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A Conceptual Approach to Library History
Towards a History of Open Science

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Abstract

This article argues that Library History ought to be guided by well-contextualized questions of cultural history. It proposes one such question: that which asks after the ways in which repositories of knowledge were created, organized and used in the past. The examples that are discussed in this article suggest that within the social context of the Republic of Letters an ideal of sharing knowledge was developed, which informed later, eighteenth-century, attempts at making repositories and libraries widely available. Modern ideals of collecting and sharing knowledge are not as new as they would appear to be. This is to say that the ideal of 'Open Science' has a history.

Keywords

Introduction

In August 2015, the director of Rotterdam University Library, Matthijs van Otegem, declared: 'this university library is going digital'.[1] If one looks at the

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1   J.-S. Venema, 'Omslag bij Universiteitsbieb: wifi en stopcontact centraal', *Algemeen Dagblad* (Rotterdam 8 August 2015).

way students consult information, it would indeed seem suicidal for academic libraries not to transform. Over the past decade, librarians have been converted into information managers. Scholars access the free and the restricted areas of more than just the library of their own institution of affiliation. Open Access has made huge bodies of knowledge globally available.[2] The way libraries are used is changing. That is very probably the reason *why* we should pursue Library History.

Reflection on a certain culture often starts when that culture is in decline. Former people of action are rendered jobless and have time to ruminate. Action is replaced by reflection on what caused the stagnation. People then often turn to history as a particularly important form of reflection. So if the question what the history of libraries should look like is now on the agenda, it probably is a symptom of the changing role of libraries which forces old style librarians to either catch up or to be antiquated. It looks indeed as if the function of the book is changing. As Hans Zotter of Graz University Library declared already in 2004:

> at present we are not only changing the *Substrat*, the *Code* [i.e. the paper book], but also quite dramatically the Canon of connective knowledge, and thereby also the frame of our endeavours to order. The half-life of knowledge that is cheaply offered online, has shrunk quite a bit: it disappears even before the question can be addressed how to order it. What is required [by society] is knowledge to act upon, and not so much knowledge to orientate oneself on.[3]

In other words, society is future-oriented and requires resources to move on, and not an archive of history to figure out the directions it should take. Symptomatic of the idea that libraries are storehouses of the past and that this past does not guide the future are the remarks of the English liberal democratic politician Vince Cable, quoted by Kristian Jensen elsewhere in this

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2   Open Science is a higher level concept, encompassing the method of Open Access.
3   H. Zotter, 'Parallele Modelle von Wissenssicherung und Ordnung', in: *Wissenssicherung, Wissensordnung und Wissensverarbeitung. Das europäische Modell der Enzyklopädien*, ed. T. Stammen & W.E.J. Weber (Berlin 2004), pp. 25-38 (28). 'wir [ändern] derzeit nicht bloß das Substrat, den Code, sondern auch vehement den Kanon des verbindlichen Wissens – und damit den Rahmen unserer Ordnungsbestrebungen [...]. Die Halbwertzeit des Wissens, das wohlfeil online angeboten wird, ist ziemlich geschrumpft, es verschwindet, bevor die Frage, wie es einzuordnen ist, geklärt werden kann. Handlungswissen ist gefragt, weniger Orientierungsgewissen.'

volume, who saw no reason why tax money should be spent on the study of the Middle Ages, and of a former Dutch secretary of state who declared that scientists make history, and humanists only write it.[4] However, whether libraries are really transforming from compasses into fuel remains to be seen; in my opinion they always *have* provided knowledge to act upon. Now that the old library, that symbol of bookish knowledge of the past, is about to be antiquated, it is time to move the compass from the present to the past.

To ask after the *how* of 'Library History' is to assume that it is a historical discipline, not a discipline of classifying knowledge in an accessible way. This is to say that Library History by nature puts the historian behind the wheel, and has librarians take the back seat. Librarians are there to think with historians. That has always been the historical task of a library: it is a service to the research community.[5] Kristian Jensen elsewhere in this issue, shows himself very optimistic about 'the opportunities which libraries offer to those who want to write about them from historical perspectives'. His conclusion is that 'we need to redouble our effort to become an integral part of the discourse of others'.[6] Elmar Mittler likewise thinks that 'library studies [...] are becoming of wider interest outside the library research community'. After reviewing the anthropological, linguistic, cultural and material turns, he sees 'plenty of opportunities for new research in library history' within the context of cultural history.[7] I could not agree more, and I will argue this on the basis of a similar development which took place in a comparable discipline, the History of Science.

The transition from professionals writing the history of their own discipline, to historians writing the history of another discipline (in our case librarianship) is not new. Exactly the same transition took place in the 1960s and 1970s in the History of Science. History of Science used to be pursued by scientists writing the history of natural science, but the subject was taken over by professional historians in the second half of the twentieth century. This transition led to fierce debates – debates that were lost by the scientists. The History of

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4   Quoted in R. Bod, *De vergeten wetenschappen. Een geschiedenis van de humaniora* (Amsterdam 2010), p. 9.

