*, 11.19.7 [ed. 2-2.880, trans. 3-2.979, but note 2.2.880 n. 118, on some manuscripts omitting this title from the list], though as the very last item in the list, no. 67, see also Mourad, *La physiognomie arabe*, 69), it is perhaps unlikely that Barhebraeus did not know its authorship.

92 Of the three manuscripts Mourad had access to, he mentions that the Cambridge one does not bear the author's name (*La physiognomie arabe*, 69).

93 However, there would not likely have been an impact on the Latin tradition as these authors did not stand in the focus of Latin translations. That is, even if there were texts, they probably would not have been translated, as other texts by these authors most often have not, either.

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The Ideas of Pseudo-Empedocles in Baghdad Mysticism of the Ninth-Tenth Centuries CE: Al-Ḥallāj's Cosmology

Pavel Basharin*

This paper looks at the cosmological texts of the eminent Sufi al-Ḥusayn b. Manṣūr al-Ḥallāj (d. 309 AH/922 CE) through the prism of pseudo-Empedocles's influence. The medieval scholar Abū l-Ḥasan 'Alī al-Daylamī was the first to juxtapose pseudo-Empedoclean doctrine and al-Ḥallāj's passionate love (*maḥabba*). A connection between the two was postulated by L. Massignon, who reconstructed the line of succession of the Baghdad believers in pseudo-Empedocles's ideas and assumed a link between the Nestorian monastery of Dayr Qunnā and these ideas. Analysing al-Ḥallāj's cosmology reveals an influence of some pseudo-Empedoclean ideas as they appear in Arabic sources. Al-Ḥallāj's fragmentary works and his quotations will be examined by considering some fragments in al-Daylamī's *Kitāb 'Aṭf al-alif*, a Persian text from the *Sharḥ al-shaḥīyāt* of Rūzbihān Baqlī, and some fragments from al-Sulamī's *Tafsīr*. There are also short cosmological fragments in the *Kitāb al-Ṭawāsīn*, and some are known from quotations. Several concepts such as *azal*, *khiṭāb* (as *logos*), *qudra*, *dahr*, *ma'ānī*, and *ṣuwar* are encountered in pseudo-Empedocles's texts. For al-Ḥallāj, the crucial concept in creation is passionate love (*ishq*, *maḥabba*), which serves as the catalyst for creation. Desire (*mashī'a*) is the first mode of the divine essence. Divine eternity (*azal*) is opposed to perpetuity (*dahr*). In al-Ḥallāj's cosmology we find the concept of secrets (*asrār*) that resemble *ma'ānī*. But at the same time, they resemble intelligent matter underlying the higher world. The question of two creations in these texts seems to go back to the understanding of the creation of the *materia prima* (*unṣur*) and material bodies (the first and second creations). Al-Ḥallāj's source for these ideas was probably connected with the Nestorian church, and this may go some way toward explaining the links between the Sufis of Baghdad and the Christian milieu in monasteries such as Dayr Qunnā.

Keywords: al-Ḥallāj, pseudo-Empedocles, Abū l-Ḥasan 'Alī al-Daylamī, Rūzbihān Baqlī, eternity (*azal*), passionate love (*ishq*), love (*maḥabba*), desire (*mashī'a*)

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The Legacy of Pseudo-Empedocles

The name of pseudo-Empedocles or the Arabic Empedocles is linked with a group of texts for which Greek originals have not (yet) been found. When and under what circumstances these texts were written is unclear, though they are certainly not authentic texts of Empedocles.¹ Before considering the main ideas of pseudo-Empedocles and their influence on the Sufi al-Ḥusayn b. Manṣūr al-Ḥallāj (d. 309/922), it is worth noting how we know about the ideas of pseudo-Empedocles.

One of the main sources of the Arabic Empedocles's doctrine is *Kitāb Amūniyūs fī ārā' al-falāsifa* (The book of Ammonius on the opinions of the philosophers), a Neoplatonic doxographical work, whose author is sometimes referred to as pseudo-Ammonius. The doxography was likely written about 850 and is known from a single manuscript only (Istanbul, Süleymaniye Kütüphanesi, Ayasofya 2450). The author puts into the mouths of the ancient philosophers views that have little to do with their actual teachings: its text contains some undoubtedly Gnostic themes, and owes its philosophical inspiration to various Neoplatonists (especially Plotinus, but also Porphyrios and Proclus). The chapter on Empedocles is the richest section of the text. It differs from other sections in form, as all the preceding sections relate personalities to a specific theme, while the chapter on Empedocles focuses on the person rather than a topic, and the topics are not discussed in detail, but only mentioned in short sentences or brief hints. There are indications that pseudo-Ammonius took some of his ideas from Neoplatonic treatises ascribed to Empedocles, several of which were circulating in the early Islamic period and on which many later authors depended. Although the doxography has no specifically Shiite elements, it must have spread to Ismā'īlī Shiite circles very early, since it was quoted by well-known Ismā'īlī authors such as Aḥmad al-Nasafī (d. 332/943) and Abū Khātim al-Rāzī (d. 327/938).

Fragments of the Arabic Empedocles and references to him are found in a wide range of works: Abū l-Ḥasan al-ʿĀmirī's *Kitāb al-Amad 'alā l-abad* (The book on the afterlife); the *Siwān al-ḥikma* (The depository of wisdom literature) attributed to Abū Ya'qūb al-Sijistānī; Abū l-Ḥasan al-Daylamī's *Kitāb 'Aṭf al-alif al-ma'lūf 'alā l-lām al-ma'ṭūf* (The book of the inclination of the familiar *alif* toward the inclined *lām*); Ṣā'īd al-Andalusī's *Kitāb Ṭabaqāt al-umam* (The book of the classes of nations); Ibn Abī Uṣaybi'a's *'Uyūn al-anbā' fī ṭabaqāt al-aṭibbā'* (The best accounts of the classes of the physicians); Muḥammad b. 'Abd al-Karīm al-Shahrastānī's *Kitāb al-Milal wa-l-niḥal* (The book of religions and sects); Jamāl al-Dīn Ibn al-Qiftī's *Ta'rīkh al-ḥukamā'* (The history of sages); Shams al-Dīn al-Shahrastānī's *Nuzhat al-arwāḥ wa-rawḍat al-afrāḥ* (Promenade of souls and garden of rejoicings); pseudo-Majrīṭī's *Kitāb al-Ghāyat al-ḥakīm* (The book of the aim of the sage); and the *Corpus Gabirianum*. Some parts of the work of pseudo-Empedocles seem to have existed in Hebrew translation, and fragments of his *Book of Five Substances* are preserved in three late medieval Jewish works.²

In order to establish the reality of any pseudo-Empedoclean impact on al-Ḥallāj in what follows, it is necessary to first highlight the main points of his doctrine, which will be done in the following subsections.

1 For a brief characterization of the Arabic Empedocles, see De Smet, Empedocles.

2 Rudolph, *Pseudo-Ammonios*, 130-131; De Smet, *Empedocles Arabus*, 31-37.

Tawḥīd (Oneness of God)

God is the True One, who fundamentally cannot be multiplied in any way. »He is One, because there is nothing that is with Him« is a Neoplatonic interpretation of the Islamic concept of *tawḥīd*, also attributed to other Arabic pre-Socratics in pseudo-Ammonius's work. This is a distinctive element of the Neoplatonic tradition in Islam. On the one hand, pseudo-Empedocles refers to the Creator as the source of being and non-being (*al-shay' wa-lā al-shay'*); on the other, he identifies God with being (*wujūd*).

Ṣifāt (Attributes)

In the account of Ṣā'id al-Andalusī's *Kitāb Ṭabaqāt al-umam*, »Empedocles was the first whose approach combined the entities of God's attributes (*ma'ānī ṣifāt Allāh*), saying that they all come down to one thing, and that, although He is described by [the terms] ›knowledge‹, ›benevolence‹, and ›power‹, He does not possess distinct entities (*ma'ānī*) which are characterized specifically by these diverse names.«³ Although some passages deny all God's attributes without exception, most representative texts provide a list of positive divine attributes. Abū l-Ḥasan al-Āmirī (d. 381/992), for example, lists four attributes: knowledge (*ilm*), liberality (*jūd*), will (*irāda*), and power (*qudra*).⁴ In the account of pseudo-Ammonius, »He is pure knowledge (*ilm*), pure will (*irāda*), He is liberality (*jūd*), might (*izz*), power (*qudra*), justice (*adl*), goodness (*khayr*), and truth (*ḥaqq*).«⁵ This list contains attributes of various origins, some of which belong to the Neoplatonic tradition, while others – such as liberality, might, power, and justice – are closer to Islamic traditions. Pseudo-Ammonius identifies the will (*irāda*) with the being of the Creator. This fact reminds us of the Christian Neoplatonic concept. According to pseudo-Ammonius, these divine attributes are not something independent and therefore distinct from His essence, but rather are fully identical with the being of the Creator. The attributes do not denote Neoplatonic »powers« (sg. *quwwa*); they are indistinguishable from the divine hypostasis (*huwiyya*).⁶ Al-Āmirī gave as his list of attributes the Mu'tazilite *ma'ānī* rather than the Neoplatonic powers».

Azaliyya (Eternity) and Dahr (Perpetuity)

The hypostasis (*huwiyya*) of the Creator exists from eternity. His eternity (*azaliyya*) in contrast to perpetuity (*dahr*) exists before the beginning of time. All eternities beneath his eternity exist from eternity too. Thus, pseudo-Empedocles alludes to the plurality of eternities, which are situated below the eternity of the divine hypostasis. The lower eternities correspond to the first created principles that directly participate in the higher eternity.

3 Stroumsa, Ibn Masarra's third book, 94.

4 De Smet, *Empedocles Arabus*, 182.

5 De Smet, *Empedocles Arabus*, 73. All translations are mine unless otherwise indicated.

6 The term *huwiyya* translates Greek εἶναι »essence«.

ʿUnṣur (Materia Prima)

The doctrine of the *materia prima* (*ʿunṣur* rather than *hayūlā* and *mādda*), the receptacle of bodily form, is one of the main ideas of pseudo-Empedocles. It is not the Intellect that stands at the beginning of creation, as one would expect in a Neoplatonic context, but *ʿunṣur*. The *materia prima* does not resemble a hypostasis, because there is no intermediary between God and matter. In the account of the Hebrew fragments of pseudo-Empedocles, matter is the first thing to be created. Constantly receiving »impressions« from the Creator, matter carries in itself all the forms of the universe. Through the *materia prima* God creates the Intellect, which is connected with it and receives from it the light, the forms, and the perfections which it has acquired from the Creator. Thus, the *materia prima* becomes the genus or »matter« for the Intellect. According to Ulrich Rudolph, Ammonius's *materia prima* does not mean the material substratum of corporeal things, but intelligent matter (ὄλη νοητή) underlying the formations of the higher world. Rudolph states that pseudo-Empedocles picked up Neoplatonic thought, but distorted and vulgarized it.⁷ Daniel De Smet relies in particular on the interpretation of the first matter in the commentary on the *Ḥikmat al-ishrāq* of Shihāb al-Dīn al-Suhrawardī al-Maqtūl by Quṭb al-Dīn al-Shīrāzī and the Druzian work *Kitāb al-Nuqat wa-l-dawā'ir*. He supposes that pseudo-Empedocles uses the term *ʿunṣur* to mean a phase of uncertainty, of pure potentiality, preceding the formation of the Intellect. This is the first hypostasis in the genesis of the Intellect, preceding its constitution.⁸

Mantiq (Reasoning)

Mantiq is used solely to refer to discursive human reasoning. Since God has nothing in common with His creatures, He cannot be comprehended by them in any way. He remains beyond the reach of the human mind and cannot be expressed in language. *Mantiq* consists of parts and therefore is divisible, whereas the Intellect is one and unites the divisible.

Jism (Celestial Sphere) vs. Jirm (Lower World)

Empedocles classifies created things into different kinds. He distinguishes between simple (*basīṭ*), spiritual (*rūḥānī*) substances and composite (*murakkab*), corporeal (*jirmānī*) substances, roughly corresponding to the Neoplatonic distinction between »pure forms« of supralunar world and sublunar »forms in matter«. He also introduces a third, middle category, the celestial bodies, to which he attributes both simplicity (*basīṭ*) and a certain corporeality (*jismānī*). Among bodies, pseudo-Empedocles thus distinguished between two kinds of bodies: the incorruptible sphere of celestial bodies (*jism*) and the temporal lower world (*jirm*).

7 Rudolph, *Pseudo-Ammonios*, 135-136.

8 De Smet, *Empedocles Arabus*, 109-110.

The Cosmic Hierarchy: 'Unşur (Materia Prima), 'Aql (Intellect), Nafs (Soul), Ṭabī'a (Nature)
 As a convinced Platonist, pseudo-Empedocles recognizes that above the natural world there exists a luminous spiritual world ('*ālam rūḥānī nūrānī*), whose beauty and splendour cannot be perceived by reason. Only the pure human soul (*al-nafs al-zakiyya*) aspires to this world during its purification. At the head of the world of simple, spiritual, and mental substances (*jawāhir basīṭa rūḥāniyya ... ma'qūla*) stands the *materia prima*. Then the entities of the intelligible world arise, each of which is intermediary (*tawassuṭ*). Thus, inferior degrees are formed. Thus, the Intellect is established through the mediation of matter, the soul through the mediation of matter and the Intellect, and finally nature through the mediation of matter, Intellect, and soul. Each essence appears as a husk (*qishr*) or image (*ṣanam*) for that which precedes it, and as a heart (*lubb*) for that which yields to it. The husk is compared with the body (*jasad*) and the heart with the spirit (*rūḥ*). Each entity is »within the horizon« (*fī ufq*) of its predecessor. De Smet associates *qishr* with *zāhir*, the outward manifestation of a being. He sees in the pair *qishr* and *lubb* the equivalent of *zāhir* and *bāṭin*.

Maḥabba (Love) and Ghalaba (Victory)

This is the most significant point of the unique pseudo-Empedoclean system. The term »victory« (*ghalaba*) rather than »strife« (*munāza'a*), like Empedocles's philosophy, seems to be linked with the word *νῆκος* (strife) becoming pronounced in the same way as *νῆκος* (victory) as a result of the regular Middle Greek process of itacism.⁹ Love (*maḥabba*) and victory (*ghalaba*) created three categories of substances: simple spiritual substances of which the mental world is composed, simple bodily substances (*jusmāniyya*), and bulky compound substances (*jirmāniyya*). Abū Ḥayyān al-Tawḥīdī (d. 414/1023) indicates that love predominates in the formation of celestial bodies and spheres, and victory in the genesis of the elements that make up the world of generation and corruption. As one descends to lower degrees, love diminishes and victory increases. Pure love is at the level of primal principles. Victory is associated with crude matter, the lowest degree of creation.

Al-Nash'a al-Thāniyya (Second Birth)

The supreme moment when the parts return to the whole and are transformed into their deepest essence is described by pseudo-Empedocles as the »second birth« or »second creation«. He appeals to the quranic notion of the »next creation« (*al-nash'a al-ākhirā*). Muslim authors are almost unanimous in condemning the cyclicity of this doctrine.¹⁰

9 The erroneous *ghalaba* is often found in Arabic Empedocles's quotations, up to al-Shahrastānī's time (6th/12th century). However, the texts also record the correct term »strife« (along with *niṣwah* »quarrel« in the Hebrew fragment). Besides *ghalaba*, pseudo-Ammonius uses the term *munāza'a* (to translate the Greek *στάσις*); see Rudolph, *Pseudo-Ammonios*, 136-137.

10 Rudolph, *Pseudo-Ammonios*, 37-38, 71, 72, 74, 82-83, 106, 108, 132-140; De Smet, *Empedocles Arabus*, 62-149.

Reflection of Pseudo-Empedocles's Ideas

Pseudo-Empedoclean ideas spread in Islamic thought, although how these ideas were originally transferred into Arabic remains disputed. Miguel Asín Palacios (1871-1944) theorized that it was scholars in Islamic Spain – specifically Ibn Masarra (Abū 'Abd Allāh Muḥammad, d. 319/931) and Spanish Jewish philosophers – who explored the pseudo-Empedocles tradition, ultimately leading to its broader reception. Asín Palacios, who based his theories upon the secondary informants Muḥammad b. 'Abd al-Karīm al-Shahrastānī (d. 548/1153) and Shams al-Dīn al-Shahrazūrī (d. after 687/1288), developed a complex theory of the transfer of pseudo-Empedocles's doctrine from scholar to scholar in Islamic Spain, until Ibn 'Arabī (Abū 'Abd Allāh Muḥammad, d. 638/1240) then propagated it throughout the Muslim world. Asín Palacios was criticized, however, for mistakenly identifying various Neoplatonic and Hermetic ideas with pseudo-Empedocles.¹¹

An analysis of the sources shows that the line of the Arabic Empedocles represented a rather narrow phenomenon within the broader Islamic intellectual tradition. For example, for Ibn al-Nadīm (Abū al-Faraj Muḥammad ibn Ishāq, d. 380/990), who is generally well versed in Greek translations, Empedocles is just one name among others. In the *Fihrist* he does not report anything specific.¹² Nevertheless, Empedocles was held in high esteem by some Muslim intellectuals who called him the »divine sage« (*al-ḥakīm al-rabbānī*). This phrase was probably based on apocryphal texts, such as the work of pseudo-Ammonius. It is hard to say whether any Arabic translations of pseudo-Empedocles's texts circulated among a limited circle of medieval Islamic intellectuals.

In *Kitāb al-Amad 'alā l-abad*, al-'Āmirī affirmed Empedocles to be the possessor of prophetic wisdom (*ḥikma*). He received this wisdom from Luqmān, whom al-'Āmirī called a friend or vizier of David. Luqmān gave Empedocles the teaching of *tawḥīd* (divine oneness), who transferred it from Syria to Greece and became the first Greek sage (*ḥakīm*) and the originator of the philosophy of Ancient Hellas. In al-'Āmirī's account, Empedocles did not grasp the teachings of Luqmān very well. After Aristotle, there was a fragmentation of knowledge which led to a certain distortion. Charlatans such as Galen spread erroneous doctrines. The heretical positions advocated by some *falāsifa* (probably Abū Bakr al-Rāzī and al-Farābī) have nothing to do with the pure original wisdom as taught by the Five Sages (Empedocles, Pythagoras, Socrates, Plato and Aristotle). Al-'Āmirī reports a double transmission of wisdom between the East and Greece: a Syriac line (Luqmān/David to Empedocles) and an Egyptian one (Solomon's companions to Pythagoras to Socrates to Plato to Aristotle). The Syriac branch, however, does not develop beyond Empedocles, since there is no direct connection between Empedocles and Socrates, Plato, and Aristotle.¹³ Al-Shahrazūrī (or his source) went even farther than al-'Āmirī. He shows Empedocles as a Muslim ascetic, even a venerable Sufi.¹⁴

11 De Smet, *Empedocles Arabus*; De Smet, *Influence of the Arabic Pseudo-Empedocles*; Stern, Ibn Masarra; Kingsley, *Ancient Philosophy*.

12 De Smet, *Empedocles Arabus*, 56.

13 De Smet, *Empedocles Arabus*, 39-40.

14 Daniel De Smet states that Arab tradition agrees with the ancient views of Empedocles as a »madman of God« who descended into this world to exhort souls and remind them of their heavenly origins; De Smet, *Empedocles Arabus*, 54.

We find pseudo-Empedocles's supporters in both the east and west of the Islamic world. In the east, al-ʿĀmirī, a native of Khurasan, wrote his above-mentioned *Kitāb al-Amad ʿalā l-abad* in Bukhara in 375/985. Abū Sulaymān al-Sijistānī (d. after 391/1001), known as al-Mantiqī («the logician»), went to Buyid Baghdad from Sijistan (Sistan) and joined Yaḥyā b. ʿAdī (d. 364/974). Al-Sijistānī's disciple al-Tawḥīdī reports that he commented on a passage of Empedocles regarding the meaning of love and victory in the philosophical meetings (*majālis*) held in al-Sijistānī's circle. Al-Sijistānī commented on this passage.¹⁵ In turn, we find an analysis of pseudo-Empedocles's ideas in the work of al-Tawḥīdī's disciple Abū l-Ḥasan ʿAlī al-Daylamī (d. early fourth/tenth cent.), entitled *Kitāb ʿAtf al-alif al-maʿlūf ʿalā l-lām al-maʿtūf*. This eastern line thus leads to Baghdad.

Louis Massignon reconstructed the line of succession of the Baghdad supporters of pseudo-Empedocles's ideas: Mattā b. Yūnus (d. 328/939), to Yaḥyā b. ʿAdī, to Abū Sulaymān al-Sijistānī, to al-Tawḥīdī, to al-Daylamī. He assumes there is a link between these ideas and the Nestorian monastery of Dayr Qunnā, and stressed that pseudo-Empedocles's ideas gained popularity in Syrian monasteries, linking Dayr Qunnā with a number of Islamic mystics. The transfer of pseudo-Empedoclean ideas is a marker of this influence.¹⁶ But his hypothesis was based on an unclear foundation.¹⁷ Indeed, we have no information on personal contacts between these mystics and scholars at Dayr Qunnā. Thus, this hypothesis can be discussed only through a detailed examination of the ideas themselves. The pseudo-Empedoclean tendencies in the commentary on Aristotle's *Metaphysics* by Mattā b. Yūnus – an eminent representative of the local scientific tradition, who started his Aristotelian education in the school of Mar Mari attached to Dayr Qunnā – would seem to support Massignon's belief that pseudo-Empedocles's ideas acquired popularity in Dayr Qunnā. In reality, however, Mattā was one of the key figures of Baghdad Aristotelianism and did not have any special empathy toward Empedocles. The popularity of pseudo-Empedoclean ideas among Nestorian intellectuals in the Abbasid era, including at Dayr Qunnā, proves nothing. There is no reason to give Dayr Qunnā a special role. While some pseudo-Empedoclean ideas seem to have had some impact, this influence should not be overstated. Mattā b. Yūnus, Abū Sulaymān al-Sijistānī, and Yaḥyā b. ʿAdī were included in the nucleus of the so-called Baghdad School of philosophers, a group of Syriac and Arabic thinkers, who based their ideas on Aristotelian logic and late antique authorities. Even though they relied on some Neoplatonic sources, it was Aristotle who was regarded as the highest authority.¹⁸

15 De Smet, *Empedocles Arabus*, 59, 162.

16 Massignon, *Interférences philosophiques*. In the fourth/tenth century, the monastery of Dayr Qunnā was a Nestorian centre of learning and intellectual work with special patronage. This monastery was situated 90 kilometres from Baghdad on the left bank of the Tigris. It was founded by Mar ʿAbdā at the end of the fourth century. In the Abbasid period this centre trained personnel for the state administration. Some influential Nestorian clans of secretaries of the ninth and early tenth centuries, like the Banū Makhlad and Banū l-Jarrāh, came from this monastery. See Massignon, *La politique islamo-chrétienne*.

17 See, for example, Kraemer, *Humanism in the Renaissance of Islam*, 221.

18 Janos, *Active nature*, 166; Janos, *Philosophical and scientific learning*, 542, 547; Twetten, *Aristotelian cosmology*.

The author in fourth/tenth-century Baghdad who conveyed pseudo-Empedoclean ideas most directly was al-Daylamī. He was a disciple of al-Tawḥīdī, who belonged to a tradition cultivated in the cosmological ideas of pseudo-Empedocles. Al-Tawḥīdī was deeply immersed in the ideas of the scholars of the Church of the East (i.e., Nestorians). For example, in the *Kitāb al-Imtā'* he reported the famous debate between Abū Bishr Mattā b. Yūnus, who was associated with Dayr Qunnā, and Abū Sa'īd al-Sīrāfī on the merits of logic and grammar.¹⁹ Massignon stressed the link between al-Tawḥīdī and al-Ḥallāj, because al-Tawḥīdī's friend Zayd b. Rifā'a was a pupil of Abū Bakr al-Shiblī, the famous Sufi *shaykh* (master) of Baghdad and a follower of al-Ḥallāj.²⁰ But this fact is not proof for this link. Some ideas of al-Ḥallāj and al-Tawḥīdī may have a similar origin, without a link between them. In some accounts, Mattā b. Yūnus and his disciple Yaḥyā b. 'Adī were the teachers of Abū Sulaymān al-Sijistānī, the eminent Islamic philosopher. Al-Sijistānī's *Risāla fī l-kamāl al-khaṣṣ* shows a set of ideas which would be developed by Sufism. These included, for example, union (*ittihād*) with the essences of the celestial bodies from old astral cults of the Sabians; the Nestorian union with the human nature (*nāsūt*) of the Christ; and the philosophical idea of union with the Active Intellect.²¹ These ideas probably reflect the background of thought at Dayr Qunnā, which could have been a source for several scholars residing in Baghdad at the time, but they may also have been associated with Nestorian personalities not directly linked to the monastery.

In the *Kitāb 'Atf al-alif al-ma'lūf 'alā l-lām al-ma'ṭūf*, al-Daylamī describes Empedoclean ideas in this manner: »Empedocles said: The first principle (*mabda'*) created by the Demiurge (*al-mubdi' al-awwal*) was a (pair): love (*maḥabba*) and victory (*ghalaba*). They created the simple spiritual substances, and the bodily simple substances, and the bulky compound substances.«²² This description reveals his knowledge of pseudo-Ammonius's work.²³

Then al-Daylamī states that it was Heraclitus who postulates the teaching on love and strife: the First Intellect (the intellectual light, *nūr 'aqlī*) created love (*maḥabba*) and strife (*munāza'a*). The higher (supralunar) worlds are created by love, and the sublunar (earth) by strife.²⁴ This confusion of Heraclitus with Empedocles is inherent in the Arabic tradition, and al-Daylamī repeats pseudo-Ammonius here.²⁵

Heraclitus and Empedocles state that love in this world is the »efficacies« or »influences« (*ta'thirāt*) of that primordial love (*maḥabba aṣliyya*) from which everything in the lower and higher worlds, divine and natural emanated (*inṣadara*) by the grace of the Demiurge.

Next, al-Daylamī moves toward al-Ḥallāj and affirms that the aforementioned ideas resemble the doctrine of al-Ḥallāj, except that Empedocles and Heraclitus refer to two Demiurges, the first and the second (= the intellect). He states: »Among other Sufi masters, no predecessor of [al-Ḥallāj's] theory is known. This doctrine brought him [al-Ḥallāj] a large number of followers.«²⁶

19 Vagelpohl, 'Abbasid translation movement, 256.

20 Massignon, *Interférences philosophiques*, 241.

21 Massignon, *Interférences philosophiques*, 241-242.

22 Al-Daylamī, *Kitāb 'Atf al-alif*, ed. Vadet, 24-25.

23 De Smet, *Empedocles Arabus*, 128.

24 Al-Daylamī, *Kitāb 'Atf al-alif*, ed. Vadet, 25.

25 Rudolph, *Pseudo-Ammonios*, 67-68.

26 Al-Daylamī, *Kitāb 'Atf al-alif*, ed. Vadet, 25-26.

Al-Ḥallāj's Cosmological Legacy and pseudo-Empedocles's Influence

The eminent Baghdad Sufi master al-Ḥallāj was probably influenced by the ideas of the Arabic Empedocles. Scholars other than Massignon have also signalled al-Ḥallāj's inspiration from Hellenistic notions. However, absolutization of this influence (e.g., by Herbert Mason and Saer El-Jaichi) has sometimes distorted the analysis of al-Ḥallāj's doctrine and led to neglecting the influence that Sufi tradition had on him.²⁷

The roots of al-Ḥallāj's doctrine came from earlier Sufi tradition, but some points of his teaching about divine love, the annihilation of the human nature in God, the incarnation (*ḥulūl*) of the divine nature (*lāhūt*) in the human nature (*nāsūt*), and unity with God (*ittiḥād*) have clear parallels with Syriac Christian doctrines. For example, al-Ḥallāj used the famous Christian metaphor of mixing water with wine (i.e., the mixing of the two natures in Christ).²⁸ However, this influence is also problematic: on the one hand, some of these parallels probably connect with ideas from the monastery of Dayr Qunnā; on the other, we have no information on al-Ḥallāj having any personal contact with scholars there. We know that some of his partisans and scholars close to him were associated with this monastery, including his patrons Ishāq b. 'Alī and Muḥammad al-Qunnā'i; the former later became a secretary of al-Khāqānī, the vizier of al-Muqtadir, and was arrested as one of al-Ḥallāj's disciples, but we know nothing about the ideas of either of these patrons.²⁹ Some scholars have gone so far as to posit that al-Ḥallāj was a hidden Christian;³⁰ nonetheless, even Roger Arnaldez, who titled his book *Hallāj ou La religion de la croix*, came to the conclusion that al-Ḥallāj's religion is not devoid of echoes of Christianity, but that no direct Christian influence can be traced.³¹ Some similarities between al-Ḥallāj's ideas and those of scholars of the Church of the East, such as the doctrine of the relation between the divine nature (*lāhūt*) and the human nature (*nāsūt*), are not disputed. However, to trace his entire doctrine, which has clear Sufi roots, to Christianity is unjustified and groundless.

Al-Ḥallāj's central idea was the unity of the human soul and God, which was considered to be the final goal for a human being. That this unity could be achieved through an ascetic lifestyle was an idea that was also very popular in Islamic mysticism. Al-Ḥallāj may have taken the principle of unity with God from his teacher Sahl al-Tustarī (d. ca. 283/896). Cosmological ideas of Syrian and Mesopotamian Islamic mystics were based on an illuminative theory of descending divine lights, and this came to the fore in Sahl al-Tustarī's doctrine. The concept of »manifestation« (*tajallī*) in early Islamic mysticism is directly connected with seeing God and with His revelation to people, but not with sophisticated cosmological structures. Sahl's crucial idea that is similar to Neoplatonic content and may be adopted from Greek heritage is that God created good and evil by the act of desire (*mashī'a*) and will (*irāda*).³²

27 Mason, *Al-Hallaj*, 6; El-Jaichi, *Early Philosophical Sūfism*, 2. For example, El-Jaichi criticized Massignon for only accepting the influence of Hellenistic ideas on al-Ḥallāj in moderation; however El-Jaichi's arguments, such as that the Sufi had a high degree of familiarity with the vocabulary of Neoplatonic philosophy (based on the list of the [lost] al-Ḥallāj works in Ibn al-Nadīm's *Fihrist*) cannot be taken seriously; see El-Jaichi, *Early Philosophical Sūfism*, 5-7.

28 Blum, *Geschichte der Begegnung*, 542-543.

29 Cabrol, *Les fonctionnaires*, 199-200; Massignon, *La passion*, I, 245.

30 Hatem, *Hallaj et le Christ*; Blum, *Geschichte der Begegnung*, 527-566.

31 Arnaldez, *Hallāj*.

32 Böwering, *Mystical Vision*, 176-180, 199, 216-220, 249-250.

Al-Daylamī draws from al-Ḥallāj's texts to quote the interpretations of *ishq* from some ancient scientists and philosophers (such as Ptolemy, Galen, Aristotle, and Plato), *mutakallimūn* (sg. *mutakallim*), dialectical theologians – including Ibrāhīm al-Nazzām, 'Alī b. Manṣūr, Abū l-Hudhayl al-'Allāf, Hishām b. al-Ḥakam, Thumāma b. Ashras) – and eminent Sufi masters – including Dhū l-Nūn al-Miṣrī, al-Ḥārith al-Muḥāsibī, al-Junayd, Sahl al-Tustarī, 'Amr al-Makkī, Yaḥyā b. Mu'ādh, Ruwaym, Ibn Khafif, Bishr al-Ḥāfi, Abū Yazid al-Biṣṭāmī, Abū l-Ḥusayn al-Nūrī, Ibn 'Aṭā', Abū Bakr al-Shiblī, Abū Bakr al-Rūdhabārī.³³ Al-Daylamī stressed that al-Ḥallāj separated himself from other *shaykhs* because he considered love as an attribute of the divine essence. Al-Ḥallāj pointed to the union of lover (*muḥibb*) and beloved (*maḥbūb*) in the state of ultimate love (*maḥabba*). In this process, the attributes of the lover are destroyed in the beloved, or human nature is destroyed in the divine nature.³⁴

El-Jaichi values al-Daylamī's text as a combination of Neoplatonic and Aristotelian philosophy, and he identifies three »axioms« of al-Ḥallāj in it: the Neoplatonic self-desire, the quranic creation *ex nihilo*, and the self-thinking thoughts of Aristotle's Prime Mover. El-Jaichi treats al-Ḥallāj's cosmogony as a blend of Arabic Plotinus, the Proclus Arabus, and pseudo-Ammonius. He believes that al-Ḥallāj's ideas were linked with the circle of Abū Yūsuf Ya'qūb b. Isḥāq al-Kindī (d. ca. 260/873), an eminent Muslim philosopher.³⁵ But this complex composite of ideas makes al-Ḥallāj a sophisticated philosopher, shaped, according to El-Jaichi, within »the Graeco-Arabic renaissance«,³⁶ meanwhile he was above all a mystic.

Al-Daylamī's comparison of al-Ḥallāj's cosmological ideas with the constructs of pseudo-Empedocles prompts the question of whether this comparison is based in a historical link between the two or is simply a hypothesis made by al-Daylamī. To evaluate this, we need to consider more carefully the cosmology of al-Ḥallāj himself.

The crucial cosmological fragments of al-Ḥallāj are the following: some fragments in al-Daylamī's work mentioned above, one Persian text from the *Sharḥ al-shaḥīyāt* of Rūzbihān Baqlī, and a fragment from al-Sulamī's *Tafsīr*.³⁷ In all these texts we can find some Neoplatonic influence. Other small cosmological fragments are also found in al-Ḥallāj's *Kitāb al-Ṭawāsīn* and in quotations of various authors, particularly in al-Sulamī's *Tafsīr*.

We find a detailed picture of the divine manifestation in a large passage in al-Daylamī's work and in a Persian translation in the *Sharḥ al-shaḥīyāt*. Massignon supposed these texts to be citations of al-Ḥallāj's lost work entitled *Khazā'in al-khayrāt* from Ibn al-Nadīm's list.³⁸ Three stages are distinguished.

33 Al-Daylamī, *Kitāb 'Atf al-alif*, ed. Vadet, 28-44.

34 Al-Daylamī, *Kitāb 'Atf al-alif*, ed. Vadet, 44.

35 El-Jaichi, *Early Philosophical Sūfism*, 128-153.

36 El-Jaichi, *Early Philosophical Sūfism*, 2.

37 Al-Daylamī, *Kitāb 'Atf al-alif*, ed. Vadet, 26-28; Baqlī, *Sharḥ-e Shāhiyāt*, ed. Corbin, 441-444; al-Sulamī, *Tafsīr*, fol. 215a-215b.

38 Massignon, *Interférences philosophiques*, 230; Massignon, *La passion*, II, 819.

The first stage postulates the existence of a single, transcendent Absolute before the beginning of time (*azal*). He existed by Himself, through Himself (Ar. *bi-nafsi-hi*, Pers. *bi-nafs-i xōd*). That is, there was only His essence (*dhāt*); hence the Absolute was devoid of any attributes. At this stage, the True God was not manifested, as there is no existence of any kind. »The True One was continually one, Himself through Himself.«³⁹

Then the divine Absolute expressed the wish to manifest Himself in some reality that was not yet present and needed to prepare the basis for this manifestation. For this purpose, individualities (*ashkhās*), forms (*suwar*), spirits (*arwāh*), knowledge (*ilm*), and mystical cognition (*ma'rifa*) appeared.⁴⁰ This led to the emergence of the principle of individuation, the key to which is the emergence of speech (*khiṭāb*).⁴¹ Speech, in turn, plays a crucial role in the emergence of a triad – the act of possession, the possessor, and the thing possessed (*mulk*, *mālik*, and *mamlūk*) – which is identical with another triad – action, subject, and object (*fi'l*, *fā'il*, and *maf'ūl*). This triad's character is a deep structure containing within it the potential property of generating subject-object relations between new realities. Thus, the process of manifestation takes the form of conversation and an exchange of speeches (*al-muḥādatha wa-l-mukhāṭaba*).

