

# Paper Regimes of the Publishing World: A Bird's Eye View on the Materiality of Global Book History

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## ABSTRACT

This article highlights key stages in the global history of paper used in publishing. As paper was universally adopted by publishing cultures worldwide, paper as a physical artifact offers a comparative and long-term perspective on the materiality of making books across many different regional book cultures and traditions. We argue that the material histories of a paper-using humankind – coined as “paper regimes” – from the second century BCE to the present are relevant and crucial to understanding global history. By synthesizing the findings of regional experts, we aim to illustrate how paper regimes manifested themselves globally across different book cultures, belief systems, and political constellations in increments of one hundred, five hundred and a thousand years. This article sets out to demonstrate that the globally used artifact “paper” offers a decentered approach to global history by highlighting parallel developments, entanglements, and integrations between the world’s paper-using cultures, recognizing possible disruptive and restrictive aspects of the use of paper within book cultures.

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## Introduction: A Paper-Using Humankind

At the present moment, in the 2020s, we are in the midst of a long-term process of becoming, in the words of Frederick Wilfrid Lancaster, a “paperless society.”<sup>1</sup> Paper continues to be available and is still consumed in large quantities. The production of paper products is at an all-time high, but the predicted tendency seems clear: paperless communication is ubiquitous; paperless libraries, the solution; paperless offices, the goal; paperless book consumption, only a question of time. For decades, a cacophony of technological prophets has repeatedly proclaimed the impending end of the paper era. But paper persists – or at least does not seem to disappear as quickly as one might think out of the Gutenberg

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1 Lancaster’s ideas on “paperless” libraries and a “paperless society” were first put forward in Lancaster 1977; see especially Young 2008.

Galaxis and elsewhere. In the 2020s, global paper industries are producing more than an astounding 400.000.000 (400 million) metric tons of paper and cardboard products each year. In 2022 alone, approximately 91 million metric tons of graph paper were produced. This is the type of paper mainly used for publishing purposes worldwide.<sup>2</sup> If we look solely at the quantities of paper used by the publishing world, we can conclude that paper is here to stay, as others have argued, or at least that paper is not quickly disappearing.<sup>3</sup> People around the world have used it for a long time. A *homo charta*, a paper-using humankind, is a feature of human life around the globe and is therefore an issue for global history.

Paper is a man-made artifact whose use had a critical impact on the forming and development of global book cultures. Defining paper as a processed and formed material made of “sloshed-together plant fibers”<sup>4</sup> opens an opportunity to contribute to an emerging global book history by focusing on past paper publishing in different areas of the world. In this sense, the fiber-based artifact paper has, on the one hand, been connected to the material culture of human societies for more than 2,000 years. On the other hand, it is bound to forming processes – the “textility” according to Victoria Mitchell and Tim Ingold – of broader textile cultures, including cottons and woolens.<sup>5</sup> If paper production is about forming fibers and subsequently using these fiber products for publishing purposes, then our global book history must start in China, where paper was invented and first used beginning in the early second century BCE.<sup>6</sup> Although paper-like materials for the transfer, reproduction, spread, and storage of stories and knowledge emerged independently in other parts of the world – such as papyrus in Egypt and *amate* (bark paper) in Mesoamerica – even predating China, it was Asia that gave rise to the origins of the subsequent global paper age. Paper became the dominant medium for publishing due to its versatility and practicality. Its production from various cellulose-based materials such as cotton, hemp, and wood, coupled with its lightweight and flexible nature, made it ideal for widespread use. The relatively low cost and simplicity of paper manufacturing further enhanced its availability and affordability across different regions, solidifying its role as the preferred material for publishing endeavors. After paper was invented and first used in Asia, the technology

2 For an overview, see the statistics on the Global Paper Industry from the data intelligence platform “Statista” <https://www.statista.com/topics/1701/paper-industry/#topicOverview> (last accessed June 11 2024), especially the numbers for the year 2022: <https://www.statista.com/statistics/270317/production-volume-of-paper-by-type/>.

3 See, for example, Müller 2014.

4 Calhoun 2020, ix. For a more physical description, cf. Browning 1970, 18: paper denotes “a felted sheet of fibers formed by passing a liquid suspension of the fibers through a screen.”

5 These extensive textile cultures have been studied in particular with regard to early modern times and along the routes of empire and trade, encompassing different regions of the world. See, for example, Skeehan 2020; Siebenhüner / Jordan / Schopf 2018; Machado / Fee / Campbell 2018; DuPlessis 2016. The idea of focusing on the forming processes of materiality and textiles comes from Mitchell 2012 [1997]; and Ingold 2010.

6 See for the oldest known paper, which is dated to the early second century BC, Xumei / Xiuwen 2010, 64.

and skills of use and manufacture spread to other regions of the world, where paper – with different speeds and to various extent – eventually superseded all other materials used for publishing purposes. It was only after paper came into general use in the publishing industry that printing-press technologies were developed; paper is therefore considered to be one of the fundamental prerequisites in the emergence of publishing and print cultures.<sup>7</sup>

Focusing on the historical presence and global use of paper in publishing requires a new conceptual approach to global book history. In order to connect our long-term material perspective with ideas developed within global history, we use the concept of “paper regimes” as an analytical framework. For analyzing the structuring processes of the global political economy – particularly through broad periodization and a comparative historical method – the concept of “regime” has proven to be a valuable analytical device.<sup>8</sup> When examining the large global framework of specific developments, such as the emergence and use of paper in publishing, it is essential to account for the interplay of political-economic structures, legal conditions, social rules, and cultural transformations. This approach reveals the dynamic interactions between centralized power structures and localized practices that determined specific paper uses. The paper regime framework thus helps to transform our understanding of paper from a simple commodity into a complex nexus of economic, political, legal, and cultural forces that have played a critical role in publishing.

In the modes of transnational history and *histoire croisée*, global book history follows books across borders, covering alternative scales of analysis and determining suitable units of study beyond national and imperial frames. While global history has inspired a renewal of the discipline, there is a growing awareness of the limited feasibility of such a way of writing history as well as of the “danger of losing a sense of proportion by underestimating social structure and hierarchy,” a theoretical concern expressed by the global historian Jürgen Osterhammel.<sup>9</sup> Aware of such challenges, we use the concept of “paper regime” to emphasize the cultural usages of paper for publishing purposes and to capture its specific historical framework within a given region. Since it would be impossible to examine every corner of the globe, we look for large-scale regional trends in the use of paper for publishing purposes while taking into account the complexities and entanglements of global geography, attempting to avoid essentializing developments on a continental scale.<sup>10</sup> Rather than covering the entire world, this perspective examines the global contexts and structures at certain moments in time, which in part determined local book traditions in their various forms.

7 Febvre / Martin 1958, 33–41.

8 The concept of “regime” has been used as a productive approach in various fields of history, such as food history, migration studies, and the new history of capitalism; see McMichael 2009; Hoerder / J. Lucassen / L. Lucassen 2011; Beckert et al. 2021. Cf. also the parallel use of “paper regime” and the “paper chase” of migrants in search of papers – permits, passports, etc. – in migration history, Yun 2009, 111–133; Dhupelia-Mesthrie 2014.