5   Of course, in reality, libraries also fulfilled other services, such as advertising the splendour of patrons or the might of monarchs.

6   See K. Jensen, 'Should We Write Library History?' elsewhere in this volume.

7   See E. Mittler, 'The Library as History: Library History Research after the Cultural Turn' elsewhere in this volume.

Science went social, anthropological, post-structural, and cultural.[8] It looks as if 'cultural' is still the paradigm, if only because it is such a broad category, able to capture the length and breadth of hybrid but relatively small-scale 'paradigms', or perhaps better 'themes', in historical research. Learning from this painful history of the History of Science, the librarian must be warned: cultural historians will take over library history, and they will ask cultural questions transcending institutional history. That is the only way in which Library History will appeal beyond librarians and connoisseurs.

One such question which transcends institutional library history is to ask how knowledge was collected, organized, and made available in the past. In the history of science of the past fifteen years, for example, there has been a concerted attention to the 'movement', 'transit' or 'circulation' of knowledge.[9] Adopting this paradigm of the circulation of knowledge in Library History would raise the question to what extent knowledge in general and libraries in particular were accessible. This offers a useful context for making Library History relevant to a wider audience. Putting it a bit sharper, the question is to what extent there was such a thing as 'Open Science' in the past. Within the scope of this article it is impossible to evaluate historical evidence of the actual Open Access to science, but it is possible to review the ideals of Open Science, regardless of the extent to which practices fell short of these ideals.

A history of Open Science should take into account the creation of an ethical framework that we might anachronistically term a sharing economy, embedded into a social context of scholarly knowledge exchange. Before moving on to some historical examples of such a sharing economy in the past, we first need to briefly sketch the social context of such exchange: who shared knowledge and for what purposes? We will then look at some examples of people who engaged in collectively creating repositories. Since practical restrictions still hampered the exploitation of these, virtual libraries sought to relieve students with little financial means. As we will see, it was in the eighteenth century that scholars first started to argue for Open Libraries. Their arguments are echoed today in discussions about the feasibility of Open Access and the wish expressed by academia and sponsors that the results of research financed through public resources be available to everybody without restrictions.

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8   K. Alder, 'The History of Science, Or, an Oxymoronic Theory of Relativistic Objectivity', in: *A Companion to Western Historical Thought*, ed. L. Kramer & S. Maza (Malden (MA.) etc. 2006), pp. 296-318.

9   P. Burke, *What is the History of Knowledge?* (Cambridge and Malden (MA.) 2016), p. 77. The seminal article is J.A. Secord, 'Knowledge in Transit', *Isis*, 95 (2004), pp. 654-72.

The Social Context: The Republic of Letters

In 1417, the Italian humanist Francesco Barbaro (1390-1454) wrote a long letter to his colleague Poggio Bracciolini (1380-1459), praising him for his many discoveries of manuscripts with new texts of ancient Roman authors. The carefully crafted letter was obviously meant for a larger public than just the recipient. It bestows on Poggio the equivalent of the modern *life-time achievement award* for 'bringing to this Republic of Letters the largest number of aids and equipments'. This is still our first recorded use of the phrase 'Republic of Letters'.[10] This term seems not to have been much in use throughout the fifteenth century, but Erasmus popularized it from the end of the fifteenth century onwards. From then, the Republic of Letters started its ascent. It was at the zenith of its power in the eighteenth century, but around 1800 the Republic of Letters quickly declined and fell.[11]

The Republic of Letters was a conglomerate of interconnected networks of scholars and scientists, communicating with each other at a distance by means of letters. Through correspondence networks, learned men and women kept abreast of who was doing what, where, and how. Structuring this Republic of Letters was a practice of *commercium litterarium:* 'exchange of learning'.[12] The higher goal of this exchange of knowledge was the Common Good: the assembling of knowledge to bring mankind closer to the Truth. By corresponding with each other, scholars in the period 1500-1800 successfully negotiated political, linguistic and religious differences in order to build up Europe's archive of knowledge.[13] As such, the Republic of Letters functioned as a so-called knowledge commons.[14]

Of course the practice was often as ugly as every human affaire of cooperation amidst distrust and diverging agendas: polemics and controversies were so endemic that they might be regarded a structural feature of the Republic of Letters. Nevertheless, the ideal of this 'imagined community' became real on a

10   M. Fumaroli, 'The Republic of Letters', *Diogenes*, 143 (1988), pp. 129-54.

11   For a brief overview of the history of the Republic of Letters, see my article 'What was the Republic of Letters? A brief introduction to a long history (1417-2008)', *Groniek*, 204/205 (2016), pp. 269-87.

12   *Commercium literarium. Forms of Communication in the Republic of Letters, 1600-1750*, ed. H. Bots & F. Waquet (Amsterdam and Maarssen 1994).