The Absolute looked at Himself, for nothing was manifested in *azal* apart from Himself. In al-Daylamī's version, from this point onward God turned from one attribute toward another attribute (*aqbala min ... 'alā*), and sometimes He »looked« (*naẓara*) from one attribute at another.⁴² All divine attributes (such as knowledge,⁴³ power (*qudra*), love (*maḥabba*), passionate love (*ishq*), wisdom (*ḥikma*), greatness (*aẓama*), beauty (*jamāl*), and greatness (*jalāl*) were His essence (*dhāt*) – all that by which God is described as the Most High, in regard to compassion (*ra'fa*), mercy (*raḥma*), and holiness (*quds*). Thereafter, the Absolute became aware of His loneliness in the face of the emergence of attributes and the emergence of the *mulk-mālik-mamlūk* structure. The spirits and other attributes of forms were included in His essence, owing to His perfection (*kamāl*). He began to manifest and objectify His attributes through other attributes. However, for the first attribute, He had to manifest Himself. This attribute was passionate love (*ishq*), which contains all the entities (*ma'ānī*).⁴⁴ And so God abided in this attribute an immeasurable amount of time (*mudda*). By contemplating something, the True One thereby endowed it with a form from Himself. This form is thus analogous to the spirit He bestows upon humanity. To objectify the attribute, He used speech and then a set of actions to create a subject-object relation between Himself and the entity contained in an attribute. There is speech (*khiṭāb*), story (*ḥadīth*), greeting (*taḥiyya*), deception (*makr*), war (*ḥarb*), and courtesy (*talaṭṭuf*). These actions were stages of the objectification of the entity, stages which al-Ḥallāj calls *maqāmāt*, the number of which is so large that al-Ḥallāj does not enumerate them all.⁴⁵

39 Al-Daylamī, *Kitāb 'Atfal-alif*, ed. Vadet, 26. The Persian text attributes to God eternity (Pers. *azaliyyat*), perfection (*kamāl*), seclusion (*infirād*), and desire (*mashī'a*); Baqli, *Sharh-e Shathiyāt*, ed. Corbin, 441.

40 The Persian text enumerates a triad: individualities, forms, and spirits.

41 The Persian text enumerates three concepts: knowledge, mystical cognition, and speech.

42 The Persian translation always uses the verb »to look«.

43 Knowledge is present only in the Arabic version, not the Persian text.

44 This final element, that passionate love contains all the entities, is found in the Persian version but is absent from the Arabic text.

45 This statement about the stages is found in the Persian text, but not in the Arabic.

Then God turned from love to seclusion (*infirād*). The Absolute began to turn⁴⁶ from attribute to attribute, objectifying them (»to achieve perfection«), first from one attribute to another, then from two to two others, from three to three others, and from four to four others. God turned from the attribute of *ishq* to the completeness (*kullīya*) of this attribute because *ishq* inherently has its own attributes and combines many entities. God manifested the attributes from one of the attributes of *ishq*. Then He praised Himself, and praised His attributes and names.

Finally, God manifested Himself. He created knowledge, power, movement, will (*irāda*), and other attributes in this form. Thus, God was becoming His true self (*huwa huwa*). The True One then objectified perpetuity (*dahr*). He became the Creator (*khāliq*) and the Provider (*rāziq*). These two attributes give life to creation: »He has created you through His power and endowed you with sustenance through His knowledge. Thus, these attributes are attached as His attributes, while He remains in seclusion.«⁴⁷

El-Jaichi is correct when he postulates a Neoplatonic source for this depiction, starting with Plotinus's idea of God's pure perfect self-vision. The Absolute looking at Himself does indeed have an apparent parallel in Plotinus's *Theology of Aristotle*: »When He acts, he only gazes at Himself, and thus performs His act all at once.«⁴⁸ However, El-Jaichi continually uses the Neoplatonic tradition alongside Aristotle's texts in discussing al-Ḥallāj.⁴⁹ This approach hides the problem of the explicit sources for al-Ḥallāj's text, and makes him appear to be a sophisticated expert in Greek philosophy. While I freely admit that al-Ḥallāj's text resonates with then-popular Hellenistic trends, it is important to try to discover more precisely the connection between al-Ḥallāj and the Arabic Empedocles, basing this on specific details in the works.

A number of concepts such as *azal*, *khiṭāb* (as *logos*), *qudra*, *dahr*, and *ma'ānī* are encountered in the texts of the Arabic Empedocles. We find a resemblance between al-Ḥallāj's ideas and pseudo-Empedocles's ideas of God's eternity (*azal*). This eternity, as opposed to perpetuity (*dahr*), exists from eternity as in the texts of the Arabic Empedocles.

Pseudo-Ammonius attributes the term »forms« (*ṣuwar*) to Empedocles. God has not willed the forms, but rather caused them. »The Creator did not create the forms knowingly or willingly (*bi-naw' ʿilm wa-irāda*), but in such a way that He is only their cause.«⁵⁰ Pseudo-Ammonius also uses the term *ṣuwar* for atoms.⁵¹

The term *arwāḥ* (spirits) is not found in Arabic Empedoclean texts. We find it in a listing of the ideas of Democritus. *Arwāḥ* means the mental pneumata, which dwells in temporary, visible elements. This pneuma is too subtle to be subject to decay. The world contains these eternal particles.⁵² Importantly, this example shows that some probable Hellenistic parallels in al-Ḥallāj's work can be traced to a Hellenistic legacy beyond the Arabic Empedocles.

46 »Look« is used throughout in the Persian text.

47 Al-Daylamī, *Kitāb 'Atf al-alif*, ed. Vadet, 26-28; Baqlī, *Sharh-e Shathiyāt*, ed. Corbin, 441-444. The quotation is from the Persian text, and not found in the Arabic.

48 Note, though, that El-Jaichi makes al-Ḥallāj's text similar to the Greek. For example, he translates *fa-kāna nāzīr ilā nafsi-hi fī azali-hi bi-nafsi-hi fī l-jamī' wa-lā zuhūr* as »He was gazing at Himself; contemplating the splendour of His Essence by Himself«; El-Jaichi, *Early Philosophical Sūfism*, 134.

49 El-Jaichi, *Early Philosophical Sūfism*, 134-153.

50 Rudolph, *Pseudo-Ammonios*, 38, 82.

51 Rudolph, *Pseudo-Ammonios*, 55, 199. On the use of the term *ṣūra* in pseudo-Ammonius's work see *ibid.*, 126.

52 Rudolph, *Pseudo-Ammonios*, 41, 150-151.

In al-Ḥallāj's text, cosmological content from the Arabic Aristotle is used as well, with vocabulary that was elaborated in the Dayr Qunnā school by Yaḥyā b. 'Adī and Mattā b. Yūnus,⁵³ and employing concepts that al-Ḥallāj seems to have adopted from the same source with pseudo-Empedoclean ideas. The first principle exists in a perfect way or in perfect actuality (*kamāl*). The duration (*mudda*) of time is numbered by movement. The term *ashkhāṣ* (sg. *shakhṣ*, corresponding to Greek πρόσωπον, »individualities, individuals«) means heavenly entities.⁵⁴

In the tenth chapter of the *Kitāb al-Ṭawāsīn*, al-Ḥallāj links the being intuited through the mode of purification (*tanzīh*) to four circles inscribed into each other, which no one can comprehend: *azal*, things understood (*mafḥūmāt*), things knowable (*ma'lūmāt*), and modalities (*jihāt*). Al-Ḥallāj concludes in the spirit of pseudo-Empedocles: »There is no essence (*dhāt*) without attributes.«⁵⁵

Al-Ḥallāj said that primordial cognition (*ma'rifa aṣliyya*) is embedded in the Quran. This knowledge contains knowledge that is directly related to *azal* and *mashī'a*: »There is everything in the Quran. The knowledge of the Quran is in the letters which are in the first suras, the knowledge of the letters is in *lām* and *alif*, the knowledge of *lām* and *alif* is in *alif*, the knowledge of *alif* is in the point, the knowledge of the point is in primordial cognition, the knowledge of primordial cognition is in eternity, the knowledge of eternity is in desire, the knowledge of desire is in His hiding, the knowledge of hiding is that »there is nothing like Him.«⁵⁶ And no one knows Him but Himself.«⁵⁷ Another version of this saying has the following order: letters – *lām* and *alif* – *alif* – point – primordial cognition – primordial knowledge – desire – concealment of divine essence (*ghayb al-huwiyya*).⁵⁸ This version conforms to pseudo-Empedoclean cosmogony as well.

On the other hand, al-Ḥallāj often juxtaposed *azal* and *abad* as »beginninglessness« and »endlessness«. This pair transmitted two Greek lexemes: ἀφθαρτος (»incorruptible, eternal *a parte post*«) and ἀγέννητος (»ungenerated, eternal *a parte ante*«).⁵⁹ Al-Ḥallāj's special attention to *azal* and *abad* resembles the *azaliyya* (eternity) and *dahr* (perpetuity) of the Arabic Empedocles.

53 Janos, *Active nature*, 144; Baffioni, *Movement as »discrete«*, 292; Stroumsa and Sviri, *Beginnings of mystical philosophy*, 234.

54 Neoplatonic and Gnostic astrology claimed that πρόσωπα (»masks«) are the faces of the planets. In Gnosticism planetary »masks« dominate individual celestial decans and zodiac signs; cf. Bouché-Leclercq, *L'astrologie greque*, 225; Pleše, *Poetics of the Gnostic Universe*, 187, 190, 198, 200. El-Jaichi compares *shakhṣ* in the phrase »When the Supreme [God] manifested individuality (*shakhṣ*), He became *huwa huwa*« with the Neoplatonic Intellect »understood in the terms of a vertical subordination«; El-Jaichi, *Early Philosophical Sūfism*, 145-148. However, I find this proposal unwarranted.

55 Al-Ḥallāj, *Kitāb al-Ṭawāsīn*, ed. Massignon, 66.

56 Quran 42.9.

57 *Akhbār al-Ḥallāj*, ed. Massignon and Kraus, 95-96; al-Sulamī, *Tafsīr*, fol. 74b.

58 Al-Sulamī, *Tafsīr*, fol. 294b.

59 Al-Sulamī, *Tafsīr*, fols. 122b, 211b, 303b; *Akhbār al-Ḥallāj*, ed. Massignon and Kraus, 50; van den Bergh, *Abad*. In ecstatic Sufism, *azal* is the source of eternity, and *abad* is a synonym of subsistence in God (*baqā'*).

Al-Ḥallāj describes desire in the seventh chapter of the *Kitāb al-Ṭawāsīn*. Desire is the first mode of the divine essence and at the same time the first obstacle to the knowledge of God. In this chapter, al-Ḥallāj enumerates three modes after desire: wisdom, power (*qudra*), and knowable eternity (*azaliyya ma'lūma*). Al-Ḥallāj describes them as four isolated circles.⁶⁰

The will (*irāda*) has a special place in pseudo-Ammonius's work. He identifies it with the being of the Creator, as stated above. On the other hand, Sahl al-Tustarī, the master of al-Ḥallāj, developed the idea of desire (*mashī'a*) and will (*irāda*). Al-Ḥallāj's interpretation here resembles Hellenistic ideas.

The crucial concept of al-Ḥallāj's creation is passionate love (*ishq*, or *maḥabba* in al-Daylamī's transmission).⁶¹ *Ishq* is one of the specific features of al-Ḥallāj's doctrine in the eyes of scholars.⁶² This passionate love was the first divine attribute, and God abided in it an immeasurable amount of time. *Ishq* has its own attributes and combine many entities. *Ishq* thereby holds the cosmic potential, »passionate overflowing« (according to Schimmel), or »emanative impulse« (according to El-Jaichi, who equates *ishq* with the Plotinian εἶδος as »an originating and creative force«).⁶³ In al-Ḥallāj's doctrine, this concept plays a major role as the catalyst of union with God. The mystic reveals a part of divine nature (*lāhūt*) into created human nature (*nāsūt*). The human ego perishes in the state of unity (*'ayn al-jam'*).

A quote from al-Daylamī gives an exhaustive explanation of *ishq* as a key catalyst for being:

Passionate love is the flame of the light of the primordial flame. It is coloured with every hue in eternity and manifests every attribute. Its essence is inflamed with His essence, its attributes sparkle with His attributes. It is realized (*mutaḥaqqiq*) in itself, traversing from beginninglessness to endlessness. It appears from ipseity (*huwiyya*) and is free from haecceity (*anniyya*). The inside of the outside of His essence is the reality of being. The outside of the inside of His attributes is the perfect form in concealment (*istitār*), elevated from completeness in perfection.⁶⁴

The conjunction of *lām* and *alif* was cited in al-Sulamī's quotation above. This conjunction plays an important role in al-Ḥallāj cosmology. Their coupling is a cause of cosmic motion. Al-Daylamī quotes a verse in which passionate love is a cause of the attraction between *lām* and *alif*:

60 Al-Ḥallāj, *Kitāb al-Ṭawāsīn*, ed. Massignon, 56-57.

61 Massignon, *Interférences philosophiques*, 235.

62 See, for example, Schimmel, *Mystical Dimensions*, 72; El-Jaichi, *Early Philosophical Ṣūfism*, 93-153.

63 Schimmel, *Mystical Dimensions*, 72; El-Jaichi, *Early Philosophical Ṣūfism*, 132-133.

64 Al-Daylamī, *Kitāb 'Atf al-alif*, ed. Vadet, 44.

Passionate love in the pre-eternity of pre-eternities from a former age
 It appears in Him, to Him, from Him.
 Desire is not contingent [on anything], since it is the attribute
 Of the attributes for the One who kills and resurrects.
 His attributes, from Him and in Him, are not created things.
 The Creator of things is not one whose origin is things.
 When He set the beginning in motion, and showed His love as an attribute
 His glow shone in what He had set in motion.
Lām with the *alif* was connected.
 Both were predestined to be One.
 They are divided when they are combining,
 But their only difference is between the servant and lord.
 Such are the realities, the fire of love is ignited
 By reality whether they are near or far apart.
 They dwindle, losing strength, when they are infatuated (*waliha*)
 And become strong when they obediently submit to love.⁶⁵

For al-Ḥallāj, love is the sum total of all entities (*ma'ānī*). In a cosmological sense, »all entities [are] in God and with God«. ⁶⁶

But is this love the same thing as pseudo-Empedoclean love? Al-Ḥallāj's love as a pre-eternal principle, an origin of everything that exists, speaks in favour of this. After manifesting passionate love, God manifests speech (*khiṭāb*), story (*ḥadīth*), greeting (*taḥiyya*), deception (*makr*), war (*ḥarb*), and courtesy (*talaṭṭuf*). In this list, *ḥarb* and *talaṭṭuf* are highlighted and appear similar to love and strife. The term »war« appears instead of the word »victory« (*ghalaba*) that is found in the Arabic Empedocles (with the latter word probably having been corrupted by a translator, as mentioned above).

It should be kept in mind that al-Daylamī states that it was Heraclitus who postulated the teaching on love and strife.⁶⁷ Al-Ḥallāj seems to be inspired by this idea. It is difficult to trace *khiṭāb*, *ḥarb*, and *talaṭṭuf* to an Islamic origin, and this idea must have come from the Hellenistic arena.

In al-Ḥallāj's cosmology, we find the concept of secrets (*asrār*). These secrets are mentioned in the ninth chapter of the *Kitāb al-Ṭawāsīn*: »Secrets remove from God (*nāzi*), ascend to Him (*bāzi*), keep in Him (*wāzi*), but are not necessary for Him.«⁶⁸ The cosmological function of *asrār* is non-typical for Sufi thought and seems to be coming from outside. These secrets appear similar to *ma'ānī*, but at the same time they resemble intelligent matter underlying the higher world.

Al-Ḥallāj tries to preserve *tawḥīd* through God's seclusion (*infirād*), but faces some problems in doing this, which we have seen before in pseudo-Empedoclean ideas.

65 Al-Daylamī, *Kitāb 'Atf al-alif*, ed. Vadet, 44.

66 Al-Ḥallāj, *Dīwān*, ed. al-Shaybī, 66.

67 Al-Daylamī, *Kitāb 'Atf al-alif*, ed. Vadet, 25.

68 Al-Ḥallāj, *Kitāb al Ṭawāsīn*, ed. Massignon, 60; al-Ḥallāj, *Kitāb al Ṭawāsīn*, ed. Nwya, 212 [30].

In al-Ḥallāj's construct as represented in the passage from al-Sulamī's *Tafsīr*, the sequence is given in which the divine manifestation progressively unfolds. Al-Sulamī mentions two stages of creation with six elements (six things, *ashyā'*) and six emanations (six modes, *wujūh*). Thus, God »determined it [the creation] with determination (*taqdīr*)« (Quran 2.25). The primary foundation of the creations is divine light, which is given the status of divine emanation. The first mode is desire (*mashī'a*), which was created over the light. The other modes are the soul (*nafs*), spirit (*rūḥ*), form (*ṣūra*), letters (*aḥruf*), and names (*asmā'*). The six things are the five pairs and breath (*rā'iḥa*): colours (*alwān*) and taste (*ṭam*), perpetuity (*dahr*) and measure (*miqdār*), blindness (*amā'*) and light (*nūr*), motion (*ḥaraka*) and rest (*sukūn*), being (*wujūd*) and nothingness (*'adam*). Creation comes to be in two stages. The six modes are identified with the divine attributes, which God objectifies through these things.

The following creations relate to the second stage: perpetuity (*dahr*), power (*quwwa*), substance (*jawhar*), form (*ṣūra*), and spirit (*rūḥ*). Each pair is objectified into one of these things and related to the above-mentioned modes: (1) names – perpetuity (time) and measure – perpetuity (*dahr*); (2) letters – colours and taste – power (*quwwa*); (3) soul – blindness and light – substance (*jawhar*); (4) form – motion and rest – form; (5) spirit – being and nothingness – spirit (*Figure 1*).

If we superimpose al-Daylamī's scheme on al-Sulamī's scheme, we get the picture shown in *Figure 2*. The model in the text of al-Sulamī seems to go back to the *materia prima* and material bodies, the six elements and six emanations.⁶⁹ The question of two creations in this text seems to go back to the understanding of the creation of the *materia prima* and material bodies. These two stages can be compared with simple spiritual (*rūḥānī*) and composite (*murakkab*) corporeal (*jirmānī*) substances, the sphere of celestial bodies (*jism*) and the temporal underworld (*jirm*) in pseudo-Empedocles's oeuvre. Six modes and six things coincide with the constructions of the Neoplatonists.⁷⁰ The pseudo-Empedoclean idea of the »second birth« or »second creation« does not fit here.

69 Al-Sulamī, *Tafsīr*, fol. 215a-215b; al-Ḥallāj, *Kitāb al Ṭawāsīn*, ed. Massignon, 148-149. This passage is copied in al-Baqlī, *Tafsīr*, fol. 361b-362a. Massignon offered another explanation for this difficult text. He divided all the entities into three sixes – aspects, things, and modes of balance. He considered each member of the oppositions as a separate unit; Massignon, *La passion*, II, 632-633.

70 Ibn Rushd, in his work *On the Soul*, describes the six components of al-Farābī's ontology as the prime cause, the second cause, the active intellect, the soul, the form, and the matter; cf. al-Ḥallāj, *Kitāb al Ṭawāsīn*, ed. Massignon, 149-150.

The last text of al-Sulamī's *Tafsīr* enumerates four roots (*uṣūl*) of the creation: divinity (*ilāhiyya*), traces of lordship (*āthār rubūbiyya*), the luminous essence (*nūriyya*) (»in which management (*tadbīr*), desire, knowledge, cognition (*ma'rifa*), understanding, thought, insight (*firāsa*), comprehension (*idrāk*), discernment (*tamyīz*), and languages of speech are found«), and motion and rest.⁷¹

A very interesting assessment of al-Ḥallāj's doctrine through the prism of Christian or perhaps Neoplatonic views is given in the *Kitāb Masālik al-mamālik* of the famous Arabic geographer al-Iṣṭakhri. This passage is thought to be a quotation of a lost work by Abū Zayd al-Balkhī (d. 322/934), who was an expert on Greek tradition and the founder of an Islamic geographical tradition based on Hellenistic science, the school of terrestrial mapping in Baghdad, to which al-Iṣṭakhri and Ibn Ḥawqal also belonged. Al-Balkhī may have belonged to the tradition of al-Tawḥīdī and al-Daylamī, and was one of the closest disciples of al-Kindī. Al-Āmirī, who transmitted the ideas of the Arabic Empedocles, was his disciple.⁷² Al-Balkhī was also interested in the doctrine of al-Ḥallāj and wrote one of the most concise and precise descriptions of his doctrine. In the account of al-Balkhī, al-Ḥallāj taught that the mystic raises his body and when obedience possesses his soul, he reaches the stage of proximity to God (*muqarrabūn*). When there is nothing left of human nature, the spirit of God is embodied in him, from which spirit Jesus, son of Mary, came. The mystic's actions become God's own act.⁷³

Scholars such as Abū Sulaymān al-Sijistānī and al-Tawḥīdī developed the idea of *ḥikma khālida* (»perennial wisdom«, *sophia perennis*). This idea was developed by Miskawayh (d. 421/1030) based on the »wisdom of the nations« and later also by Shihāb al-Dīn al-Suhrawardī al-Maqtūl. The upholders of this doctrine included Sufi successors of the ancient philosophers like Dhū l-Nūn al-Miṣrī, Sahl al-Tustarī, and al-Ḥallāj. The eminent Andalusian Sufi and poet Abū al-Ḥasan 'Alī b. 'Abd Allāh al-Shushtarī (d. 668/1269), the disciple of Peripatetic philosopher and Sufi 'Abd al-Ḥaqq Ibn Sab'īn (d. between 668/1269 and 669/1271), who was burned for adherence to the doctrine of incarnation (*ḥulūl*), reckoned al-Ḥallāj in the Greek tradition. He brought al-Ḥallāj and some other Sufis and Peripatetics like al-Niffarī, al-Ghazālī, al-Shiblī, Ibn al-Fāriḍ, al-Suhrawardī, Ibn Masarra, Ibn Ṭufayl, Ibn 'Arabī, Abū Madyan, Ibn Sinā, and Ibn Rushd into a single line with Hermes, Socrates, Plato, Aristotle, and others. Apparently, the reason for this comparison was his knowledge of some of their Hellenistic ideas.⁷⁴

71 Al-Sulamī, *Tafsīr*, fol. 204a.

72 See also De Smet, *Empedocles Arabus*, 32 f. 90.

73 al-Iṣṭakhri, *Viae regnorum*, ed. De Goeje, 148-149. This unusual passage first attracted the attention of Silvestre de Sacy. Massignon attributed al-Balkhī to the Christian Baghdad tradition of Dayr Qunnā on the basis of this passage; al-Ḥallāj, *Kitāb al Ṭawāsīn*, ed. Massignon, 135; Massignon, *Interférences philosophiques*, 242.

74 Massignon, *Recherches sur Shushtarī*, 419. The idea of *ḥikma khālida* was developed by Miskawayh on the basis of pre-Islamic Iranian tradition alongside with Abū Sulaymān al-Sijistānī and al-Tawḥīdī; cf. Grunebaum, *Parallelism, convergence, and influence*, 99.

Ibn al-Faraḍī gives an account in which al-Ḥallāj's close follower Abū Ya'qūb Ishāq al-Nahrajūrī (d. 330/941) was the teacher of the eminent Andalusian philosopher Ibn Masarra,⁷⁵ who studied in Baghdad. Ibn Masarra's original works, other than a group of passages in the works of Ibn 'Arabī and Ibn Ḥazm, were discovered about 50 years ago. Ibn al-Qifṭī, following Ṣā'īd al-Andalusī, attributed to Ibn Masarra the development of pseudo-Empedoclean ideas and their transfer to Muslim Spain, where they spread as a doctrine of the Almerian philosophical tradition that combined Peripatetic and Sufi ideas.⁷⁶ Ibn Masarra perhaps acquired this knowledge in the course of communicating with Baghdad Sufis. Some ideas of Baghdad Sufism (like the phenomenon of divine will, *irāda*) definitely did enter into Ibn Masarra's philosophy. As mentioned earlier, Asín Palacios proposed that ideas that circulated in the monastery of Dayr Qunnā formed a part of the intellectual background of Muslim Spain in this way. While Asín Palacios was criticized for portraying Ibn Masarra incoherently,⁷⁷ the discovery of Ibn Masarra's original works has weakened this criticism,⁷⁸ and it would seem that some elements of pseudo-Empedocles from Baghdad may indeed have formed part of his thinking.

On the other hand, scholars have found links between pseudo-Empedoclean and Ismā'īlī philosophical ideas. For example, al-Shahrastānī probably drew on pseudo-Empedoclean ideas through Ismā'īlī doctrine.⁷⁹ The Iranian philosopher al-'Āmirī said that Empedocles influenced all *bāṭinī* philosophers and mystics; this appellation seems to refer to the mystical trend of their ideas without necessarily having an implication of a philosopher or mystic being an Ismā'īlī.⁸⁰

Conclusions

Some conclusions can be drawn from the above survey. It is perhaps not clear whether al-Ḥallāj's cosmology has Neoplatonic or Gnostic roots. Gnostic themes in pseudo-Ammonius's text have already been noted. Adam Mez saw an influence of Gnosticism on al-Ḥallāj's construct, comparing it to that of Basilides of Irenaeus, which contained λόγος, φρόνησις (wisdom), δύναμις (power), and σοφία (knowledge).⁸¹ But in the case of the cosmological ideas of al-Ḥallāj that we have covered, Neoplatonic influence seems a more reasonable suggestion: Gnostic influence on Islamic personalities was probably marginal because of the insularity of Gnostic groups, whose movements are hard to follow.⁸²

75 Ibn al-Faraḍī, *Ta'rikh 'ulamā' al-Andalus*, ed. al-Suwayfī, 323-324.

76 Salomon Munk believed that it was because of this development that Ibn Gabirol adopted some pseudo-Empedoclean ideas later. Munk, *Mélanges*, 3.

77 Arnaldez, Ibn Masarra.

78 Stroumsa and Sviri, *Beginnings of mystical philosophy*.

79 Rudolph, *Pseudo-Ammonios*, 137; Kingsley, *Ancient Philosophy*, 379.

80 Stroumsa and Sviri, *Beginnings of mystical philosophy*, 210. De Smet notes that it is not clear who was hidden behind the vague label of *bāṭinī*, whether magicians and alchemists or instead members of Ismā'īlī or other Shiite communities; De Smet, *Empedocles Arabus*, 58.

81 Mez, *Renaissance of Islam*, 300.

82 See Durkin-Meisterernst, *Zoroastrians, Manichaeans and Gnostics*.

El-Jaichi tried to justify his hypothesis that al-Ḥallāj was inspired by Neoplatonism based on examining Neoplatonic sources including Arabic Neoplatonism.⁸³ Pseudo-Empedoclean texts, in my opinion, provide more useful food for thought in considering the juxtaposition of these ideas.

De Smet has already deconstructed the previous tradition and made himself out to be an iconoclast destroying the »pseudo-Empedoclean myth« which his predecessors built on a fragile foundation.⁸⁴ He noted that »only the notion of matter as the first creature and of love and strife as contradictory principles might be specific to the Arabic Empedocles«.⁸⁵ However, the supposition that al-Ḥallāj drew from pseudo-Empedoclean ideas is not a fiction. It is unlikely that al-Ḥallāj was acquainted with pseudo-Empedocles from written works – it is more likely that his source was specific people – and oral transmission of these ideas probably distorted them, particularly because they were unusual for the times. Whether this was through East Syriac Christians, as has been suggested, remains an open question, but such a supposition is supported by his echoing of certain Christian ideas (for example, the idea of mixing), which suggests an extended contact with Christians or at least Christian ideas, and these connections are confirmed by the details of his biography. It is also likely that Neoplatonic ideas reached him from the same source, which seems to be the Aristotelism of the monastery of Dayr Qunnā, as elaborated by Yaḥyā b. 'Adī and Mattā b. Yūnus, two philosophers of the Church of the East connected to that monastery; their translations and commentaries do sometimes refer to Empedoclean ideas. However, the direct influence of Dayr Qunnā on al-Ḥallāj is difficult to determine. Echoes of the pseudo-Empedoclean ideas may have been associated with personalities not directly linked to the monastery. In particular, recent research on the Baghdad School of philosophers mentioned above – for whom Empedocles lives only in the shadow of Aristotle – shows that there is no reason to assign Dayr Qunnā's tradition a special role in the popularization of pseudo-Empedoclean ideas. There was also interest in pseudo-Empedoclean ideas from Abū Sulaymān al-Sijistānī, his disciple al-Tawḥīdī, and especially al-Daylamī, the student of the latter.

On the other hand, al-Ḥallāj appears to have been a Qarmaṭī preacher for some time⁸⁶ and, as a judicial inquiry into him revealed, he was familiar with Manichaeism.⁸⁷ We find a reflection of extreme Shiite ideas and even what appear to be Manichaean ideas in his legacy. But in the cosmological texts analysed above, a direct Neoplatonic influence is evident. Al-Daylamī may have later adjusted al-Ḥallāj's ideas slightly to those of the Arabic Empedocles, and the later Arabic tradition may have found an even more detailed resemblance between his ideas and those of pseudo-Empedocles, since that tradition had access to the works of al-Ḥallāj that have not survived to our time. Given all of this, it seems unnecessary to demand that pseudo-Empedocles's ideas should be conveyed accurately in what we know of al-Ḥallāj's work. The sources of those ideas and the form in which they came to this Sufi master are not entirely clear.

83 El-Jaichi, *Early Philosophical Sūfism*, 10-12.

84 De Smet, *Influence of the Arabic Pseudo-Empedocles*, 12.

85 De Smet, *Influence of the Arabic Pseudo-Empedocles*, 229.

86 See Basharin, *O statute »mahdistiskikh« dvizhenij*.

87 See Basharin, *O statute »mahdistiskikh« dvizhenij*.

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Figures

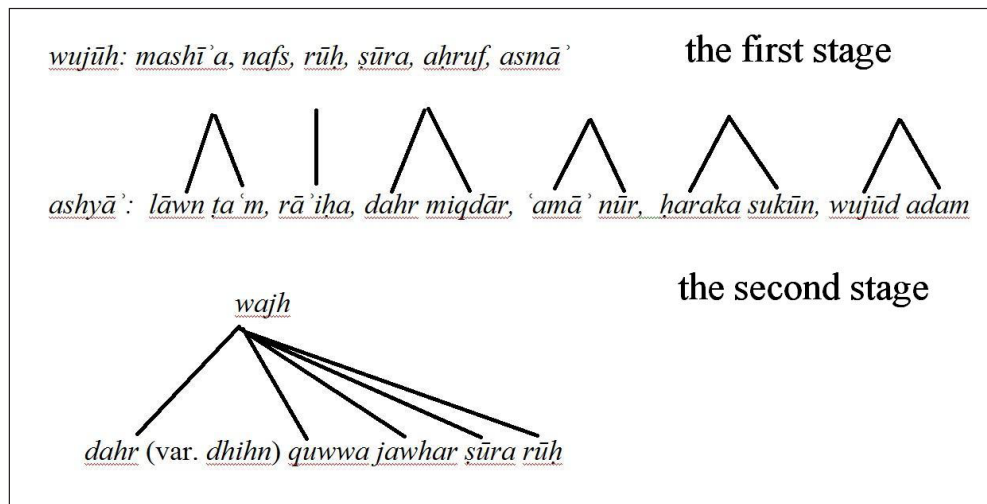


Figure 1: The schematization of things and modes in al-Ḥallāj's cosmology.

<i>Al-Daylamī</i>	<i>Al-Sulamī</i>
<i>ashkhāṣ, ṣuwar, arwāḥ, 'ilm, ma'rifa</i>	six <i>wujūh</i> : <i>mashī'a, nafs, rūḥ, ṣūra, aḥruf, asmā'</i>
<i>'ishq</i>	probable, <i>mashī'a</i> , as the first mode of the Divine essence
<i>'ilm, quwwa, ḥaraka, irāda</i>	six <i>ashyā'</i> : <i>alwān</i> and <i>ta'm</i> (1), <i>rā'iḥa</i> (2), <i>dahr</i> and <i>miqdār</i> (3), <i>amā'</i> and <i>nūr</i> (4), <i>ḥaraka</i> and <i>sukūn</i> (5), <i>wujūd</i> and <i>'adam</i> (6)
<i>dahr</i>	<i>dahr, quwwa, jawhar, ṣūra, rūḥ</i>

Figure 2: The schematization of things and modes in al-Ḥallāj's cosmology.

John Zacharias *Aktouarios* (c. 1275-1330) and His Treatise *On Psychic Pneuma*: Critical Edition of the Greek Text with German Translation and Medical-Historical Commentary Progress and Current Results of the Research Project

Isabel Grimm-Stadelmann*

This edition project is part of the programme »Edition of Greek and Latin Texts of Late Antiquity and the Middle Ages« at the Bavarian Academy of Sciences and Humanities. The progress of the project so far has resulted in the definite identification of previously unknown textual witnesses. It has revealed a completely new dimension of textual understanding by considering the way the various paratexts accompanying the main text evolved; it has developed new methods of editing the text; and it has discovered significant points regarding the transmission and reception of the text, including the texts that were transmitted together with it (*Überlieferungsgemeinschaften*, that is, in multi-text manuscripts). It has also uncovered the positioning of divergent redactorial levels, which is significant in terms of its cross-cultural reception history.

Keywords: Byzantine medicine, John Zacharias Aktouarios (c. 1275-1330), manuscript tradition, critical edition, medical paratexts, »burnout therapy«

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A Byzantine »Burnout Therapy«?

Nowadays, many people suffer from illnesses characterised as »burnout«, »depressive disorders«, or »emotional exhaustion«. The causes of such illnesses are commonly considered to be the result of a general physical and psychological overload in professional and private life, but they can also be a direct reaction to social phenomena and are usually completely independent of the socio-cultural context and age of those affected.¹ Is the state of being physically and emotionally burnt out exclusively a contemporary phenomenon, or do historical sources report on comparable phenomena and the associated challenges for therapists and patients?

John Zacharias (c. 1275-1330), a high-ranking Byzantine physician and *actuarius* (Greek *aktouarios*)² describes and analyses physical and mental impairments in his two-part treatise *On Psychic Pneuma*.³ These impairments are quite comparable to today's »burnout symptoms«. According to John Zacharias, the psychic pneuma can be understood as a psychic-emotional bodily fluid having its origin in the brain and promoting health and well-being when it flows through the body unhindered. When blockages inhibit its flow, however, depression, sleep disorders, loss of appetite and power, physical and mental exhaustion, and general incapacitation arises – in other words, the classic burnout symptoms.⁴ The treatise by John Zacharias contains specific advice on how such blockages can be avoided, balanced, or completely eliminated through a holistic life-concept being adapted to the individual patient's physical constitution, by means of a balanced diet, sufficient exercise in the fresh air, aroma bathing therapy, and judiciously coordinated phases of activity and rest.