9 Osterhammel 2016, 38. For a concise introduction to the goals and politics of global history, see Conrad 2016, 62–89, 205–235.

10 Arguing against common geographical divisions and unconscious spatial frameworks of analysis along continental boundaries is Lewis 1997.

Paper regimes of the past can be made historically visible by highlighting parallel advances and entanglements. We will be integrating developments between the world's paper-using cultures, while recognizing possible disruptions and impediments to the use of paper within a book culture. Book production relied on paper, and a lack of paper resulted in a full-stop to publishing activities. If paper was not readily available for book production – something that happened frequently in preceding centuries – writers, copyists, and printers were unable to continue their usual work routines or had to make use of alternative writing media. Paper scarcity affected labor practices in the so-called publishing industries.<sup>11</sup> By analyzing paper regimes in different parts of the world across the centuries, we are looking for both material patterns and divergent paths (*Sonderwege*) of global book cultures of the past.

With this understanding, the globally used artifact “paper” offers a decentered approach to global history. As an item of material culture, paper can help to reconceptualize space.<sup>12</sup> This recognition can be taken further: the history of paper usage offers a material framework for studying fields beyond global book history, including global intellectual history and the history of science. It can be used to examine paper practices of scholars across different world regions and approach environmental history, as paper can be seen both as a staple product and as a recycled commodity that depended on the trade in rags, old paper, and, from around 1800, wood pulp. The history of paper can act as a window into imperial history, as paper became an essential bureaucratic means of organizing cultural heterogeneity and controlling territory over large distances. The many transregional features of paper use in print and for manuscripts around the globe and at different times led to highly interconnected processes of importing and exporting paper and its raw materials. From this bird's eye perspective focusing on the human activities surrounding paper in diverse book cultures, we contribute to investigating the past and its connected histories in a global setting.<sup>13</sup> Paper as a material artifact (as well as the knowledge about it) were moved by actors who, in their role as brokers, operated in particular regions, under certain rules while following their own norms and motivations – i.e. acting within a paper regime and, at times, bridging different regimes. This article demonstrates the profound impact of paper on the development of global publishing and book cultures from a long-term perspective. It provides a comparative window into cultural and material relations from a unique vantage point, transcending the conventional Eurocentric or

11 See the many examples for early modern Europe given in Bellingradt / Reynolds 2021. For paper shortages during the First World War, see the Australian solution of pulping eucalyptus wood, as discussed in Donath 1957. After the Second World War, by contrast, the persistent challenges posed by paper restrictions for publishers in Australia were addressed through international trade agreements; Ensor 2012, 49–51.

12 See on the claim to decenter historiography via global history approaches: Davis 2011. For a historiographic overview of material culture studies and global history, see Riello 2022. On the implicit assumptions concerning the scale of material culture analysis in history, see Gänger 2024.

13 See Manning 2003; J. R. McNeill / W. H. McNeill 2003. See on the influential idea of writing “connected histories” in global history: Subrahmanyam 1997.

Western-centric approach to book history. In other words: global book history is part of global history, and any book history is usually a history of paper use.<sup>14</sup>

### Historiographical Context: Narratives of Global Book History

Connecting the dots established by regional histories of paper, we aim to integrate these global paper stories into the historiographic future of an emerging global book history. In fact, the term “global book history” is a fresh one, and the first conference on the topic took place only in 2024, convened by the Society for the History of Authorship, Reading and Publishing (SHARP).<sup>15</sup> Pursuing a global book history, we build on the literature and research focusing on popular paper routes and contribute to the narrative of paper traveling through different regions subsequent to its invention.<sup>16</sup> In fact, global approaches to book history have always stressed the materiality of forming knowledge and emphasized that stories are rooted in the cultures and times that produced them.<sup>17</sup> Although “book” is an established umbrella term for most portable objects that enable data storage and distribution,<sup>18</sup> paper has remained the main material factor of any publishing culture for over two thousand years. In a nutshell, paper is, was, and will likely continue to be a global product that offers relatively cheap spaces for code-using cultures to arrange and present information signs for communication purposes;<sup>19</sup> paper thus enables the emergence of global book cultures.

In the last two decades, the field of book history has been rejuvenated and now includes innovative research areas beyond the scope of traditional scholarship. After es-

14 At different times, in various regions, and following distinct preferences, humankind has used many diverse materials to make books, including clay, papyrus, bamboo, bronze, silk, palm-leaves, parchment, and others, in order to store and communicate information or knowledge over space and time. On various premodern material forms of communicating with “written words”, i.e. code, see e.g. Enderwitz / Sauer 2015. Besides such kinds of books, visual and tactile communication modes based on objects, images, and practices offer an even broader horizon, as has been explored for the Andes: Cummins 1998.

15 The hashtag #globalbookhistory was used on Twitter (nowadays X) as early as 2020: <https://x.com/dbellingradt/status/1250047708532027392?s=20>. See for the SHARP 2024 conference “Global Book Cultures: Materialities, Collaborations, Access” at the University of Reading (UK) the call for papers: <https://research.reading.ac.uk/centre-for-book-cultures-and-publishing/event/sharp-conference-2024/>.

16 See e.g. Müller 2014; Basbanes 2013; Kurlansky 2016; Monro 2014; Weber 2004.

17 Howsam 2015, 1, suggests that we work with a very broad definition of “book” and “book history” in a global approach: “The history of the book is a way of thinking about how people have given material form to knowledge and stories.” See also Shep 2015. According to James Raven, “[t]he history of the book is multifarious [...] the history of the book is not only a history of the paper codex, or indeed the printed book, but a history of how different peoples in different parts of the world, in different ways, for different reasons, and with very different consequences have striven to store, circulate, and retrieve knowledge and information.” Raven 2022, 4; cf. also Raven 2023.

18 Borsuk 2018, 1. On books as physical objects and their material biographies, see Gleixner et al. 2018; Martin 2008.

19 Chang / Grafton / Most 2021.

tablishing national book histories within the Anglo-American, German, and French academic systems (manifested in journals and institutionalized in university chairs dedicated to book history), the quest for transnational histories of the book has continued.<sup>20</sup> Several publications from the 2000s addressed the topic by focusing, for instance, on the book in colonial contexts as an extension of Western book culture,<sup>21</sup> by analyzing distribution patterns in terms of a common market and increasingly global market forces,<sup>22</sup> or by defining indigenous appropriations of and resistance to book use.<sup>23</sup> Moreover, book historians specializing in different world regions have jointly published anthologies that bring together their respective expertise in the field and explore new topics such as cultural transfers of genres and content, or cultural translation and the proliferation of global genres.<sup>24</sup> Encyclopedic compilations that cover differing aspects of the object “book” around the world provide a comparative overview of the practices and people who created books and literary traditions in the past. Examples include *The Book: A Global History* as well as *How Literatures Begin: A Global History*, which provides a more literary focus.<sup>25</sup> By offering a global panorama of book media, these volumes go beyond the well-researched areas of Europe and North America to include other regions – from Asia to Latin America and Sub-Saharan Africa – and their distinct traditions. In the same vein, a volume centered on the Americas and titled *American Contact* explores the medium in an inclusive way, analyzing material practices of power and resistance via the use of books.<sup>26</sup> Though these research volumes provide a panorama of the breadth and diversity of material texts, these sorts of histories with chapters separated along geographic lines remain additive and fail to reveal the entangled nature of book production and use.