13   *Between Scylla and Charybdis. Learned Letter Writers Navigating the Reefs of Religious and Political Controversy in Early Modern Europe*, ed. J. De Landtsheer & H. Nellen (Leiden/Boston 2011).

14   *Understanding Knowledge as a Commons – From Theory to Practice*, ed. C. Hess & E. Ostrom (Cambridge (MA) 2006).

daily basis: knowledge was exchanged in huge quantities, and made available to a large audience, as three examples will make clear.

Encyclopaedias as Products of Collective Action

The industrious Flemish botanist Charles de l'Ecluse or Carolus Clusius (1526-1609) is primarily known for his role in spreading across Europe the tulip and the potato. As a professor in Vienna and Leiden, he created a huge correspondence network.[15] Unlike most scholars of his day, he did not limit himself to communicating in Latin and French, but he also used Spanish, Italian, Dutch, and German in his letters. About fifteen hundred letters are still extant. This correspondence shows how Clusius collected botanical information and specimens from the outskirts of Europe and beyond. With this material he created a botanical garden in Leiden, but he also published two large botanical encyclopaedias: the *Account of Rare Plants* (1601: *Rariorum plantarum historia*) and his *Ten Books of Exotic Plants* (1605: *Exoticorum libri decem*). In these books, Clusius often credited his informants, or he even quoted extensively from their letters.[16]

Another example of an encyclopaedia which drew on the resources of a large scholarly correspondence network is the *Corpus of Roman Inscriptions*, first published in 1602 by Janus Gruter, a Dutch scholar residing in Heidelberg.[17] This folio-sized tome, about eight inches thick, formed the basis of the *Corpus Inscriptionum Latinarum*, started by the famous historian Theodor Mommsen in 1853 and carried out today by the Berlin-Brandenburg Society of Arts and Sciences in an open-source form.[18] Gruter's original collection was largely based on material that others had sent him. The French scholar Joseph Scaliger (1540-1609), for example, planned for a long time to publish his own collection

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15   S. van Zanen, '*Eene uitzonderlijke verscheidenheid'. Planten, vrienden en boeken in het leven en werk van Carolus Clusius (1526-1609)* (Leiden 2016; thesis).

16   F. Egmond, 'Observing Nature. The Correspondence Network of Carolus Clusius (1526-1609)', in: *Communicating Observations in Early Modern Letters (1500-1675). Epistolography and Epistemology in the Age of the Scientific Revolution*, ed. D. van Miert (London, Turin 2013), p. 50, draws attention to the reports of Tobias Roels, Onorio Belli, and Gregorio da Reggio. See also ibid. p. 64 for Clusius' mentioning of the proper names of the people who sent him data. It should be added that Clusius was selective in his use of the information supplied to him by letters (p. 65).

17   *Inscriptiones antiquae totius orbis Romani, in corpus absolutiss*[*imum*] *redactae*, ed. J. Gruterus (Heidelberg [1602-3]).

18   cil.bbaw.de/cil_en/dateien/forschung.html.

of Latin inscriptions, enriched by those that other scholars had sent to him, and including his corrections to previously published collections. In the end, he decided to delegate the task to Gruter. On every single page, Gruter testifies to his indebtedness to an entire web of correspondents: Protestants and Catholics, old and new, Italians, French, Germans, Dutch. The *Corpus of Roman inscriptions* was the result of a truly collective and inclusive endeavour.

Clusius and Gruter both drew on the resources of their networks of industrious individuals who expected no financial gain. Just like many modern scholars, they did it to collect, systematize and publish information for the scholarly community and to help research of the truth in nature and in history. Presumably, scholars shared their data also because they enjoyed that their names were being mentioned in the final product. But their efforts hardly materialized into an Open Access source. The book was far too expensive for individual scholars, and libraries had very limited opening hours – if any at all. By the end of the eighteenth century, that was felt as a problem, as the following example shows.

Crowd-Sourcing a Botanical Garden

Clusius was not the only one who used his contacts for collecting botanical information and species of plants. In 1768, the physician Ernst Gottfried Baldinger (1738-1804) was appointed professor of botany (1768-73) at the University of Jena.[19] He found the medical garden in complete disarray. During the short period of his employment, he managed to revive it by placing an advert in the *Jenaischen Gelehrten Zeitungen*, asking for plants and seeds. This strategy proved enormously successful: people familiar to him, but also people who were unknown to him, made a collective and voluntary effort to reinstate the garden by donating species. As Baldinger later reported:

> Even from Italy, Siberia and Denmark I received seeds. [...] Every day the mail arrived was a feast of joy, when new sendings arrived which enriched the garden for the benefit of our students. The altruism displayed by so many famous scholars in supporting me, gave me a feeling of delightful bliss; for nothing is more detrimental for the growth and expansion of the botanical knowledge than plant envy [*Pflanzen-Neid*, a pun on the word

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19   *Geschichte der Universität Jena 1548/58-1958. Festgabe zum vierhundertjährigen Universitätsjubiläum*, ed. M. Steinmetz, vol. 1 (Jena 1958), pp. 286-7, 296, 301.