Byzantine Medicine Between Tradition and Innovation – and Its Current Relevance

Medical literature and active healthcare were of great importance in everyday Byzantine life; nevertheless, the manifold structures of medical thought in the Byzantine Middle Ages are, for the most part, still quite inadequately researched. My own study has paralleled that of Petros Bouras-Vallianatos in focusing on the particular turn Byzantine medicine took in relation to ancient and classical medicine. In contrast to these eras (or, at least, their representation in scholarly research), the uniqueness of Byzantine medical history lies in its dynamic tension between tradition and innovation.⁵ This is what accounts for its extensive and many-branched international and cross-cultural reception.⁶

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- 1 See Schaufeli and Buunk, Burnout; L. Heinemann and T. Heinemann, Burnout research; Burisch, *Burnout-Syndrom*.
 - 2 A title signifying a high rank, widely attested in hospital hierarchies and equivalent to a department head in a modern hospital.
 - 3 See Bouras-Vallianatos, *Innovation in Byzantine Medicine*, 25-28 (regarding the title and office of *aktouarios*), 31-32 (for a brief overview of the treatise *On Psychic Pneuma*), and 177-204 (for a thorough analysis of the treatise). *Editio princeps*: Goupyl (1557); further editions: Fischer (1774) and Ideler (1841).
 - 4 Grimm-Stadelmann, Burnout auf Byzantinisch, 52-55; Grimm-Stadelmann, Burnout-Therapie aus byzantinischer Zeit.
 - 5 Bouras-Vallianatos, Galen in Byzantine medical literature, 86-110; Bouras-Vallianatos, *Innovation in Byzantine Medicine*, 2-9; Grimm-Stadelmann, *Untersuchungen zur Iatromagie*, 196-200.
 - 6 Bouras-Vallianatos, Cross-cultural transfer of medical knowledge, 963-1008.

Mental diseases, that is, emotionally induced and psychological illnesses in the broadest sense, were explained in both ancient and Byzantine medical science exclusively in terms of physical causes, or, more precisely, in terms of disturbances of the body's internal balance of humours, as a result of which the brain is affected and damaged.⁷ The five-part treatise *On the Structure of the Human Body* (Περὶ τῆς τοῦ ἀνθρώπου κατασκευῆς)⁸ attributed to a certain Theophilus and dating to the Middle Byzantine period (9th or 10th century) very clearly shows in its fourth book that during Byzantine times manifold forms of mental, neurological, or psychological diseases had been observed and diagnosed:

Dementia, melancholy, madness, epilepsy, vertigo, phrenitis, catalepsy, lethargy, delirium, amnesia, apoplexy and paralysis: all these diseases occur when the brain suffers because its body or the surrounding cerebral membranes are either heated or cooled down, dried out or excessively moist, or when the nerves growing out of it are attacked due to other causes.⁹

John's definition of the psychic pneuma as a »psychic-emotional fluid«, whose harmonious flow can be blocked by humoral disturbances (*dyskrasiai*), mostly caused by digestive problems, is also based on this humoral-pathological model.

John Zacharias Aktouarios

John Zacharias is a historical person whose biography, education, career, and life circumstances are described in detail in a rich contemporary correspondence.¹⁰ He belonged to an illustrious circle of well-known and highly esteemed scholars around Emperor Andronikos II Palaiologos (r. 1282-1328) and was a respected authority not only in the medical field but also of natural philosophy.¹¹ He advocated a holistic view of medicine in which philosophy played an essential role for understanding the nature and causes of diseases. In his view, practical knowledge and experience were not sufficient for being able to practise medicine in a responsible and conscientious way: with this attitude, he follows the tradition of Galen's iatrosophism, stating that the ideal physician has to simultaneously be a philosopher.¹² John's lifelong spiritual mentor, the monk and philosopher Joseph Rhakendytes (c. 1260-1330), also belonged to the same circle of scholars.¹³ Probably somewhat after 1326, both retired together from Constantinople to a monastery and, according to some indications, also died in the same year, 1330.¹⁴

7 For these ancient explanations, see Thumiger, *History of the Mind*, 17-65 and 335-418.

8 Theophilus Protospatharios, *Aufbau des Menschen*, ed. Grimm-Stadelmann.

9 Theophilus Protospatharios, *Aufbau des Menschen*, IV, 31, ed. Grimm-Stadelmann, 182 (own translation).

10 Bouras-Vallianatos, *Innovation in Byzantine Medicine*, 19-25.

11 Bouras-Vallianatos, *Innovation in Byzantine Medicine*, 11-14.

12 Galen, *Quod opt. med.*, ed. Boudon-Millot, 235-314.

13 Gielen, Joseph the Philosopher, 205-215; Gielen, Ad maiorem Dei gloriam, 260-276; Gielen, The *Synopsis* of Joseph Racendytes, 107-111; Bouras-Vallianatos, *Innovation in Byzantine Medicine*, 180-181.

14 Bouras-Vallianatos, *Innovation in Byzantine Medicine*, 29 and n. 183.

Joseph Rhakendytes planned an extensive, but perhaps never finalised, universal scientific collection (*Synopsis*),¹⁵ to which John Zacharias not only made a contribution with his two-part treatise on the psychic pneuma, but at the same time also provided his mentor with a suitable and individual guide to combat his »burnout symptoms«. The treatise can be described as a synthesis and quintessence of John's entire medical oeuvre,¹⁶ which was by no means reserved for a purely professional audience, but was equally accessible to »amateur physicians«, known as *philiatroi*.¹⁷ John's three-part *Medical Epitome* covering the fields of diagnostics, therapeutics, and pharmacology was also dedicated to a famous *philiatros*, the high-ranking and widely influential state official Alexios Apokaukos (c. 1280-1345);¹⁸ and Joseph Rhakendytes, as John emphatically emphasises several times, likewise possessed a high degree of medical knowledge that went far beyond a mere theoretical interest, since Joseph was even capable of expertly performing phlebotomy.¹⁹

The Two-Part Treatise On Psychic Pneuma: A Medieval Wellness Programme

The first part of John Zacharias' treatise *On Psychic Pneuma* concentrates entirely on the theoretical explanation of the psychic pneuma. What is highly innovative is that John expands the traditional pneumatology.²⁰ To the three types of pneumata originating in different organs – the brain, the heart, and the liver – which produce psychic, vital, and vegetative fluids depending on the specific organ's qualities, he adds a fourth and »gastric« pneuma, originating in the stomach.²¹ Against the backdrop of his practical work as a physician, combined with precise observation of his patients, it is this aspect, namely the emphasis on the importance of the stomach as well as the entire digestive system, that is particularly emphasised within the framework of his therapeutical concept. Thus, psychic-emotional problems are not only able to impact the stomach, but also, conversely, digestive problems can gravely affect the psychic-emotional balance. John explains the intensity of the four pneumata's effects on the whole organism in detail and analogously to the humoral-pathological body concept, with their variations depending on the characteristics of the organs in which they originate. A harmonious relationship of all the internal body fluids is the prerequisite for holistic health and well-being; digestive disorders produce bodily fluids of incompatible substance, from which a kind of vapour develops that is responsible for all kinds of blockages inside the body and for the corresponding physical and psychological damages arising from them.

15 Gielen, *Nicephori Blemmydae de virtute*, cxxii; Bouras-Vallianatos, *Innovation in Byzantine Medicine*, 180-181 and n. 6.

16 For a concise overview, individual analyses, and the contextualisation of the whole oeuvre of John Zacharias, see Bouras-Vallianatos, *Innovation in Byzantine Medicine*.

17 Bouras-Vallianatos, *Innovation in Byzantine Medicine*, 106-110.

18 Bouras-Vallianatos, *Innovation in Byzantine Medicine*, 30-31 and 111-112.

19 *On Psychic Pneuma*, I.20,9, ed. Ideler, I, 348,32-349,8; cf. Bouras-Vallianatos, *Innovation in Byzantine Medicine*, 184 and n. 25.

20 Cf. Coughlin *et al.* (eds.), *Concept of Pneuma*, which also includes a chapter on pneumatological theories in the work of John Zacharias (Bouras-Vallianatos, Theories on pneuma).

21 *On Psychic Pneuma*, I.6,11-12, ed. Ideler, I, 323,20-33; cf. Bouras-Vallianatos, *Innovation in Byzantine Medicine*, 193-194.

The psychic-emotional fluid, defined by John Zacharias as psychic pneuma, is particularly susceptible because it reacts extremely sensitively to any negative influences. This is due to its ethereal and subtle substance and is also why it requires special care. The care must firstly concentrate on dietary measures (*regimina*), the subject of the second part of the treatise, which take into account not only the qualities of certain foods, but also their concrete, individual application. Thus, very nutritious types of grains and cereals and the products made from them («wholemeal products») are beneficial for people working physically but not at all advisable for intellectual workers.²² In relation to the symptoms he observed in Joseph Rhakendytes, John Zacharias therefore advises the consumption of light white-flour products, since these can be absorbed most completely by an organism not working physically and one which is also weakened by regular periods of fasting and starvation (as obligatory for Orthodox monastics)²³ without blocking the internal body fluids.²⁴

In the further course of the text, various vegetables and fruits are analysed in detail according to their nutritional and therapeutic value: according to John Zacharias, some of them have no nutritional value at all, but are highly recommended as regulating remedies that purge the body internally.²⁵ In this very context John also differentiates between cultivated and wild growing forms. For example, in the case of radishes, the wild form is extremely valuable therapeutically due to its powerful purging effects but otherwise has no nutritional value.²⁶ In general, John advises against highly flatulent vegetables and fruits or recommends forms of preparation regulating and balancing their flatulating properties: for example, pulses should always be soaked for a long time, drained, and then cooked thoroughly. Asparagus is considered the ideal food with the best qualities, high in nutritional value as well as therapeutically valuable as a diuretic. John therefore recommends consuming it as often as possible in season and even preserving it by pickling in order to have a supply available out of season.²⁷

22 On grains and cereals, see *On Psychic Pneuma*, II.5,1-21, ed. Ideler, I, 358,35-361,25; cf. Kokoszko *et al.*, *Cereals of Antiquity and Early Byzantine Times*. Regarding types of workers, see *On Psychic Pneuma*, II.3,5, ed. Ideler, I, 359,9-15; 18-22. John also draws an interesting parallel in this context between the constitution of intellectuals and that of sick people.

23 Cf. in detail Bouras-Vallianatos, *Innovation in Byzantine Medicine*, 202 and n. 135 (containing all relevant bibliography).

24 *On Psychic Pneuma*, II.5,5, ed. Ideler, I, 359,18-22.

25 *On Psychic Pneuma*, II.6, ed. Ideler, I, 362,25-367,4; cf. Bouras-Vallianatos, *Innovation in Byzantine Medicine*, 200-201 and n. 126-128; for a general overview especially on fruits see Simeonov, *Obst in Byzanz*.

26 *On Psychic Pneuma*, II.6,8, ed. Ideler, I, 363,22-28; cf. Bouras-Vallianatos, *Innovation in Byzantine Medicine*, 201.

27 *On Psychic Pneuma*, II.6,14, ed. Ideler, I, 363,15-25; cf. Bouras-Vallianatos, *Innovation in Byzantine Medicine*, 201 n. 128.

Since the treatise's addressee, Joseph Rhakendytes, is committed to the fasting rules of Orthodox monasticism and therefore abstains completely from eating meat, John apologises several times for including different kinds of meat in the treatise as well, but he emphasises that although the treatise is primarily intended for Joseph, it should also be useful to other people seeking similar advice.²⁸ For the sake of completeness, he does not want to exclude the qualities of various kinds of meat. Here, too, the rule applies that the less the physical work, the lighter the food: for purely intellectual workers, poultry is preferred to other types of meat. In accordance with the Orthodox monastic rules, fish and seafood are allowed at certain times, and John gives clear preference to saltwater fish over the richer and therefore harder-to-digest freshwater fish.²⁹

John's recommendations on dairy products also seem very modern.³⁰ Although lactose intolerance was still completely unexplored and totally unknown in his times, he states purely on the basis of observation and experience that sheep and goat milk is much better tolerated by the organism than cow's milk.³¹ His warning against all oversalted (cured) foods is also quite consistent with today's dietary advice.

It is in this second part of his treatise that John develops a detailed, individually tailored health programme that accords with modern demands in every respect. A central component of this programme is a detailed dietary plan emphasising a balanced distribution of the day's meals; at least two meals a day are required. Furthermore, John Zacharias advises a balanced and individually adapted exercise and gymnastics programme: in the course of his text, he lists different types of physical exercises and sports, but simultaneously emphasises that in some cases just a simple walk might be absolutely sufficient, especially for people not used to any sporting activities at all. Concluding, he also advises bodily hygiene, bathing therapies, and regular intervals of rest and activity.³²

Both parts of his treatise impressively convey that John Zacharias combined the entire diversity of ancient, late antique, and Byzantine medical sources with the philosophical and theological knowledge base of an educated Byzantine. In addition, he draws on rich practical experience as well as manifold inspiration from the cross-cultural professional scientific dialogue common at his time, especially in the environment of Byzantine hospital institutions and as part of a scientific community including Muslim and Jewish representatives of Arabic medical cultures.³³

28 *On Psychic Pneuma*, II.6,28, ed. Ideler, I, 367,1-4; for meat in general, cf. Kokoszko and Rzeźnicka, *Animals as a source of food*.

29 *On Psychic Pneuma*, II.7,4-8, ed. Ideler, I, 367,24-368,7; cf. Bouras-Vallianatos, *Innovation in Byzantine Medicine*, 202.

30 *On Psychic Pneuma*, II.8-10, ed. Ideler, I, 370,13-29; cf. Rzeźnicka and Kokoszko, *Milk and Dairy Products*.

31 *On Psychic Pneuma*, II.10, ed. Ideler, I, 370,25-29.

32 Cf. Bouras-Vallianatos, *Innovation in Byzantine Medicine*, 202-203.

33 Cf. Bennett, *Medicine and Pharmacy*; Bouras-Vallianatos, *Cross-cultural transfer of medical knowledge*, 993-994; cf. also the ongoing research project by Petros Bouras-Vallianatos, »Making and Consuming Drugs in the Italian and Byzantine Worlds, 12th-15th c.« (Wellcome University Award, 2019-2024).

Manuscript Tradition and Recensio

The Greek text of the treatise *On Psychic Pneuma* is preserved in 35 manuscripts kept in around 20 different libraries throughout Europe. Almost all manuscripts date between the 14th and 16th centuries, with the largest number being from the 15th century. Intratextual references, secondary annotations, glosses, and margins reveal that copyists and readers examined the text's contents, professional terminology, grammar, and lexicography intensively. The results obtained from the handwritten witnesses and their respective transmission are, apart from their significance for codicology and reception history, of considerable value for understanding cross-cultural knowledge collaboration in the medieval Mediterranean world.

The methodology of the edition project is aimed at uncovering the text's redaction history more than at establishing an archetypal text. The existence of an autograph cannot be proven, and, in light of this methodology, is not crucial. Conversely, *apographa*, which have only secondary value for stemma and textual constitution, take on particular significance in showing how the text was later redacted. Four manuscripts have proven to be *apographa* with identifiable *Vorlagen*:

1. Munich, Bayerische Staatsbibliothek, Cod. graec. 69, fols. 1-46 (dated 20 April 1551, Diktyon ID: 44513) is an *apographon* of Venice, Biblioteca Nazionale Marciana, gr. Z. 298 (coll. 583), fols. 1-33v (dated 1465, Diktyon ID: 69769).
2. Padova, Biblioteca Civica, CM. 644, fols. 1-40 (15th century, Diktyon ID: 48832) is an *apographon* of Paris, Bibliothèque nationale de France, grec. 2305, fols. 121-158 (dated 1418, Diktyon ID: 51935).
3. Budapest, Hungarian National Library (Országos Széchényi Könyvtár), Kéziratar Fol. Graec. 4, fols. 1-45 (15th century, Diktyon ID: 11727) is an *apographon* of Paris, Bibliothèque nationale de France, grec. 2306, fols. 289-329 (15th century, Diktyon ID: 51936).
4. Glasgow, University Library, Special Collections Department, MS Hunter 271 (U.5.11), fols. 1:1-13:1 (15th century, Diktyon ID: 17310) is an *apographon* of Paris, Bibliothèque nationale de France, grec. 2098, fols. 119-158 (before 1326, Diktyon ID: 51727).

The stemma consists of two subordinate textual redactions, of which the second, younger redaction in particular shows the way mostly 15th-century scholars examined the text intensively. For these two recensions, it is possible to distinguish between two significantly diverging transmission histories and intended uses:

1) The first is an *epistolary* redaction in which the entire text takes the form of a didactical letter, intended for incorporation into Joseph Rhakendytes' scientific collection (*Synopsis*). This redaction is the older one and comprises a total of five manuscripts with a focus in the 14th century.³⁴ These manuscripts show hardly any variation in their readings, and the contents they share as multi-text manuscripts (*Überlieferungsgemeinschaften*) also largely coincide: the individual texts destined for the *Synopsis*.

In this redaction the text is left almost unchanged as a literary document and shows virtually no traces of any significant engagement with it. Paris, Bibliothèque nationale de France, grec. 3031 (Diktyon ID: 52676), which was hitherto unknown in connection with John Zacharias' treatise *On Psychic Pneuma*, has been successfully identified as a completely new textual witness containing the entire two-part treatise in close connection with the *Synopsis* of Joseph Rhakendytes. The previous assumption that the Florentine manuscript Riccardianus 31 (K II 4) contains only the first part of the treatise (fols. 275-290), followed by alleged letters of John Zacharias (fols. 290-305) has been indisputably refuted, since the alleged letters can be identified without question as the entire second part of John's treatise *On Psychic Pneuma*.

2) Independently from the epistolary redaction there exists another redaction, destined for practical use, for which the preponderance of manuscript witnesses come from the 15th century. This redaction is characterised by an explicitly practical orientation and shows that the text's content and terminology was examined intensively. The manuscripts constituting this redaction contain numerous annotations and marginal comments and certainly should be assigned to a professional clinical-therapeutical environment. This form of transmission is emblematic of Byzantine scientific literature, and it documents various stages of working on the text in approximately three sub-levels, focusing and evaluating its contents but also refining its professional terminology and rendering it more precisely. Some passages of the text are questioned, continuously evaluated, and intensively discussed. Its terminology is constantly updated, and individual therapeutical concepts and recommendations are supplemented, revised, and rewritten on the basis of the users' practical experiences, knowledge gained, cross-cultural collaboration, and innovative discoveries. As a special feature of Byzantine medical literature, this phenomenon requires special methodological attention and is significant for the history of science as it conveys a vivid picture of practitioners' detailed intellectual engagement with the relevant texts. It is precisely the emphasis on divergent reception histories that provides us with interesting insights into physicians' contemporary scientific exchanges as well as into their cross-cultural scholarly collaboration and networking structures as they discussed and applied new therapies.

34 Firenze, Biblioteca Riccardiana, Riccard. 31 (K II 4), fols. 275-305 (14th century, Diktyon ID: 17031); Paris, Bibliothèque nationale de France, grec. 3011, fols. 62-95 (14th century, Diktyon ID: 52676); Vatican, Biblioteca Apostolica Vaticana, Vat. gr. 111, fols. 298v-332v (14th century, Diktyon ID: 66742); Venice, Biblioteca Nazionale Marciana, gr. Z. 529 (coll. 847), fols. 405-422 (15th century, Diktyon ID: 70000); and Vatican, Biblioteca Apostolica Vaticana, Vat. gr. 429, fols. 315-341v (16th century, Diktyon ID: 67060), which, however, only preserves the second part of the treatise.

Of particular relevance regarding the evolution of the text is the determination of the significance of the texts that were transmitted together in the manuscripts (*Überlieferungsgemeinschaften*), that is, the manuscript context in which *On Psychic Pneuma* was transmitted. These textual groupings have much to say about the text's reception, such that the context of the commentaries in the text (its »marginalia«, interlinear commentaries, and disciplinary annotations) as well as the arrangement and internal structure of each manuscript's textual groupings provide crucial indications of its users and reception history and the text's place within cross-cultural scholarly networks. By contextualising intratextual annotations and commentaries, we can gain various insights into cross-cultural collaborations located at Byzantine hospital institutions, known as *xenones*.³⁵ One example is a collection of recipes and therapeutical concepts attributed to a Jewish doctor named Benjamin,³⁶ which were tested and evaluated during hospital operations. The fact that both translations and redactions of Arabic medical works can be attributed to John Zacharias means that he himself played a significant role within these cross-cultural scholarly collaborations and networking structures.³⁷

The Paratexts

Evidence of the continuous professional examination and evaluation of Byzantine medical literature is to be spotted as paratextual structures³⁸ accompanying and commenting on or supplementing the main text, mainly written on the margins of the manuscripts, but sometimes also inserted between the lines of the main text. The focus of these changes according to the user, who might, for example, add terminological, philological, and linguistic specifications, or discuss and specify the main text's practical and therapeutical statements, or even occasionally include diagrams³⁹ and drawings. The intensive dialogue between text and paratexts has not yet been studied at all in the context of Byzantine medical literature,⁴⁰ let alone recorded methodically within critical editions. For this reason, an adequate editing method is now being developed for the critical edition of the treatise *On Psychic Pneuma*, in order to do justice to the paratexts' cultural-historical significance as evidence of a vivid dialogue with the main text. In the specific case of the treatise *On Psychic Pneuma*, a total of nine different groups of paratexts have already been identified and transcribed, and these contain fascinating and sometimes detailed discussions of certain passages, with the relevant manuscripts occasionally even displaying divergent readings. Of particular importance are clinical case studies based on observations of individual patients, which provide direct insights into everyday medical practice.

35 Cf. Bennett, *Medicine and Pharmacy*; Horden, *Medieval hospital formularies*, 145-164.

36 Bouras-Vallianatos, *Innovation in Byzantine Medicine*, 145 n. 23; Grimm-Stadelmann, »... und mischt daren das Aug des Wiedehopfs ...«, 129-131.

37 Bouras-Vallianatos, *Innovation in Byzantine Medicine*, 34-37.

38 For the concept of paratexts, see Genette, *Paratexts*; Cooper, *What is medieval paratext?*, 37-50; Fioretti, *Sul paratesto nel libro manoscritto*, 179-199.

39 Bouras-Vallianatos, *Diagrams in Greek medical manuscripts*, 287-329.

40 The results of the recent symposium »The Medical Paratext« (funded by the Wellcome Trust) and organised by Petros Bouras-Vallianatos and Sophia Xenophontos, which took place on 7-8 September 2022 at the University of Glasgow, will be published in 2023 and will open up some closer and more detailed investigation of this topic.

Our German translation of the treatise *On Psychic Pneuma* takes into account not only all the essential results of the composition of the text, but also the paratexts accompanying the text as well as the Latin translation by Julius Alexandrinus de Neustain (1547-1567, in several versions) and a recently published modern Greek translation.⁴¹ In addition to the interdisciplinary use of the text, the translation also serves to expand and explain the treatise's multi-layered structure and special technique of compilation.

Sources and Structure

The first part of the treatise imposes different sources on top of each other in several layers, to some extent in an extremely elliptical-paraphrastic manner. Aristotle's treatise *De Anima* (*On the Soul*) is one of these foundations, but also the various late antique and Byzantine commentaries on Aristotle's works, especially that of John Philoponos. There is a particular focus on the nearly contemporary commentary on Aristotle by Nikephoros Blemmydes (1197-1272).⁴² Another essential source, at least for the first part of the treatise, is the Theophilos redaction of Middle Byzantine Christian anthropology.⁴³ The second part of the treatise, with its practical and therapeutical focus, is based on a selection of dietetic sources, in particular on the relevant writings of Galen and Paul of Aegina, intertwined with excerpts from Theophanes Chrysobalantes and the *Dynameron* of Nikolaos Myrepsos as well as from John Zacharias' three-part *Medical Epitome*.⁴⁴ The technique of compilation used by John Zacharias represents a methodological peculiarity in the context of Byzantine medical epitomising, since, with a few exceptions, the sources are hardly quoted literally but rather hinted at in the form of extensive paraphrases, as a kind of »sources d'inspiration«.⁴⁵

Conclusion and Prospects

John's treatise *On Psychic Pneuma* with its manuscript tradition not only displays special features within Byzantine medical literature, but also proves to be a crucial source for evaluating and discussing cross-cultural scholarly collaboration and scientific networks within medieval medical cultures. John Zacharias reveals by his comprehensive scientific and linguistic knowledge as well as by his reception of Aristotle's works significant crossing

41 Kakavelake, *Iōannou Zacharia Aktouariou Peri energeiōn kai pathōn tou psychikou pneumatos*.

42 Valente, *Nikephoros Blemmydes, Epitome physica*.

43 Theophilos Protospatharios, *Aufbau des Menschen*, ed. Grimm-Stadelmann; Grimm-Stadelmann, *Mittelbyzantinische christliche Anthropologie* (forthcoming).

44 See Bouras-Vallianatos, *Innovation in Byzantine Medicine*, 200 and n. 126 (on Paul of Aegina); Theophanes Chrysobalantes, *Theophanis Nonni Epitome de curatione morborum*, ed. Bernard (for an analysis of the manuscript tradition, see Sonderkamp, *Untersuchungen zur Überlieferung*; Zipser, *Revisions of Theophanes Chrysobalantes*); the first critical edition of Nikolaos Myrepsos' Greek text, Valiakos, *Das Dynameron*; Bouras-Vallianatos, *Innovation in Byzantine Medicine*, 105-176 and 184 (on John Zacharias' *Medical Epitome*).

45 A term from Lazaris, *Le Physiologus grec*, 45

points between Byzantine and Arabic medical cultures and traditions. Moreover, several points of John Zacharias' work contribute significantly to medieval medical history: his redefinition and rewriting of traditional pneumatologies; his emphasis on anthropological aspects;⁴⁶ and his activity in a cross-cultural hospital system, where professional networking was based on mutual collaboration and scientific exchange as well as on continuous evaluations of therapeutic methods and on concepts born from empirical expertise.⁴⁷

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46 Cf. Wakelnig, *Medical knowledge*, 219-249.

47 As explored in the »Séminaire sur la formation du médecin« (equih.sam.hypotheses.org/seminaires/projets-en-cours/formation-du-medecin, accessed on 30 November 2022).

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Communities of Knowledge: Interreligious Networks of Scholars in Ibn Abī Uṣaybi‘a’s *History of the Physicians* (Project Report)

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The project »Communities of Knowledge: Interreligious Networks of Scholars in Ibn Abī Uṣaybi‘a’s *History of the Physicians*« aimed to examine the social encounters of Christian, Muslim, and Jewish scholars in the Abbasid Near East, in the period 132-656 AH/750-1258 CE. The Arabic biographical dictionary of Ibn Abī Uṣaybi‘a (b. after 590/1194, d. 668/1269 or 1270) provides rich accounts of such interactions, sometimes occurring directly between scholars, but other times involving much larger networks of people with a wide variety of religious affiliations. Ibn Abī Uṣaybi‘a weaves these figures throughout his biographical entries, revealing networks of scholarly interchange. In our project, we wanted to discover which people, places, and types of communication he shows as most central to exchange between communities of differing religious affiliations. The networks themselves we understand to be historiographical presentations by a physician who wished to trace the art of medicine through elite practitioners to his present day, relying in the process on both Islamic and other sources, as well as on information from his own broad range of acquaintances in the field.

In this project report, we describe three processes crucial to our project. First, we identified and »tagged« people and places in Ibn Abī Uṣaybi‘a’s text. This included creating entries for each person or place, which also served as authority data to which we could link using tags in the text of the *History of Physicians*. Second, we created prosopographical »factoids« for passages we wanted to study in detail. These are information nuggets that record in a machine-readable way what we understand the text to be asserting about people, relationships, and events. Finally, we loaded the tagged text and factoids into networks to help identify which persons, places, or features call for in-depth qualitative study in regard to exchange between religious communities.

Keywords: interreligious networks, knowledge exchange, Near East/Middle East, Abrahamic religions, Abbasid caliphate (132-656 AH/750-1258 CE), Arabic, biographical literature, medieval science, medieval medicine, Ibn Abī Uṣaybi‘a (b. after 590 AH/1194 CE, d. 668/1269 or 1270), network analysis

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Introduction

The project »Communities of Knowledge: Interreligious Networks of Scholars in Ibn Abī Uṣaybi'a's *History of the Physicians*« aimed to examine the social encounters of Christian, Muslim, and Jewish scholars in the Abbasid Near East, in the period 132-656 AH/750-1258 CE.¹ Its primary source was the text of Ibn Abī Uṣaybi'a (b. after 590/1194, d. 668/1269 or 1270), a physician active in Syria and Egypt who wrote an Arabic biographical dictionary of physicians from antiquity until his time titled *'Uyūn al-anbā' fī ṭabaqāt al-aṭibbā* (literally, »Choice accounts of the classes of physicians«, hereafter abbreviated as *History of Physicians*).² This work provides rich accounts of interactions across religious communities, sometimes occurring directly between scholars, but other times involving much larger networks of people, including students, patrons, patients, family members, and assistants. Moreover, the religious affiliations of the people he mentions are richly varied, encompassing not only a wide range of Muslims (Sunni, Shi'i, and Sufi); but also Christians from the East and West Syriac, Melkite, and Coptic churches; Rabbanite and Qaraite Jews; Samaritans; Zoroastrians; Sabians; and Hindus.

Several distinctive features allowed the project to contribute to under-researched areas. First is that it focused on social, interpersonal encounters rather than the more commonly investigated area of textual and literary exchange. Biographical works, especially those detailing social relationships as richly as Ibn Abī Uṣaybi'a does, are uniquely positioned alongside documentary texts to reveal the specific social circumstances in which cross-communal exchange took place.³ Second, the project explored such interactions in the context of medicine and other disciplines that are not explicitly religious. On the one hand, collaboration in such fields across Near Eastern religious communities is well known; on the other hand, texts such as the *History of Physicians* typically fall into the disciplinary domain of the history of science, where their interreligious implications may be overlooked. A third distinctive feature of the project was the attempt to transcend the biographical dictionary's explicit structure, using digital tools to take into account all the characters appearing in the text, not just those who are the subject of biographical entries.

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- 1 The project was funded from 2018 until 2022 under the title »Wissensgemeinschaften: Interreligiöse Gelehrtennetzwerke in Ibn Abi Usaybi'a's *Geschichte der Ärzte*« (grant number O1UL1826X) by the German Federal Ministry of Education and Research (BMBF) in the program »Kleine Fächer – Große Potentiale« and was hosted by Ronny Vollandt, professor of Judaic studies, at the Institute of Near and Middle Eastern Studies, Ludwig-Maximilians-Universität München. Team members included Nathan P. Gibson (principal investigator); Nadine Löhr (academic associate); Vanessa Birkhahn, Hanna Friedel, Lukas Froschmeier, Robin Schmah, Malinda Tolay, and Flavio Zeska (student researchers, in alphabetical order); and Fabio Ioppolo (intern). Carolin Willimsky (student researcher) has done additional tagging since the project concluded. The individual contributions of each of the team members will be visible as data is iteratively published to the project website.
 - 2 Although works of the *ṭabaqāt* genre like this one provide individual biographical entries, they do not strictly qualify as »biographical dictionaries« according to Goudie, *Historiography*, sec. 2, who reserves the term for the alphabetically organized *mu'jam* works.
 - 3 The articles in the thematic section of the previous volume (*Medieval Worlds*, vol. 17) include several studies emphasizing the social dimension of interreligious knowledge exchange, as well as an expanded discussion of interpersonal versus literary exchanges in the introduction (Gibson, *Knowledge collaboration*, 60-61). For many examples of cross-communal exchange in Arabic-speaking regions and some of the settings in which they occurred (including teacher-student relationships, patronage and clientele, and shared workplaces), see Gibson and Vollandt, *Cross-communal scholarly interactions*.

In the following, we introduce the text of Ibn Abī Uṣaybi'a and then describe three processes crucial to our project: (1) tagging people and places in the text, (2) creating prosopographical »factoids«, and (3) building and analyzing networks.

Choice Accounts of the Classes of Physicians (History of Physicians)

Over the course of approximately 420 entries (*tarājim*, sg. *tarjama*) in the *History of Physicians*, ranging from a single paragraph to several pages long, Ibn Abī Uṣaybi'a describes physicians' medical training and practice, the patrons who supported them, anecdotes of their most surprising treatments, poems composed by them or for them, aphorisms they imparted, and books they wrote.⁴ Although the text was originally edited by August Müller in 1882-1884,⁵ it was re-edited in recent years on a much improved manuscript basis as *A Literary History of Medicine* (hereafter »LHOM«), with a parallel English translation, by a team from the universities of Oxford and Warwick.⁶ The digital version of this edition and translation was released under an open-access license, allowing it to be reused with appropriate attribution.

Ibn Abī Uṣaybi'a's text falls into the *ṭabaqāt* genre, in which biographical entries are given for a certain category of individuals, for example, those associated with a particular place, profession, or legal school, and are arranged by »generations« or »classes« (*ṭabaqāt*).⁷ It is generally agreed that this kind of taxonomizing biographical work originated in – or at least received a major impetus from – the burgeoning study of hadith.⁸ Essential to the reliability of hadith reports were certain characteristics of their transmitters; thus, what was known about the individual transmitters had to be documented. Nevertheless, as the genre flourished, it was adapted in many directions.⁹ Ibn Abī Uṣaybi'a's *History of Physicians* was more focused on medicine than were *ṭabaqāt* works about the transmission of Greek sciences in general, such as those of his predecessor Ṣā'īd al-Andalusī (420-462/1029-1070) and his contemporary Ibn al-Qiftī (568-646/1172-1248).¹⁰ But it was also more expansive and up-to-date than the biographical collection of physicians by Ibn Juljul (332-after 384/944-after 994), with a large part of the book dedicated to developments since the fourth/tenth century.¹¹

4 The number of biographical entries and their contents differ among the three different versions of Ibn Abī Uṣaybi'a's work. See Sánchez, Textual and manuscript tradition, sec. 5, for a detailed discussion. For an overview of what Arabic biographical entries typically contained in this period, see Goudie, Historiography, sec. 2; Khalidi, *Arabic Historical Thought*, 210.

5 Ibn Abī Uṣaybi'a, *Uyūn al-anbā'*, ed. Müller.

6 Ibn Abī Uṣaybi'a, *Uyūn al-anbā'*, ed. Savage-Smith *et al.*

7 Jaques, Arabic Islamic prosopography, 398; Goudie, Historiography, sec. 2. For some examples of how *ṭabaqāt* works were structured, see Jaques, Arabic Islamic prosopography, 406-408.

8 Jaques, Arabic Islamic prosopography, 400, compare 395-396; Goudie, Historiography, sec. 2.

9 Goudie, Historiography, sec. 2; Doufkar-Aerts, Arabic biography. Regarding historiographical concerns in medical histories, see Millán, Ibn Juljul, 142-145. For such considerations regarding Arabic biographical literature generally, including its literary aims, see Bray, Literary approaches to Arabic biography, 237-238. Also see the articles in *Medieval Worlds* 15si, especially Mahoney and Vocino, Medieval biographical collections; Heiss, Biographical collections from South Arabia; Mahoney, Obituaries in Yemen.

10 For Ṣā'īd al-Andalusī and Ibn al-Qiftī, see Martínez-Gros, Ṣā'īd al-Andalusī, and Dietrich, Ibn al-Qiftī, respectively.

11 For Ibn Abī Uṣaybi'a's historiographical perspective, see Sánchez, Art of compilation, 77-79, 97-113. On Ibn Juljul, see Dietrich, Ibn Juljul. The *Ta'riḫ al-aṭibbā'* (»History of the physicians«) by Ishāq b. Ḥunayn (d. 298/910) is older but is more of a chronology than a *ṭabaqāt* work as such (Ishāq b. Ḥunayn, *Ta'riḫ al-aṭibbā'*, ed. Rosenthal). See also the brief comparison of Ibn Juljul with Ibn Abī Uṣaybi'a in Millán, Ibn Juljul, 143-144.