### Paper Regimes from a Bird’s Eye View

Assessing paper regimes for global book cultures means establishing a long-term macro view of the synchronous as well as the asynchronous periods of the existence and use of paper across the planet. In a specific way, we attempt to utilize the concept of the “si-

20 Hofmeyr 2005; Shep 2010; Chakravorty / Gupta 2011; Lyons 2016; Lyons / Mollier 2012.

21 For example, Ballantyne 2007. For the case of North America, see Amory 2007. Bringing together the written cultures of Africa and South America is Delmas / Penn 2011. Against the simple diffusion model, cf. Connolly et al. 2016.

22 For the transatlantic space and centered on the enterprise of booksellers: Raven 2007; Arndt 2013. From the vantage point of postcolonial history, literary theorists have embraced the topic, exploring the conditions of the production of world literature: Fraser 2008; Mander 2012. Another line of scholarship has focused on the contemporary economy of literature; see Steiner 2011.

23 Examples for South America: Boone / Mignolo 1994; for South Asia: Venkatachalapathy 2012; Ghosh 2003. On indigenous engagements with textual cultures in Africa, North America, and Australasia, see Ballantyne / Paterson / Wanhalla 2020.

24 McDermott / Burke 2015; Boehmer et al. 2017. The concept of cultural transfers was suggested in the 1980s by German and French scholars, namely Michel Espagne and Michael Werner, and was developed in the following years. On the state of the concept, see Lüsebrink 2013.

25 Suarez / Woudhuysen 2013; Lande / Feeney 2021.

26 Barnes / Goodman 2024.

multaneity of the non-simultaneous”<sup>27</sup> and apply its core idea of the concurrent existence of historical processes to both regional and global paper regimes. The introduction and use of paper exerted diverse impacts across different regions of the world, contributing to the formation of distinct paper regimes. These regimes emerged as dynamic systems shaped by political, economic, legal, and cultural factors that influenced how paper was produced, traded, and utilized. While some regions developed highly regulated paper industries, others saw more commercialized systems, differentiated by variations in literacy, bureaucratic structures, and publishing traditions. It is necessary to identify these consequences, and we recognize that the simultaneous existence of paper in various parts of the planet does not ensure similar cultural impacts across diverse regions of the world. These are parallel phenomena that are not necessarily connected and do not take place at the same time, i.e. they are asynchronous processes. We do not see the presence of paper in a given region and culture as an evolutionary step in a process of becoming a printing culture (e.g. a culture using movable type exclusively). Examining paper in a global setting entails more than just using the material as a “context spinner” to write a synthesis of paper usages in regional contexts and add these to a new global amalgamation.<sup>28</sup>

Methodologically, we will focus on paper used for writing and printing – in the context of publishing –, but not on its many other applications, such as packaging. By conducting analyses in increments of temporal intervals of one hundred, five hundred, and a thousand years of paper history in different regions of the world, we aim to identify long-term trends and transformations, exploring recurring patterns of cultural paper practices, even when these are separated by intervals that span centuries. Specifically, this means not only comparing the different moments of the arrival of paper, but paying attention to the characteristics, features, and multiple histories of paper’s presence and use in different regions, the actors involved in these stories and their intentions, the infrastructures and policies of supply, as well as the power structures and the ways that they both impacted and constrained the paper regime in question.

### The First One Hundred Years: Multiple Starts around the Globe

The first period of paper production and use began in Asia in the early second century BCE, although writing on bamboo and wooden slips persisted, and the transition to paper as the dominant medium was not fully realized until the third century CE.<sup>29</sup> The invention took place in China, as has been echoed in many history books, from whence it

27 German-speaking scholars around 1900, especially Wilhelm Pinder and Ernst Bloch, originally devised the concept of “Gleichzeitigkeit des Ungleichzeitigen” to make sense of modernity. However, its core meaning of coping with the simultaneous existence of historical processes in divergent (regional, national) settings is particular helpful for global history. On the state of research, see Landwehr 2020, 177–208.

28 Crossley 2008. On the phenomenon of “paper without print” in Mughal India, see O’Hanlon 2013.

29 Xumei / Xiuwen 2010, 64. On the continuous use of different writing materials in Central Asia, see Hansen 2012, 14–16.



haltingly spread to neighboring regions in Asia.<sup>30</sup> By the seventh century CE, paper and the art of paper making had traveled to the Korean kingdom and Japan. Wherever paper appeared – as a gift, as a trade good, or as a medium of knowledge transfer enabling the establishment of papermaking techniques – a gradual shift took place. This shift benefited from the fact that paper could easily fit into existing manuscript and printing traditions. Paper was a relatively cheap product that met a cultural demand within an already established book culture. This ‘paper shift,’ or push toward using the new artifact within extant book and publishing cultures, occurred at differing speeds, dictated by local customs, over long time spans. All over Asia, the presence and usage of different papers – an artifact made of mulberry and other bast fibers combined with rags and hemp in China, while made of mulberry bark in Japan – influenced the traditional materials of local and regional publishing activities, mainly bamboo and silk.<sup>31</sup> After a period of coexistence, scrolls of paper gradually replaced the older tradition of rolls of silk in China and Japan. These early paper shifts were made possible in large part by the trading networks of merchants, the missionary activities of Buddhist monks, and the technologies brought by migrants. These key groups of actors played a crucial role in establishing additional Asian paper regimes via manufacturing.<sup>32</sup> As in China, where paper was used for bureaucratic and record-keeping purposes from its inception, similar patterns of use emerged in other Asian countries: beginning with bureaucratic and private purposes, its rapid and widespread availability also impacted those societies’ traditional and flourishing publishing cultures, which now began to rely on paper.

By approximately the eighth century CE, paper usage established a significant presence in the Arab world, encompassing regions of Arab settlement and influence across Western Asia and Northern Africa, making this region a second main global area of paper use. This expansion mirrored earlier patterns observed in Asia. The introduction of paper as a product as well as the craft of its manufacture to this region (primarily via Samarkand) was largely driven by economic factors and commercial interests.<sup>33</sup> In an outdated version of this story, Muslim Arab armies conquered Central Asia in the eighth century and captured the technology in Samarkand.<sup>34</sup> In fact, the transfer of the knowledge and technology of papermaking occurred via commercial and cultural connections in the Central Asian region around Samarkand beginning around 650 CE. It is highly likely that the artifact paper travelled the same trade routes that were used to transport silk and other commodities from East to West. When Arab papermakers in Samarkand began producing paper, they did so by using recycled fibers of linen and hempen rags. As in other parts of Asia, this new industry developed within an established elite book culture that had previously relied mainly on papyrus and/or parchment. Close to the advent of

30 See for example the English-language overviews on Chinese “printing and book culture” or “the history of the book in China”: Brokaw 2005; Edgren 2010; Drège 2017.