Brotneid[20]] and the unnecessary sumptuousness of new botanical works, the luxury print, paper, engravings and decorations of which have made them so expensive that nobody can afford to buy them.[21]

What is significant in this early modern version of crowd-sourcing is not only that Baldinger listed the donators and benefactors in his published work, but also that he complained about the inaccessibility of student books. Lavish coffee-table books with exquisite images were out of ordinary students' reach. Such books may have gathered paper gardens, but such paper versions of collections needed to be accessible. That, at least, was the ideal. We might guess that Clusius' and Gruter's encyclopaedic works were also hardly consultable for ordinary students. Yet, there was in the eighteenth century a very lively tradition of publishing virtual libraries: bibliographies of important books, often with information about the authors and the contents and the place of the book in the history of learning. This type of virtual libraries is known as *historia literaria*.

Historia Literaria, the Virtual Library and the Classification of Knowledge

The German Enlightenment has traditionally been associated with the rationalist philosophy of Leibniz, Christian Wolff, and Christian Thomasius, and with a new type of academic institutes, exemplified by the universities of Halle (1694) and Göttingen (1734).

Göttingen was particularly famous due to its library, to the journal *Göttinger gelehrte Anzeigen* and to its Academy. Since 1770, under the leadership of

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20   I thank Paul Ziche for bringing this word play to my attention.

21   E.G. Baldinger, *Über Litterar-Geschichte der theoretischen und praktischen Botanik* […] *zur Ankündigung seiner öffentlichen Vorlesungen im Sommer 1794* (Marburg 1794), pp. 17-20; quotation on pp. 19-20: 'Sogar aus Italien, Sibirien, Dännemark, bekam ich Sämereyen … Jeder Posttag war für mich ein Freudenfest, wo neue Remisen ankamen, die den Garten bereicherten, um unsern Studierenden nützlich zu werden. Die Uneigennützigkeit mit welcher mich so viele berühmte Gelehrten unterstützten, war für mich ein Wonnegefühl; denn nichts schadet dem Wachsthum und der Ausbreitung der Pflanzenkenntniss mehr als Pflanzen-Neid und die überflüssige Kostbarkeit neuer botanischer Werke, die durch luxus im Druck, Papier, Stich, Bemahlen, so vertheuert werden, dass solche Niemand kaufen kann.'

Christian Gottlob Heyne, all three of these cooperated with the University.[22] The ambition to allow students access to the vast resources of the library (some 200,000 books in 1791) necessitated easily negotiable catalogues, and in particular an insightful way of classifying the books. The organization of libraries depended to a certain extent on the spatiality of the building and the space between the shelves, but also on a useful classification of knowledge.

Classifications of knowledge abounded at the time that Göttingen was founded. An almost obsessive preoccupation with systematizing knowledge on the basis of books transpires in the historiographies of learning which had been published in large quantities in Germany since the end of the seventeenth century. Generically known as *historia literaria* (*history of learning* or *gelehrte Geschichte*), these historiographies of learning comprised the canonization of authors and their books, structured according to certain knowledge fields. Depending on the ambition of these intellectual historians or the purpose and scope of their books, they had to make conscious choices for classifying and selecting author names and book titles. Often, the literary histories themselves carry the word 'library' in their titles, assigning to their contents the status of a condensed library, or perhaps even the blueprint of a catalogue of a basic library of knowledge. In other words: such books are virtual libraries; they are paper-interfaces pointing out titles of books structured according to themes and sub-themes. The Göttinger library put into practice precisely these principles of *historia literaria*.[23] It boasted a strong tradition of collecting, centralizing and organizing books, and the ambition to provide Open Access to the vastest possible realms of knowledge.

Historia literaria was a typically eighteenth-century phenomenon, but the genre can be traced back to the sixteenth century. The example of the Swiss physician and natural historian Conrad Gesner is well known. The full title of his *Bibliotheca universalis* (1545) translates as *A Universal Library, or a very rich Catalogue of all authors in three languages, Latin, Greek and Hebrew, extant or not anymore, of ancient and modern authors to this very day, of learned and unlearned authors, published and kept in Libraries. A new work and not only*

22   A. Saada, 'La communication à l'intérieur de la République des Lettres observée à partir de la bibliothèque universitaire de Göttingen', in: *Kultur der Kommunikation. Die europäische Gelehrtenrepublik im Zeitalter von Leibniz und Lessing*, ed. U.J. Schneider (Wiesbaden 2005), pp. 243-54 (243); M.C. Carhart, 'Historia Literaria and Cultural History from Mylaeus to Eichhorn', in: *Momigliano and Antiquarianism. Foundations of Modern Cultural Sciences*, ed. P.N. Miller (Toronto 2007), pp. 185-99 (197-9).