Altogether there are fifteen »classes« or chapters into which Ibn Abi Uṣaybi'a divides the physicians recounted in his work, »with the information regarding them arranged sequentially in chronological order«, as the author states in the preface.¹² The first five of these deal with the ancient origins of medicine, and include Asclepius, Apollo, Hippocrates, Galen, and their successors. Chapters 6-7 treat pre-Islamic and early Islamic physicians. Following this, chapters 8-15 constitute the bulk of the text. Chapter 8 – one of the largest – deals with the »Syriac« (*Suryānī*) physicians of the early Abbasid period, many of them renowned, beginning with Jūrjis b. Jibrīl (d. after 152/769), the ancestor of the celebrated Bukhtishū' family. Thus, chapters 1-8 are roughly chronological, covering from antiquity through to approximately the third/ninth century.

Chapter 9 carries the heading, »Physicians who translated works on medicine and other subjects from Greek into Arabic, and their patrons«. This chapter has a unique, list-like format, in which brief comments rather than long entries focus on the quality of the translators' work more than on the details of their lives or medical practice. The first part appears to be derived from an unidentified source which Ibn Abi Uṣaybi'a and the earlier bibliographer Ibn al-Nadīm (d. 385 or 388/995 or 998) both drew from for their work; the second part uses Ḥunayn b. Iṣḥāq's *Risāla ilā 'Alī b. Yaḥyā* (»Epistle to 'Alī b. Yaḥyā«) about the translations of Galen.¹³ Many of the scholars mentioned here are described in more detail in the biographical entries of chapter 8.

Finally, chapters 10-15 proceed geographically. In each of these chapters, the author recounts the lives and work of physicians from the given region up to his own times: Iraq (in the pre-modern sense) with »al-Jazīrah and Diyār Bakr« (ch. 10); Persian lands (ch. 11); India (ch. 12); »Western lands« (*bilād al-maghrib*, here used to mean North Africa west of Egypt, and Andalusia, ch. 13); Egypt (ch. 14); and Syria (*al-Shām*, ch. 15). Of these, chapters 10, 14, and 15 are the most substantial, and the latter two, representing places Ibn Abi Uṣaybi'a himself lived and worked, are replete with information from his own experiences and networks.

Among *ṭabaqāt* literature, two things make Ibn Abi Uṣaybi'a's *History of Physicians* particularly suitable for investigating networks extending across multiple religious communities. First, the discipline of medicine was one populated by practitioners with many different religious affiliations, as attested by a number of sources besides Ibn Abi Uṣaybi'a, whether other biographical dictionaries, chronicles, or documentary sources from the Cairo Geniza.¹⁴ This multi-religious cross-section of a profession is in contrast to *ṭabaqāt* works dealing with some other subjects, such as hadith transmitters, for example.

Second, over and above the nature of the discipline itself, Ibn Abi Uṣaybi'a himself shows little overt religious bias in the way he selects and presents his biographical subjects and their networks. Both Muslims and non-Muslims receive biographical entries; both can, according to his account, be good doctors or poor ones; both can be pious or impious. To be sure, the

12 Ibn Abi Uṣaybi'a, *Uyūn al-anbā'*, ed. Savage-Smith *et al.*, Preface.

13 Ibn Abi Uṣaybi'a, *Uyūn al-anbā'*, ed. Savage-Smith *et al.*, sec. 9.1n1.

14 See Pormann and Savage-Smith, *Medieval Islamic Medicine*, 2, and the many examples from the Cairo Geniza (Goitein, *Mediterranean Society*, 2:240-261; Lev, *Jewish Medical Practitioners*). That non-Muslims occupied prestigious positions as physicians sometimes drew criticism. See, for example, al-Jāḥiẓ's recurring critique of Christian physicians throughout his *Refutation of Christians* (Jāḥiẓ, *Rasā'il al-Jāḥiẓ*, ed. Hārūn, 3:314-316) and al-Qalyūbi's complaint about Muslim patients preferring Jewish doctors (Sánchez, *Why Muslims shouldn't practice medicine*, 83-87).

selectivity of the sources upon which he relies can affect which persons from which communities appear in his history; moreover, Thomas A. Carlson argues that Ibn Abī Uṣaybī'a was more likely to include non-Muslims as biographical subjects when they were his acquaintances than when he was drawing on historical sources farther afield.¹⁵ But even his selection of sources is indicative, for he is not afraid to draw extensively from Christian sources such as Pethion or Ḥunayn b. Ishāq. Where the author tells of his own intellectual lineage, he unabashedly includes non-Muslim teachers. Whatever the calculations behind Ibn Abī Uṣaybī'a's portrayal of scholarly networks, there seem not to have been any simple formulas that automatically led to excluding or disparaging non-Muslim scholars.¹⁶

Although organized under rubrics devoted mostly to famous scholars, the *History of Physicians* consciously portrays its subjects within networks. R. Kevin Jaques remarks that *ṭabaqāt* texts show the authority not just of individuals, but also of »networks of ideas«. ¹⁷ The same might be said, in this case, regarding networks of *people*. Accompanying the approximately 420 subjects of biographical entries are more than 2,200 other individuals whom Ibn Abī Uṣaybī'a mentions within the entries.¹⁸ Many of these people occur in multiple entries, and the author sometimes seems to expect readers to track these actors across entries. At least in the cases of teacher-student relationships, patronage, and book dedicatees and addressees, the author traces pedigrees in a way that is reminiscent of attempts to establish the authority of a legal school or of a chain of hadith transmitters.

Ibn Abī Uṣaybī'a's conscious selection of biographical subjects and their networks means that simply counting the persons who receive entries and categorizing them by period and religious affiliation, as Max Meyerhof and later Mohammad Hannan Hassan did, is unlikely to provide insight into the multi-religious dynamics he describes. Such a tally cannot, for example, accurately show the relative growth or decline of Muslim versus Jewish physicians.¹⁹ This is partly because such approaches do not take into account Ibn Abī Uṣaybī'a's selection criteria, which appear to have included whether he had access to biographical information about the person in the sources available to him, the nature of the person's intellectual lineage, and the books, poetry, and anecdotes attached to them.²⁰ But it is also because such approaches omit approximately 85% of the persons Ibn Abī Uṣaybī'a discusses, those who are not the subject of biographical entries, including the many non-physicians in the work.

15 Carlson, *Garden of the reasonable*, 104-106. Carlson moreover comments: »Medieval Middle Eastern society was almost certainly less Islamic and more mixed than even Ibn Abī Uṣaybī'a was willing to admit« (*ibid.*, 100).

16 In a comment on an earlier draft of this article, Nadine Löhr pointed out that Ibn Abī Uṣaybī'a's portrayal of non-Muslim scholars can also be weighed against the fact that he dedicated one version of his text to the Samaritan convert to Islam Amin al-Dawlah Abū l-Ḥasan ibn Ghazāl ibn Abi Sa'īd (d. 647/1249; see Ibn Abī Uṣaybī'a, *Uyūn al-anbā'*, ed. Savage-Smith *et al.*, Preface and sec. 15.49.1).

17 Jaques, *Arabic Islamic prosopography*, 408.

18 This number is based on 2,416 persons from the LHOM index and 230 additional persons we have identified during the course of our tagging work on chapters 8-15, as of 30 January 2023.

19 Meyerhof, *Quelques médecins juifs*; Hassan, *Jews in the development of sciences*. See the evaluation in Carlson, *Garden of the reasonable*, 100, 104-106, regarding the fundamental flaws of this approach as well as problems with both Meyerhof's and Hassan's assumptions.

20 Compare Ibn Abī Uṣaybī'a's selectivity with that of Ibn Juljul (Millán, *Ibn Juljul*, 149-150).

Tagging Persons and Places

In order, then, to trace the interreligious relationships Ibn Abī Uṣaybi‘a presents in his text, it was necessary to decide which entities should be represented in these networks and then identify and collate references to them in the source. Persons and places were of primary relevance to the project’s goals. Moreover, since the project focused on the Abbasid period (132-656/750-1258), the selected corpus consisted of chapters 8-15. This would enable closer prosopographical work on persons appearing throughout the text and provide a survey of the text’s networks by showing which people or places were involved with each other in the same passages.

Accomplishing this involved two steps: establishing identifiers for persons and places and then tagging their occurrence in the text. First, the project team created authority lists of persons and places on the basis of the LHOM edition’s index, assigning Uniform Resource Identifiers (URIs) with the base usaybia.net/person/ or usaybia.net/place/ plus a unique numeric ID to each entity. We did this using a shared spreadsheet in Google Sheets, which could be updated by any team member, and which used formulas to generate unique IDs and extract or match particular kinds of data (such as names, dates, textual references, and relationship keywords) from the index entries. The spreadsheet was also a convenient way to search for URIs for specific persons or places.

We added new entries with corresponding URIs to this list as we encountered places or persons not mentioned in the index. Since we were concerned primarily with individuals, the only groups we included in our list of persons were small ones whose membership was unambiguous but for whose members we did not have individual references. Thus we excluded tribes (Banū Awd), ethnicities (Nabataeans), and institutions or schools of thought (Mu‘tazilites). Such large, subjective, and fluctuating groups would be poorly suited to analyzing in a network alongside individual actors who might belong to them. We did, however, include as persons both legendary figures (Achilles) and anonymous individuals, since these are part of Ibn Abī Uṣaybi‘a’s representation of relationships between individuals. For anonymous persons, we modeled our practices after those of the »SPEAR: Syriac Persons, Events, and Relationships« prosopographical project (spear-prosop.org), in which each anonymous person is given an ID and a description based on the textual reference, which allows the person to be distinguished from other anonymous persons or, in some cases, even to be identified in another reference. For example, two anonymous persons who appear in the biography of al-Yabrūdī are Anonymous 2444, with the description »Father of al-Yabrūdī«, and Anonymous 2447, with the description »The man whom al-Yabrūdī watched eating too much horse meat«.²¹

21 For the biography of al-Yabrūdī, see Ibn Abī Uṣaybi‘a, *Uyūn al-anbāʾ*, ed. Savage-Smith *et al.*, sec. 15.3.

These lists of persons and places, with short descriptions, dates, and alternate names extracted from the index entries of the LHOM edition, were then turned into individual records according to the Text Encoding Initiative (TEI) guidelines for eXtensible Markup Language (XML).²² Team members, particularly Robin Schmahl, Malinda Tolay, and Hanna Friedel, also linked many of the persons in the list to external identifiers from resources such as the Virtual International Authority File (viaf.org), Onomasticon Arabicum (onomasticon.irht.cnrs.fr), and Wikipedia. By hosting them on a server running an XML database (eXist-db) with the Srophé application (srophe.app), we could present the entries as web pages on the project website (usaybia.net), with each URI taking the user to a corresponding web page (e.g., usaybia.net/person/32). The person or place entry contains a list of all its occurrences within the text (according to the LHOM index) and additional information such as alternative names and links to other projects or databases. Planned additions to the entries include adding more name forms and occurrences attested in the text (as discovered during the tagging work) and displaying literature related to the entries (as entered and tagged by Flavio Zeska and Nadine Löhr, primarily from the bibliographies of the LHOM edition and the Ptolemaeus Arabus et Latinus project, ptolemaeus.badw.de).

Once the initial authority records and infrastructure were in place, the second step was to tag occurrences of persons and places in chapters 8-15 of the Arabic text of Ibn Abī Uṣaybī'a's *History of Physicians*. In 2018-2019, before the publication of the LHOM edition, the base text for this tagging work was planned to be the 1884 edition of Müller. There were several problems, however, with producing a reliable electronic transcription of this. The text was poorly printed and required extensive manual correction after transcribing it with handwritten text recognition in the Transkribus software, even though we achieved a moderately good character accuracy rate of about 95%. Although we had hoped to mitigate this by aligning the results from the text recognition with a transcribed text available from al-Maktaba al-Shamila (www.shamela.ws), this text does not indicate page breaks, which we had to find manually, and its editorial conventions (vocalization, orthography, etc.) made it difficult to align with Müller's text using automated processes.

Fortunately, the LHOM edition became available in open-access from the publisher's website, downloadable in TEI-XML form. This much superior edition immediately became our new base text. Although a reliable English version was now available through the LHOM translation, we chose to continue tagging the Arabic rather than the English text, in order to capture the original formulations of names. After standardizing and formatting the LHOM files, team members Vanessa Birkhahn, Hanna Friedel, Lukas Froschmeier, Nadine Löhr, Malinda Tolay, Robin Schmahl, and later Carolin Willimsky attached URIs to person and place references.²³ These references could be names (tagged with the TEI persName and placeName elements) or indirect references (tagged with rs), such as personal pronouns, anonymous persons, or general descriptors like »son of« or »friend of«. Overall, we tagged over 10,000 occurrences of persons and places in these chapters.

22 For the TEI guidelines, see tei-c.org/release/doc/tei-p5-doc/en/html/index.html. Our TEI-XML records can be downloaded in various versions at doi.org/10.5281/zenodo.3975505 or directly from the project's GitHub repository at github.com/usaybia/usaybia-data/releases.

23 As a rule, persons and places occurring more than once in a paragraph element (p) or list item element (item) were tagged only once within that element. Occurrences in footnotes were not tagged.

In order to effectively manage changes being made by various team members, we used GitHub as a version control and project management system. Changes to the tagged text could be tracked, reviewed, and merged, and tasks could be assigned to specific team members via the »issues« feature.

The following passage (with brackets indicating the translators' interpolations) from the *History of the Physicians* serves as an example of our tagging process:

Abū 'Abd Allāh Muḥammad of Malaga [in al-Andalus], the copyist, has related to me [Ibn Abī Uṣaybi'ah] that the mind of Ibn Riḍwān became deranged toward the end of his life. The reason for this change occurred during the period of the famine when he adopted an orphan-girl whom he raised in his house. One day he left her by herself in the house where he had accumulated valuables and gold worth about 20,000 dinars. She took all of it and fled. She was never heard from again, and Ibn Riḍwān was not successful in finding out where she had gone. From then on, his mental faculties deteriorated.²⁴

We are able to detect four persons within the network mentioned in this paragraph: (1) Abū 'Abd Allāh Muḥammad of Malaga, (2) Ibn Abī Uṣaybi'a, (3) Ibn Riḍwān, and (4) the orphan girl. Two of these four persons are mentioned by their proper name, one (Ibn Abī Uṣaybi'a) is referred to with a relational descriptor while his identity is known to us, and one (the orphan girl) remains anonymous. Accordingly, after our tagging process, the passage is marked in the following manner (here in English rather than Arabic for illustrative purposes):

```
<persName ref="https://usaybia.net/person/2394">Abū 'Abd Allāh Muḥammad of Malaga</persName>
[in al-Andalus], the copyist, has related to <rs ref="https://usaybia.net/person/926">me</rs>
[-- Ibn Abī Uṣaybi'ah --] that the mind of <persName ref="https://usaybia.net/person/1093">Ibn
Riḍwān</persName> became deranged toward the end of his life. The reason for this change
occurred during the period of the famine when he adopted an <rs
ref="https://usaybia.net/person/2503">orphan-girl</rs> [...]
```

By utilizing unique and stable identifiers (that is, the URIs) this process allows us to consistently tag persons who are mentioned in the text in a variety of ways. As such, in this example we can accurately tag Ibn Abī Uṣaybi'a, although he is simply mentioned as »me«, and link to his entry within the database. The same applies to Ibn Riḍwān, whose full name does not appear in this particular passage. Furthermore, we created a URI for the orphan girl, so that she too will receive her own entry within our database, although the text does not mention her name. This step allows any future network analysis to take unnamed actors such as this orphan girl into consideration.

In the tagging process, the encoder brings together the processes of structuring data with close reading, making a combination of quantitative and qualitative analyses possible. While close reading by a human alone could not efficiently track thousands of persons across the text in over ten thousand occurrences, machine processing alone could not resolve indirect references and nuanced hints as accurately as a researcher with knowledge of Arabic and the historical context can.

24 Ibn Abī Uṣaybi'a, *Uyūn al-anbā'*, ed. Savage-Smith *et al.*, sec. 14.25.4.

It was with these factors of efficiency and accuracy in mind that we developed a particular workflow for tagging the text, partly through trial and error. At first, we expected to use the user-friendly Recogito web interface for tagging so that team members did not have to work directly in the TEI-XML code. Although this would probably now be feasible, at the time the TEI-XML export features of Recogito were not yet sufficiently developed to allow us to download our text from Recogito in the necessary format after tagging it. Instead, the team quickly learned to work directly in the code. Winona Salesky, the lead developer of the Srophé web application that visualizes our XML database on the project website, adapted the TEI Publisher Extension for Visual Studio Code (VS Code) so that the person tagging could search the person and place authorities on our website directly from the tagging application (VS Code).²⁵ This was done by simply highlighting a name in the text and pressing a key command. Clicking on one of the results in the sidebar inserts the `persName` or `placeName` tag with the associated URI (see Figure 1).²⁶

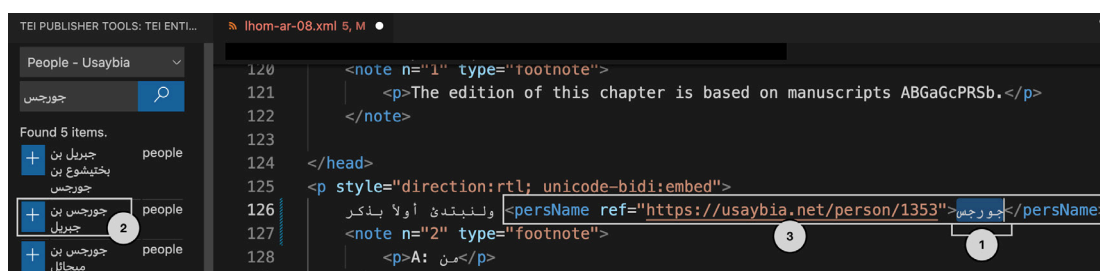


Figure 1: Tagging the personal name *Jūrjis* using the TEI Publisher Extension for VS Code: 1. The encoder selects the name. 2. The encoder chooses a search result. 3. The `persName` element and URI are automatically inserted.

The team found this process to be quite efficient compared to other methods. Although we experimented with automatically wrapping person names in `persName` elements by matching them against common patterns (regular expressions) for Arabic name elements (e.g., Abū, Umm, Ibn, bin, bint), the team found correcting these tags to be laborious. The primary issue was that Arabic names are composed of many elements chosen contextually: a given name (*ism*), an honorific filionym (*kunya*), one or more patronymics sometimes comprising multiple generations of a genealogy, and various other honorific and informative titles. Thus it proved difficult to construct patterns that correctly recognized the boundaries of a name. An Arabic phrase such as the word-by-word equivalent of »called Abū 'Amr the doctor«, could be understood to refer to either one person (`<persName>Abū 'Amr the doctor</persName>` called ...) or two persons (`<persName>Abū 'Amr</persName>` called the doctor ...). Theoretically, a natural language processor with named entity recognition capabilities might recognize name boundaries more accurately than our pattern searches, but, given the complexity of Arabic name structures, we were uncertain that this possibility would increase accuracy and offset the time we would have needed to invest to incorporate named entity recognition into our workflow. In the context of a longer-running project with a larger dataset, this would be worth testing.

25 github.com/eeditiones/tei-publisher-vscode. The fork of the plugin for use with Usaybia.net is at github.com/usaybia/tei-publisher-vscode.

26 See also the documentation of the feature »Entity Markup« at github.com/eeditiones/tei-publisher-vscode.

Overall, the authority creation and tagging process took the majority of the project's personnel hours and funding period, while also providing tangible data to the project's other stages. This includes a text enriched in over 10,000 loci with identifications of persons and places. It also includes name attestations and comprehensive references to augment the person and place entries. And, most importantly for the analytical aspects of the project, it allows us to explore networks of the people and places mentioned together in the text. To summarize, our tagging process allows for stable and consistent identification of known as well as anonymous entities despite their varying names and designations within the text, while building a database that is especially suitable for cross-linking to other projects and offering the potential to take otherwise obscured actors into consideration for future analyses.

Prosopographical Techniques

For the majority of Ibn Abī Uṣaybi'a's large text, we had to be content with locating the words the author used to refer to specific people or places, due to the project's time constraints. This is sufficient for identifying which persons, places, and communicative modes should be examined more closely, but not for the closer examination itself. To achieve a deeper layer of interpretive reconstruction, we added a procedure we could implement on a case-by-case basis. Nadine Löhr's study of manuscripts connected to Ibn Riḍwān served as the best occasion to develop this.²⁷

For this interpretive reconstruction, we borrowed techniques from the approach known as »factoid prosopography«. Prosopography on the whole has to do with studying a group of persons by interpreting references to them (often minor or passing ones) dispersed across a source or corpus. While this was traditionally done by constructing a narrative about each individual on the basis of these references, factoid prosopography turns each of the text's assertions about a person into structured, machine-readable data.²⁸ »Factoids« in this sense

capture assertions made in primary source texts and not necessarily confirmed truths about the past. The factoid approach to prosopography thus captures the scholar's interpretation of what a historical source asserts about persons. As a result, factoids may or may not be verifiable and in some cases are demonstrably false.²⁹

The »Communities of Knowledge« project is not a prosopography per se, in that it does not attempt a collective portrait of a group or class at the comprehensive level that a prosopography would. Nevertheless, we have used the factoid approach for certain passages or themes of Ibn Abī Uṣaybi'a's text to add an interpretive, analytical layer that is closely connected to the text itself but also more machine-processable than the tagged text alone. This is especially important in the case of relationships that will be used to construct networks. On the basis of the tagged text alone, networks can be constructed that show which subjects are mentioned together, but not the more detailed nature of the relationship between them. A factoid recording a particular interaction, however, can specify quite precisely what the text has asserted and even provide machine-readable dates and places for the interaction, when the text states or implies these.

27 One of the articles in the present volume (Löhr, *Off the record*) partially relates to this investigation.

28 Bradley and Short, *Texts into databases*.

29 Schwartz *et al.*, *Factoid prosopography*, sec. 5.

In keeping with our use of TEI-XML for the tagged text and authority records, we have implemented factoids in TEI using the format pioneered by Daniel L. Schwartz and colleagues.³⁰ For relationship types and certain other kinds of keywords, we used terms from the »Taxonomy of Syriac Studies« (<https://syriaca.org/taxonomy>), which had already established many of the keywords we needed and to which we submitted new terms as needed.

Overall, team members Nadine Löhr and Malinda Tolay created approximately 180 factoids, which focused on passages from chapter 14 (Egypt). Factoid types included relations, events, and personal characteristics such as occupation. The following passage and the relation factoid derived from it illustrate the model:

Ibn Buṭlān was a contemporary of the Egyptian physician 'Alī ibn Riḏwān, and the two of them exchanged extraordinary letters and shocking and astonishing writings. Neither of them would compose a book nor form any opinion without the other responding to it and exposing the folly of his opinion.³¹

```
<ab type="factoid" subtype="relation" xml:id="factoid-3" resp="#nloehr">
  <idno type="URI">https://usaybia.net/factoid/10-38-3</idno>
  <listRelation>
    <relation type="person" ref="http://syriaca.org/keyword/refuter-of"
      mutual="https://usaybia.net/person/961 https://usaybia.net/person/1093">
      <desc>Neither of them would compose a book nor form any opinion without the other
        responding to it and exposing the folly of his opinion.</desc>
    </relation>
  </listRelation>
  <bibl type="urn">
    <ptr target="urn:cts:arabicLit:0668IbnAbiUsaibia.Tabaqatalatibba.lhom-ed-ara1:10.38"/>
    <citedRange unit="part">2</citedRange>
  </bibl>
</ab>
```

The above factoid, authored by Nadine Löhr, captures the relationship (»refuter of«) between Ibn Buṭlān and 'Alī ibn Riḏwān both in a narrative description and in a way that can be put into nodes and edges of a network. In the bibl element, it also provides the information for locating the assertion in a specific passage of the text.

In the example below, the encoder (again Nadine Löhr), has created an event factoid that includes her inferences about the date range in both Julian and Hijri calendars and about the place the incident occurred, in machine-readable form.

He ['Alī ibn Riḏwān] adopted an orphan-girl whom he raised in his house. One day he left her by herself in the house where he had accumulated valuables and gold worth about 20,000 dinars. She took all of it and fled.³²

30 Schwartz *et al.*, Factoid prosopography.

31 Ibn Abi Uṣaybi'a, *Uyūn al-anbā'*, ed. Savage-Smith *et al.*, sec. 10.38.2.

32 Ibn Abi Uṣaybi'a, *Uyūn al-anbā'*, ed. Savage-Smith *et al.*, sec. 14.25.4.

```

<ab type="factoid" subtype="event" xml:id="factoid-8" resp="#nlöehr">
  <idno type="URI">https://usaybia.net/factoid/14-25-8</idno>
  <listEvent>
    <event ana="https://usaybia.net/keyword/crime">
      <desc>In
        <choice>
          <reg>
            <date notBefore="1053" notAfter="1061" calendar="julian">1053-1061</date>
          </reg>
          <orig>
            <date notBefore="0445" notAfter="0453" calendar="hijri">445-453</date>
          </orig>
        </choice>,
        <persName ref="https://usaybia.net/person/2457">an orphan girl</persName> whom
        <persName ref="https://usaybia.net/person/1093">he</persName> raised in his
        house in <placeName ref="https://usaybia.net/place/458">Qasr al-Sham</placeName>
        took valuables and gold worth about 20,000 dinar and fled.
      </desc>
    </event>
  </listEvent>
  <bibl type="urn">
    <ptr target="urn:cts:arabicLit:0668IbnAbiUsaibia.Tabaqatalatibba.lhom-ed-ara1:14.25"/>
    <citedRange unit="part">4</citedRange>
  </bibl>
</ab>

```

Here it would be expected that another factoid would also be created to describe the relationship between ‘Alī ibn Riḍwān and the orphan girl.

While factoids such as the above might appear arduous to code, much of the structure is formulaic. This allowed us, using VS Code’s snippet feature, to create and call factoid templates with a few keystrokes, such as »abfr« for a relation factoid.³³ The result is essentially like filling in a form. We also contemplated using the persons and places tagged in the text to pre-populate draft factoids for review, but this could not be accomplished within the project’s timeframe.

Network Analysis

The ultimate goal of the »Communities of Knowledge« project was to discover the people, places, and modes of communication most central to knowledge exchange between Jewish, Christian, and Muslim communities in Ibn Abi Uṣaybi’a’s depiction. Central to this is the task of constructing networks from the persons and places tagged in the text. A large-scale analysis of the data created through the tagging and factoid work is planned for a monograph and accompanying network diagrams on the project website. Nevertheless, we will explain some of the preliminary considerations for this analysis here.

As mentioned above, these networks can be constructed on the basis of two different forms of data: (1) the co-occurrence of entities (persons, places, etc.) in the tagged text and (2) factoids. The fundamental units of a network graph are nodes and edges (the connections between nodes). There are multiple ways to transform each of the above two forms of data into networks, depending on what is chosen to be the nodes and edges.

In the case of constructing co-occurrence networks from the tagged text, one reasonable approach is to show nodes as persons and the passages in which they co-occur as edges. The network-building logic is as follows:

33 See code.visualstudio.com/docs/editor/userdefinedsnippets#_create-your-own-snippets for the custom snippets feature and github.com/usaybia/usaybia-data/blob/3c186311615e8e7b8ef37297c28293ab44f73c80/.emmet/snippets.json for our snippets file.

1. For each numbered subsection or list item in the text
 - 1.1. get a list of unique person URIs tagged in it.
 - 1.2. For each person URI in the list
 - 1.2.1. create an edge connecting it to each of the following person URIs in the list.³⁴

This results in a network graph with many thousands of edges, which, due to its size, lends itself to quantitative analysis and, conversely, is not a feasible target of qualitative analysis until the most relevant parts of the network can be identified. This is the well known »spaghetti monster« problem (see Figure 3). In line with the project goals, we are looking for (1) interreligious and (2) interpersonal connections and, further, want to identify (3) the nodes most significant to knowledge exchange. The last aspect might be understood as corresponding to »centrality« in network terms, perhaps specifically »betweenness centrality«, which has to do with the number of shortest paths in a network that pass through a particular node (see Figure 2). In terms of knowledge exchange, this could be put as the likelihood that knowledge exchanged between groups went through a particular person.³⁵

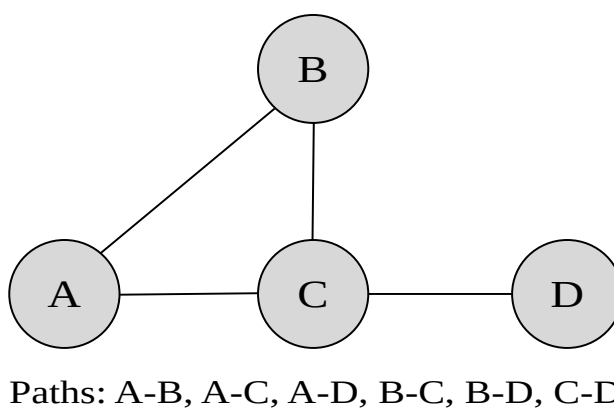


Figure 2: In this simple undirected network graph, node C has the highest betweenness centrality. When the shortest path (least number of edges) is taken between every node and every other node, more of them pass through C than through any other node.

To focus the network on (1) interreligious connections, it is necessary to label the religious affiliations of persons in the network, where discernible. This is a complex task that must be done in a nuanced way.³⁶ Once labeled, it is possible to use religious affiliation as a visualization feature in the network, for example indicating it through the color or position of the nodes, or even to filter the network to include only persons connected to persons across different religious affiliations.

³⁴ This example is non-executable pseudocode. We have typically used xQuery on the TEI documents to construct these networks.

³⁵ For a discussion of the appropriateness of centrality measures for evaluating historical networks, see Düring, How reliable are centrality measures?

³⁶ As discussed in one of the articles in the present volume, Gibson, Labeling religious affiliation.

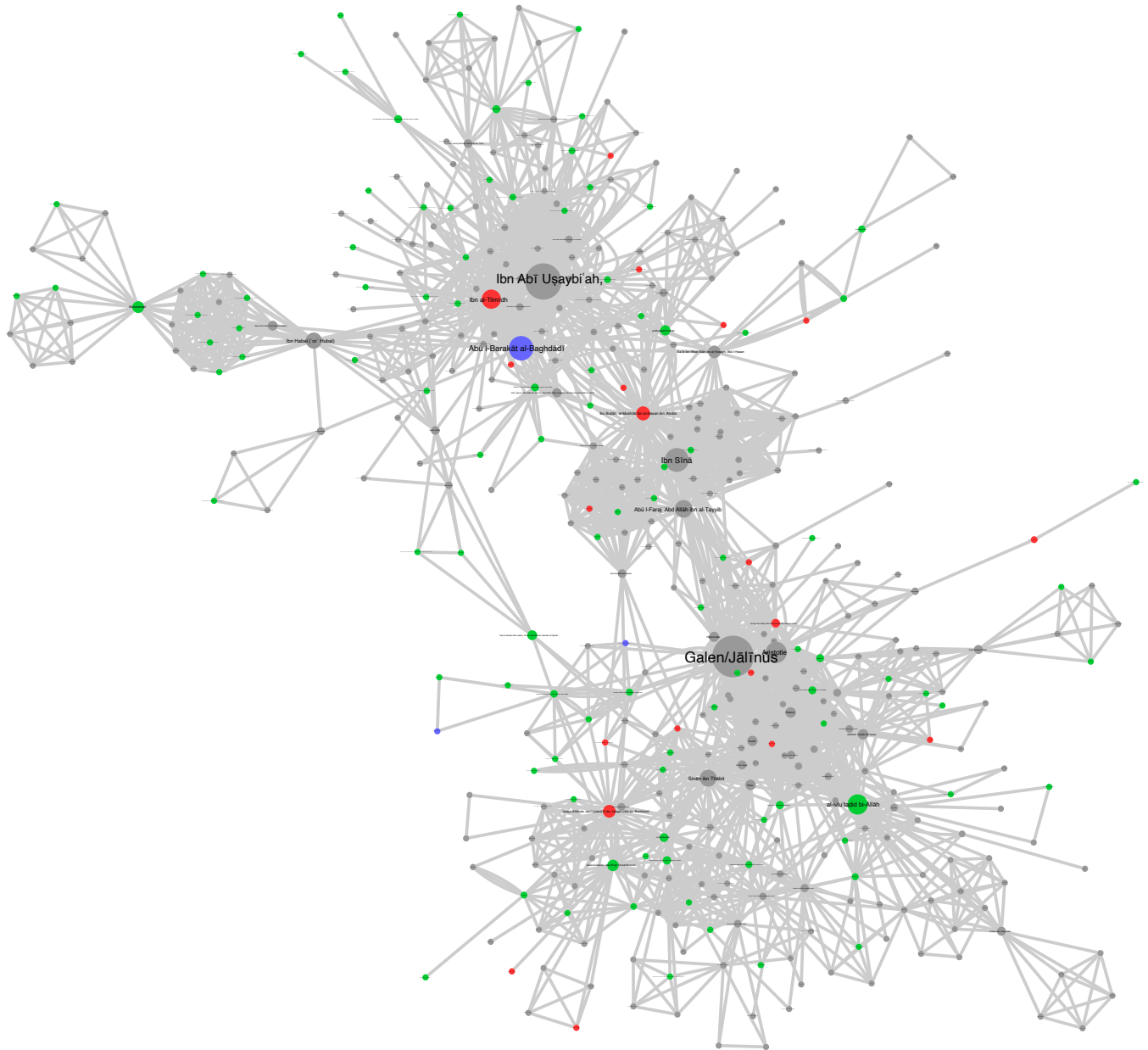


Figure 3: A co-occurrence network derived from chapter 10 of the History of Physicians, illustrating a spaghetti monster of 416 nodes (persons) and 2,384 edges (co-occurrence relationships). Also note that Ibn Abī Uṣaybi'ah and Galen are most prominent in the network. Node size indicates betweenness centrality. Colors indicate religious affiliation: green = Muslim, red = Christian, blue = Jewish, gray = undesignated. Layout created with the Prefuse Force Directed OpenCL Layout in Cytoscape.

Regarding (2) interpersonal connections, the project prioritizes understanding social interactions among contemporaries above literary exchanges that may have taken place across centuries. Truly distinguishing between literary and social interactions would require categorizing them manually, perhaps using the factoid approach above or sophisticated natural language processing. However, it is possible to eliminate at least some of the connections, those between people whose approximate life dates are known and who were not contemporaries (see *Figures 4-5*).

Another advantage of trying to limit network edges to those between contemporaries is that it is less critical to try to determine the direction of the flow of information. If Person A died before Person B was born, Person A could have transmitted information in written form or orally through a third person to Person B, but Person B could not, of course, have transmitted information to Person A. Co-occurrence networks are undirected, meaning that they do not try to distinguish the $A \rightarrow B$ relationship from $B \rightarrow A$; instead, paths between nodes can be traversed in either direction ($A \leftrightarrow B$). Co-occurrence relationships between non-contemporaries, which should be directed but are in an undirected network, reduce the accuracy of network measurements that differentiate between directed and undirected networks.

In order to remove non-contemporary relationships, the work of assigning dates to the persons mentioned in the text is ongoing. Nathan P. Gibson and Hanna Friedel were able to extract dates from the LHOM index entries for approximately 850 people (around 35% of the index entries for persons). Where persons were matched with other databases (Onomasticon Arabicum, Virtual International Authority File, and Wikidata via Wikipedia), dates could sometimes be retrieved from these linked records. For the remainder of the persons, approximate dates will need to be determined based on contextual information in the *History of Physicians*. A more sophisticated approach, which we might take in the future, would be to determine the overlapping time period between person nodes and assign a date range property to the edge itself based on this.