31 See Hunter 1932; Kornicki 1998, 40–42; Tsuen-Hsuei 2004, esp. 149–174; Rischel 2004.

32 Bloom 2001, 8; Hansen 2012, 5–6, 139.

33 Bloom 2000, 17–23.

34 Bloom 2001, 8–9; Hansen 2012, 137–139.



using paper for publishing purposes, subjects in the Arab world also began to manage bureaucratic needs on paper, as the example of the first paper mill in Baghdad (founded in 794 CE) shows. According to Jonathan Bloom, the motivation behind this establishment was to ensure the paper supply for the Abbasid caliphate's own bureaucratic activities.<sup>35</sup> Paper soon replaced the use of parchment and papyrus by regional bureaucracies, and a new infrastructure of making and trading paper developed.<sup>36</sup>

From the outset of the paper regimes in the Arab world, the artifact became a commodity. The extensive trading activities of Muslim Arab merchants played a pivotal role in introducing paper to the African continent during the eighth century. Religion played a major role in the demand for paper during this early phase, as the Qur'an, the literary centerpiece of Islam, influenced the book culture that was then developing. Paper gradually became integrated into administrative practices as well, shaping the developments of written culture. Muslim copyists across North Africa and the wider Islamic world made use of paper for their manuscripts after a period of reluctant adoption. They continued to write on parchment at least until the 13<sup>th</sup> century, while Christian writers in the Ethiopian-Eritrean region continued to use parchment well into the 19<sup>th</sup> century. Traditional writing materials, including papyrus from the Nile Valley and parchment, coexisted with newer paper publishing activities.<sup>37</sup> African manuscript collections point to these concomitant practices in the scribal culture: while paper was known, produced, and traded on site, for several centuries it was only one writing material that co-existed with several others.

The advent of the European paper regime was instigated by Muslim North Africa's established infrastructure of paper production intended to supply the ever-growing demand for the product within the Arab world. In Europe, paper made its ingress during the so-called Middle Ages, at a time when the established elite book culture was based on parchment. The paper shift in this publishing culture occurred within a century of importing paper sheets produced by Arab papermakers.<sup>38</sup> As an artifact, the Arab-style paper was introduced to Europe via trade contacts as early as the 11<sup>th</sup> century (and possibly even earlier).<sup>39</sup> To Europeans, the imported good was exotic, "marked with traces of the Judeo-Arabic world."<sup>40</sup> A European "paper age"<sup>41</sup> began in the early 13<sup>th</sup> century in the Iberian Peninsula and Italy,<sup>42</sup> and gained significant momentum in the decades after 1400 with the spread of European paper-making technologies, including the use of hemp and flax fibers. The craft of making "European paper" – also labelled "rag paper," or "linen paper" – evolved over decades, and paper mills quickly became an investment

<sup>35</sup> Bloom 2001, esp. 48–49.

<sup>36</sup> *Ibid.*, 49.

<sup>37</sup> Cf. Bloom 2019. Only in rare cases and much later did Christian writers produce paper manuscripts, mainly for European scholars in the 19<sup>th</sup> and 20<sup>th</sup> century; Bausi 2014, 49.

<sup>38</sup> See Meyer-Schlenkerich 2025; da Rold 2020; Meyer / Schultz / Schneidmüller 2015.

<sup>39</sup> For an introduction to Arabic and European ways of making paper, see Hunter 1930; Hunter 1947; Bloom 2001; Loveday 2001.

<sup>40</sup> Fowler 2019, 14.

<sup>41</sup> Bellingradt 2021, 1.

<sup>42</sup> For a lively discussion about where the first European papermakers were active, see Tschudin 1998.

opportunity. The art of making paper spread throughout Europe, gave rise to early paper industries,<sup>43</sup> and paper sheets became a commodity that was moved, traded, and sold transregionally.<sup>44</sup> These early paper flows within Europe “reached places and regions both with and without their own paper mills and established the first regular markets for the purchase, usage, and consumption of paper.”<sup>45</sup> The first one hundred years of paper in Europe turned the man-made artifact into a hand-formed and mobile economic commodity to be sold. From the beginning, paper sheets were sold in Europe mainly for three uses: for writing, for printing, and for wrapping.<sup>46</sup>

Paper made of rags arrived as a new artifact in the Americas at the end of the 15<sup>th</sup> and the beginning of the 16<sup>th</sup> century with the European colonizers, in particular state and church officials, who also imported the technology of printing on paper. In pre-Hispanic times, indigenous peoples from Chiapas to Yucatán used *amate* paper for communication, ritual uses, and as a tribute item. *Amate* is a macerated woven bark paper, similar to *tapa*, a beaten bark cloth produced in other regions close to the equator, including Polynesia and Indonesia.<sup>47</sup> While *amate* production continued on a small scale, the pre-Columbian screenfold books that were folded in a zig-zag were seized and largely destroyed by the Spanish colonizers.<sup>48</sup> European Renaissance definitions and images entailed rather exclusive conceptions about what a book was and how it had to be made. While they conceived and classified the indigenous artifacts – the *amoxтли* of the Mexica and the *vuh* of the Maya – as “books,” Spanish missionaries and soldiers burnt these objects to replace them with Western book culture.<sup>49</sup> The Spanish and Portuguese empires relied on exclusionary systems of power that regulated access to the lettered sphere, which was based on a single material: imported paper. Following this imperative, the Spanish Crown strictly controlled trade and did not allow paper production in the viceroyalties. In 1533, a request for establishing a printing press and a paper mill by Bishop Juan de Zumárraga in New Spain remained unsuccessful.<sup>50</sup> Two years later, the first printing workshop opened in Mexico, but paper making remained centralised on the Spanish peninsula from whence transatlantic trade was managed. In addition to political and economic considerations, religious concerns led to a dual system of control over printing privileges, required the granting of licences, and produced an active Catholic Inquisition that supervised book publishing

43 See, for example, Coleman 1958; Voorn 1960–1987, volumes I and II.

44 Graziaplina 2004; Irsigler 1992; Irsigler 1999; Zaar-Görgens 2004.

45 Bellingradt 2021, 2.

46 Bellingradt 2019.

47 Weber 2004, 29–30.

48 Only about a dozen Mesoamerican manuscripts have survived, the most prominent being the Mexican codices: Coe 1977; Turner 2022; Afanador-Pujol 2020. The new codices that were composed after colonization were mostly written on paper imported from European mills.

49 Mignolo 1994.

50 Millares Carlo 1950, 115. Only a few cases of American mills are known, such as an Augustinian paper mill in Culhuacán, Puebla around 1575, which was allowed to open because of the discovery of a “new” material for paper production, which would not compete with Spanish paper imports; Montellano Arteaga 2009.

from Brazil to Peru.<sup>51</sup> In contrast to the development of paper regimes elsewhere, which were based on regional manufactures, the European paper trade extended to Central and South America and incorporated it. In the first century after its introduction, “European paper” superseded traditional writing materials in the Spanish and Portuguese empires, ushering in a new paper regime exclusively based on imported paper.