23   Saada, art. cit. (n. 22), p. 244.

necessary for instituting public and private libraries, but also extremely useful for
all students of whatever subject or science for advancing their studies.[24]

Gesner's *Bibliotheca* is a catalogue of books kept in more than one library,
and not necessarily of the best books: as a *universal* library, it also lists bad
books. It is a book meant for students, no matter what they specialize in. And
the book is basically a blueprint for the ideal library, be it a private library or
one that will be used by a community. Underlying Gesner's classification of
knowledge is a basic division into *necessary sciences* (the seven liberal arts, but
subdivided into twelve subjects), the 'ornate' sciences history and geography,
and the 'substantial' sciences, which made up the four faculties of the univer-
sity: philosophy, law, medicine and theology. 'Philosophy' is a messy category
in early modern thought. Gesner subsumed natural scientific, legal, medical
and political subjects under philosophy in books 14 to 21. He was not the only
one who failed to come up with an entirely *neat* classification of knowledge.

Most eighteenth-century historians of learning thought that Francis Bacon,
who lived early in the seventeenth century, was the founding father of *historia
literaria*. Time and again, they cited a passage from Bacon's *The Advancement
of Learning* (*De augmentis scientiarum*, book 2, chapter 4) to supply their type
of historiography with a programmatic intellectual foundation. Bacon noted
that ecclesiastical and civil history were well served, but that the 'history of
learning' (as he called it in English in 1605; he himself translated it as *historia
literarum* in 1623) was still in its infancy. Despite the existence of particular
histories on certain subjects, he stressed the need for:

> a just story of learning, containing the antiquities and originals of
> knowledges and their sects, their inventions, their traditions, their
> diverse administrations and managings, their flourishings, their opposi-
> tions, decays, depressions, oblivions, removes, with the causes and occa-
> sions of them, and all other events concerning learning, throughout the
> ages of the world.[25]

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24   C. Gesner, *Bibliotheca universalis, sive Catalogus omnium scriptorum locupletissimus, in
      tribus linguis, Latina, Graeca, et Hebraica; extantium et non extantium, veterum et recentio-
      rum in hunc usque diem, doctorum et indoctorum, publicatorum et in Bibliothecis latentium.
      Opus novum, et non Bibliothecis tantum publicis privatisve instituendis necessarium, sed
      studiosis omnibus cuiuscunque artis aut scientiae ad studia melius formanda utilissimum*
      (Zurich 1545).
25   F. Bacon, *The Advancement of Learning* (London 1605), bk 2, ch 1, § 2 (translated and
      revised in *De Augmentis Scientiarum* (London 1623), lib. 2, cap. 4, § 1).

This was not to be a history based on other historical accounts, but a century-for-century synopsis of the contents, style, method and character of books. Bacon wanted learned men to be trained in the use and administration of learning. Just as in ecclesiastical and civil history, scholars ought to learn from good and bad examples in the history of learning.

Since the time of Immanuel Kant, Bacon's *Advancement of Learning* has been seen as the beginning of 'empirical' philosophy (something called into doubt by recent research).[26] Librarians will know Bacon primarily from Dewey Decimal Classification, which allegedly is based on Bacon's famous classificatory epistemology of memory, imagination and reason.[27] But Bacon was also regarded as the founding father of the history of knowledge (and by consequence, I would argue, of the History of Science as a discipline). The ones who regarded him as such are for example the Hamburg scholar Petrus Lambecius, who in his *Prodromus* (=forerunner) *historiae literariae* (1659) cited at length Bacon's 'Notable passage on historia literaria'.[28] Lambecius failed spectacularly, for his attempt at a universal history of literature since creation was abortive, to say the least. Of the prospected 38 books, Lambeck proceeded no further than chapter 4 of his second book, at the end of which this history of learning breaks off in the thirteenth century BCE. Yet, it is significant that the Hamburg bibliographer of classical antiquity Johann Albert Fabricius, in his preface to the much better disseminated second edition of Lambecius' *Prodromus* of 1710, calls Gesner the 'Varro of Germany'[29] and Lambecius 'a kind of Pliny'.[30] Fabricius noted that bibliographies in the style of Lambecius had been primarily the work of German scholars: by 1710, the likes of Johann Franz Budde,

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26 For the history of this rationalism-empiricism dichotomy, known as the RED reading, see A. Vanzo, 'Kant on Empiricism and Rationalism', *History of Philosophy Quarterly*, 30 (2013), pp. 53-74. For further criticism see P. Sperber 'Empiricism and Rationalism. The Failure of Kant's Synthesis and its Consequences for German Philosophy around 1800, *Kant Yearbook*, 7 (2015), pp. 115-38; T. de Goeij, 'Kant's Critical Rejection of the Synthesis of Rationalism and Empiricism' [forthcoming]. See also P. Ziche, 'Thinking Classified: Structuring the World of Ideas around 1800' (Utrecht 2013) at www.uu.nl/staff/PGZiche/2, tab 'Research' (accessed 29 December 2015).