Finally, before considering (3) betweenness centrality or indeed any quantitative metrics of the network, we must first try to account for some features of the co-occurrence networks that, for our purposes, are unwanted artifacts. For example, the subjects of the biographical entries, although often undoubtedly significant figures in the history of medicine, are exaggerated in importance in the co-occurrence networks. Each person mentioned *within* an entry is in some way connected to the person who is the *subject* of that entry. But this means that the subjects of detailed biographies have many edges (co-occurrences) and will appear more »central« in the network, simply because Ibn Abī Uṣaybi'a devoted more attention to them (or had more source material for them). While this might reveal some of the author's priorities, it also obscures the importance of other persons whose role in knowledge exchange in this text may have been just as significant. One way to mitigate this is to look for persons in the network who have high betweenness centrality despite not being biographical subjects, or to remove the biographical subjects from the network entirely for some analyses.³⁷

37 Thanks to Henrike Rudolph and other participants of the Historical Network Research Lunch on 18 February 2021 for this suggestion.

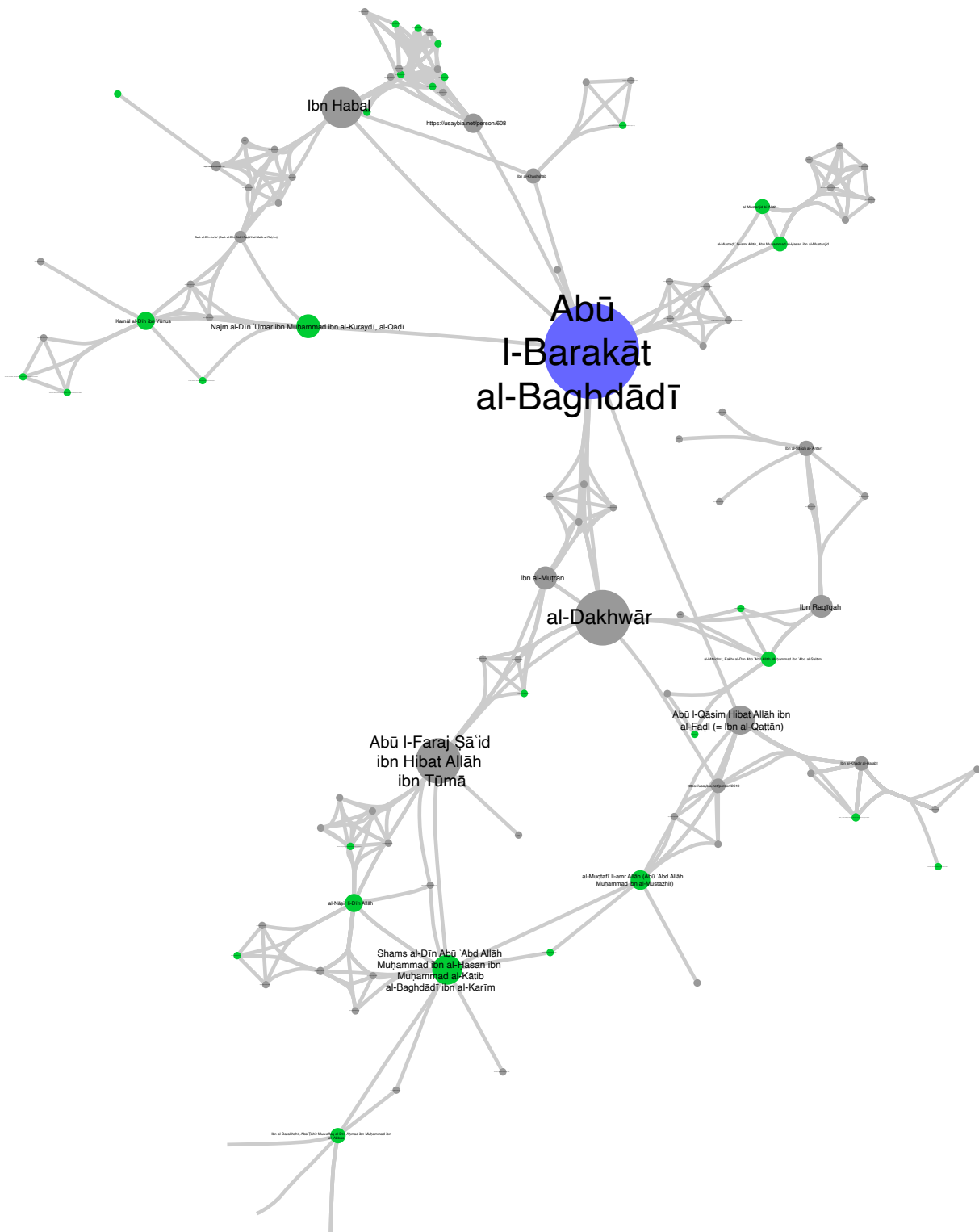


Figure 4: A co-occurrence network for chapter 10 derived from the network in Figure 3 above, having removed Ibn Abī Uṣaybi'a as well as all persons with known dates earlier than the 6th/12th century, in order to focus on relationships among contemporaries. Note that it is now possible to clearly see interreligious connections such as those of the at first Jewish, later Muslim, scholar Abū al-Barakāt al-Baghdādī (d. after 560/1164). Key and layout: see Figure 3.

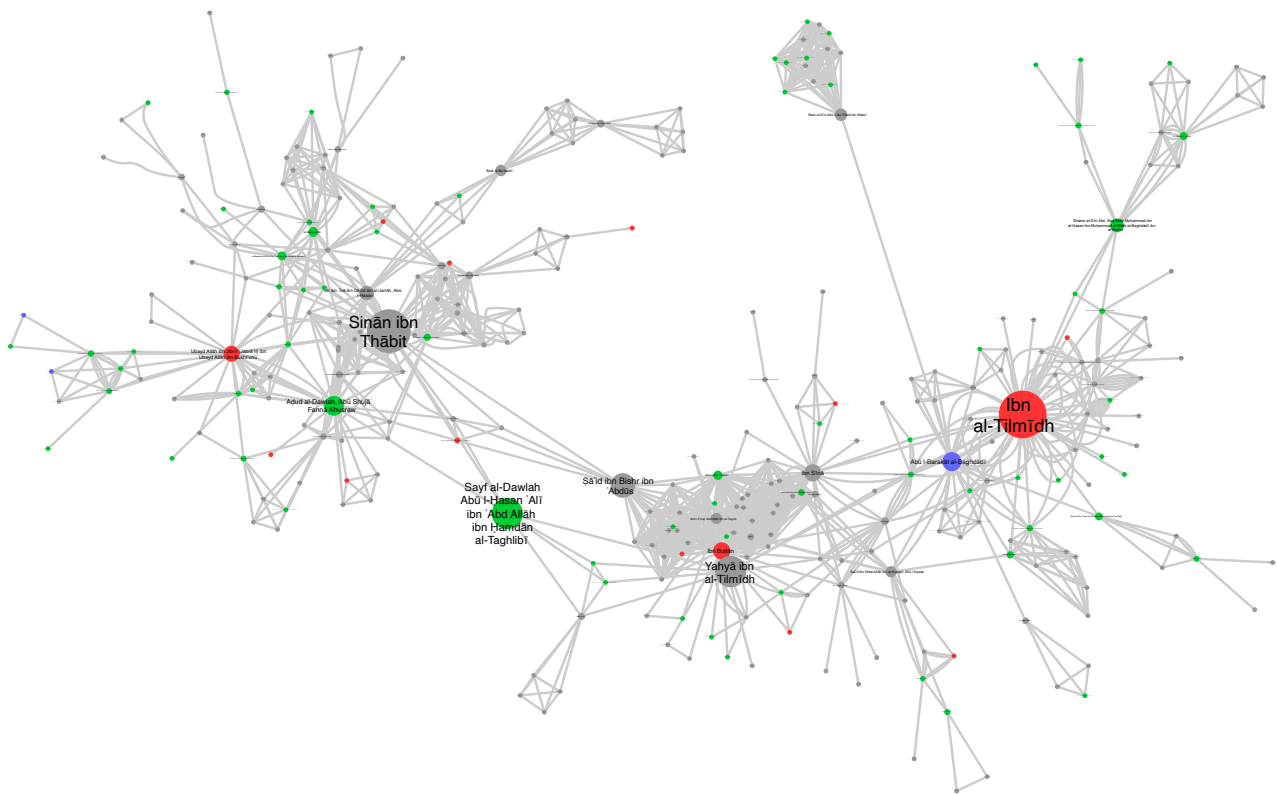


Figure 5: A co-occurrence network derived from the one in Figure 3 above, isolating persons with known dates in the 4th-6th/10th-12th century (and including persons with dates not yet designated). Although this visualization is rather more complicated than Figure 4 and shows a chronological range beyond contemporaries, the centrality of the scholars Ibn al-Tilmīdh (Christian, d. 560/1165) and Sinān ibn Thābit (Sabian, later Muslim, d. 331/943) as well as of the emir Sayf al-Dawla 'Alī ibn Ḥamdān (Muslim, r. 333-356/944-967) can still be seen. Key and layout: see Figure 3.

Another artifact in our co-occurrence networks is the high centrality of people whom Ibn Abī Uṣaybi‘a mentions as part of lists. While people may be listed together because they share some characteristic, being mentioned in the same passage with many other people gives them many edges in the network, sometimes resulting in a high centrality that does not represent their actual connectedness (*see Figure 6*). This could be mitigated by only drawing edges when the number of people mentioned in a paragraph is below a certain threshold.

The fact that Ibn Abī Uṣaybi‘a often mentions the authors of his sources also means that the high frequency of these persons and their corresponding high centrality can obscure the social interactions we are looking for. In Figure 3, for example, a co-occurrence network from chapter 10 (physicians of Iraq), Ibn Abī Uṣaybi‘a himself as well as Galen dominate the network. It makes sense to remove these persons altogether from the network in some analyses. In future work, a list of sources could be compiled from those the editors of the LHOM text have identified and could be used to exclude persons who are probably mentioned as literary sources rather than in regard to their social interactions.³⁸

38 Sánchez, *Textual and manuscript tradition*.

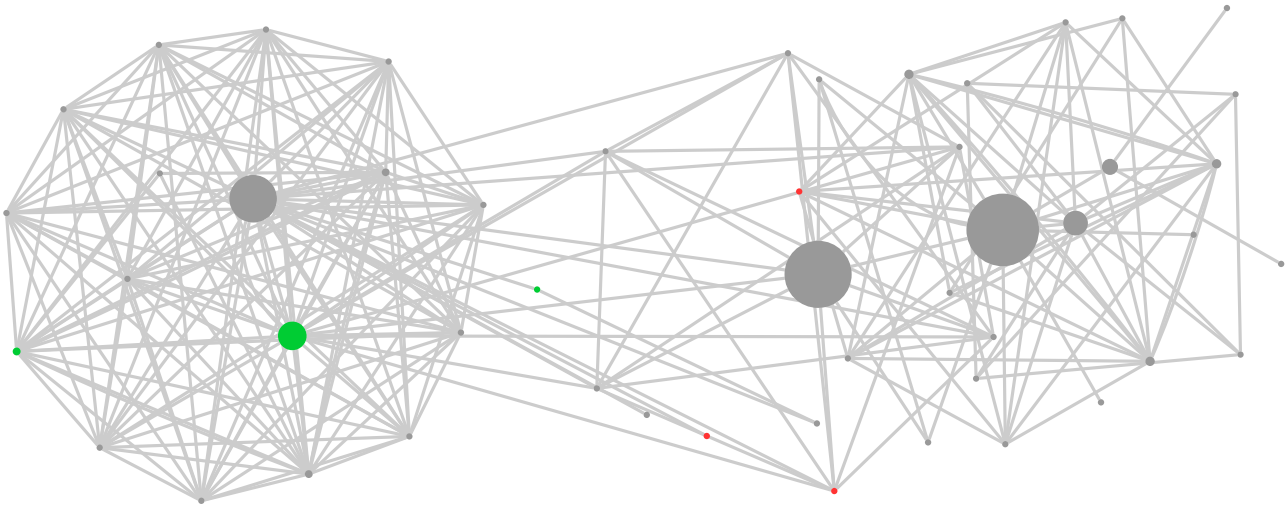


Figure 6: Clusters like the one seen on the left of this diagram illustrate the artifact created by lists when building a co-occurrence network. In this case, Ibn Abī Uṣaybi'a is discussing the students of Abū al-Faraj ibn al-Ṭayyib but has also provided a long list of the latter's contemporaries (shown as interconnected), who may not have interacted with him.³⁹

The primary usefulness of network graphs like these is using metrics and visualizations to identify persons and relationships that need further study, whether in the text of the *History of Physicians* or comparatively across sources. For example, the above networks suggest focusing on the circles of Abū al-Barakāt al-Baghdādī, Ibn al-Tilmīdh, Sinān ibn Thābit, and Sayf al-Dawla 'Alī ibn Ḥamdān as ones whose interreligious connections deserve further investigation – not only these persons individually (the first three of whom are biographical subjects in Ibn Abī Uṣaybi'a) but also the figures immediately connected to them who may have facilitated such interactions. This qualitative study can be done by constructing a network with more precise relationships based on factoids, which distinguish between various types of personal and literary contact, as well as through more typical historical-critical methods with narrative description.

Finally, although our examples above apply to persons, the very same process could be utilized for places or other features. With that, it is possible to adapt the outlook of the future quantitative analysis by featuring, for example, places as nodes and persons as edges within the network.

39 Ibn Abī Uṣaybi'a, *Uyūn al-anbā'*, ed. Savage-Smith *et al.*, sec. 10.37.4.

Summary

In the »Communities of Knowledge« project, we aimed to find the people, places, and communication modes that Ibn Abī Uṣaybi‘a represented as bridging various religious groups. The lion’s share of this work, as we discovered, lay in identifying and tagging these comprehensively in the text of chapters 8-15 of the *History of Physicians*. By early 2020, we greatly benefited from the edited text, translation, and indices of the work created by the LHOM team. Building on this, we created individual records for persons and places with unique identifiers in the form of URIs along with a digital infrastructure to provide these TEI-XML records as (1) online entries, (2) information we could search and apply in our tagging work, and (3) entities in a linked-open-data ecosystem that included other projects. Tagging names in the text was done entirely manually, but we were able to integrate a lookup capability that streamlined the work.

Beyond tagging the text, we employed a second layer of analytic annotation in order to study certain passages in more detail. This layer consisted of prosopographical factoids, which we implemented in TEI-XML format. Factoids are self-contained nuggets expressing the reader-encoder’s understanding of a particular passage in a form that can be aggregated and queried by machine. This technique allowed us to work with Ibn Abī Uṣaybi‘a’s assertions, particularly about relationships, in a more precise way than we could have by simply tagging the text.

Finally, in order to locate and better understand cross-communal interactions, we loaded the tagged text as well as the factoids into networks. While the detailed analysis of these networks will be published elsewhere, we illustrated here some of the procedures we used along with their methodological challenges. Our tagging work provided the basis for co-occurrence networks, that is, networks in which entities (persons or places) appearing together in a text passage are shown as related. Besides the hindrance that co-occurrence is a very generic kind of relationship, we had to mitigate for ways that building and measuring such co-occurrence networks might misrepresent certain features of the text, including macro-structures (biographical entries) and micro-structures (lists). Overall, the co-occurrence networks are particularly useful for pointing the way to passages, persons, places, and themes in Ibn Abī Uṣaybi‘a’s text that need more detailed study using factoids.

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Figure 3: A co-occurrence network derived from chapter 10 of the *History of Physicians*, illustrating a spaghetti monster of 416 nodes (persons) and 2,384 edges (co-occurrence relationships). Also note that Ibn Abī Uṣaybī'a and Galen are most prominent in the network. Node size indicates betweenness centrality. Colors indicate religious affiliation: green = Muslim, red = Christian, blue = Jewish, gray = undesignated. Layout created with the Prefuse Force Directed OpenCL Layout in Cytoscape.

Figure 4: A co-occurrence network for chapter 10 derived from the network in Figure 3 above, having removed Ibn Abī Uṣaybī'a as well as all persons with known dates earlier than the 6th/12th century, in order to focus on relationships among contemporaries. Note that it is now possible to clearly see interreligious connections such as those of the at first Jewish, later Muslim, scholar Abū al-Barakāt al-Baghdādī (d. after 560/1164). Key and layout: see Figure 3.

Figure 5: A co-occurrence network derived from the one in Figure 3 above, isolating persons with known dates in the 4th-6th/10th-12th century (and including persons with dates not yet designated). Although this visualization is rather more complicated than Figure 4 and shows a chronological range beyond contemporaries, the centrality of the scholars Ibn al-Tilmīdh (Christian, d. 560/1165) and Sinān ibn Thābit (Sabian, later Muslim, d. 331/943) as well as of the emir Sayf al-Dawla 'Alī ibn Ḥamdān (Muslim, r. 333-356/944-967) can still be seen. Key and layout: see Figure 3.

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Off the Record: On Studying Lost Arabic Books and their Networks

Nadine Löhr*

In this paper we discuss the notion of Arabic literary works which, to the best of our knowledge, have been lost over the course of history. We examine factors contributing to the likelihood of transmission, address current interdisciplinary debates, and discuss digital tools applied to estimating the loss of literary heritage or to retrieving information on lost works. Our aim is to highlight the potential that bio-bibliographical works hold for the study of lost texts and manuscripts. Three possibilities are presented for studying lost books mentioned in Ibn Abī Uṣaybi‘a’s *History of Physicians* (*Uyūn al-anbā’ fī ṭabaqāt al-aṭibbā’*), and these include the identification of lost works in bio-bibliographical reference works, the encoding of attestations for manuscripts written by the authors themselves, and the reconstruction of scholarly networks which contributed to a certain lost work. The examples discussed demonstrate the advantages prosopographical networks can offer if they include works and manuscripts. Therefore, we put a particular focus on the use of machine-readable assertions which involves encoding the claims and statements from primary sources in a format that enables computer systems to process and analyse them.

Keywords: Near East/Middle East, history of literature, biographical literature, networks, medie-val sciences, knowledge exchange, Arabic, lost literature, digital humanities, book history

Introduction

History of literature has always been hampered by the fact that it relies heavily, if not exclusively, on texts that have survived. Ultimately, our understanding of literary heritage is based on the fraction of sources that have been handed down, whether that was through coincidence or resulted from factors which facilitated the survival of a particular work. While it is difficult to take into account texts and books that have been forgotten over the course of time, it is still vital to consider knowledge that has not been transferred or has been lost, in order to grasp the exchange of ideas within a community.

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The seventh-century AH/thirteenth-century CE biographer Ibn Abī Uṣaybi'a from Damascus tells us, for example, in his *History of Physicians* (*Uyūn al-anbā' fī ṭabaqāt al-aṭibbā'*) of a once well-known private library established by the emir and scholar al-Mubashshir ibn Fātik (fifth/eleventh century, Cairo) who – according to Uṣaybi'a's informant – believed that his books »were more important than anything else that he possessed«. ¹ His library comprised a large number of manuscripts likely covering the subjects of his interest, which were medicine, astronomy, mathematics, logic, and philosophy. Ibn Fātik may be considered a key figure in the intellectual scholarly networks in fifth-century/eleventh-century Egypt. He fostered close relationships and studied together with renowned scholars such as the mathematician and astronomer Ibn al-Haytham (d. 430/1039), the court physician and astrologer 'Alī ibn Riḍwān (d. 452/1061), and the philosopher Abū l-Ḥusayn ibn al-Āmidī (fifth/eleventh century). ² We may assume that Ibn Fātik's private library contained several works of these associates, but, when he died, »his wife, accompanied by her slave girls, be-took herself to his library. She was resentful of the books because of the time he spent with them, all the while neglecting her. While lamenting him, she and the servant girls threw the books into a big pool of water in the courtyard. The books were subsequently retrieved from the water, but by then most of them had become waterlogged.« ³

The severe damage to Ibn Fātik's library, among other circumstances, may have contributed to the fact that only about 23 of more than one hundred texts written by Ibn Fātik's close friend 'Alī ibn Riḍwān have been handed down to us today. ⁴ Furthermore, only one of Ibn Fātik's own works survived the fate of history, but it quickly became a bestseller in medieval Europe. ⁵ *The Book of the Choicest Maxims and Best Sayings* (*Kitāb mukhtār al-ḥikam wa-maḥāsīn al-kalim*), a compilation of 20 biographies of wise and prophetic figures, was translated into at least four European languages and cited extensively. ⁶ Gerard of Cremona (d. 1187), for example, used this source for the introduction of his translation of Ptolemy's *Almagest*. ⁷

1 Ibn Abī Uṣaybi'a, *Uyūn al-anbā'*, ed. and trans. Savage-Smith *et al.*, §14.23.2.

2 Note that this cannot be the Sayf al-Dīn Abū l-Ḥasan al-Āmidī (d. 631/1233) mentioned in the recent edition of Ibn Abī Uṣaybi'a's work (see §14.23.1 n. 4), since Sayf al-Dīn lived about 150 years after Ibn Fātik. Langermann (*One ethic for three faiths*, 200) states furthermore that Abū l-Ḥusayn ibn al-Āmidī was in close contact with 'Alī ibn Zur'a (d. 398 / 1008).

3 Ibn Abī Uṣaybi'a, *Uyūn al-anbā'*, ed. and trans. Savage-Smith *et al.*, §14.23.2.

4 See also Seymore, *The Life of Ibn Riḍwān*, 22.

5 Cottrell, al-Mubashshir ibn Fātik, 815–818.

6 For an edition of this treatise, see Ibn Fātik, *Mukhtār al-ḥikam wa-maḥāsīn al-kalim*, ed. 'Abd al-Raḥmān Badawī.

7 Cottrell, al-Mubashshir ibn Fātik, 815–818.

Ibn Abī Uṣaybi'a's report about the bibliophile Ibn Fātik is one of many examples which allow us to trace the history of texts that were once well known but are to our knowledge not witnessed in any extant manuscripts. In his extensive history of medicine, Ibn Abī Uṣaybi'a summarises the interactions of more than 450 physicians along with their social environment and almost 4,000 work titles connected to them. For modern researchers, the basic use of historical bio-bibliographical works such as this has so far been mostly limited to finding a scholar's biography and citing additional information on their life and works.⁸

If, however, narrative descriptions are turned into machine-readable data, more in-depth analyses and answers to specific questions (such as, »Who owned a certain lost work?«) may be possible. In this paper, we contemplate the problem of lost Arabic manuscripts, address a variety of interdisciplinary approaches to tackle the issue, and present three options for studying lost texts in bio-bibliographical reference works.

Factors Influencing the Likelihood of Transmission

As Arnold Esch highlighted in his pioneering article, it should be noted that there is a certain element of randomness of transmission (*Überlieferungs-Zufall*) which stands in contrast to the likelihood of transmission (*Überlieferungs-Chance*).⁹ *Überlieferungs-Zufall* is unpredictable in that it can cause the disappearance of important literary works like Homer's *Margites*, or the survival of a writing exercise or a shopping list which was never intended to be transmitted. However, contrary to the randomness of transmission, likelihood of transmission can be estimated as dependent on a number of different factors, which often work in conjunction with each other in effecting the disappearance of a text or its survival. Thomas Haye conducted an extensive examination focusing on the causes and patterns of non-transmission of medieval Latin literature.¹⁰ However, we currently lack comparable research on the transmission of texts from the region of the Middle East and North Africa. Despite the significant attention paid to certain brief and impactful events, such as book burnings, which are often seen as symbolic of the loss of literary transmission, the gradual neglect of libraries is an underestimated factor that can have a far more severe impact on the continuity of a literary tradition. A brief discussion will be given here of eight aspects relating to the transmission of manuscripts and texts to highlight some of the dynamics most relevant to those produced in the Near and Middle East.¹¹

8 See studies and methodological approaches suggested by Romanov, *Developing text-mining techniques*, and Romanov, *Algorithmic analysis of biographical collections*.

9 See Esch, *Überlieferungs-Chance und Überlieferungs-Zufall*, 529-570.

10 Haye, *Verlorenes Mittelalter*.

11 Research in this field has so far particularly been conducted by medievalists. Some outstanding examples are a short overview by Bourgain and Light, *Bestsellers*; Regazzoni (ed.), *Schriftlose Vergangenheiten*; and Kühne-Wespi, et al. (eds.), *Zerstörung von Geschriebenem*. In the field of European studies, there is Grafton and Blair (eds.), *Transmission of Culture*.

1) To begin, there are issues relating to materials. Paper is often more vulnerable than parchment, which can be washed or scraped and reused. On the other hand, insects prefer parchment over paper. Therefore bindings were often treated with adhesives¹² to ward off insects, especially the larvae of beetles – commonly referred to as »bookworms«. Paper of thicker and higher quality often had a longer life than books of lower quality, for example those comprised of paper with splitting layers of pulp (*démariage*).¹³ Slow burning and the corrosion of metallic gall inks is unfortunately another common cause of the destruction of many manuscripts. While manuscripts written with gall inks may still be readable after immersion in water (as was the case with those of Ibn Fātik's books which were still witnessed by Ibn Abī Uṣaybi'a), humidity and mould will over time accelerate the deterioration of the paper. Dry climates and deserts, on the other hand, create ideal conditions for the long survival of written artefacts.

2) The circumstances of conservation and the efforts employed to preserve cultural heritage of course play a crucial role for the lifespan of a book. Of particular interest for cultural studies are old preserved repositories like genizahs or storage areas in mosques (such as the famous Qubba of Damascus) which preserved documents and letters whose transmission would otherwise be very improbable.¹⁴ Furthermore, it is important to highlight that works are especially susceptible to the risk of being lost shortly after their creation. The wider their distribution and incorporation into private and institutional collections, the higher the likelihood of their preservation over time. Within libraries, books are entrusted to the care of librarians whose responsibilities encompass both safeguarding literature and engaging in a selection process influenced by various factors. These factors include considerations of usefulness, the social status of the author, aesthetics, literary trends, and even political and religiously motivated criteria.¹⁵ Even though neglect and mismanagement of libraries has, in comparison to brief stirring events (such as environmental disasters), received little attention in society, it has led to the loss of many valuable collections and should not be underestimated. Richard Ovenden, for example, highlights the creeping neglect that led to the gradual destruction of the famous library of Alexandria in antiquity.¹⁶

3) Whether books are transmitted or not may depend on the use of a text and consequently its format. For example, beautifully illustrated manuscripts of the Quran, often commissioned or acquired at high cost, and treated and stored with particular caution or even reverence, are not necessarily more likely to survive than books serving a practical purpose. Cutting the codices into separate folios or removing miniatures and illuminations can bring higher financial profit to later owners who decide to sell the manuscript as pieces. Similarly, small pamphlets or booklets which were carried around more frequently were naturally susceptible to damage. We can think of the library of Muwaffaq al-Dīn ibn al-Muṭṭarān (d. 587/1191), which allegedly comprised about ten thousand books, most of which he had copied in

12 Gacek, *Arabic Manuscripts*, 187. Pastes to keep worms away were mostly produced with aloe, wormwood, or colocyth.

13 This terminology on »splitting« paper was used by François Déroche at a summer school at San Lorenzo de El Escorial in June 2019.

14 Further examples of preservation through conservation efforts in antiquity are the Dead Sea Scrolls found in the Qumran Caves. For a thorough study on the Damascene Qubba, see D'Ottone Rambach *et al.*, *Damascus Fragments*.

15 See Haye, *Verlorenes Mittelalter*, 125-137.

16 Ovenden, *Bedrohte Bücher*, 56.

single volumes »on small-format paper, one-sixteenth the size of Baghdādī paper¹⁷ [since] he would never leave his house without a book in his sleeve, which he would read at the gate of the Sultan's palace or wherever else he might go«. ¹⁸ However, to our knowledge, none of Ibn al-Muṭṭarān's miniature books survived and it has long been assumed that only Quran manuscripts were produced in such small formats. Furthermore, less wealthy readers kept unbound manuscripts or practised the habit of loaning single quires to others, which caused the distortion of works.

4) The context in which a text circulates can also have a significant impact on the quantity and types of copies it generates. For instance, within a scholarly environment, there is a tendency to produce specific texts that are created or promoted by the teaching staff. In Samarqand, Qāḍī Zāda al-Rūmī (d. 840/1436) authored an astronomical textbook, which today is extant in over 300 manuscript copies in Turkish libraries alone. ¹⁹ In the same scholarly setting, al-Fanārī (d. 834/1431), an Ottoman theologian and legal scholar, even granted his students one day off each week, allowing them to dedicate time to copying relevant texts. ²⁰ However, such an environment can also give rise to texts that are mere summaries or personal notes, not originally intended for widespread dissemination.

5) Transmission may hinge on a reader's preferences or the value that a certain culture attributes to particular books. If a culture keeps producing vast numbers of literary works, which books are given preference when it is to be determined what to preserve? 'Alī ibn Riḍwān advises keeping only a smaller number of important books:

I prefer to concentrate on the following: five books of belles-lettres (*adab*), ten books on Sharia, the books of Hippocrates and Galen on the art of medicine and related topics, such as Dioscorides' *The Book of Herbs*, the books of Rufus, Oribasius, Paul and al-Rāzī's *The Comprehensive Book*. Of books on agriculture and pharmacology there are four; of technical books (*kutub al-ta'ālīm*), the *Almagest* and its introduction and whatever else is useful, as well as »The Four Books« of Ptolemy. Of books by sages (*kutub al-ārifīn*), there are books by Plato, Aristotle, Alexander, Themistius, and Muḥammad al-Fārābī, and whatever else may be of use.

Other books I either sell at any price I can get or I store in cases; however, selling them is better than storing them. ²¹

As we see, there is here a particular interest in keeping the books of famous Greek scholars. However, 'Alī ibn Riḍwān decides not only to keep books featuring the translations of important Greek texts but also other literature useful for their study, such as an introduction to Ptolemy's *Almagest*. This leads us to another factor influencing a work's survival.

17 Muwaffaq al-Dīn's miniature books were thus not much bigger than 69×45 mm. According to Gacek (*Arabic Manuscripts*, 192), Baghdādī paper designated a sheet of paper in the largest size (1099×733 mm), but the paper may also have had a particular high quality. See Bosch *et al.*, *Islamic Bindings & Bookmaking*, 30-31; Bloom, *Paper before Print*, 53-55.

18 Ibn Abi Uṣaybi'a, *Uyūn al-anbā'*, ed. and trans. Savage-Smith *et al.*, §15.23.4.

19 İhsanoğlu, *Osmanlı astronomi literatürü tarihi*, 8-20.

20 van Ess, *Die Träume der Schulweisheit*, 101.

21 Ibn Abi Uṣaybi'a, *Uyūn al-anbā'*, ed. and trans. Savage-Smith *et al.*, §14.25.2.

6) Everything spawning additional works has a higher chance of survival.²² We can almost certainly say that classical astronomical literature was studied through commentaries guiding a reader's interpretation more than through the original works. Some outstanding examples are Naṣīr al-Dīn al-Ṭūsī's (d. 672/1274) recension of the *Almagest*, 'Alī ibn Riḍwān's commentary on the *Tetrabiblos*, and the commentary of Abū Ja'far (i.e., Ibn al-Dāya, d. 264/878) on the Pseudo-Ptolemaic *Centiloquium*. The numbers of these commentaries are overwhelming in comparison to the texts on which they are based. But even though the texts were primarily studied in the form of commentaries, there was a strong interest in preserving the basic texts, even leading scribes to feel compelled to recreate the original works (or what they assumed to be the original works). Thus, we learn that the copyist al-Bughāyri from Harand in Khorasan extracted Ptolemy's quotes from a commentary when he made a copy of the *Tetrabiblos*,²³ and Emanuele Rovati observes that the extant Arabic witnesses of the *Centiloquium* were (almost) exclusively created through the extraction of literal quotes from its commentaries.²⁴ In some cases, this further demonstrates that agents witnessing the loss of manuscripts intervened in the imminent decline of a manuscript tradition they considered indispensable.

7) Additional factors in the transmission of texts are patronage and censorship. Financial support for the enhancement of a scholarly environment is certainly a factor that contributes to a blooming literary production. It facilitates the dissemination and transmission of specific works and authors, sometimes at the cost of others. Censorship is similarly directed at individual genres and authors, but can, on occasion, lead to an effect opposite to the original intention. Indeed, in some cases, it seems to have sparked renewed interest in a particular genre. When, for example, »[a]l-Manṣūr [i.e., Ya'qūb Abū Yūsuf] decided that no book of logic and philosophy should remain in his lands, and many were burnt«,²⁵ the teacher al-Ḥafīd Abū Bakr smuggled in a book of logic and read it with his students which led to renewed interest in the topic.²⁶

8) Nonetheless, the destruction of cultural heritage caused through wars or political upheaval as well as by theft is a major factor that contributes to the loss of literature.

In contemplating such multiple effects contributing to the loss or survival of Arabic books, we ask with Arnold Esch: »What, then, is a historian to do?«²⁷

If we consider recent publications, we can see that the problem has been addressed from different perspectives involving methods borrowed from various fields such as ecology, computational sciences, and material studies. In the following we briefly summarise a number of promising approaches and refer to some projects that have applied them.

22 See also Esch, *Überlieferungs-Chance und Überlieferungs-Zufall*, 541.

23 Löhr, MS Tehran, *Kitābkhāna-yi Millī-yi Īrān*.

24 Ongoing research by Emanuele Rovati, *pers. comm.*, July 2020. See also Rovati, *Pseudo-Ptolemy*.

25 Ibn Abi Uṣaybī'a, *'Uyūn al-anbā'*, ed. and trans. Savage-Smith *et al.*, §13.63.5.

26 Ibn Abi Uṣaybī'a, *'Uyūn al-anbā'* ed. and trans. Savage-Smith *et al.*, §13.63.6.

27 Esch, *Überlieferungs-Chance und Überlieferungs-Zufall*, 569.

Researchers Approaching Lost Manuscripts, Books, and Texts

The notion of »lost works« is not necessarily meant to indicate that such texts do not exist anymore, but rather that we are currently unaware of any surviving copies. Thanks to a number of research projects addressing manuscript and cataloguing activities, hitherto unknown or lost treatises have been found in private libraries as incorrectly titled codices or as overlooked parts of multiple-text manuscripts. Furthermore, fragments of texts (especially commentaries) reappear when attention is paid to marginal and interlinear annotations, inserted leaves, and palimpsests. In any case, a work which appears to have failed to be transmitted is either really lost or very rare and so is worthy of our attention whether or not it may some day be partially or fully rediscovered.

Here some projects can be highlighted that have greatly contributed to uncovering evidence of works which were believed to be lost or previously unknown. For individual treatises, the study and examination of text fragments may be profitable. This concerns physical fragments on the one hand, but also textual fragments transmitted in the margins of a codex or as quotes in other sources. The »Lost Manuscripts« project is compiling a catalogue of manuscript fragments, most of which appeared recycled in later book covers or bindings.²⁸ The project introduced a new term for the conceptualisation of lost manuscripts with a traceable existence: »manuscripts of Babel« which refers to manuscripts existing »in a virtual space, in a no-place« (similar to the term »Utopia« applied to manuscripts in anonymous private possession).²⁹ I decided against the use of the term »manuscripts of Babel« in this paper for two main reasons. First, »Babel« as a place of historical, religious, or fictional longing may promote unnecessary romanticisation and mystification where our goal should be shedding light on lost works in order to understand their dissemination and reception. Second, in my opinion the metaphor does not work very well. Such fragments and pieces of information may be understood as the remains of a destroyed Tower of Babel, but the project also points out that the term refers to Luis Borges' literary masterpiece »La biblioteca de Babel«.³⁰ The novel demonstrates the idea of a library in which everything exists (and at the same time very little makes sense); Borges' books feature everything that was written and that will ever be written. But the number of lost Arabic books is not endless, and with sufficient research it is possible to get at least a rough impression of what was written where and when.

28 www.lostmss.org.uk (accessed on 17 June 2022); principal investigator: Dr. David Rundle, University of Kent, UK, Centre for Medieval and Early Modern Studies.