After the colonization of North America in the 17<sup>th</sup> century, missionaries in New France transcribed the hieroglyphic systems created by indigenous peoples on stone, bark, and animal skin onto paper, which were then sent back to Europe and published on the printing press in Paris.<sup>52</sup> From the 1630s onwards, European colonizers in North America engaged in the development of a domestic book culture. Similar to processes in Ibero-America, this was an entirely colonial endeavour, as presses, type, and paper had to be imported from Europe well into the 18<sup>th</sup> century. The British colonial administration pursued a mercantilist policy which prescribed the modes of paper supply. As stipulated by the Navigation Act of 1663, paper had to be purchased from British manufactures. Although there was no legislation prohibiting the establishment of American paper mills, Britain passed laws against the emigration of skilled craftsmen and the export of machinery, including paper moulds. These measures were clearly intended to suppress the emergence of a papermaking culture in North America.<sup>53</sup> During the Anglo-Dutch wars (1652–1674), access to white paper became restricted, prompting the establishment of the first papermills on American soil, which were utilizing Dutch papermaking technologies, moulds, and even watermarks.<sup>54</sup> The Rittenhouse family, originally from Germany, emigrated to Philadelphia after a decade of work in Amsterdam and opened the first papermill there in 1690. Through this transatlantic transfer of technology by a migrant family and the subsequent establishment of papermills in Pennsylvania, Massachusetts, New Jersey, and Virginia, colonial papermakers sought to reduce the colonies’ dependence on the importation of paper from England.<sup>55</sup> With regard to content, constraints on publishing in the British colonies were loosened with the Licensing Act of 1695, leading to favourable conditions for printing workshops in the colonies, which resulted in the founding of various paper-based news media.<sup>56</sup>

European paper sheets, introduced through colonial expansion and commercial ventures, eventually reached the Americas, Africa, and later Australia – world regions which were then lacking their own paper regimes. Aboriginal Australians had communicated using message-sticks and also inscribed messages on stone, bark, and human bodies via tattooing. In 1787, eleven convict ships brought books and a printing press from England to Australia. Among the first publications produced with the imported equipment was the *Sydney Gazette*. As in other colonial contexts, imports continued to dominate the

51 Abreu 2003; Guibovich Pérez 2003.

52 Jaenen / Gagnon 2004.

53 Bidwell 2007, 163, 173.

54 Skeehan 2020, 59.

55 Green 1990.

56 Elliott 2007, 330.

book trade, while paper was often a rare and expensive staple for printers, who primarily focused on domestic affairs.<sup>57</sup> The first water-powered plant for processing waste rags into paper for newsprint was erected in 1818, upon the initiative of an English immigrant bookseller, while the first paper mill in Melbourne, erected half a century later, still depended on imported wood pulp.<sup>58</sup> Publishing projects thus combined resources and skills from various sites, as illustrated by a case in New Zealand in 1834, when William Colenso printed the Bible in Maori for the Church Missionary Society. Colenso had to work with a limited selection of type, borrow paper from missionary wives, and send the printed sheets to Sydney for binding.<sup>59</sup> When Australia became a nation in 1901, after only about a century of paper use, federal censorship rules prohibited the publication of contents that were deemed indecent and banned certain titles from import. Moreover, the Customs Tariff Act of 1902 exempted paper and pulp produced in the United Kingdom from taxation, creating a weak incentive for the development of a local paper industry.<sup>60</sup> As happened elsewhere within the first one hundred years of paper presence in a particular region, publishing could only flourish once paper had become a regular commercial commodity or was produced locally, which usually happened sooner or later.

### **The First 500 Years: A Growing Demand for Paper for Publishing**

After the first five hundred years of paper's presence and use around the globe – which occurred in various world regions at different times, as we have seen – the paper regimes developed certain common and unique features to ensure the material's continuous availability. This period saw the advancement of papermaking technologies, driven by the need for a reliable supply, and was characterized by the evolution of market structures that facilitated distribution. In parts of Asia, this historic marker occurred roughly around 400 CE. In China, an elite book culture flourished within the previous five-hundred-year period, manifesting itself in the general circulation of paper books and the growth of libraries. This paper regime was intimately connected to the introduction of Buddhism. While demand for Buddhist texts increased, paper-based publishing cultures flourished. This boom was, in large part, driven by religion.<sup>61</sup> Another feature of these paper regimes was the transition from paper rolls to books. Other parts of contemporary Asia, including Russia and the Indian subcontinent, were still largely lacking their own manufacture, but were already engaged in paper importation. In most areas of South Asia, the art and knowledge of papermaking did not take root before the 15<sup>th</sup> century CE. The advent of paper at that point, however, led to the emergence of additional manufacturing hotspots to meet the growing demand of the existing manuscript culture and, secondarily, early

<sup>57</sup> Lyons / Arnold 2001; Morrison 2010.

<sup>58</sup> Donath 1957, 61–62.

<sup>59</sup> Shep 2015, 57–58.

<sup>60</sup> On censorship, see Pierce 2009; on domestic paper production: Dadswell 2018, 218.

<sup>61</sup> Edgren 2010; Kornicki 1998.

printing activities from the early 16<sup>th</sup> century onwards.<sup>62</sup> The process of making and using paper in South Asia, as the case of India shows, took place according to a common global pattern: before paper, books in India (known as *pothi*) had been made out of either palm-leaf or birch bark for nearly two millennia. Indian manuscript culture was well-established when paper was introduced and continued to exist long after print came to South Asia.<sup>63</sup>

In the Arab world, the first five hundred years of the paper regime extended from the eighth to the 13<sup>th</sup> centuries CE. While the first century already evinced a growing demand and the establishment of many paper manufactures, this trend continued and intensified after the arrival of Islam. When Muslim communities brought paper and the art of papermaking to Iraq, Syria, Egypt, North Africa, Sicily, and later Spain, this religiously-supported activity of fostering a manuscript culture also promoted improvements of the techniques of manufacturing paper and its trade.<sup>64</sup> In general, an Arab manuscript culture on paper – which included Jewish and Christian regional traditions as well – flourished from the eighth century onward; manuscripts on paper could be found in Damascus as early as 800 CE (in Christian communities),<sup>65</sup> and the “Arabian Nights” were written down on paper in Syria in 978 CE.<sup>66</sup> The paper codex popularized in these years, for example in the book culture of Syria,<sup>67</sup> made manuscript books and their markets a predominantly paper-based business, although it still included lesser amounts of written materials on parchment and papyrus. As in other parts of the world, the first five hundred years of paper in the Arab world demonstrate that paper was used for bureaucratic needs in addition to the publishing industry. For example, the Abbasid Caliphate (750–1258) organized its administrative procedures on paper.<sup>68</sup>

Arab paper regimes in North Africa reached their 500-year milestone in the 12<sup>th</sup> and 13<sup>th</sup> centuries. At this time, the paper trade was embedded in a widespread exchange network of merchant communities who maintained extensive commercial transactions, including the trade in paper and other book-making materials, such as leather. Above all, Muslim scholars used paper for copying and distributing books. Whereas fine paper was imported from Damascus, mills in the Fustat region in Egypt produced paper called *talhi* (11<sup>th</sup>–12<sup>th</sup> century), which was exported to North-West Africa. The Cairo Genizah provides information about paper traded by Jewish communities along a network in the eastern Maghrib and the Mediterranean. The first treatise on paper production and ink preparation in the region dates to the 11<sup>th</sup> century. Soon other cities in the region produced their own paper, and by the 13<sup>th</sup> century there were allegedly four hundred pa-

62 Probably Kashmir was the first location of manufacture. For more details see Shaw 2007; Orsini 2013.

63 On the manuscript tradition, see Pollock 2006. On printing activities, for example by Christian missionaries, cf. Gupta 2012, 148–150.