27 W.A. Wiegand, 'The "Amherst Method". The Origins of the Dewey Decimal Classification Scheme', *Libraries & Culture*, 33 (1998), pp. 175-94.

28 P. Lambecius, *Prodromus Historiae literariae, et tabula duplex chronographica universalis*, ed. J.A. Fabricius (Leipzig, Frankfurt 1710), f. ***4r: 'Notabilis de historia literaria locus'.

29 Ibid., f. **3r: 'Auctores ordine litterarum et uniuscuiusque scripta recensenda laborem in se suscepit Varro ille Germaniae Conradus Gesnerus'.

30 Ibid., f. **4r: 'Lambecius noster […] corpus Historiae litterariae […] non minus praeclaro ausu quam Plinius *Naturae rerum historiam* […] delineare aggressus est.'

Burchard Gotthelf Struve, Johann Möller, and Jacob Friedrich Reimmann had already helped establish *historia literaria* as a genre.[31]

Before saying a bit more about two of these four authors, I have to draw attention to the first complete work of *historia literaria*: Daniel Georg Morhof's *Polyhistor*, published in 3 volumes in 1688, 1690 and 1708. Morhof (1639-91) did not complete the last volume: that was the work of the Möller just mentioned. The *Polyhistor* proved an astounding success: it was reprinted in 1714, 1732 and 1747. Morhof explicitly referred to Bacon and Lambecius as his sources of inspiration.

Right from the start, in chapter 2 of book 1, Morhof treats *historia literaria*. He refers to Bacon as the inaugurator of the genre and dismisses a previous aspiration by Christoph Mylaeus, also quoted by Lambecius, as inadequate, because it reads like an encyclopaedia, laid out in continuous prose, however elegant. Mylaeus' work is incomplete and, more importantly, lacks a method. Morhof also mentions Lambecius' aborted attempt. Even if Lambeck would have completed his work, which would then have constituted a major contribution, he would have ignored Bacon's order and method.[32] More inspiring for the classification of knowledge was Gabriel Naudé's *Advice on establishing a library* (1627). On the basis of Naudé's fifteen 'classes' an 'idea' of literary history could be conceived. Managing to conjure up a literary history would benefit the 'civil society' (*societas civilis*) and learning (*res literaria*). This is precisely what Bacon would have wanted, whose passage on *historia literaria*, by now a topos, Morhof quotes.[33]

The three hefty tomes which constitute Morhof's *Polyhistor*, are, consecutively, entitled 'literarius', 'philosophicus' and 'practicus'. For the purpose of this article, it is noteworthy that the first part of tomus 1 bears the title 'liber bibliothecarius'. Its first six chapters deal with polymathy, 'historia literaria', 'the matter of libraries' (including the 'reasons for setting up libraries'), 'the means to do so, and to furnish libraries', 'the order of libraries, and their downfalls', 'librarians, and acquiring library knowledge', before moving on to basic chapters about types of books, social settings, catalogues, and three chapters (16, 17 and 18) on authors who wrote about libraries and *historia literaria*, about

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31   Ibid., f. **3v: 'quanta in aliis adstruxerunt adstruentque qui cum laude in Historia Litteraria locupletanda cum maxime desudant (ut nonnullos e Germanis nostris tantum memorem) praestantissimi viri Jo. Franciscus Buddeus, Burch. Gothelf. Struvius, Jo. Mollerus, Jac. Fridericus Reimmannus'.

32   D. Morhof, *Polyhistor, sive De notitia auctorum et rerum commentarii, quibus praeterea varia ad omnes disciplinas consulta et subsidia proponuntur*, vol. 1 (Lübeck 1688), p. 10.

33   Ibid., p. 15.

authors who were librarians themselves, and on those who drew up catalogues of authors. The remaining chapters of its 320 pages extol the use of *historia literaria*, and the book ends, significantly, with three chapters on letter writers and unpublished letters – i.e., the means of communication in the Republic of Letters.

The link between *historia literaria* and librarianship is equally evident from another early example of the genre: the *Introduction to Knowledge of Learned Matter and to the Use of Libraries* (1704) by the earlier mentioned Burchard Gotthelf Struve. This book is devoted primarily to libraries and books. A first chapter gives an introduction to *historia literaria*, and four following chapters treat lost libraries, libraries outside of Germany, libraries of German people and the use of libraries. Remaining chapters deal with authors and their communities, as well as forbidden books.[34]