29 See *Why Babel*, on the Lost Manuscripts website, www.lostmss.org.uk/project/why-babel (accessed on 17 June 2022).

30 A tale of a universe in a never-ending library comprised of books that contain every possible combination of letters. In 2012, Jonathan Basile based on the short story's idea a computer algorithm for the creation of a digital Library of Babel containing all possible pages of 3,200 characters, about 10^{4677} books (libraryofbabel.info, accessed on 17 June 2022).

Material studies and spectral imaging can reveal texts on parchment that have been washed or scraped off to make parchment reusable. Here we may refer to the »Sinai Palimpsest Project« which is one of the few projects that study lost texts of non-Western scripts. It is examining thousands of palimpsest folios preserved at St. Catherine's Monastery by illuminating them with different wavelengths of light and subsequently processing the digital images. The palimpsest manuscripts preserved in the monastery feature ten languages and various scripts from different religious backgrounds. The research results can be accessed through a digital palimpsest library published in collaboration with the UCLA Library and the Early Manuscripts Electronic Library.³¹

The works of specific authors can on occasion be identified among texts without attribution if stylistic analyses are applied (i.e., stylometry). Hence hitherto unknown or lost texts can be attributed to their rightful authors. »Kallimachos: Zentrum für digitale Edition und quantitative Analyse« at the University of Würzburg applied stylometry for identifying the authors of anonymous medieval Latin translations from Greek and Arabic. By studying non-technical and non-disciplinary vocabulary, Dag Hasse and Andreas Büttner identified a number of textual markers individual to specific translators, which allowed for the identification of authors for several anonymous Latin treatises.³²

If a researcher is interested in a general understanding of the size of a textual tradition, mathematical approximations for clever guessing of a manuscript tradition can deliver further insights. We will briefly highlight two examples for such methods.

Estimating the production of literature in the past and its survival

In February 2022, Mike Kestemont and colleagues published an article in *Science* which suggested the application of »unseen species models« to the survival of books.³³ To correct survivorship bias,³⁴ the team applied statistical analyses of rare species to the survival of culture. The research is based on a mathematical formula for the estimation of the number of classes in a population, originally presented by Anne Chao in 1984.³⁵ In simpler words: the authors treated manuscript copies as sightings of a rare species. The overall extant exemplars of the species in a given (cultural) ecosystem are then statistically estimated through the Chao1 method. Kestemont *et al.* conducted a case study for a number of heroic and chivalric fictional works preserved in Dutch, English, French, German, Icelandic, and Irish manuscripts. The researchers counted the handwritten documents and applied non-parametric methods to estimate the original richness of the text tradition.³⁶ They found that the cultural ecosystems of islands (Icelandic and Irish) showed lower loss rates in comparison to the continental manuscript heritage.³⁷

31 For a recent publication, see Rapp *et al.*, *New Light on Old Manuscripts*. For further information, visit sinaipalimpsests.org (accessed on 17 June 2022).

32 See also Hasse and Büttner, Notes on anonymous twelfth-century translations.

33 Kestemont *et al.*, *Forgotten books*, 765-769.

34 Survivorship bias occurs, for example, when the incomplete survival of cultural heritage and the study of a fraction of historic documents leads to incorrect conclusions about the actual artefacts produced in historic societies.

35 Chao, *Non-parametric estimation*, 265-270.

36 For details, see the formula provided by Chao, *Non-parametric estimation*, 265-270, and Kestemont *et al.*, *Forgotten books*, 765-769.

37 See also Table 1 »Point estimates of survival ratios in six traditions«, in Kestemont *et al.*, *Forgotten books*, 769.

Since social networks with fewer connections seemed to realise a more even distribution of manuscript copies per work, the copies were less susceptible to external forces, the authors argued. This highly unique and insightful approach may prove to be important in advancing manuscript studies and promotes, yet again, the advantages of interdisciplinary studies. It is my impression, however, supposing the assumptions of the model hold true for literary and not just biological ecosystems, that this approach can, at best, only provide a general rate of survival of manuscripts in a literary tradition without taking into account the factors mentioned above that disparately affect specific works or genres, as the formula is based on the random appearance of species (or manuscripts) assuming a linear development in the increase or decrease of cultural heritage. But in essence, transmission itself is inherently uneven. Although Esch warned against ahistorical quantitative models, stressing the importance of thoughtful application, the aforementioned approach can be powerful when employed cautiously, taking into account additional historical factors that may have influenced the transmission of manuscripts.

An interesting approach which considers the historical development of a manuscript tradition was presented in December 2022 by Camps and Randon-Furling, who observed resemblances between evolutionary biology and the transmission of manuscripts, prompting them to apply a stochastic model to texts.³⁸ In doing so, they argue, »[h]ow much was lost or preserved from all works of the past [...] can be described in terms of genetic drift and natural selection«.³⁹ Instead of working with statistical estimates alone, the researchers thus considered the philological model of a *stemma codicum*, treating it like the biological model of a phylogenetic tree. Where the stemma establishes – based on textual variants found in existing manuscript copies – which common ancestors of a text (i.e., manuscript copies) must have existed, the phylogenetic tree is similarly used to reconstruct the links between existing and extinct species. This approach features a crucial advantage over the Chao1 method in that it can not only calculate the probability of a tree (a work) being lost, but that it can also, for example, grasp the loss of full »branches«, whose existence can be postulated by determining the textual variants that prevail over others and thus reduce textual diversity in a manuscript tradition. The paper then presents some results obtained with a suggested stochastic model for the transmission of European manuscripts and, in consequence, is able to refine the results in Kestemont *et al.*

While we have seen that increasing attention is being paid to lost literature in a number of projects led by medievalists, and systematic attempts are being made to account for lost European manuscripts,⁴⁰ the histories of Near and Middle Eastern literature have for the most part received attention through individual case studies on specific works and are thus largely based on discoveries of text fragments. In the following we address the potential that bio-bibliographical reference works hold as an important source for the systematic study of lost Arabic texts.

38 Camps and Randon-Furling, *Lost manuscripts*.

39 Camps and Randon-Furling, *Lost manuscripts*.

40 See furthermore the project »Books Known Only by Title: Exploring the Gendered Structures of First Millennium Imagined Libraries« at the Centre for Advanced Study of the Norwegian Academy of Sciences and Letters.

Reasons to Study Networks of Lost Texts

To acquire a better understanding of the likelihood of transmission (*Überlieferungs-Chance*) we consider manuscripts as carriers of texts that circulate in communities where life cycles of codices end, and the texts are transferred on new manuscripts (or not). This scenario is reflected in networks that continue to revolve around the texts; networks comprised of readers, owners, scribes, and so on.

Effects influencing the survival or disappearance of the works in this kind of network were mentioned above, but we can also claim that there is one factor that probably plays the most important role when it comes to the survival of a text: its dissemination at a relatively early stage. Whenever the dissemination of a text can be traced in several communities in different cultures and regions, it is far less likely that single factors such as an outbreak of fire in a library, war in a specific region and so on, will cause the disappearance of a work. It could be argued that the better disseminated a text, the longer its lifespan might be (or have been), and the more likely we are to find its traces in other sources that were produced around the time that the text in question was being circulated.

This is where networks become a crucial tool. While we know relatively little about lost texts, we still have many valuable resources at hand that allow us to reconstruct where and by whom a text was read (or who claims not to have read a certain text). Collecting information on books in fact comes down to a collection of information on provenance – information on past ownership, custody, and location. Such a reconstructed network around any literary work will never be complete, but it may assist a researcher in gaining insight into the minimum circulation of a text before its disappearance.

For single instances it is possible to collect and evaluate such information manually. With vast source material such as entire manuscript collections or bio-bibliographical reference works, however, digital prosopography can provide useful tools for a better and more detailed understanding of lost manuscript traditions.

Bibliographies and Their Limitations

Historical works, especially biographies (including autobiographies) and bibliographical treatises are not extant in numbers that rival those of the copies of works on theology.⁴¹ As a result, researchers are often constrained to depend on valuable insights into these works from the accounts of a small number of well-known historical biographers, such as Ibn al-Nadīm (d. c. 384/994), Ibn al-Qifṭī (d. 646/1248), Ibn Abī Uṣaybi‘a (d. 668/1269 or 1270), and Bar Hebraeus (d. 685/1286). It is important to realise that when we talk about apparently lost titles mentioned in these biographical works, we are talking about already famous works, texts, and authors, well known enough to make it into one or another historical bio-bibliography. These are titles and figures which were intended to be remembered, and their inclusion in a bio-bibliographical book was further based on the compiler’s preferences – meaning that possibly thousands of other works never made it into such a compilation.

41 Bourgain and Light, *Bestsellers*, 9. Ibn Abī Uṣaybi‘a quotes the autobiographies of Ḥunayn ibn Ishāq, Ibn Haytham, ‘Alī ibn Riḍwān (lost), and ‘Abd al-Laṭīf al-Baghdādī (lost), as also highlighted by Sánchez, *Written sources*, 89.

Despite this issue of the bibliographers' selection and preference of some authors over others, bibliographical works can provide a basic understanding about books that were lost in the following centuries. However, caution should also be exercised with regard to the titles that later biographers have unreservedly taken over from earlier bio-bibliographical works. Stefan Leder has pointed out that the discrepancy between extant literature and that listed in al-Nadīm's *Fihrist* is especially large for early works, up to the third/ninth century. On the one hand, this may mean that the mention of certain works in later bibliographies is no guarantee of their existence at the time of the composition of the reference work; on the other hand, there are reasons to hold reservations about the correctness of the information and thus about the existence of the early works mentioned in the *Fihrist*.⁴²

Meticulous research enabled Ibn Abī Uṣaybi'a in his *History of Physicians* (*Uyūn al-anbā' fī ṭabaqāt al-aṭibbā'*) to provide detailed bibliographic information on authors writing on medical topics, exceeding the number of works listed by Ibn al-Nadīm and Ibn al-Qiftī.⁴³ It makes thus sense to choose Ibn Abī Uṣaybi'a over the earlier biographers when working with networks, even if he noticeably omitted individual titles in some biographies, possibly because he could not confirm their existence. There is no doubt that Ibn Abī Uṣaybi'a's detailed and multifaceted history offers a unique insight into the social networks which evolved around more than 450 famous scholars and the almost 4,000 works they wrote. Ibn Abī Uṣaybi'a mentions scribes and collectors of books, scholars who studied together, and those who refuted each other's works.

A brief look at the individual chapters of the *History of Physicians* further allows us to grasp how comprehensive the information was that Ibn Abī Uṣaybi'a gathered from his informants and libraries he visited. Since our focus lies on authors and works of the early Arabograph world, we concentrate here on chapters which deal with physicians spanning from the Early Abbasid period to Ibn Abī Uṣaybi'a's lifetime.

Ibn Abī Uṣaybi'a was born in Damascus, where he lived for many years; hence it is not surprising that he was able to list 60 physicians along with more than 600 works from Syria. Working in the Nāṣiri Hospital in Cairo certainly also made it easy for him to collect biographical data on Egyptian physicians.

But Table 1 also shows that Ibn Abī Uṣaybi'a had heard of 88 renowned physicians who settled in the Maghreb, while only very little was known about the works these physicians produced (on average he cannot list more than two works per capita). On the other hand, he knows of relatively few physicians from Persia but can list about 25 works written by each Persian scholar. Even though some scholars may have written extensively while others produced few treatises during their lifetime, these numbers are mainly a reminder of the fact that we observe literary text production through the lenses of Ibn Abī Uṣaybi'a who heavily relied on the bibliographical work of Ṣā'īd al-Andalusī (d. 462/1070).⁴⁴ We are consequently limited to the information he collected through his own personal networks and the books that were accessible in thirteenth-century Syria and Egypt.

42 See Leder, *Grenzen der Rekonstruktion*, 22-23.

43 See Ibn al-Nadīm, *Kitāb al-Fihrist*, ed. Flügel, or the more recent edition published by the Al-Furqān Islamic Heritage Foundation: Ibn al-Nadīm, *al-Fihrist*, ed. Sayyid; Ibn al-Qiftī, *Ta'riḥ al-khukamā'*, ed. Lippert.

44 See al-Andalusī, *Kitāb ṭabaqāt al-'umam*, Spanish trans. Llavero Ruiz and Lorca *et. al.*

Table 1: The chapters of Ibn Abī Uṣaybi‘a’s *History of Physicians* that list physicians from the Early Abbasid period or later, together with the number of biographies and titles of works in each chapter.

Chapter	Number of biographies	Number of titles
8. Syriac Physicians of the Early Abbasid Period	39	230
9. Physicians Who Translated Works on Medicine and Other Subjects from Greek into Arabic, and Their Patrons ⁴⁵	49	---
10. Iraqi Physicians and the Physicians of al-Jazīrah and Diyār Bakr	83	793
11. Physicians in the Lands of the Persians (<i>bilād al-‘ajam</i>)	24	594
12. Physicians of India	6	25
13. Physicians Who Were Prominent in the Western Lands and Settled there	88	200
14. Famous Physicians amongst Those in Egypt	58	408
15. Famous Syrian Physicians	60	619

Digital Prosopography and Texts – How to Shed Light on Presumably Lost Works

Digital editions of reference works are useful in many ways, especially if they are published under a Creative Commons licence that allows their re-use. The »Communities of Knowledge« project applied encoding processes and linking of entities to a digital edition of Ibn Abī Uṣaybi‘a’s *History of Physicians*, produced by Emilie Savage-Smith, Simon Swain, and Geert Jan van Gelder as *A Literary History of Medicine*.⁴⁶ We aimed to create a dataset that would allow for the observation of individual scholars from different viewpoints within the framework of the historical reference work. A user could then visualise and study individual networks of a specific target group, based on desired parameters.

This required a shift from the narrative descriptions of a bio-bibliographical collection to structured, machine-readable data.⁴⁷ I will roughly describe the process that was used in order to later allow for the evaluation of the dissemination of a literary work.⁴⁸ The team of »Communities of Knowledge« used the source text in TEI-XML (Text Encoding Initiative Extensible Markup Language) format and its indices to produce a dataset that constitutes the basis for network visualisation and analyses. All necessary entities (names, works, places) were tagged in this process and received stable URIs as identifiers. Additionally, so-called »factoids« with a specific focus on relations between individuals (and in this case also between individuals and works) received stable URIs.

45 In this chapter, Ibn Abī Uṣaybi‘a primarily assesses the quality of the translation performances and provides only very few titles. Therefore, it is unnecessary to present the number of works here.

46 Ibn Abī Uṣaybi‘a, *‘Uyūn al-anbā’*, ed. and trans. Savage-Smith *et al.* For the edition of the Arabic text, see vols. 2-1 and 2-2, for the annotated English translation, see 3-1, 3-2, 3-3. Please note that the transliteration applied by the editors differs slightly from our own and was not changed in the quotes and tables provided throughout this paper. We are grateful to Prof. Savage-Smith for the information she provided during the early stages of the project.

47 See Schwartz *et al.*, *Modeling a born-digital factoid prosopography*, §4.

48 For a more detailed description of this process, see Gibson and Schmahl, *Communities of knowledge*, in this volume (doi.org/10.1553/medievalworlds_no18_2023s\$\$\$).

In a factoid-based approach, it is possible to encode a researcher's interpretation of a primary source. Here we benefit from standards established by Daniel Schwartz, Nathan Gibson, and Katayoun Torabi.⁴⁹

The term factoid was applied by a group of researchers at King's College,⁵⁰ who pioneered prosopography in a relational database. »Factoids capture assertions made in primary source texts and not necessarily confirmed truths about the past. The factoid approach to prosopography thus captures the scholar's interpretation of what a historical source asserts about persons.«⁵¹ In this manner it is possible to encode more complex pieces of information, which the researcher may put into a relational database, creating a nexus of relationships between the pieces.⁵² In general, we encoded three kinds of factoids:

- Person factoids (using the TEI »person« element) encode a variety of information related to an individual like ethnicity, education, gender, or birth dates. Encoding this kind of data as factoid is most useful whenever a simple tag does not suffice and an interpretation by the researcher is desired. This may, for example, apply to the instance in which 'Alī ibn Riḏwān's date of birth (or a possible timespan) can only be retrieved from the planetary constellation given for the time of his birth.⁵³
- Event factoids (using the TEI »event« element) capture relevant events in the source text which may later be displayed in a timeline or juxtaposed with other events.
- Relationship factoids (using the »relation« element) can encode many kinds of relations between people (and, in our approach, between people and works).

While early approaches to digital prosopography focused on a relational database for modelling prosopographical factoids, the »Communities of Knowledge« project (drawing from the project »Syriac Persons, Events, and Relations – SPEAR«⁵⁴) implements a TEI model for prosopographical factoids. To give a practical application, we go back to our example from the introduction:

When al-Mubashshir ibn Fātik died, may God have mercy upon him, his wife, accompanied by her slave girls, betook herself to his library. She was resentful of the books because of the time he spent with them, all the while neglecting her. While lamenting him, she and the servant girls threw the books into a big pool of water in the courtyard.⁵⁵

If we wish to trace the dynamics of a social networks and want to encode the relationship between Ibn Fātik and his wife expressed in this quotation, a non-mutual relationship factoid with an @active and a @passive participant, we choose the @ref attribute »enmity-for«, in the taxonomy we have defined in collaboration with Syriaca.org. The fully encoded factoid according to our standards is:

49 See Schwartz *et al.*, Modeling a born-digital factoid prosopography, §4.

50 Centre for Computing in the Humanities, now Department of Digital Humanities.

51 Schwartz *et al.*, Modeling a born-digital factoid prosopography, §5.

52 For recent studies and the technical development of the factoid approach, see Bradley, A prosopography as Linked Open Data, and Pasin and Bradley, Factoid-based prosopography and computer ontologies.

53 For this example, see Ibn Abī Uṣaybi'a, *Uyūn al-anbā'*, ed. and trans. Savage-Smith *et al.*, §14.25.1.

54 syriaca.org/spear/index.html (accessed on 25 February 2023).

55 Ibn Abī Uṣaybi'a, *Uyūn al-anbā'*, ed. and trans. Savage-Smith *et al.*, §14.23.2.

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Figure 1: An example factoid with @ref attribute »enmity-for« encoded in TEI.

By employing this approach, the historian's interpretations of a narrative source are transformed into machine-readable assertions. It is important to note that these assertions may occasionally conflict with one another and should be regarded as research tools rather than definitive research outcomes. The information can then be stored in a well-organised spreadsheet or database. Additionally, the open-source web application Srophé, which powers both Syriaca.org and Usaybia.net, facilitates the generation of RDF (Resource Description Framework) from TEI to make it more friendly to semantic web applications.⁵⁶ In our particular case, we exported the information as a TSV (tab-separated values) document using XSL (Extensible Stylesheet Language).⁵⁷ We limited our taxonomy creation and factoid encoding to aspects relevant to specific research questions, such as the circulation of books. When the focus is shifted from individual scholars of a network to texts and manuscripts produced within this network, we can trace the minimum circulation of well-known works as well as lost books with respect to temporal, regional, or culturally shaped viewpoints and carefully suggest which closely collaborating scholars might have been aware of a certain work. Factoid-based encodings can (depending on the time invested) only be conducted for a limited part of the source text, but can be visualised against the backdrop of the persons, places, and works tagged throughout chapters 8-15 of the text. If desired, the networks can easily be extended with the addition of encoded factoids from other sources such as further biobibliographical works like those of Ibn al-Nadīm or Ibn al-Qifṭī.

56 Srophé, a TEI publishing application, accessed on 8 June 2023: github.com/srophe/srophe. Srophé's RDF serialization capability has not yet been fully implemented for Usaybia.net.

57 For the XSL, see our Usaybia-Tools Github repository, accessed on 2 June 2023: github.com/usaybia/usaybia-tools/blob/MW-v18/tools/xslt/factoids2network.xsl.

The Potential of Bio-Bibliographies

Lists of Works – Grasping the Lost and the Extant

The first suggested potential way of using data that emerges from machine-readable reference works is to inventory lost texts, but this unfortunately still lies out of reach for researchers at the moment. Since bio-bibliographical works often comprise structured lists of works, the obviously great potential they offer is to deliver an overview about works which, to the best of our knowledge, existed at a certain point in history. Comparing these titles to an overview of existing works would take historians a big step forward in better understanding the loss of treatises in the transmission process. However, this is quite difficult to achieve, for several reasons: (1) while general encyclopaedias on Arabic literature exist,⁵⁸ we are well aware of the fact that these are incomplete and should be updated by surveying as many manuscript catalogues as possible; (2) both the data extracted from bio-bibliographical reference works and an overview of existing Arabic literature need to be machine-readable and the data need to be compatible; (3) the titles of works mentioned in the reference work have to be matched with the corresponding titles in the dataset of existing works, that is, the data need to be normalised, requiring some manual adjustment by researchers.

The objective of identifying lost works in bio-bibliographical reference works may appear farfetched at first glance, but future databases could bring us considerably closer to a better understanding of the loss of literature. One of the main research outputs of *Bibliotheca Arabica*,⁵⁹ for example, is a digital database, *Khizana*,⁶⁰ which integrates modern catalogue data, as well as historical catalogues and collections of manuscript notes. The platform aims to combine a curated compilation of bio-bibliographical sources and Linked Data collections. This could make it significantly easier for future projects endeavouring to identify exactly those works which appear in the bibliographies of Ibn al-Nadīm, Ibn al-Qifṭī, or Ibn Abī Uṣaybi'a but are absent from even the most important and most comprehensive manuscript catalogues.

Readers and Owners of Manuscripts

While Ibn Abī Uṣaybi'a was writing his *History of Physicians*, he visited a large number of private as well as institutional libraries, and at times he even indicated when he came across individual manuscripts in the handwriting of a specific scholar or scribe. His reports on his meticulous search for titles and works can hence also serve as a valuable attestation for important manuscripts or even autographs that were still extant in the thirteenth century.

I encoded these relations as »reader-of-handwriting-of« factoids, which encompasses a broader scope than would have been possible by using more restricted vocabulary, such as »reader-of-autograph«. An example of this can be seen in the following factoid:

58 Such as Brockelmann, *Geschichte der arabischen Litteratur*, and Sezgin, *Geschichte des arabischen Schrifttums*.

59 »Bibliotheca Arabica – Towards a New History of Arabic Literature«, based at the Saxon Academy of Sciences and Humanities in Leipzig (Germany) is a long-term research project dedicated to the history of Arabic literature with a focus on manuscript studies. On this project, see Brinkmann and Löhr, *Bibliotheca Arabica*, 197-206.

60 *Khizana*, accessed on 9 June 2023: khizana.saw-leipzig.de.

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Figure 2: Factoid encoding a »reader-of-handwriting-of« relation including a date element.

We learn that Ibn Abī Uṣaybiʿa claims to have seen manuscripts in the handwriting of 30 scholars, most of whom lived in eleventh- to twelfth-century Egypt and Syria. In some instances, he was able to access copies which date back to the tenth or even the ninth century, which makes Ibn Abī Uṣaybiʿa an important witness of the early manuscript traditions. He copied, for instance, from Khalaf al-Ṭūlūnī's (fl. 302/914) autograph⁶¹ and saw the original version of al-Fārābī's (d. 338/950) *Kitāb al-qiyās al-ṣaghīr*. Ibn Abī Uṣaybiʿa even claims to have seen several books in the handwriting of Ḥunayn ibn Isḥāq (d. 260/873):

I – Ibn Abī Uṣaybiʿah – add here that Ḥunayn's secretary was a man by the name of al-Azraq. I have seen many of the works of Galen and other authors in his handwriting, some of them with annotations in Greek in Ḥunayn's handwriting, and those books bore the seal of al-Ma'mūn.⁶²

61 The autograph has the title K. *al-nihājah wa-l-kifāyah fī tarkīb al-ʿaynayn wa-khilqatihimā wa-ʿilājihimā wa-adwiyatihimā*; Ibn Abī Uṣaybiʿa, *Uyūn al-anbāʾ*, ed. and trans. Savage-Smith *et al.*, §15.1.5 (no. 14).

62 Ibn Abī Uṣaybiʿa, *Uyūn al-anbāʾ*, ed. and trans. Savage-Smith *et al.*, §8.29.6. Note that as a translation for the Arabic word *ʿalāma*, »seal« is likely wrong; this may rather have been a standardised signature. Seals are only transmitted from later periods. I am grateful to Boris Liebrecht for his opinion on this matter.

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Figure 3: A »reader-of-handwriting-of« factoid encoding the relationship between Ibn Abī Uṣaybi‘a and manuscripts annotated by Ḥunayn ibn Ishāq.

Yaḥyā ibn ‘Adī (d. 363 / 974) reports that al-Ma‘mūn (r. 198-213 / 813-833) paid Ḥunayn for his translations in gold and by weight. From Ibn Abī Uṣaybi‘a, who transmits Ḥunayn’s autobiography, we learn that the scholar would on other occasions translate free of charge even for his adversaries to prove his good will, whereas previously he had received a purse of silver dirhams equal in weight to the translated work. This apparently compelled him to produce thick and heavy codices, which Ibn Abī Uṣaybi‘a could apparently purchase:

I have found large numbers of these works, and have purchased a good many of them. They are written in *muwallad* Kūfic script in the handwriting of al-Azraq, Ḥunayn’s secretary. The letters are written very large, with broad strokes, and the lines are widely spaced. The paper is very heavy, being three or four times as thick as the paper manufactured nowadays, while the sheets are trimmed to about one third the size of a sheet of Baghdādī paper. Ḥunayn had his works published in that fashion to make them bulkier and increase their weight, inasmuch as he was paid weight for weight in silver dirhams. It is thus clear that he used that particular type of paper deliberately.⁶³

Interestingly, a manuscript preserved in the University Library of Tehran⁶⁴ transmits a colophon for Ḥunayn ibn Ishāq’s *Ādāb al-falāsifa* which attributes the copy to Ḥunayn himself and dates it Dhū al-Ḥijja 249 / January-February 864. The large and widely spaced Kufic script on thick oriental paper clearly fit the criteria described by Ibn Abī Uṣaybi‘a. However, recent radiocarbon dating of the manuscript suggests an origin between 1526 and 1796 and confirms earlier suspicions of palaeographers.⁶⁵ The Tehran codex was not copied by Ḥunayn, but clearly imitates his original style and was thus inspired by the tales or was truly copied from an autograph.

Overall, we can compile a list of manuscripts and works in the handwriting of several scholars which were read by Ibn Abī Uṣaybi‘a and thus still extant in thirteenth-century Damascus; see Table 2.

63 Ibn Abī Uṣaybi‘a, *‘Uyūn al-anbā’*, ed. and trans. Savage-Smith *et al.*, §8.29.2.

64 MS Tehran, Kitābkhāna-yi markazi-i Dānishgāh-i Tehrān, 2165.

65 Aghaei *et al.*, Radiocarbon dating of manuscripts, 6-7 and 12.

Table 2: Well-known scholars whose handwriting Ibn Abī Uṣaybi'a claimed to have seen in manuscripts, together with the work in question (where he indicated this).⁶⁶

AUTHOR/SCRIBE	WORK*
Muwaffaq al-Dīn 'Abd al-Laṭīf ibn Yūsuf al-Baghdādī (usaybia.net/person/32)	
Abū l-Faḍl ibn 'Abd al-Karīm al-Muhandis (usaybia.net/person/153)	Galen's Sixteen Books
Abū l-Khaṭṭāb (usaybia.net/person/254)	
Abū Sahl al-Masīhī (usaybia.net/person/334)	<i>K. iẓhār ḥikmat allāh ta'ālā fī khalq al-insān</i> (ID: Work 3728)
'Alī ibn Sulaymān (usaybia.net/person/480)	<i>K. al-amthilah wa-l-tajārib wa-l-akhbār wa-l-nukat wa-l-khawāṣṣ al-ṭibbiyyah</i> (ID: Work 1663)
'Alī ibn Sulaymān (usaybia.net/person/480)	<i>K. al-ta'ālīq al-falsafiyyah</i> (ID: Work 1664)
al-Azraq (usaybia.net/person/600)	
al-Badī' 'Abd al-Razzāq ibn Aḥmad ibn al-Khiḍr al-'Āmirī (usaybia.net/person/603)	
al-Bayyāsī, Amīn al-Dīn Abū Zakariyyā Yaḥyā ibn Ismā'īl al-Andalusī (usaybia.net/person/642)	
Bulmuẓaffar ibn Mu'arrif (usaybia.net/person/659)	a commentary of Alexander on Aristotle's <i>Generation and Corruption</i>
Fakhr al-Dīn al-Rāzī (usaybia.net/person/762)	
al-Fārābī, Abū Naṣr (usaybia.net/person/765)	<i>K. al-qiyās al-ṣaghīr</i> (ID: Work 985)
al-Ḥasan ibn al-'Abbās (usaybia.net/person/846)	
Ḥunayn ibn Ishāq (usaybia.net/person/899)	<i>R. fīmā aṣābahū min al-miḥan wa-l-shadā'id</i> (ID: Work 3046)
Ibn Abī Ṣādiq al-Nisābūrī (usaybia.net/person/923)	<i>S. kitāb manāfi' al-a'dā' li-Jālinūs</i> (ID: Work 3952)

66 Usaybia.net URIs for works (e.g., usaybia.net/work/1664) are preliminary and based on the items mentioned in Ibn Abī Uṣaybi'a's lists (see Ibn Abī Uṣaybi'a, *Uyūn al-anbā'*, ed. and trans. Savage-Smith *et al.*), – they do not resolve to a web page and could be revised in the course of further work. Therefore, we have indicated IDs rather than URIs here.

Ibn al-‘Aynzarbī (usaybia.net/person/939)	
Ibn Jazlah (usaybia.net/person/1012)	
Ibn al-Muṭrān (usaybia.net/person/1070)	
Ibn al-Naḥḥās, Muwaffaq al-Dīn Hibat Allāh Abū l-Qāsim ibn ‘Abd al-Waḥḥāb ibn Muḥammad ibn ‘Alī al-Kātib (usaybia.net/person/1075)	
Abū l-Faraj ibn al-Ṭayyib (usaybia.net/person/1136)	<i>Tafsīr K. Aghlawqun li-Jālinūs</i> (ID: Work 2620)
Abū l-Faraj ibn al-Ṭayyib (usaybia.net/person/1136)	<i>M. amlāhā fī jawāb mā su‘ila ‘anhu min ibṭāl al-i‘tiqād fī l-ajzā’ allati lā tanqasim</i> (ID: Work 2643)
Ibn al-Tilmīdh (usaybia.net/person/1140)	
Jamāl al-Dīn (Ibn al-Jammālah) (usaybia.net/person/1314)	<i>Al-M. al-Nāsiriyyah fī ḥifz al-umūr al-ṣiḥḥiyyah</i> (ID: Work 1142)
al-Jilyānī (usaybia.net/person/1339)	
Abū ‘Alī al-Ḥasan ibn ‘Alī ibn Ibrāhīm al-Juwaynī al-Kātib (usaybia.net/person/1355)	
Khalaf al-Ṭūlūnī (usaybia.net/person/1378)	<i>K. al-nihājah wa-l-kifāyah fī tarkīb al-‘aynayn wa-khilqatihimā wa-‘ilā-jihimā wa-adwiyatihimā</i> (ID: Work 5001)
Muhadhhab al-Dīn ibn al-Naqqāsh (usaybia.net/person/1596)	<i>K. bustān al-aṭibbā’ wa-rawḍat al-alibbā’</i> (ID: Work 1141)
Muḥammad ibn Aḥmad ibn Ṣāliḥ al-‘Abdī (usaybia.net/person/1612)	
Ṣadaqah ibn Manjā ibn Ṣadaqah al-Sāmīrī (usaybia.net/person/1943)	
Sa‘īd ibn Hibat Allāh ibn al-Ḥusayn (usaybia.net/person/1969)	<i>K. al-Talkhīṣ al-Nizāmī</i> (ID: Work 2768)
Yūsuf ibn Hibat Allāh ibn Muslim (usaybia.net/person/2336)	

Networks of Lost Works and Their Sources

Depending on the prominence of a lost text and on how rich in detail a reference work is, the digital factoid approach makes it possible to trace the dissemination of works or even to reconstruct who contributed to a treatise that has not been transmitted.

We will illustrate this by using the example of Yūsuf ibn Ibrāhīm ibn al-Dāya's (d. between 263/876 and 270/884) lost *History of Physicians*. In historical accounts, Ibn al-Dāya is overshadowed by his son, the previously mentioned author of the Pseudo-Ptolemaic *Centiloquium*, Abū Ja'far (also known as Ibn al-Dāya). His now lost *History of Physicians*, however, was used by Ibn Ḥawqāl (d. after 978) and Ibn al-Qiftī, as well as by Ibn Abī Uṣaybi'a. In an article, Jelle Bruning has shown that Ibn Abī Uṣaybi'a did not only rely on the earlier biographers when he cited this work but apparently had access himself to a copy of the lost history.⁶⁷ His quotes are in several cases more extensive than those by Ibn Ḥawqāl; Ibn al-Qiftī on the other hand appears to paraphrase the original work at times. Ibn Abī Uṣaybi'a may hence be acknowledged as the most reliable source for Ibn al-Dāya's *History of Physicians*. However, at this point we are interested not in editing or collecting the numerous text fragments, which are certainly interesting, but in looking at the informants that Ibn al-Dāya approached when he compiled his treatise.

In his work, Ibn Abī Uṣaybi'a is systematic in the way in which he quotes his sources. Oral informants are usually introduced by *qāla*, while he refers to literary sources by *ḥaddatha*.⁶⁸ This not only relates to Ibn Abī Uṣaybi'a's own history, but also to Ibn al-Dāya, whom he usually quotes in the following manner:

حدث أبو جعفر أحمد بن يوسف بن إبراهيم قال حدثني أبي قال حدثني عيسى ابن حكم الدمشقي
المتطبب
قال حدثني أبي عن أبيه قال ولي الموسم في أيام معاوية بن أبي سفيان يزيد بن معاوية فوجهني
أبوه معه متطببا له.

I have the following story from Abū Ja'far Aḥmad ibn Yūsuf ibn Ibrāhīm, who had heard the account from his father, who in turn had heard it from the physician 'Īsā ibn Ḥakam al-Dimashqī, who had heard it from his father, who had heard it from his father. »In the caliphate of Mu'āwiyah ibn Abī Sufyān,« 'Īsā's grandfather said, »the caliph's son Yazid was responsible for leading the *ḥajj*-caravan, and on one occasion his father sent me along as Yazid's personal physician.«⁶⁹

We can consequently retrieve substantial networks through which Ibn al-Dāya received his biographical information. The personal contacts which contributed to Ibn al-Dāya's lost treatise are introduced by *qāla* and can hence be encoded by applying SPEAR vocabulary and non-mutual »oral-informant-to« factoids. This yields on the one hand, a list of at least 17 direct oral informants to Ibn al-Dāya (see Table 3), and, on the other hand, a much bigger

67 See Rosenthal, Ibn al-Dāya, and Bruning, Yūsuf b. Ibrāhīm b. al-Dāya, 97-120.

68 Bruning, Yūsuf b. Ibrāhīm b. al-Dāya, 106.

69 Ibn Abī Uṣaybi'a, *Uyūn al-anbā'*, ed. and trans. Savage-Smith *et al.*, §7.6.

social network that spans from one oral informant to another. We may notice that the direct oral sources found for Ibn al-Dāya include more personal contacts than those listed by Yāqūt al-Rūmī (d. 626/1229).⁷⁰ However, some informants mentioned by Yāqūt al-Rūmī such as Ibrāhīm ibn al-Mahdī's mother Ḥakam Shakla are not mentioned in Ibn Abī Uṣaybi'a's accounts.⁷¹

Table 3: List of direct informants for Ibn al-Dāya's lost treatise as retrieved from Ibn Abī Uṣaybi'a's History of Physicians.