64 Bloom 2001, 9.

65 Ibid., 204.

66 Abbott 1949.

67 Hirschler 2020.

68 Bloom 2001, 47–49. On the distinctive uses of paper for book publishing versus central administration in the Arab world, see Humbert 2002, 55–77.

permaking shops in Fez.<sup>69</sup> Despite the existence of these paper mills and others along the Nile, paper production did not thrive, and imported Italian paper became dominant. In the following century, the centres of paper production shifted, as is illustrated by the correspondence, written on Italian griffin paper, between the sultan of Tunis and the king of Aragón around 1350.<sup>70</sup> To Muslim scholars, however, the Christian *Rumi* paper was idolatrous with its cross and paschal lamb watermarks of Italian and French papermakers.<sup>71</sup> This mistrust prompted Venetian merchants in the 15<sup>th</sup> century to fabricate a new brand of paper called *tre lune* (*waraq bilali*, three moons), which became a widely-distributed writing material for Islamic manuscripts.<sup>72</sup> Since paper had already existed in this area for five hundred years, the import of European paper was a new feature in the paper regimes of North Africa.

Historiography has referred to the first 500 years of European paper regimes, spanning the 14<sup>th</sup> to 19<sup>th</sup> centuries, by several appellations. These include “a first European paper age” (Daniel Bellingradt), a “paper time” (Caroline Fowler), and an early modern period of a paper-infused “information revolution” (Paul M. Dover).<sup>73</sup> These terms have been proposed in connection with the existence of thriving paper-using publishing industries across European territories.<sup>74</sup> These capital-intensive publishing industries relied on commercially active individuals and on the availability of paper. This “vital material” of publishing, as Leon Voet called it, was supplied by a transregional infrastructure of paper mills across Europe stretching back to c. 1400 CE.<sup>75</sup> During this period, the use of parchment occupied only a small niche, after serving as the predominant European book-making material for nearly a thousand years. By the early 16<sup>th</sup> century, parchment fell almost completely out of use. While regulations were imposed on “early modern” publishing activities in many European territories – legal norms whose purview ranged from printing privileges for single book editions to regularly published newspapers – the use of paper in these industries was permitted without legal restrictions by authorities.<sup>76</sup> In other words, paper was delivered

69 In the first 500 years of paper use on the African continent, two paper-trading spheres can be discerned according to Paul M. Love: one in the Western Maghrib that also encompassed the Iberian Peninsula, and a second one in the Eastern Maghrib, including the Sahara. Love 2018, 94–97. See also Ferhat 1994.

70 Valls i Subirà 1982, 4–5, 11.

71 In 1409, the Maghribi jurist Ibn Marzuq ruled on the religious permissibility of using paper manufactured by Christians in Europe despite ritual and economic concerns. Halevi 2008; Walz 2010.

72 Love 2018, 98.

73 Fowler 2019; Bellingradt 2021, 1; Dover 2021.

74 See on the paper-using “printing revolution” (Eisenstein), the so-called “first age of print”, and the resulting “Gutenberg Galaxis” (McLuhan): Eisenstein 1978; Rhodes / Sawday 2000; Landau / Parshall 1994, esp. 15–16. For a gendered approach to the sociomaterial history of paper and knowledge production in Europe (and North America), see Bittel / Leong / von Oertzen 2019.

75 Voet 1969–1972, volume II, 19–46, 43. Besides urbanization and the monasteries and universities, it was the shift from parchment to paper that allowed for a growing book production: Buringh / van Zanden 2009.

76 See on the gap between norms and realities of censorship in early modern Europe Tortarolo 2001; Tortarolo 2011; Wilke 2008. Further, see Minois 1995; Kemp et al. 2009.

within Europe to whoever could afford buying the product; the artifact and its raw materials were traded transregionally in market hubs like Amsterdam.<sup>77</sup>

In addition to the intra-European paper trade, an immense flow of paper exports became a defining characteristic of European commercial, colonial, and missionary activities during this phase. Blank paper sheets and printed publications of all sorts and formats were shipped to other parts of the globe from the 15<sup>th</sup> century onwards.<sup>78</sup> The Dutch East India Company, for example, used exclusively European paper for the company's informational and administrative needs.<sup>79</sup> In fact, Europeans in the early phases of this trans-continental paper trade even ordered European paper when operating within the paper regimes of Asia, including Japan and China.<sup>80</sup> One reason for this preference may have been that Asian papers had a soft finish, which made them unsuitable for the goose-quills which the Europeans used. Only very few paper imports reached Europe from other paper regimes during this time, with the exception of some Asian papers that were imported to Europe in the early modern period by the Dutch, who commonly bought them in Japan.<sup>81</sup> By the 17<sup>th</sup> century, European paper types had spread throughout the world, where they were traded like other goods, making the paper regimes of the world more interconnected than ever.

A few of these exports are worth highlighting: from the 17<sup>th</sup> to the 20<sup>th</sup> century, a paper trade flourished from continental Europe via present-day Russia to the centers of Islamic manuscript cultures. These sorts of paper were produced especially for customers in markets along the Red Sea, in Yemen and Ethiopia, in parts of West Africa, as well as for clienteles in the Mediterranean, Bilād al-Šām, and Iran.<sup>82</sup> With these exports and the growing demand for European paper (sized with gelatine, rather than with starch as were Arabian papers) in regions from whence paper had originally migrated into Europe, we observe processes of complex interconnectivity between global paper regimes. In the words of Anna-Grethe Rischel, the "Paper Road circled back from Europe to the Islamic centers of manuscript production in Africa and the Middle East."<sup>83</sup> By the 19<sup>th</sup> century European exports began to decline, however, fueled by the adoption of Western style-printing technology in many parts of the world, which promoted local paper production.

In the Americas, the dependence on imported European paper became evident in the paper trade during the five hundred years after its first introduction, i.e. between 1500 to 2000. In the vast Spanish Empire, paper was taxed, and several regulations prohibited the export of linen rags from Spain, while rags collected in America had to be sent back to the peninsula for papermaking.<sup>84</sup> Due to the colonial prohibition on paper produc-

<sup>77</sup> Bellingradt 2019; Zawrel 2025.

<sup>78</sup> For printed exports, see Madar 2024.

<sup>79</sup> Birkenholz 2021, 244–264.

<sup>80</sup> Bloom 2001, 6.

<sup>81</sup> See Bellingradt 2019; Zawrel 2025, 7 with an outdated statement that the Dutch shipped Japanese paper to Europe only twice, and only discovered Japanese paper in the 19<sup>th</sup> century.