Other significant representatives of the genre are the earlier mentioned J.F. Reimmann, whose *Versuch einer Einleitung in die Historiam literariam derer Teutschen*, 7 vols. (Halle 1708-13), focuses on German authors; the Halle professor of *historia literaria* C.A. Heumann, who published a *Conspectus reipublicae literariae sive Via ad Historiam literariam iuventuti studiosae aperta* (Hanover 1718); the weighty four volumes of Nicolaus Hieronymus Gundling's *Vollständige Historie der Gelahrheit* (1734-6); and the tiresome lists of authors provided in Johann Andreas Fabricius' *Abriß einer allgemeinen Historie der Gelehrsamkeit* (1752-4). This Fabricius should not be confused with the also mentioned Johann *Albertus* Fabricius, who was not only responsible for the re-edition of Lambecius' *Prodromus historiae literariae*, but also (and more famously) published a string of bibliographies of ancient, medieval and modern authors, all entitled *Bibliotheca* [...].[35] These virtual libraries, useful as they might be, still did not mean that students could 'click on' to the full texts of the titles. They had to be able to physically enter a library and open a book. But how? How 'open' were 'public libraries'? And how openly available was published knowledge?

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34   B.G. Struvius, *Introductio ad Notitiam Rei-Litterariae et usum Bibliothecarum. Accessit Dissertatio De doctis impostoribus* (2nd edn.; Jena 1706): Caput 1: De historia litteraria; Caput 2: De bibliothecis deperditis; Caput 3: De bibliothecis exterorum; Caput 4: De bibliothecis Germanorum; Caput 5: De usu bibliothecarum; Caput 6: De ephemeridibus eruditorum; Caput 7: De scriptoribus vitarum; Caput 8: De scriptoribus iudiciorum; Caput 9: De libris damnatis et prohibitis; Caput 10: De societatibus litterariis; Caput 11: De typographia.

35   *Bibliotheca Latina* (1697); *Bibliotheca Latina mediae et infimae Aetatis* (1734-6); *Bibliotheca Graeca*, 14 vols. (1705-28); *Bibliotheca Antiquaria* (1713); *Bibliotheca Ecclesiastica* (1719).

The Plea for Open Libraries

Libraries are as old as the art of writing, although few of their keepers will have strived towards comprehensiveness. The Library of Alexandria is perhaps the most famous example of a universal knowledge archive. It was, at least, for many early modern humanists a point of reference. 'Ah, those beautiful libraries of Egypt – bygone!', the already mentioned Joseph Scaliger was recorded to have exclaimed at the beginning of the seventeenth century, after explaining that for a perfect library one would need six large rooms.[36] The same Scaliger famously praised Leiden University Library: 'There is here the great resource of the library, so that students can study.'[37] Early modern libraries continued to be institutional, as they had been in previous centuries when abbeys and convents built their archives. Of course, princes and scholars owned private libraries. With the rise of the university a new type of institutional library developed, next to the municipal library which accompanied the rise of the city.

Despite Scaliger's praise of Leiden's University Library, students and scholars continued to rely largely on private libraries and not solely on university or city libraries. A fine example of the collective use of a private library is provided by the 'loan booklet' of Gerardus Johannes Vossius, a professor in Leiden and Amsterdam (1577-1649). He noted down the names of people who borrowed his books, and he added the titles to them. Vossius owned probably more than four thousand books.[38] According to Johann Burckhard Mencke's *Compendiöses Gelehrten-Lexicon* of 1715 (itself a work of *historia literaria*, later expanded by C.G. Jöcher) Vossius died as a result from a fall of his ladder in his library, after he had been crushed by books.[39]

Gabriel Naudé famously made plans for the perfect library. A good library, however, was not just complete, but also accessible. The first 'public' libraries

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36 *Scaligerana, Thuana, Perroniana, Pithoeana, et Colomesiana* […], ed. P. Des Maizeaux, vol. 2 (Amsterdam 1740), p. 237 (=*Secunda Scaligerana*, s.v. *Bibliotheca Florentina*): 'Pour une parfaite Bibliotheque, il faudroit avoir six grandes Chambres. Les belles Bibliotheques d'Egypte, olim!'

37 Ibid., p. 426 (s.v. *Leyde*): 'est hic magna commoditas Bibliothecae, ut studiosi possint studere'.

38 The handwritten catalogue of Vossius's library dates from 1622 and lists about 3,800 titles. After 1622, he no longer seems to have updated this catalogue, or at least, a more recent one was never found. See F.F. Blok, *Contributions to the History of Isaac Vossius's Library* (Amsterdam, London 1973), p. 17.