<i>Usaybia.net URI</i>	<i>Informant</i>
usaybia.net/person/1337	Jibrīl ibn Bukhtīshū'
usaybia.net/person/1240	'Īsā ibn Ḥakam
usaybia.net/person/2355	Zakariyyā ibn al-Ṭayfūrī
usaybia.net/person/1675	Mūsā ibn Isrā'īl
usaybia.net/person/595	Ayyūb ibn al-Ḥakam al-Baṣr
usaybia.net/person/1194	Ibrāhīm ibn Fazārūn
usaybia.net/person/2326	Yūḥannā ibn Māsawayh
usaybia.net/person/227	Abū l-'Ibar Ṭarad
usaybia.net/person/2064	Aḥmad ibn Hārūn al-Sharābī
usaybia.net/person/1186	Ibrāhīm ibn 'Alī
usaybia.net/person/838	Hārūn ibn Sulaymān ibn al-Manṣūr
usaybia.net/person/1567	Mīkhā'īl ibn Māsawayh
usaybia.net/person/1199	Abū Ishāq Ibrāhīm ibn al-Mahdī
usaybia.net/person/2191	al-Ṭayfūrī
usaybia.net/person/1199	Ibrāhīm ibn al-Mahdī
usaybia.net/person/2147	Sulaymān, a eunuch from Khorasan
usaybia.net/person/1276	Ismā'īl ibn Abī Sahl ibn Nawbakht

We can extend this information with other factoids which we have also modelled for relevant parts of Ibn Abī Uṣaybi'a bio-bibliography (e.g., »associate-of«, »colleague-of«, »patron-of«, etc.) and further specify personal relationships that lie behind an »oral-informant-to« connection. The network can then be visualised using a visualisation tool such as Cytoscape, as is done in Figure 4, where we have also highlighted Ibn al-Dāya's direct oral informants.⁷² To deliver a clearer picture we have excluded in this figure the linear relations between unnamed informants (e.g., »heard it from his father who had heard it from his father«).

70 Yāqūt al-Rūmī, *Irshad al-arib ila ma'rifat al-adib*, 2, ed. Margoliouth, 157, as also noted by Bruning.

71 Bruning adds eight people to Yāqūt's list of the informants on whose authority Ibn al-Dāya transmitted anecdotes. However, even Bruning (Yūsuf b. Ibrāhīm b. al-Dāya, 106) misses four of the oral contributors mentioned by Ibn Abī Uṣaybi'a, which illustrates the advantages of digital factoid modelling over manual searches.

72 Cytoscape Consortium, Cytoscape: Network Data Integration, Analysis, and Visualization in a Box, accessed on 9 June 2023: cytoscape.org/.

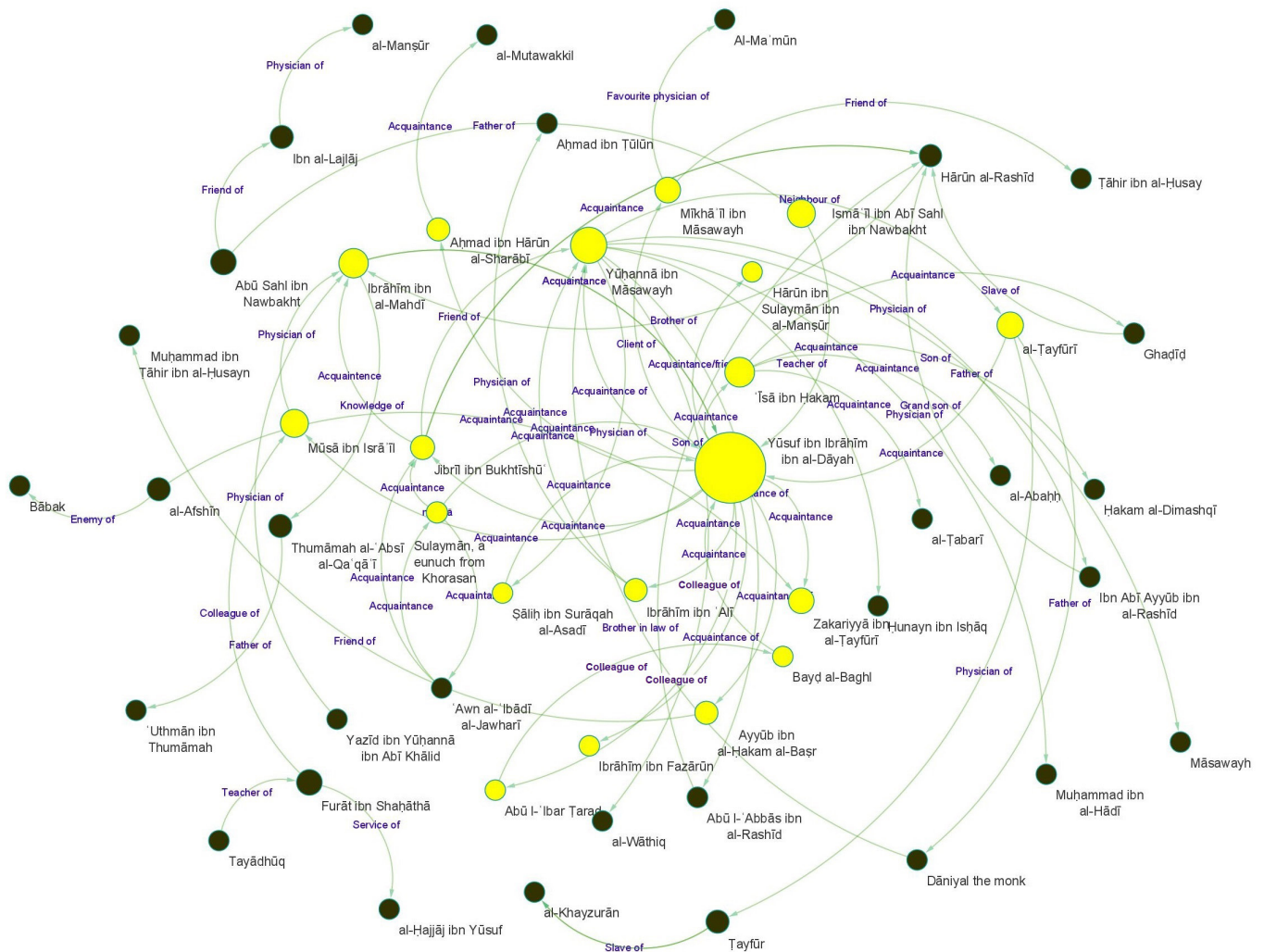


Figure 4: Bird’s eye view of the network of Ibn al-Dāya’s informants who contributed to his lost History of Physicians (node size based on betweenness centrality, continuous mapping; first neighbouring nodes to Ibn al-Dāya are selected).

This graph reflects the minimum-network of personal connections Ibn al-Dāya maintained and shows further how close his social links to the caliphs were. Not only was Ibn al-Dāya considered a foster brother of al-Mu‘taṣim (r. 218/833-227/842),⁷³ there is also only a single intermediate step in the personal connection between Ibn al-Dāya and al-Mutawakkil, which is through Aḥmad ibn Hārūn al-Sharābī. Moreover, Ibn al-Dāya’s relationship with Mikhā’īl ibn Māsawayh, the brother of Yūḥannā ibn Māsawayh (d. 243/857), who holds an important position in the network, proves a close connection to al-Ma’mūn.

73 Bruning, Yūsuf b. Ibrāhīm b. al-Dāya, 98.

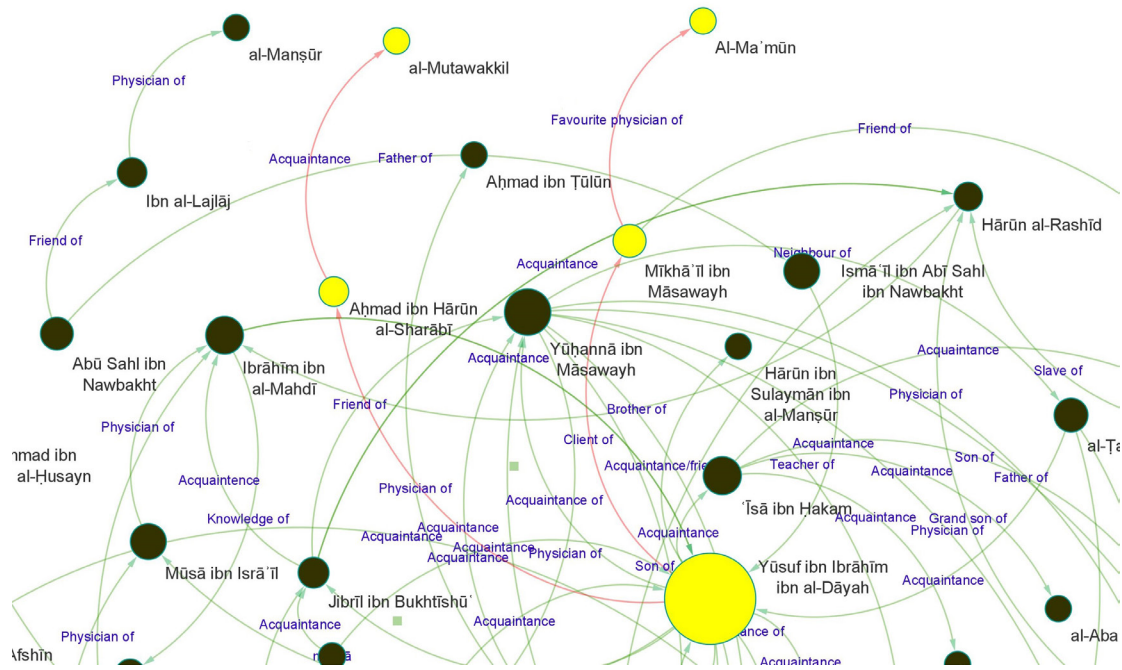


Figure 5: Close reading of Ibn al-Dāya's social network focusing on his connections to the caliphs.

Conclusion

The wider the dissemination of a literary work at a relatively early stage in its history, the higher its chance of survival. As has been noted by Arnold Esch, the survival of a work is subject to two separate processes: the overall randomness of transmission and the factors affecting the likelihood of a specific work's transmission. At the beginning of this paper, we discussed a number of factors that contribute to the likelihood of transmission. For our purposes, we are not interested in a scenario in which manuscripts are preserved in an enclosed environment (such as a genizah or a qubba). We focused instead on a second scenario, where manuscripts circulate in a community, which allows us to examine networks of owners and readers of a work, or even contributors to a certain treatise.

Historical reference works hold a high potential for the study of lost literary heritage. In the future, it may be possible to systematically compare lists of works in bio-bibliographical histories to data retrieved from manuscript catalogues and thus get a basic understanding of works that have disappeared over the centuries from the shelves. Establishing networks of readers and owners of lost manuscripts and works mentioned in reference works can further serve as a useful tool in analysing the social environment in which specific treatises were read and studied. We showed that Ibn Abī Uṣaybi'a had access to at least 30 manuscripts written by prominent scholars and their scribes, and among those books were apparently also autographs of al-Fārābī and Ḥunayn ibn Ishāq. Furthermore, it may even be possible to trace the sources used for producing selected lost works. Ibn Abī Uṣaybi'a's reference work, for example, contains enough information to draft a vast social network of oral informants on whose authority Ibn al-Dāya transmitted the anecdotes in his now lost *History of Physicians*.

To use such a reference work in a systematic manner, persons, places, and other relevant entities need to be tagged. We encoded our interpretation of the text in the form of digital factoids that were relevant for our study, such as »reader-of-handwriting-of«. Applying digital prosopography and modelling factoids in a customised TEI schema (SPEAR) in general offers great potential for investigating bio-bibliographical reference works.⁷⁴ For this paper, we applied factoid prosopography to draft networks of lost texts and manuscripts, allowing us to model a minimum network of personal informants that contributed to Yūsuf ibn Ibrāhīm ibn al-Dāya's now lost *History of Physicians*.

In the small but hopefully growing field of research on lost literary heritage, the Arabograph world is underrepresented. Using machine-readable assertions from bio-bibliographical reference works as a starting point, this article seeks to raise awareness about lost Arabic works and advocates for systematic approaches that go beyond studying selected fragments of individual works.

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74 See also Gibson and Schmahl, *Communities of knowledge*, in this volume (doi.org/10.1553/medievalworlds_no18_2023s196).

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- Figure 4: Bird’s eye view of the network of Ibn al-Dāya’s informants who contributed to his lost *History of Physicians* (Nodes’ size based on betweenness centrality, continuous mapping; first neighbouring nodes to Ibn al-Dāya are selected).
- Figure 5: Close reading of Ibn al-Dāya’s social network focusing on his connections to the caliphs.
- Table 1: The chapters of Ibn Abī Uṣaybi‘a’s *History of Physicians* that list physicians from the Early Abbasid period or later, together with the number of biographies and titles of works in each chapter.
- Table 2: Well-known scholars whose handwriting Ibn Abī Uṣaybi‘a claimed to have seen in manuscripts, together with the work in question (where he indicated this).
- Table 3: List of direct informants for Ibn al-Dāya’s lost treatise as retrieved from Ibn Abī Uṣaybi‘a’s *History of Physicians*.

Labeling Religious Affiliation in Ibn Abī Uṣaybi‘a’s *History of Physicians*: A Quest

Nathan P. Gibson*

In this article, I identify some of the challenges of labeling religious affiliation in a medieval Arabic biographical text. I further propose a solution for characterizing such affiliations in a network or database while preserving the nuances and uncertainties of primary-source evidence.

The goal of the »Communities of Knowledge« project was to observe cross-communal interactions in scholarly circles as represented in the *History of Physicians* by Ibn Abī Uṣaybi‘a (b. after 590 AH/1194 CE, d. 668/1269 or 1270). The network analysis at the core of the project’s large-scale view of these interactions presupposed linking hundreds or even thousands of individuals mentioned in the text to their various religious communities.

Fundamentally, this linking involves two steps: (1) inferring an individual’s religious affiliation from the text and (2) making this inference accessible to the network analysis in the recording system. Both steps raise challenges. At the inference step, the concepts of religion and group adherence must be contextualized in Ibn Abī Uṣaybi‘a’s text. Here I explore his explicit, implicit, and ambiguous references to affiliation.

At the recording step, a labeling system should allow varying levels of precision for the affiliation, should show the type and certainty of the »signal« (the evidence for inferring the affiliation), and should record multiple signals of a person’s affiliation where present, even if these appear contradictory. The model I propose with TEI-XML examples makes multiple signals and their attributes machine-actionable.

Finally, I consider how this model relates to the possibility of machine labeling affiliations with named entity recognition (NER). Arabic NER models do not currently include entity types for religious affiliation, but the tagged text of the *History of Physicians* could help to train NER models on the nuances of religious affiliation in medieval Arabic texts.

Keywords: religion and religious identity, interreligious relations, Near East/Middle East, digital humanities, Arabic onomastics, Abrahamic religions, Abbasid caliphate (132-656 AH/750-1258 CE), Arabic, biographical literature, Ibn Abī Uṣaybi‘a (b. after 590 AH/1194 CE, d. 668/1269 or 1270), network analysis, TEI-XML, named entity recognition (NER)

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Introduction: ‘Uyūn al-anbā’ (History of Physicians)

The frequent, even daily and unremarkable, contact among several religious groups in the medieval Near East is reflected in myriad texts beyond the confines of religious genres – including in biographical works. These recount interactions not only between members of the three major monotheistic or »Abrahamic« religions – Judaism, Christianity, and Islam – who have lived side-by-side for many centuries in and beyond the areas where they trace the roots of their respective faiths, but also between a number of other groups, including Zoroastrians, Manichaeans, Samaritans, and Harranian pagans or »Sabians«.

Among medieval biographical texts in Arabic, ‘*Uyūn al-anbā’ fī ṭabaqāt al-aṭibbā’* (literally, »Choice accounts of the classes of physicians«, hereafter abbreviated as *History of Physicians*) by the Syrian physician Ibn Abī Uṣaybi‘a (born after 590 AH/1194 CE, died 668/1269 or 1270) is perhaps unequaled in the extent to which it details the social interactions of scholars from many different religious communities. Works in this *ṭabaqāt* genre tend to present a kind of »who’s who« resource, collecting information about personages in particular categories such as hadith transmitters or poets. While some of these categories were applicable especially within specific religious traditions, Ibn Abī Uṣaybi‘a’s project outlined a profession (medicine and related areas) in which collaboration and exchange *across* different communities was typical. The *History of Physicians* is thus an ideal source for analyzing interreligious knowledge exchange on a large scale, as undertaken by the project »Communities of Knowledge« (usaybia.net).¹ As a textual basis for this analysis, the recently published critical edition and translation of Ibn Abī Uṣaybi‘a’s work (*A Literary History of Medicine*, hereafter »LHOM«) was especially suitable since it is available for download and reuse as open-access under a CC-BY-NC license.²

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- 1 For a more detailed introduction to the *History of Physicians*, see Vernet, Ibn Abī Uṣaybi‘a; the introductory essays in Ibn Abī Uṣaybi‘a, *‘Uyūn al-anbā’*, ed. and trans. Savage-Smith *et al.*; and the report about the »Communities of Knowledge« project in the present volume (Gibson and Schmahl, Communities of knowledge).
 - 2 Ibn Abī Uṣaybi‘a, *‘Uyūn al-anbā’*, ed. and trans. Savage-Smith *et al.* This is also the source of translated quotations below, unless otherwise noted.

The project's overall aim prompted the need to find a way to label the religious affiliation of persons mentioned in the *History of Physicians* and to address the methodological considerations that go along with such a labeling system. On the whole, the »Communities of Knowledge« project aimed to examine the specific people, places, and types of interactions that function to bridge religious communities as represented in Ibn Abī Uṣaybī'a's text.³ The project team identified the persons and places mentioned in chapters 8-15 of Ibn Abī Uṣaybī'a's text in order to construct networks revealing how the author depicts the interactions of these persons throughout his text.⁴ But in order to be able to isolate cross-communal interactions in the network, it is necessary to be able to link at least a substantial portion of the approximately 3,000 individuals mentioned in the text to their respective religious communities. Thus, the goal of labeling persons with religious affiliations is to make the interreligious dimensions of these networks visible. The question for this paper is: How can this be done in a way that corresponds to the nuances of religious affiliation as perceived and recorded by Ibn Abī Uṣaybī'a?⁵

Below, I discuss the two steps involved in this linking: (1) inferring an individual's religious affiliation from the text; and (2) making this inference accessible to the network analysis in the recording system. Regarding the first step, I use examples and data from the *History of Physicians* to explore how a person's religious affiliation can be determined from the text amid ambiguities and conceptual problems (such as multiple affiliation). For the second step, I describe the requirements for a system to record these determinations, and I propose a model intended to meet these requirements. As a final reflection, I consider how this two-step process relates to automated tagging through named entity recognition (NER). Arabic NER models cannot yet be used in their off-the-shelf form for labeling religious affiliations, but it is conceivable to train a model on the manually tagged text of the *History of Physicians* in order to further develop Arabic NER capabilities.

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- 3 This goal had to do not with proving *whether* such cross-communal collaboration took place (indeed, one might argue it was unexceptional at the time), nor with determining *to whom* the scholarly achievements of this period belong, but rather with examining *how* this collaboration took place on an interpersonal level. See Gibson, Knowledge collaboration, 60-65.
 - 4 See the project report in this volume (Gibson and Schmahl, Communities of knowledge) for more details about identifying persons in the text and constructing networks from these identifications.
 - 5 The network constructed from the *History of Physicians* is meant as a tool for analyzing Ibn Abī Uṣaybī'a's assertions. It is not in itself a historical-critical model.

Inferring Religious Affiliation in the History of Physicians: Toward a Working Definition

The challenge of linking historical persons to religiously delineated groups begins with the question of how terms such as »religion« and its corollaries »religious identity«, »religious adherence«, and »religious belonging« should be applied to medieval Near Eastern texts. The modern definitions of these terms are actively debated in the sociology of religion.⁶ But – more to the point – although there is some consensus that the modern concept of religion should be applied only with careful adaptation (if at all) to medieval discussions,⁷ there has been little progress, as far as I can find, in determining in practical terms what should be seen as indicators of religious affiliation in medieval Near Eastern texts, that is, what its indicators might be. This is needed for any broad-scale study that would map these communities through their individuals – through their inclusion and exclusion, what connected or isolated them – in the abundant literary works and documentary texts that survive to describe persons from this region and time period. Without knowing clearly how to detect and mark religious affiliation, we are limited to guessing at larger patterns or confining ourselves to only the clear-cut cases in which terms such as »Jewish« or »Muslim« describe persons in source texts.⁸

Regardless of this lack, many insights into cross-communal interactions have been possible from studies in a number of areas: religious jurisprudence,⁹ polemical exchanges,¹⁰ intertextuality in the exegesis of scripture and its narrative retellings,¹¹ and others. Moreover, the light that documentary and legal texts have shed on daily life has led to questioning the rigid boundaries that have sometimes been assumed for religious communities. But for approaches such as prosopography or network analysis that work from references *about individual persons* toward a larger whole, systems must exist for labeling religious affiliation if interreligious dimensions are to be taken into account.

6 For a summary of some of these debates, see Berger, *Some second thoughts*; Bruce, *Defining religion*; K nemann, *Religion*.

7 See, most helpfully, the brief discussion and references in Weltecke, *Über Religion vor der »Religion«*, 13-15 and n. 3; as well as Bruce, *Defining religion*, 107-108; K nemann, *Religion*, 1-2; and, for a book-length treatment, Nongbri, *Before Religion*.

8 Gero Menzel has brought to my attention that membership categorization analysis could provide a profitable methodological comparison for my approach (*pers. comm.*, 23 May 2023; see Silverman, *Harvey Sacks*, 74-97). Unfortunately, I have not yet been able to explore this line of inquiry.

9 E.g., Rustow, *Legal status*; Weitz, *Between Christ and Caliph*; and the special issue Tillier, *Le pluralisme judiciaire*.

10 Thomas and Roggema, *Christian-Muslim Relations 1*; Thomas *et al.*, *Christian-Muslim Relations 2*; Thomas and Mallett, *Christian-Muslim Relations 3*.

11 E.g., Islamic apologetic use of the Gospels (Accad, *Gospels in the Muslim discourse*), Islamic tellings of the stories of the prophets in the *q     al-anbiy  * genre (Nagel, *Q     al-Anbiy  *), and the Jewish exegete Saadiah Gaon's attention to Islamic theology (Freidenreich, *Use of Islamic sources*).

Defining what should be considered religious affiliation in the History of Physicians involves, first of all, disentangling the concept of »religion« from modern preconceptions. Indeed, it is debated when and where the idea took shape that a single term such as »religion« could encompass a plurality of systems of belief and practice.¹² Put differently, by the seventh/thirteenth century, when Ibn Abī Uṣaybī'a was writing, could his descriptions of people as »Muslim«, »Christian«, »Jewish«, or »Zoroastrian« be understood as comparable terms within a single category?

Several centuries before the period of interest, in the early centuries of Islamic rule, the encounters of groups having partially conflicting and exclusivist beliefs had already prompted comparative projects, such as that of Theodore Abū Qurra (d. after 213?/829?). As the Christian Melkite (Byzantine Orthodox) bishop of cosmopolitan Harran, Theodore imagined what it would be like for a man who grew up on a mountain away from society to come into contact with people »in their differing religions« (*fī adyānin mukhtalifatin*).¹³ He goes on to describe how each »people from« (*qawm min*) the pagans, Zoroastrians, Samaritans, Jews, Christians, Manichaeans, Marcionites, Bardaisanites, and Muslims would attempt to recruit the newcomer to their group through their self-descriptions.¹⁴ Here it is not my purpose to resolve whether Theodore or others of his time used the Arabic word *dīn* (pl. *adyān*) analogously to the term »religion« in its modern sense.¹⁵ Rather, it is sufficient to note that, already at this time, an author might subdivide his society into groupings that today we would call »religious«, and that he seems to have considered these groups to be exclusive alternatives to one another.

Muslim writers in the third/ninth and fourth/tenth centuries wrote works describing the beliefs of various non-Muslim communities (*ghayr al-Islāmiyyīn*), but little survives from these.¹⁶ Remnants of a work by al-Nashī' al-Akbar (d. 293/906) and the section of 'Abd al-Jabbār's (c. 325-415/937-1024) *Mughnī fī abwāb al-tawhīd wa-l-'adl* (Compendium on the pillars of oneness and justice) dealing with religious sects show systematic heresiographic attempts that would later be seen in better known books in this vein by Ibn Ḥazm (384-456/994-1064) and Abū al-Faḥ Muḥammad al-Shahrastānī (b. 479?/1086 or 1087?, d. 548/1153). These efforts at clarifying which theologically distinctive features should be assigned to particular groups show that, at least on this level, categorizing people into communities of belief was conceivable long before the time of Ibn Abī Uṣaybī'a.

12 As Weltecke, *Über Religion vor der »Religion«*, has shown, current research on the origin of the concept has been too confined to studying the Latin term *religio* while neglecting more relevant terms such as *lex* as well as Arabic and other West Asian conceptions such as *milla* and *dīn*.

13 Abū Qurra, *Traité de l'existence du créateur*, ed. Dick, 200.

14 Abū Qurra, *Traité de l'existence du créateur*, ed. Dick, 200-210.

15 On this, see briefly Weltecke, *Über Religion vor der »Religion«*, 24.

16 Thomas, *Christian Doctrines*, 20-22.

While Theodore's project and those of the abovementioned Islamic heresiographers aimed at theological persuasion, the religious categories they describe had more than just a theological import. Legal reasoning in a variety of traditions demarcated these groups, perhaps establishing relevant social categories or perhaps reflecting and reinforcing existing ones. Islamic jurists attempted to make group membership a criterion for rules regarding taxation, marriage, inheritance, and other areas – differentiating not only between Muslims and non-Muslims, but also between Scripture people (*ahl al-kitāb*, literally »People of the Book«), protected people (*ahl al-dhimma*), and others.¹⁷ Christian bishops in canon law texts barred their parishioners from giving their daughters in marriage to outsiders (under threat of excommunication), and Jewish leaders did similarly in their responsa. Even supposing that such rules were idealistic and written to erect or reinforce boundaries that in practice were not maintainable, they reflect the thinking that each person *could* be assigned to one of a set of mutually exclusive legal categories corresponding to real-life communities.

With these theological and legal perspectives in the background, I find the term »religious affiliation« more applicable to medieval Near Eastern biographical descriptions than »religious identity«, »religious adherence«, or »religious belonging«. These latter carry with them a sense of self-identification and self-determination that would be anachronistic, especially for a text such as Ibn Abī Uṣaybi'a's, which typically reports affiliations as observations or social perceptions rather than as first-person descriptions by the historical subjects themselves. For example, imagine a woman whose Christian parents baptized her as a child. She then marries a Muslim man, probably by the arrangement of the families. It is unlikely that she herself will at any point determine whether others perceive her as a Christian or Muslim. Moreover, her children will be considered Muslim because of their Muslim father. Except in the unusual case that her own statements are reported, it would be tenuous to say that she identifies as Christian or Muslim, or that she adheres to Christianity or Islam, because these would imply that this determination comes through what she says about her own beliefs and practice. An »affiliation« with one of these groups, on the other hand, means only that someone (whether she herself or others) sees her as belonging to that group.

Thus, the working definition of »religious affiliation« that I would apply to Ibn Abī Uṣaybi'a's *History of Physicians* is »perceived belonging to a group with theological and social distinctions that are typically exclusive«. ¹⁸ By the term »interreligious«, I correspondingly intend, »between differing religious affiliations«. This definition is starkly different from some modern conceptions, in which religion may be individually chosen and comprise highly personal and perhaps idiosyncratic elements.¹⁹ Significantly, this definition also makes no assumptions about a person's individual beliefs and practices (although the group as a whole is expected to hold to some theological distinctions), nor does it directly relate to phenomenological descriptions (such as encountering »the numinous«).

17 In general on this topic, see Levy-Rubin, *Non-Muslims in the Early Islamic Empire*; Simonsohn, *A Common Justice*; Fattal, *Le statut légal*; Freidenreich, Christians in early and classical Sunnī law.

18 The »perception« in this case is that of the narrator (Ibn Abī Uṣaybi'a) or that of the speaker he cites.

19 For the modern concept of »religion«, see Nongbri, *Before Religion*.

As discussed below, »perceived group belonging« fits the way Ibn Abī Uşaybī'a uses explicit designations such as »Muslim« or »Jewish«, for example, as well as the slightly more subtle indications he gives using occupational descriptors (»qadi«, »priest«) or family connections. It also fits the wide range of beliefs and practices attributed in his work to members of each group, in which a subject's personal piety was not at issue in the categorization. For example, the eminent physician Yūḥannā ibn Masawayh (d. 243/857) is commonly spoken of as being part of the Christian community, and Ibn Abī Uşaybī'a quotes certain biographers that explicitly call him a »Christian« and a deacon. Yet his biography in the *History of Physicians* hardly presents a pious believer.²⁰ Once while he was suffering from a deathly illness, he reportedly fumed at the monks gathered around his bed to pray for him, »One drop of rose-perfume is better than the prayers of all the people of Christendom from the beginning to the day of Resurrection. Get out of my house!«²¹ When reproved for taking concubines, he responded to the catholicos (head of the Church of the East) with obscene insults.²² Yet Ibn Abī Uşaybī'a never suggests that Yūḥannā ibn Masawayh was not a Christian. On the other end of the spectrum of Christian piety was Abū al-Faraj ibn al-Ṭayyib (d. 435/1043).²³ Besides being a respected physician, he was secretary to the catholicos, a practicing priest, and a Bible commentator. Ibn Abī Uşaybī'a calls him *al-imām* (translated by Savage-Smith *et al.* as »paragon«). Clearly, for Ibn Abī Uşaybī'a, terms like »Christian« indicated the community to which someone belonged, not their beliefs and practices.

Inferring Religious Affiliation in the History of Physicians: Exploring Ibn Abī Uşaybī'a's Usage

With a working definition in hand, it is now time to see what terms Ibn Abī Uşaybī'a uses for religious affiliation in the *History of Physicians* and the challenges these might present for constructing a system to represent that usage. Such a system should reflect the nuances, uncertainties, contradictions, and even misperceptions of religious affiliation in the text rather than flattening them. The following shows some of the ways Ibn Abī Uşaybī'a speaks of religious affiliation, both directly and indirectly.

1. *Explicitly religious descriptions:* As explicit indications, Ibn Abī Uşaybī'a sometimes provides a religious adjective, either attached directly to the person's name (a *nisba*) or as a description of the person, such as *al-Naṣrānī* or *al-Masīḥī* (»the Christian«), *al-Yahūdī* (»the Jew«), or *al-Isrā'īlī* (»the Israelite«). For example, in the entry for Abū al-Barakāt ibn Sha'yā, the author specifies that the latter was a »Karaites Jew« (*wa-kāna Yahūdiyyan Qarā'an*).²⁴ *Nisba* designations for non-Muslims are common in other Islamic texts, but Ibn Abī Uşaybī'a employs them sparingly, even when he apparently knows the person's affiliation and indicates it in other ways.

20 Ibn Abī Uşaybī'a, *Uyūn al-anbā'*, ed. and trans. Savage-Smith *et al.*, sec. 8.26.

21 Ibn Abī Uşaybī'a, *Uyūn al-anbā'*, ed. and trans. Savage-Smith *et al.*, sec. 8.26.7.

22 Ibn Abī Uşaybī'a, *Uyūn al-anbā'*, ed. and trans. Savage-Smith *et al.*, sec. 8.26.8.

23 His biography appears in Ibn Abī Uşaybī'a, *Uyūn al-anbā'*, ed. and trans. Savage-Smith *et al.*, sec. 10.37.

24 Ibn Abī Uşaybī'a, *Uyūn al-anbā'*, ed. and trans. Savage-Smith *et al.*, sec. 14.41. This biography only appears in versions 1 and 3 (see n. 1 there). On Abū al-Barakāt, see Pines, *Abu 'l-Barakāt*.

At times, Ibn Abī Uṣaybi‘a seems to mention someone’s affiliation because it relates to the person’s biography, including in cases of conversion. He says Abū al-Barakāt Hibat Allāh al-Baghdādī (b. c. 470/1077, d. after 560/1164 or 1165) »was a Jew who subsequently became a Muslim« (*kāna Yahūdiyyan wa-aslama ba‘da dhālika*).²⁵ Throughout the biography, his former Jewish affiliation and his conversion feature large. The vizier al-Ṣāhib Amīn al-Dawla (d. 648/1250 or 1251) »was a Samaritan who converted to Islam under the name Kamāl al-Dīn« (*kāna Sāmīriyyan wa-aslama wa-luqqiba bi-Kamāl al-Dīn*).²⁶ His uncle is given the *nisba al-Sāmīrī* (»the Samaritan«). A final example is Amīn al-Dawla ibn al-Tilmīdh, whose *non-conversion* is emphasized, saying he »died as a Christian« (*wa-māta Naṣrāniyyan*).²⁷ Except in cases of conversion, Muslims are rarely designated as *Muslim*, an omission that is common in other Islamic texts as well.

2. *Religious offices and occupations*: More frequent than explicit *nisba* or adjectival designations are references to someone’s religious office or occupation, which clearly marked their religious affiliation for Ibn Abī Uṣaybi‘a’s readers. Qadis and caliphs can be presumed Muslim, while patriarchs, metropolitans, bishops, priests, and monks can be presumed Christian.²⁸

3. *Indirect indications through family relations*: In other cases, the indications are scattered and less direct, but may be enough to infer an affiliation when taken together. This is the case in Ibn Abī Uṣaybi‘a’s biographies of ‘Abd Allāh al-Ṭayfūrī (active late second/eighth century), his son Zakariyyā, and his grandson Isrā‘īl.²⁹ None of these biographies of the family’s three generations mention the affiliation of the main subjects. However, the entry for the Christian physician Yūḥannā ibn Masawayh tells about the family’s relationship to the latter.³⁰ ‘Abd Allāh, it turns out, was Ibn Masawayh’s father-in-law. If ‘Abd Allāh and his daughter were Muslim, it would be very unlikely for her to be given in marriage to a Christian man. The account thus implies their Christian affiliation.³¹ Moreover, ‘Abd Allāh lived next to Yūḥannā in the »Christian quarter« of Baghdad and one of his sons, Dāniyal, became a monk. In the biography of Ḥunayn ibn Ishāq, ‘Abd Allāh’s grandson Isrā‘īl is reported to have been a Christian who created a conflict with Ḥunayn and then called for him to be tried by a Christian tribunal.³² Ultimately, the catholicos got involved, suggesting that Isrā‘īl, like Ḥunayn, was probably affiliated with the Church of the East. On the basis of the affiliation of his descendants and (more weakly) his place of residence, it is reasonable to conclude that ‘Abd Allāh and his mentioned descendants were Christians, likely of the East Syriac variety. This affiliation is one that Ibn Abī Uṣaybi‘a’s readers would have easily inferred from the contextual clues he provided.

25 Ibn Abī Uṣaybi‘a, *‘Uyūn al-anbā’*, ed. and trans. Savage-Smith *et al.*, sec. 10.66.

26 Ibn Abī Uṣaybi‘a, *‘Uyūn al-anbā’*, ed. and trans. Savage-Smith *et al.*, sec. 15.49. Ibn Abī Uṣaybi‘a’s attention to this case could be due to the fact that he was the dedicatee of one version of the *History of Physicians* (my gratitude to Nadine Löhr for this comment on an earlier draft of this article; see Ibn Abī Uṣaybi‘a, *‘Uyūn al-anbā’*, ed. and trans. Savage-Smith *et al.*, Preface and sec. 15.49.1).