<sup>82</sup> See the contributions in Regourd 2018.

<sup>83</sup> Rischel 2018.

<sup>84</sup> For Spanish paper regulations, see Nuevo Ábalos 2004. On rags collected in the Viceroyalty of Peru, see Macera 1977, 285.



tion, the Spanish-American royal courts (*audiencias*) regularly received large quantities of imported paper. Yet Spain itself had few paper mills, lagging behind in manufacturing and unable to satisfy domestic demand. Spanish merchants thus had to acquire supplies from manufacturers in Genoa, as well as from French and Dutch paper centres, and ship them to America, where printers, colonial administrators, and tobacco producers eagerly awaited the commodity. Bales of paper regularly crossed the Atlantic, normally comprising up to 5% of a merchant ship's cargo. As the print market grew, so did the demand for paper, with the result that paper imports tripled in the 18<sup>th</sup> century.<sup>85</sup> Only after the independence of the Latin American states, beginning in the early 19<sup>th</sup> century, did the first paper factories open, as in Mexico in 1824, Lima in 1848, São Paulo in 1883, and Buenos Aires in 1877/84.<sup>86</sup> Yet even afterwards, printers continued to complain about a scarcity of paper, as in the case of Mexico, where government officials continued to charge tariffs on paper imports to aid the development of domestic paper production, a measure that was seen as critical to national economic development.<sup>87</sup>

Similar to Latin America, imported paper was the prime material for publishing in North America as well, despite the fact that England itself became independent of French paper imports only in the late 17<sup>th</sup> century.<sup>88</sup> In contrast to the Spanish Empire and actively supported by the government, which granted monopolies, booksellers and printers opened paper mills in North America to avoid the delays and high costs of importing paper from overseas. In the 18<sup>th</sup> century, printing and papermaking thus became two closely related industries. This is evident in the biographies of men who engaged in both trades (including Benjamin Franklin, who was involved in the founding of eighteen paper mills in addition to his activities as a printer, publisher, and statesman) and also emerges from advertisements for collecting rags found in contemporary newspapers.<sup>89</sup> It is also worth noting that both paper production and the printing trade relied on unfree labour, as is shown by the example of enslaved workers and runaway papermakers from mills at Milton, in the Boston area.<sup>90</sup>

During periods of warfare, paper regimes underwent fundamental transformations. These changes also affected book production, as the paper trade suffered disruptions and major shifts. When England went to war against Spain in the 1740s, a sudden shift occurred in the increased use of Genoese paper for British-American imprints. Italian paper was usually sold to Spanish merchants and shipped to South America, a route that was interrupted and diverted in wartime.<sup>91</sup> Imperial tax regulations, especially the British Stamp Act of 1765, likewise affected the paper trade, causing not only political turmoil but also carrying strong economic consequences for printers who produced newspapers, almanacs,

85 Gehbald 2023, 55–61; Argouse / Soliva Sánchez 2019.

86 Lenz 1990, 145; Ragas 2007, 122; Badoza / Belini 2011.

87 Zeltsman 2021, 241–242.

88 Bidwell 2002.

89 In the beginning, though, colonial paper mills produced mainly cheap wrapping and printing grades. Bidwell 2007, 176–183; Skeehean 2020, 60–61.

90 Garcia 2022, 326–327.

91 Bidwell 2007, 174–175.

and pamphlets.<sup>92</sup> Whether imported or produced domestically, the cost of paper ran high for printers who offered so-called cheap printed wares – small-format books and low-quality products – to their North American customers.<sup>93</sup> During the American Revolutionary War, paper once again became a scarce commodity and papermakers were consequently exempted from military service.<sup>94</sup> Against the backdrop of the British imperial system, the Declaration of Independence in 1776 in its earliest material form encapsulated such connections of a global paper regime: the single-sheet broadside was printed by a native Irishman on paper produced in Dutch papermills that had been imported via England.<sup>95</sup>

Publishing cultures in the Americas resembled each other in their transatlantic dependence on the supply of paper, which was increasingly traded within progressively integrated economic structures. Paper was no longer imported to Upper Canada only from Britain but also from neighbouring mills in the United States – from where it could be obtained duty-free – until the Canadian province produced its own handmade paper from 1826 onwards.<sup>96</sup> Reflecting the United States' imperial ambitions at the beginning of the 20<sup>th</sup> century, the National Paper & Type Company established branches in several Latin American countries, distributing paper produced by industries on the U.S. east coast, with newsprint the primary product.<sup>97</sup> The increasing demand for paper in publishing across various sites around the world during the first 500 years of its use contributed to the consolidation of distinct paper regimes. These regimes were primarily shaped by commercial relations and imperial networks rather than by shared cultural traditions. The expansion of religious scholarship, commercial activities, and bureaucratic administration drove the integration of paper into diverse regions, reinforcing the influence of political and economic power structures.

### The First 1,000 Years: An Ever-Growing Demand for Paper

For Asia, the demarcation of the first millennium of its paper regime varies by region. In China, this milestone occurred around 900 CE; for East Asian regions, including Korea and Japan, it happened around 1600 CE; while for most parts of Central and South Asia, the first thousand years have only recently ended or have yet to be completed. For the early adopters of paper in Asia, the demand as well as the consumption of paper for bureaucratic needs, including the Chinese imperial examination system that started in 605 CE along with the Chinese and Korean invention and spread of xylographic and movable type printing from the 8<sup>th</sup> century CE onward, had lasting impacts on the paper use of

92 Ibid., 176–181. On colonial publishing genres, see Amory 2007, 28–30.

93 Hall 2007, 154; Bidwell 2007, 172–173; Fleming / Donnelly / Winearls 2004. In the 19<sup>th</sup> and early 20<sup>th</sup> century, printing paper dominated the demand for paper, especially for newspaper publishing; Magee 1997.

94 Bidwell 2007, 180.

95 Armitage 2008, 12.

96 Fleming 1980, 25.

97 Serna 2022.

these publishing cultures.<sup>98</sup> While no large-scale adoption of movable type printing for publications would occur for centuries, a xylographic printing boom, especially in China, spurred paper demand to new heights. Without this impulse towards printing, 12<sup>th</sup>- and 13<sup>th</sup>-century Buddhist publishing projects including the 80,000 Korean woodblock prints would have been impossible.<sup>99</sup> A Chinese national paper market emerged from the 11<sup>th</sup> century onwards, with paper books, newspapers and other items manufactured in the course of private, religious, and governmental publishing activities.<sup>100</sup> Paper use across all of East Asia rose to a new level around 1500, a time in which scholars observe a “publishing boom.”<sup>101</sup> If we include Japan in our assessment of this “boom,” even small amounts of European paper imports contributed to the flourishing Asian paper regimes when, around the year 1600, Portuguese Jesuits and Dutch merchants brought European paper to Japan primarily for their own use. From the end of the 19<sup>th</sup> century onwards – about a thousand years after the alleged first imports of paper to South Asia – the areas in question witnessed the establishment of modern paper industries. This change from hand-crafted to machine-made paper was only partly instigated by authorities, as in the case of British India. It was mainly propelled by economic and technological changes in tandem with an increased demand for relatively cheap paper.<sup>102</sup>