39 C.S.M. Rademaker & P. Tuynman, *Het uitleenboekje van Vossius* (Amsterdam 1962); C.S.M. Rademaker, *Leven en werk van Gerardus Joannes Vossius (1577-1649)* (Hilversum 1999), p. 346, n. 868. See col. 2437 in Mencke's *Lexicon*.

appeared near the end of the sixteenth century in Italy (Rome, *Biblioteca Angelica*, 1595; Milan, *Biblioteca Ambrosiana*, 1609), although the notion of 'public' does not necessarily indicate that a library was open to a general public of literate people; it rather indicates that the source of the finance was not private, but a public authority such as a city government or an institution like a university or church.[40] In fifteenth-century London, a number of religious manuscripts have been identified as 'common-profit' books: they were copied out 'for a comyn profite, [...] so it be delivered and committed from persoone to persoone, man or womman, as longe as the book endureth'.[41] That argument for a 'common profit' for men and women, is heard much more loudly only at the beginning of the eighteenth century. It was James Kirkwood in England (*c*.1650-1709), the 'father of free libraries', who openly argued in 1703 that 'Compleat and free Libraries are absolutely necessary for the Improving of Arts and Sciences, and for Advancing of Learning amongst us' (1703). This 'advancing of learning' is no doubt a conscious reference to the title of Francis Bacon's aforementioned *The Advancement of Learning* of 1605.

But it also brings to mind Poggio's 1417 reference of 'aids and equipments' brought to the 'Republic of Letters'. Probably slightly less known is that ten years later the German scholar Michael Lilienthal (1686-1750) equally argued to 'Make all private libraries public'. In his book *On Literary Machiavellians* (1713), he explained that those who just *take* from the common good, and fail to contribute to it are the 'literary Machiavellians' of the title:

> Thus literary Machiavellism seeks not the public utility of the Republic of Letters, but only labours at chasing one's own reputation, no matter how, even to the detriment and deception of the cause of knowledge.[42]

In the language of modern study of institutions (not to be confused with 'institutional history'), these Machiavellians can be reconceptualized as so-called

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40 P. Schneiders, *Nederlandse bibliotheekgeschiedenis. Van librije tot virtuele bibliotheek* (Den Haag 1997), p. 71.

41 W. Scase, 'Reginald Pecock, John Carpenter and John Colop's "Common-Profit" Books: Aspects of Book Ownership and Circulation in Fifteenth-Century London', *Medium Aevum*, 61 (1992), pp. 261-74 (261).

42 M. Lilienthal, *De Machiavellismo literario, sive de perversis quorundam in Republica Literaria inclarescendi artibus dissertatio historico-moralis* (Königsberg, Leipzig 1713), § 3: 'Sic Machiavellismus literarius non publicam Reipublicae literariae utilitatem quaerit, sed propriae solum existimationis incrementum quovis modo, etiam cum rei literariae damno ac deceptione, venari adlaborat'. Cited after S. Kivistö, *The Vices of Learning. Morality and Knowledge at Early Modern Universities* (Leiden/Boston 2014), p. 24, n. 81.

'free riders' in the common goods game of a 'low-sanctioning institution of collective action', in this case the 'poorly policed' Republic of Letters.[43] Framing the history of a sharing economy in these technical terms shows that the history of sharing knowledge can be theorized on a more advanced level by adopting a truly interdisciplinary approach.

Conclusion

In this article, we have seen that in the past, crowd-sourcing, knowledge classifications and virtual libraries in the form of catalogues, systematic bibliographies and library advices were all instruments in the social world of knowledge gathering. Although such practices were developed long ago within extensive scholarly networks, they seem to have concurred precisely in the eighteenth century, when a public with leisure and means emerged. What strikes most in these examples is the knowledge ideal of what we might anachronistically call Open Science. This ideal was fostered within the Republic of Letters – a community which we can describe as a knowledge commons.

It was through this ideal that a European knowledge archive was built up. Ultimately it might have been this ready availability of knowledge and the right to act upon it as free individuals, which enabled Europe's rise to global power. Joel Mokyr has argued that without the Republic of Letters there probably would not have been an industrial revolution.[44] Knowledge was collected, but it also had to be stored and made available. That was the task and the accomplishment of libraries and their librarians. Without libraries, these age-old storehouses of books, which in the computerized age seem an anomaly, there would have been no collections to digitize in the first place. And of course, the library will not disappear. Its mediums are expanding. New ways of searching are to a large extent (but never entirely) taking over old ones. And no doubt the role of the library in society will change as well. But the Baconian idea of a readily available body of knowledge accumulated by past thinkers, will stay with us.

In the context of the Republic of Letters' imperative to *commercium literarium* I would argue that the history of collecting, classifying and spreading

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43   For the use of the phrase 'poorly policed' by the German cameralist Johann Heinrich von Justi, see W. Clark, *Academic Charisma and the Origins of the Research University* (Chicago, London 2007), p. 14.

44   J. Mokyr, 'The Commons of Knowledge: A Historical Perspective', *The Annual Proceedings of the Wealth and Well-Being of Nations*, 4 (2011-2), pp. 29-44.

knowledge is a fruitful avenue for the why, what and how of Library History. Only within a larger historical framework such as this one (but one can of course think of others, e.g. the library as an institution of power) can useful parameters be devised for a comparative history of libraries, for studying the interplay between collectors and users, for understanding the particular views which users had of certain books, in short: for a Library History that is guided by well-contextualized questions of cultural history.