27 Ibn Abī Uṣaybi‘a, *‘Uyūn al-anbā’*, ed. and trans. Savage-Smith *et al.*, sec. 10.64.16.

28 Terms for unambiguously Jewish religious offices seem to be rare in the *History of Physicians*.

29 Ibn Abī Uṣaybi‘a, *‘Uyūn al-anbā’*, ed. and trans. Savage-Smith *et al.*, secs. 8.10-12.

30 Ibn Abī Uṣaybi‘a, *‘Uyūn al-anbā’*, ed. and trans. Savage-Smith *et al.*, sec. 8.26 and see above.

31 Muslim men marrying Christian women was juristically and socially a different matter and was far more likely.

32 Ibn Abī Uṣaybi‘a, *‘Uyūn al-anbā’*, ed. and trans. Savage-Smith *et al.*, sec. 8.29.12 and n. 64. Ibn Abī Uṣaybi‘a reports this from Ibn Juljul, *Ṭabaqāt al-aṭibbā’*, ed. Fu‘ād, 69-70 (and compare al-Qiftī, *Ibn al-Qiftī’s Ta’rīh al-ḥukamā’*, ed. Müller and Lippert, 172).

The following affiliations of family members are ones I have taken to be indirect indications of a subject's own affiliation in the *History of Physicians*, due to prevalent legal practices and social mores:

1. Father's affiliation
2. Affiliation of child (for male subjects)
3. Non-Muslim affiliation of husband
4. Muslim affiliation of wife

4. *Names used predominantly by particular groups*: To the above indications could be added certain names, if it could be shown that their usage is nearly exclusive to a particular community. These would provide a weak signal of someone's affiliation at birth.³³

Such a list can, in fact, be cautiously compiled from the Onomasticon Arabicum (OA), a digital publication of the French Centre national de la recherche scientifique (CNRS), which is based on a number of Arabic biographical dictionaries. Precisely because entries in this database sometimes record the religious affiliations mentioned by biographers, it is possible to get a basic idea of which names were in use in which communities and, especially, which names were or were not used by Muslims. Each record is essentially an attestation of a person's name and other biographical information mentioned in a particular source. In the field »DIN«, OA lists any religious labels mentioned by the source or »deduced« by the person recording the data.³⁴ Of about 13,500 attestation records, there were approximately 6,500 affiliation labels.³⁵ By listing all of these and classifying them into »macro-affiliations« such as Muslim, Christian, Jewish, Zoroastrian, and so on, I was able to compile usage statistics for each name showing the number of times it occurred for each macro-affiliation. Some important caveats are in order. Persons labeled with non-Muslim affiliations make up only a tiny proportion of the dataset (e.g., Christian: 93 records or 0.7%; Jewish: 31 records or 0.2%). Also, the vast majority of records are for men and, by virtue of being derived from biographical dictionaries, mostly prominent men.

33 The idea of tracing religious affiliation through onomastic data shares some things in common with Bulliet's well-known attempt to determine the rate of conversion to Islam in Iran using the names appearing in successive generations of each family (Bulliet, *Conversion*; for more recent evaluations of this attempt, see Harrison, *Behind the curve*; Bulliet, *Conversion curve revisited*). Given the broad scope of Ibn Abi Uṣaybi'a's *History of Physicians* with regard to time, regions, and cultures, I believe it is prudent to be particularly cautious about which names imply a Muslim affiliation and how certainly they do so.

34 Given that the Onomasticon Arabicum focuses on Islamic sources and persons and that religious affiliation is not collected systematically, this resource should be used especially for attestations of names in Muslim communities and only cautiously regarding other communities. Many of the labels in the DIN field are intra-Islamic references to a juristic school or a Sufi *ṭarīqa* (»path«). Discussion of how this field is used can be found in Müller *et al.*, *Onomasticon Arabicum. La base de données OA-online*, 9, 12, 19-20; and in a history of the database in Müller, *Onomasticon Arabicum: A historical survey*.

35 The data cited here from OA were accessed in 2017.

Table 1: Names attested more than 100 times for Muslims in the *Onomasticon Arabicum*.

Name	Occurrences among Muslims
Muḥammad	1255
Aḥmad	585
‘Alī*	390
‘Abd Allāh*	240
Ibrāhīm*	189
‘Abd al-Raḥmān	171
al-Ḥasan*	114
Ismā‘īl*	102

The three names without an asterisk – Muḥammad, Aḥmad, and ‘Abd al-Raḥmān – are ones that could be seen to have a particularly Islamic valence in contrast to, for example, ‘Abd Allāh (»slave of God«) or Ibrāhīm (Abraham), which might be seen as generally monotheistic. Thus, I take these three names as weak indicators of a person’s Muslim affiliation at the time the name was given.

We can also see which names are *not* present in the nearly 6,000 attestations for Muslim men. I have classified these by Christian or Jewish usage, but it should be noted that, due to the small number of Christian and Jewish affiliations in OA, no conclusions can be drawn about which names were actually common in these communities. Moreover, of the names that occur only once in OA, I have excluded those I consider to be unusual and likely to be seen only in connection to one particular individual (e.g., Masawayh). Table 2 provides the names occurring among Christians but not Muslims.

Table 2: Names occurring among Christians but not Muslims according to attestations in the *Onomasticon Arabicum*.

Name	Occurrences among Christians
Yūḥannā/Yuḥannā	4
Bukhtishū‘	3
Isrā‘īl*	2
Jibra‘īl	2
Jūrjis/Jurjis/Jirjis	2
Mikhā‘īl	2
Būluṣ	1
Iṣṭīfan	1
Mārī	1
Masiḥ	1
Mattā	1
Nasṭās	1
Sarjis	1
Tiyādūrus/Tayādūrus	1
Yūwānīs	1

The asterisk (*) indicates I have disregarded the name Isrā'īl as a particularly »Christian« name, because I consider it likely to also occur in Jewish communities, even though it is not attested as Jewish in OA. Most of the other names could be seen as having a particularly Christian valence: names of New Testament characters or Christian saints or names that refer to »Christ« (Masīḥ) or to »Jesus« in Syriac (Īshū').³⁶

Because of the small number of Jewish attestations (31), there are fewer »non-Muslim« names attested as Jewish in OA, as seen in Table 3.³⁷

Table 3: Names occurring among Jews but not Muslims according to attestations in the *Onomasticon Arabicum*.

Name	Occurrences
Ḥasdāy	2
Ṣafiyya	1
Minaḥim	1

Among the onomastic data from OA and the text of the *History of Physicians*, there are also some surprises with regard to affiliation. Names one might have thought to have a particularly Islamic valence were sometimes used also among non-Muslims, such as 'Alī, al-Ḥasan, and 'Abd Allāh. Moreover, names one might guess to indicate a Jewish affiliation such as Isrā'īl and Hibat Allāh (the equivalent of Nathaniel) were in use among Christians, perhaps because they were also biblical names. This points to the importance of using attestation statistics to test assumptions about the religious valence connected to names.

In contrast to names, honorific titles seem of limited use as affiliation signals. Titles one might expect to be reserved for Muslims are also given to non-Muslims in Ibn Abī Uṣaybī'a's account. The *kunya* – that is, the title Abū [X] (»father of [X]«) or Umm [X] (»mother of [X]«) – is a customary form of respect, but one prohibited by certain versions of the so-called Pact of 'Umar, the document supposed to outline the agreements made between Muslims and conquered non-Muslim protected peoples (*ahl al-dhimma*).³⁸ The provisions in the Pact of 'Umar were very often disregarded, and this is illustrated by the high frequency of *kunya* titles for non-Muslims in the *History of Physicians*. The presence of a *kunya* may in fact not indicate anything useful regarding a person's affiliation.

36 The Syriac Īshū' for Jesus is in contrast to the quranic name for Jesus, 'Īsā, which was not uncommon among Muslims. If Masīḥ and Bukhtishū' can be regarded as indicators of a Christian affiliation, then similar names could probably be included in this category as well: Īshū', Sabrishū', and 'Abd al-Masīḥ. A good source to supplement Arabic names attested among medieval Christians would be the *Syriac Biographical Dictionary* (syriaca.org/persons), which has records for persons connected to the Syriac communities. The few records relating to non-Christian affiliations would need to be manually excluded and the remaining names filtered according to whether they have Muslim attestations in OA.

37 For Jewish names, a good supplement could be the descriptions of Arabic items from the Cairo Genizah available from the Cambridge Digital Library (cudl.lib.cam.ac.uk/collections/genizah). Names would need to be extracted from the descriptions and persons known to be non-Jewish excluded. Then the list could be compared with OA and the *Syriac Biographical Dictionary* to determine which names are attested only for Jewish affiliations, not Muslim or Christian.

38 See Ibn Ḥanbal's version of the pact (Ibn Ḥanbal, *Aḥkām ahl al-milal*, ed. Khallāl and Ḥasan, 357-359) and compare Levy-Rubin, *Non-Muslims in the Early Islamic Empire*, 149.

Even more surprisingly, honorific titles with an apparent Islamic valence such as al-Dawla («of the state») or al-Dīn («of the religion») are also given to non-Muslims in the *History of Physicians*. The Christian physician Ibn al-Tilmīdh famously bore the title Amīn al-Dawla («trusted of the state») along with an additional title, Muwaffaq al-Mulk («successful of the reign»).³⁹ Two physicians with Samaritan *nisab* (sg. *nisba*), Yūsuf ibn Abī Saʿīd and Yaʿqūb ibn Ghanāʾim, are mentioned with the titles Muhadhdhab al-Dīn («refined of the religion») and Muwaffaq al-Dīn («successful of the religion»), respectively.⁴⁰ The Jewish physician Ibn Abī al-Bayān had the title Sadīd al-Dīn («correct of the religion»).⁴¹ The Christian physician Yaʿqūb ibn Siqlāb and the Christian scribe Ibn al-Būrī are both given the title Muwaffaq al-Dīn.⁴² Yaʿqūb ibn Ishāq was a Jewish physician with the title Asʿad al-Dīn («happiest of the religion»).⁴³ The «al-Dīn» titles for non-Muslims occur especially in chapters 14-15, dealing with late Abbasid Egypt and Syria, including the Mamluk and Ayyubid periods, where Ibn Abī Uṣaybiʿa relies heavily on reports from his own networks. This might merely reflect the overall popularity of such titles in these regions and time periods, or it might have to do with the author preserving respectful forms for people connected to his circle of acquaintances.

To summarize, the indicators of religious affiliation in the present analysis of Ibn Abī Uṣaybiʿa's *History of Physicians* are as follows:

1. Explicit statements of a subject's affiliation or conversion
2. Offices or occupations held by the subject that are unique to a particular affiliation
3. Family relations
 - a. Father's affiliation
 - b. Affiliation of child (for male subjects)
 - c. Non-Muslim affiliation of husband
 - d. Muslim affiliation of wife
4. Names used predominantly by particular groups

39 Ibn Abī Uṣaybiʿa, *ʿUyūn al-anbāʾ*, ed. and trans. Savage-Smith *et al.*, sec. 10.64.

40 Ibn Abī Uṣaybiʿa, *ʿUyūn al-anbāʾ*, ed. and trans. Savage-Smith *et al.*, secs. 15.48, 15.59.

41 Ibn Abī Uṣaybiʿa, *ʿUyūn al-anbāʾ*, ed. and trans. Savage-Smith *et al.*, sec. 14.43.

42 Ibn Abī Uṣaybiʿa, *ʿUyūn al-anbāʾ*, ed. and trans. Savage-Smith *et al.*, sec. 15.23.2.2.

43 Ibn Abī Uṣaybiʿa, *ʿUyūn al-anbāʾ*, ed. and trans. Savage-Smith *et al.*, sec. 14.42.

Inferring Religious Affiliation in the History of Physicians: Contradictory Indications

Over and above the challenges of understanding Ibn Abī Uṣaybi'a's contextual presentation of someone's religious affiliation is the problem of the author's own uncertain or contradictory information in certain cases.

One example is the biography of biography of Rabban al-Ṭabarī (active in the late second/eighth and the early third/ninth centuries, father of the famous physician and convert to Islam 'Alī ibn Rabban al-Ṭabarī, b. 165?/781?, d. after c. 241/855), which he quotes without correction from Ibn al-Qiftī. It is asserted that Rabban al-Ṭabarī was Jewish because his title »Rabban« sounded similar to »Rabbi«. ⁴⁴ This is despite the fact that Ibn Abī Uṣaybi'a knows »Rabban« could be a title of respect among East Syriac Christians, having recorded this in an account of Yūsuf ibn Ibrāhīm ibn al-Dāya (active in the late third/ninth cent.) regarding Jibril ibn Bukhtīshū' and Ḥunayn ibn Ishāq. ⁴⁵ Perhaps he overlooked this inconsistency, leaning too heavily on his sources, or perhaps he preferred to let his sources speak for themselves in this case without intervening. Ibn Abī Uṣaybi'a's presentation of Rabban al-Ṭabarī therefore involves both a Jewish affiliation and, less directly, a Christian one.

At times, Ibn Abī Uṣaybi'a marks his uncertainty, as in the high-profile case of Maimonides (Mūsā ibn Maymūn [Arabic] or Moshe ben Maimon [Hebrew], 532-601/1138-1204):

It has been said that al-Ra'īs Mūsā had converted to Islam while in the Maghrib, memorized the Qur'an and studied Islamic jurisprudence. Then, when he went to Egypt and took up residence in Old Cairo, he reverted to his former faith. ⁴⁶

The author's tentative framing (»It has been said«, *wa-qīla*) seems pointed, especially in regard to someone closely connected to his own personal networks. The allegation that someone converted to Islam and then apostatized (*irtadda*) was a grave one, but in the case of Maimonides it may have been mitigated by being less than voluntary: unlike what was typical in other Islamically ruled realms, the Almohads, rulers where Maimonides had sojourned, left their subjects little choice. ⁴⁷ Ibn Abī Uṣaybi'a has chosen to repeat the information, perhaps because it was well known and also mentioned by Ibn al-Qiftī, but he has diluted its significance as being merely a rumor.

44 Ibn Abī Uṣaybi'a, *Uyūn al-anbā'*, ed. and trans. Savage-Smith *et al.*, sec. 11.3. On 'Alī ibn Rabban al-Ṭabarī and his father, see Thomas, Al-Ṭabarī.

45 Ibn Abī Uṣaybi'a, *Uyūn al-anbā'*, ed. and trans. Savage-Smith *et al.*, sec. 8.29.3. On Ibn al-Dāya, see Rosenthal, Ibn al-Dāya.

46 Ibn Abī Uṣaybi'a, *Uyūn al-anbā'*, ed. and trans. Savage-Smith *et al.*, sec. 14.39.2 and n. 7 and see (as noted there) Ibn al-Qiftī, *Ibn al-Qiftī's Ta'riḥ al-ḥukamā'*, ed. Müller and Lippert, 317; Stroumsa, *Maimonides*, 57-61. My gratitude also goes to Rachel Richman for the insights shared in her unpublished paper, »The biography of Maimonides: An inquiry into the biographical and autobiographical sources« (8 December 2017; *pers. comm.*, 26 January 2022).

47 Stroumsa, *Maimonides*, 56-58.

Unless Ibn Abi Uṣaybi'a is again simply echoing his sources, he explains Maimonides's Jewish affiliation as a »reversion« that came after the rumored conversion to Islam. It appears that, for him, Maimonides could not be Muslim and Jewish simultaneously; since he was Jewish in Egypt, he must have either reverted or never converted to Islam in the first place. The concept that religious affiliation was exclusive seems to have been generally accepted, but the case of Maimonides does raise the question of whether there might be exceptions that would allow one to infer multiple simultaneous affiliations. A historian from the region, 'Abd al-Wāḥid al-Marrākushī (581-625?/1185-1228?), who was a younger contemporary of Maimonides, comments:

Jews in our midst behave outwardly as Muslims: they pray in the mosques, they teach their sons the Qur'ān, they behave like our coreligionists and adhere to our tradition; but God alone knows what they hide in their hearts and what they do in their houses.⁴⁸

Maimonides himself asserted that it was possible to live as a Jew, secretly observing the commandments, while superficially professing Islam:

If a man wishes to fulfill the 613 commandments secretly he can do so ... They know very well we do not mean what we say [the *shahāda*], and that what we say is only to escape the ruler's punishment and to satisfy him with this simple confession.⁴⁹

Maimonides and his coreligionists might not have considered themselves to be Muslim in anything more than name. Yet when it is their social interactions in view rather than their secret observance of Torah, Jews who were forced to convert to Islam under the Almohads could be seen to have multiple affiliations. The case of Maimonides in the *History of Physicians* is a caution against inferring religious affiliations superficially; on a careful reading, the author's uncertainty regarding whether Maimonides was Jewish or Muslim in the Maghrib constitutes possible indicators for two affiliations, both of which should be considered in the analysis.⁵⁰

Labeling Religious Affiliation Based on Multiple Signals

Explicit labels, religious occupations or offices, family relationships, and a handful of given names can all provide signals of a person's affiliation with varying degrees of certainty. Cumulatively, such signals may help to establish that a person is being portrayed with a certain affiliation, even if individual signals (such as names or relationships) are not decisive when taken in isolation. Moreover, multiple signals should be recorded even when they appear contradictory, since they may indicate the author's uncertainty or the subject's conversion or multiple affiliation.

48 Translation from Stroumsa, *Maimonides*, 57-58. On al-Marrākushī, see Viguera Molins, 'Abd al-Wāḥid.

49 Maimonides, *Martyrdom*, sec. 4, trans. Halkin and Hartman, 30. The rest of this fascinating epistle is certainly relevant to the question of multiple affiliation but cannot be discussed here.

50 In the working definition of religious affiliation in the *History of Physicians* given above, note that the exclusivity of groups is only »typical«, allowing for some exceptions.

As a first trial, we used these indicators to label the affiliations of persons in the index of the recent edition and translation of the *History of Physicians* (LHOM).⁵¹ These index entries normally provide the person's full name and a brief description and sometimes include the person's occupation, affiliation, or relationships, to the extent these may be useful for identification. For example, the entry for the abovementioned al-Ṭayfūrī is: »'Abd Allāh al-Ṭayfūrī, Christian physician to al-Hādī«. Often, this information is drawn from the text of Ibn Abī Uṣaybī'a, but occasionally it is supplemented from external sources.⁵² Working with the index is thus only a preliminary way to probe what in a further stage could likely be derived from signals in the main text.

Overall, using these signals from the index entries, we were able to manually label the affiliation of approximately 660 persons out of 2,418 in the index, or about 27% (see *Figure 1*). While this is far from the proportion needed to draw statistical conclusions or make inferences from network topography, it is still far more than can be done by relying on explicit identifications alone. Further, it is hoped that these signals will allow us to label many more affiliations when working directly with the text rather than with the index.

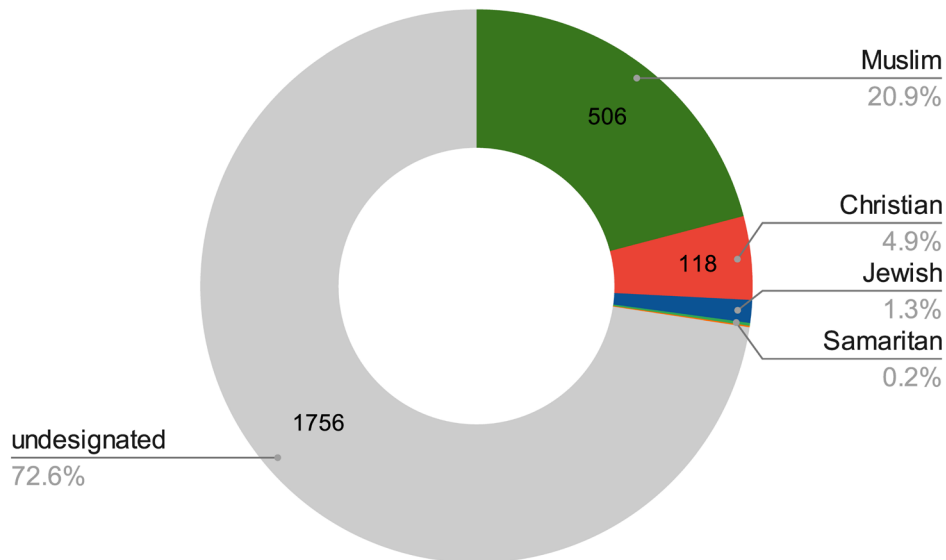


Figure 1: Total number of persons in the LHOM index whose affiliation could be labeled by any of the abovementioned signals.

51 See the project report in this volume. Vanessa Birkhahn, Fabio Ioppolo, Nadine Löhr, Robin Schmahl, and Malinda Tolay (in alphabetical order) helped identify and proofread the information coming from the raw text of the index. Vanessa Birkhahn also helped to mark stated religious affiliations, and Fabio Ioppolo and Malinda Tolay processed the relationships mentioned in the index. As a rule, these entries can also be found in a draft form (with ongoing corrections) at usaybia.net.

52 Although the LHOM index does not specifically cite sources, the editors indicate in the English footnotes to the corresponding biographies in the text the primary and secondary sources they used.

As can be seen in Figure 2, the usefulness of each type of signal varies depending on the affiliation.⁵³ Muslims can be identified especially by their mentioned occupations or offices, by their given names, or by their ancestors' names. The same is largely true for Christians, but the latter are identified at a higher rate by the editors of the index, and their *nisab* are also helpful.⁵⁴ Finally, Jewish affiliations prove quite difficult to find.

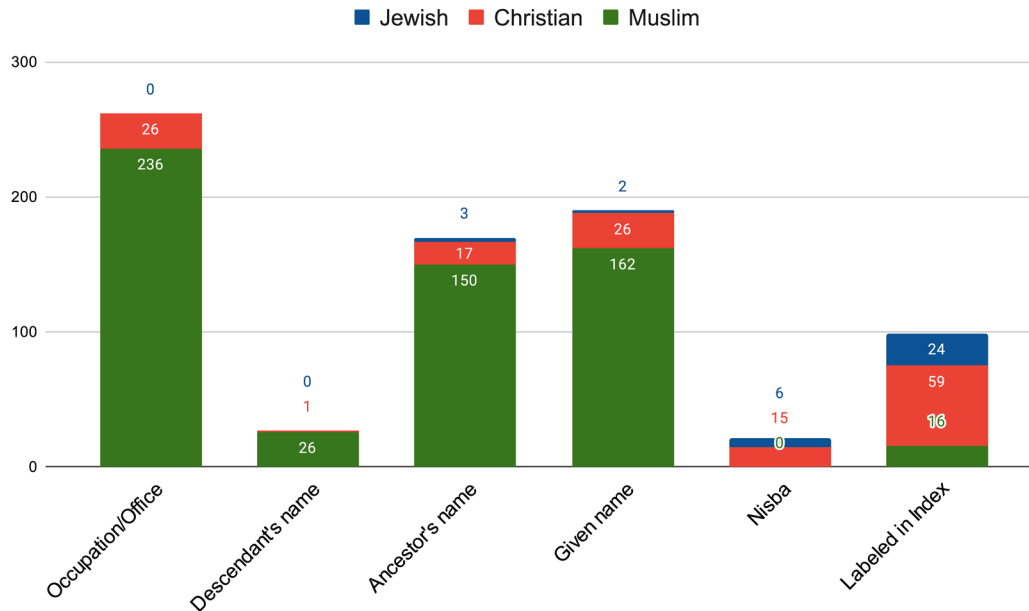


Figure 2: Number of persons from the LHOM index who could be labeled with Jewish, Christian, and Muslim affiliations, by signals used. The same person may be listed with more than one signal.

Constructing a Labeling System

The above charts, which bracket each person in the text into a single macro-affiliation, might seem at first glance to have quantified Ibn Abi Uṣaybi'a's designations of religious affiliation. In reality, they have paved over the specificity and nuance of his affiliational portrayals and, moreover, ignore the uncertainty involved in interpreting them. What is needed is to be able to record each signal's direction, type, and certainty; that is, the specific or generic affiliation to which the indicator points, the evidence on which it is based (occupation, name, family relation, etc.), and how definite that indicator is in the author's portrayal. Multiple signals should be allowed for each person, and each of the signals' properties should be queryable by machine. In natural language, such a query might be expressed, or example, as »Show each person in the dataset having signals for a Jewish affiliation with a combined certainty of at least x« or »Show each person having signals for a Christian affiliation whose children have distinctively Muslim names«.

53 For this chart, narrow affiliations such as »Shi'i« or »Qaraite« are grouped with broader ones (»Muslim« or »Jewish«), and Samaritan and Zoroastrian affiliations (with 4 and 2 persons labeled, respectively) are omitted as having insufficient data.

54 The »Labeled in Index« column shows affiliations that the editors explicitly provide in the index and may come from indications in the text or outside information.

What this would enable is a kind of granularity that approximates the texture of Ibn Abī Uṣaybi'a's descriptions even when working with thousands of person records. Most notably, allowing multiple signals for each person, which can point even toward differing affiliations, will highlight cases that need further investigation. One of the signals may be inaccurate, conversion may have occurred (consecutive single affiliation), or it may be a case of simultaneous multiple affiliation. Converts, for example, might be particularly influential in cross-communal knowledge exchange networks by transmitting knowledge from their old community to the new one (and possibly in the reverse direction), so it is important to see both of their affiliations.

For this labeling system, a kind of database should be chosen that allows recording and querying person records using the abovementioned features of religious affiliation. This has mostly to do with how the data is structured but could also be affected by limitations of the underlying database application or code. In line with our project's adoption of TEI-XML for several other purposes – tagging person and place names in the Arabic edition of the text, creating person and place entries, and recording prosopographical factoids⁵⁵ – this is also the format that we find most compatible for recording religious affiliation signals. When loaded into an XML database, the various characteristics of these signals can be retrieved and processed using the XQuery language.

The example below shows one way a religious affiliation signal based on a person's occupation could be modeled using the state element in TEI, either within a person entry or incorporated into a factoid.⁵⁶

```
<state
  type="signaled-religious-affiliation"
  subtype="signaled-by-occupation"
  ref="http://syriaca.org/keyword/coptic"
  ana="http://syriaca.org/keyword/priest"
  cert="high">
  <label>Coptic</label>
  <note type="desc">
    A Coptic affiliation is signaled by the person's
    occupation as a priest in a Coptic environment.
  </note>
</state>
```

Figure 3: Example of a religious affiliation signal encoded as a TEI state element.

55 Factoids are machine-readable statements of what we understand the text to be asserting about people, relationships, and events. See in this volume Gibson and Schmahl, *Communities of knowledge*, 205.

56 »(state) contains a description of some status or quality attributed to a person, place, or organization often at some specific time or for a specific date range« (TEI Consortium, TEI element state). The state element was chosen over the faith element because TEI defines the latter in a way that emphasizes personal religious beliefs, contrary to the considerations mentioned in the working definition of religious affiliation above (TEI Consortium, TEI element faith). A similar structure to the one shown here could also be used to tag the indication in the text edition itself.

The @type and @subtype attributes indicate that this is a religious affiliation signal derived from someone's stated occupation, enabling all religious affiliation signals to be selected or to filter for only those based on occupation. The @ref and @ana attributes point to terms in an external taxonomy for the community and the occupation, respectively.⁵⁷ Since the taxonomy connects these to a hierarchy of broader and narrower terms, inferences about these terms can be made by machine, such as that the »Coptic« religious affiliation is related to the broader term »Christian«. The certainty of the person encoding the signal, that is, how definitively the encoder considers the affiliation to be indicated, can be given in the @cert attribute, either as »high«, »medium«, or »low«, or as a numeric value between 0 and 1.⁵⁸ Multiple signals are recorded simply by adding another state element in the person record or adding another religious affiliation factoid. The label element shows a human-readable gloss to display for the signal, and the note element can provide more human-readable information about the inference being made. Finally, if an approximate date or date range of the affiliational signal is known, such as the date of someone's conversion, it can be indicated in the date attributes provided by TEI (not shown here). All of this is directly connected to the relevant person, either by appearing as one or more state elements inside the person record or, in the case of a factoid, by linking to the person's record in the database.

As mentioned above, being able to reflect the nuance and uncertainty of Ibn Abī Uṣaybi'a's hints about affiliation also requires dealing with multiple – and sometimes conflicting – indications, or »mixed signals«. In the LHOM index, there are fewer mixed signals than I expected, with only two persons having conflicting »macro-affiliations«. These are Abū Ghālib ibn Ṣafīyya al-Ṭabīb al-Naṣrānī (active late sixth/twelfth century), who is explicitly called a »Christian« but whose ancestor Ṣafīyya bears a name attested in Jewish usage in OA; and Abū Ja'far Yūsuf ibn Aḥmad ibn Ḥasdāy (d. 530 or 531/1136), who seems to have hailed from the Jewish Ḥasdāy family in Andalusia, but who is said in other sources to have been a Muslim.⁵⁹

Named Entity Recognition

Tagging a text with machine-readable labels raises the question of whether the tagging itself could be automated. Fundamentally, named entity recognition (NER) is just such a process. A digital text is passed into a process that categorizes each word using either predetermined rules or a model trained on previously tagged texts. Religious affiliation in a text such as the *History of Physicians* could, theoretically, be tagged this way – if the model being used can process Arabic texts and recognize religious affiliation terms.

57 *A Taxonomy of Syriac Studies* (syriaca.org/taxonomy).

58 »The cert attribute provides a method of indicating the encoder's certainty concerning an intervention or interpretation represented by the markup« (TEI Consortium, TEI infrastructure, sec. 1.3.1.1.4 Sources, certainty, and responsibility). Theoretically, a numeric value for the certainty of implicit signals (e.g., names) could be calibrated on the basis of explicit ones (e.g., *nisab*), but only once a more fully labeled dataset is available.

59 See Sánchez, Ibn Ḥasdāy; Stroumsa, *Between acculturation and conversion*.

At present, there are several difficulties with using NER for this task. Most fundamentally, Arabic NER models do not currently include entity types for religious affiliation. This is at least partly because terms for religious affiliation are inadequately tagged, if at all, in the text corpora that have been used to train NER models. CANERCorpus is the most relevant text corpus for classical Arabic, with 258,264 words tagged from the hadith collection of al-Bukhārī.⁶⁰ Impressively, 20 different entity types are tagged, but there are only 210 words tagged with the types relevant for our purposes: organization (Org), sect (Sect), and religion (Rlig).⁶¹ When training their BERT-BGRU-CRF model, Norah Alsaaran and Maha Alrabiah excluded these entity types as having insufficient data.⁶² The ANERcorp tagged corpus of modern Arabic newspaper and Internet articles (125,102 words) generally labels the explicit religious affiliation terms »Muslim«, »Christian«, and »Jewish« as either other (O) or miscellaneous (Misc),⁶³ while the AQMAR corpus of Arabic Wikipedia articles additionally labels many of these as persons (PER).⁶⁴ The NER functionality in CAMELBERT is, moreover, based on ANERcorp, and the one in the popular Stanford NLP is based on AQMAR.⁶⁵ At base, then, to my knowledge, there exists no NER tool for tagging religious affiliation in Arabic because none have been trained on texts tagged suitably for this task. The text of Ibn Abī Uṣaybi'a tagged with religious affiliation signals could be used for such training.

Second, the conceptual work of defining what should be considered to indicate religious affiliation must be done prior to tagging a text and training NER models – and this is still lacking. What I have outlined above is merely a preliminary foray.

Finally, if we are to link the »religious affiliation« terms labeled by NER to stable identifiers for religious entities, far more work needs to be done on structured digital ontologies and taxonomies of religious affiliation. Whereas the requirements of libraries, personographies, and gazetteers have stimulated a prolonged wrestling with the conceptual framework for identifying persons and places (and, to a lesser extent, titles and subjects), the application of religious affiliation labels in databases or digital text editions has not received the same kind of attention.

60 Alsaaran and Alrabiah, *Classical Arabic*, 91542; Salah and Binti Zakaria, *Building the Classical Arabic Named Entity Recognition Corpus*.

61 Alsaaran and Alrabiah, *Classical Arabic*, 91543.

62 Alsaaran and Alrabiah, *Classical Arabic*, 91543.

63 Benajiba *et al.*, *ANERsys*, 149; see also Obeid *et al.*, *CAMEL tools*. I accessed the dataset from camel.abudhabi.nyu.edu/anercorp/ on 8 June 2023.

64 Mohit *et al.*, *Recall-oriented learning*, 162-163, describing the AQMAR corpus and tagger and its relation to other Arabic NER solutions; see also Alsaaran and Alrabiah, *Arabic named entity recognition*. I accessed the dataset from www.cs.cmu.edu/~ark/ArabicNER/ on 8 June 2023.

65 Inoue *et al.*, *Interplay*, 5, and Stanford NLP Group, *NER models*, respectively. Regarding other NER services: Microsoft's Azure services explicitly states that it does not include nationality or religion in the »Organization« category (which is included for Arabic language) and does not appear to include it elsewhere (Jboback *et al.*, *Entity categories*). The popular spaCy toolkit does not list any official Arabic models, but some work appears to have been done in the »ar« folder of the GitHub repository (ExplosionAI GmbH, *Models & languages*).

Conclusions and Application

When it comes to coding religious affiliation in Ibn Abī Uṣaybi‘a’s *History of Physicians*, the next step would be to manually label signals of religious affiliation throughout the text of chapters 8-15 and connect these to the people already identified and tagged.⁶⁶ Something similar to the example of the state element given above could be applied inline as a tag where such signals occur in the text, or as »standoff markup« in the form of a TEI factoid linking to the text passage. While some of the labeling can probably be done by searching for keywords (explicit designations, occupations, and names, as mentioned above), it will undoubtedly need thorough human review, and connecting these tagged signals to the people they refer to is most likely a manual task.

Comprehensively tagged religious affiliation signals will add a crucial analytic dimension to our analysis of the networks Ibn Abī Uṣaybi‘a depicts in his text, which contain thousands of persons with perhaps tens of thousands of relationships between them. It will then be possible to see which persons »bridge« various religious communities or »clusters«, and to do so while taking into account the certainty and specificity of the signals. With this information in hand, anecdotal impressions can be compared to wider patterns. For example, are Ibn Abī Uṣaybi‘a’s own networks more interreligious than those he reports from other sources? An answer to this question would help test Thomas Carlson’s thesis that medicine in the seventh/thirteenth century was less dominated by Muslim practitioners than previously suggested.⁶⁷ Or, as another example, among the various roles our author portrays (physician, patient, patron/employer, commentator, etc.), how is religious affiliation distributed?

Religious affiliations labeled in Ibn Abī Uṣaybi‘a’s text with the detailed attributes mentioned above could serve as training material for Arabic NER models, making it possible to tag religious affiliations in the voluminous pages of other medieval Arabic biographical works. While adjustments would need to be made for the idiosyncrasies of particular corpora, computer tagging of religious affiliations is a conceivable goal. So far, NER tools for Arabic do not label religion-related terms. The tagged text of Ibn Abī Uṣaybi‘a could serve as ground truth, specifically as labeled training data, to train an algorithm using supervised or semi-supervised learning methods. That is, using a text tagged for religious affiliation signals in the ways described here, someone wanting to tag another text (or corpus) for religious affiliation could automate the process and further refine its accuracy. Such an algorithm should be trained to label religious affiliation with the type of signal, its corresponding certainty, and its referent (the specific or more general community to which it refers).

66 Although general considerations for this work were discussed above, more specific guidelines for encoders need to be developed to ensure that this can be done consistently across the text.

67 Carlson, *Garden of the reasonable*.

Our understanding of interreligious exchanges in the medieval Near East has so far been hindered not only by vague definitions of religious affiliation and confusing disparities between medieval and modern concepts, but also by the lack of large-scale, systematically tagged data. Further study of the relationships between religious communities should have a broader textual basis, one assisted by automated tagging and analysis, but one that does not flatten religion into a single macro-affiliation attribute for each of the persons mentioned in these texts. As seen in Ibn Abī Uṣaybī'a's *History of Physicians*, affiliation can be broad or narrow, single or multiple, and based on evidence that is more or less definitive. Thus, the approach described here, applied at first manually, can serve as the starting point of larger-scale, machine-assisted analyses of interreligious relations.

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