Around 1650 CE, more than a thousand years after it had first been used in the Arab world, paper constituted an important commodity that was as valuable as salt or slaves to the traders on the extensive trans-Saharan caravan routes. Muslim travellers wrote accounts of the flourishing centres of book art along the routes of the trans-Saharan trade, where copyists, calligraphers, illuminators, and bookbinders produced fine Qu’ran editions and instructional books on imported paper.<sup>103</sup> While local paper production must have continued given the existence of a paper polisher guild in Cairo in 1800, the extensive trade from Europe introduced paper of different qualities and prices on African markets, leading to a rise in publishing and book ownership in the major cities.<sup>104</sup> To reduce the dependence on European paper, the Egyptian ruler Muhammad Ali established a paper factory in 1833. However, imports continued, as especially Italian paper was highly renowned, and the material also came from England due to the British occupation of Egypt. Similarly, the French colonizers in Algeria and Tunisia introduced machine-made paper, which gradually replaced handcrafted paper there.<sup>105</sup> The case of *esparto* or alfa grass in Tunisia in the late 19<sup>th</sup> century exemplifies how the search for new raw materials by the French and British in their trans-imperial paper trade transformed indigenous societies.<sup>106</sup>

<sup>98</sup> Runchuan 2013; Edgren 2010.

<sup>99</sup> Cf. Lancaster / Park 1979.

<sup>100</sup> In the 11<sup>th</sup> to 13<sup>th</sup> centuries, newspapers existed as independent products (called *xiao pao*) in some regions of China, according to He 2015. On the development up to 1500, see Edgren 2010.

<sup>101</sup> Akin 2021.

<sup>102</sup> Bansal / Kumar 2001; Rahman 1998. For a general overview, see Kesavan 1985–1997.

<sup>103</sup> Krätli 2004.

<sup>104</sup> Hanna 2003, 86–90.

<sup>105</sup> Love 2018, 99–103; Walz 2010, 90–91.

<sup>106</sup> McQuarrie 1995; Särkkä 2021.

The domestic publishing industry only took off after the independence of African states, although it had to compete with multinational and foreign publishers who were operating in Africa as part of a globalizing industry.<sup>107</sup> Duties and taxes on imported paper curbed publication activities, according to Walter Bgoya's assessment of African publishing.<sup>108</sup> The process of decolonization once again changed production conditions, as illustrated by the case of Tanzania, where newspaper publishing diminished after independence in 1961, particularly in vernacular languages.<sup>109</sup> As various African states gained their independence, the supply of paper was restructured in the postcolonial markets. Established in 1974, about ten years after Kenya's independence, the Pan African Paper Mill factory in Western Kenya, funded by the World Bank, became a focal point for discussions on governance and development.<sup>110</sup> As the publishing industries adapted to new realities, paper emerged as a symbol of economic growth, employment, and, ultimately, independence. While the first millennium of paper use saw a shift toward an increasing number of domestic manufacturing sites, power dynamics have continued to shape paper regimes through the acquisition of raw materials as well as technological advancements and machinery used in paper production. These enduring power relations have thus played a crucial role in transforming paper into a truly global commodity.

## Conclusions

Since the invention of paper in Asia, book cultures have developed and flourished worldwide, both as a result of and as a prerequisite for a growing paper trade. Our *longue-durée* analysis reveals that paper regimes have evolved in different paces depending on their specific contexts. In the first century after paper was introduced to a certain region and its culture, it typically became one of the primary materials for publishing, eventually replacing other writing or printing materials. This transition occurred swiftly in some areas, facilitated by traditional trade relations, as was the case with the Muslim caravan routes in the eighth century, or by hegemonic power relations, as exemplified by *amate* in Mesoamerica around 1600. In other regions, such as Christian North Africa, the shift from parchment to paper was more gradual, taking much longer than a century due to cultural constraints. Brokers of various kinds – including missionaries, traders, colonial administrators, and migrants – facilitated the spread of the artifact. It was above all economic and religious motivations that initially drove the dissemination of paper and the knowledge of papermaking.

During the next 500 years after its initial introduction, political factors began to play a major role in the use of paper as a primary material for publishing purposes. Exemplifying the simultaneity of the non-simultaneous, some paper regimes were subject to a new commercial system of licenses that either prohibited the development of regional manufacturing or regulated and taxed imports. Particularly during the period of European

<sup>107</sup> Le Roux 2012, 258–261.

<sup>108</sup> Bgoya / Jay 2013, 19.

<sup>109</sup> Hunter 2015, 23–27.

<sup>110</sup> Moskowitz 2015.

expansion from the 15<sup>th</sup> century onwards, paper and printing as a book-making technology were implemented in other parts of the world under colonial and imperial rule. Over time, the demand for paper steadily increased, driven not only by burgeoning publishing industries after the introduction of the printing press but also by administrative needs. In the thousand years following its introduction, paper has become the primary material for publishing, with demand rising on a global scale. Material differences in the making of paper led to preferences and hierarchies on paper markets. During periods of conflict and warfare, when access to raw materials or paper was restricted, alternative sources and supply routes were explored, and experts were tasked with developing new papermaking technologies. The continuous availability of paper for publishing was finally achieved through the globalized paper trade of the last century.

On a global scale, technological advances like the invention of the Fourdrinier in 1837 transformed production patterns, commercial networks, and thus publishing cultures, regardless of how established paper regimes had been beforehand. Developments in engineering and national production initiatives revolutionized papermaking in various places. Paper, always in high demand for publishing, could now be produced faster, cheaper, and in larger quantities. However, this industrial revolution was a protracted process, hampered by legal disputes before paper became an industrial commodity in the 20<sup>th</sup>-century global economy. Factors such as institutional framework, transport infrastructure, capital, knowledge, technology, and access to raw materials were crucial in this period of industrialization. By 1938, the United States had become one of the world's leading paper producers, relying heavily on lumber and wood pulp imports from Canada and Scandinavia.<sup>111</sup> Since the 1980s, China has emerged as the global leader in paper production and consumption. Today, China produces almost half of the world's paper (circa 200 million metric tons)<sup>112</sup> and holds a leading role in graphic paper production for publishing, generating nearly 50% of the global output (45 million metric tons). These market developments have integrated various paper regimes into worldwide trade, making the different publishing cultures dependent on global production.

A future global book history will benefit from adopting a material culture approach that helps to revise established research questions and rethink epistemological parameters. The new paradigm of global book history will allow historians to examine book media within their multiple cultural connections around the world. As an agenda for future research, examining paper as a material marker of global book cultures enables comparisons on different scales: media regulation (censorship laws, privileges, freedom of the press acts), trade and supply infrastructure (paper mills, industrial firms, depots, shops, trade routes), knowledge (raw materials, engineering advances, industrialization),

111 Anderson 1942; Bidwell 2009; Särkkä 2021; Särkkä / Gutiérrez-Poch / Kuhlberg 2018; Lamberg et al. 2012.

112 See the statistics from the data intelligence platform "Statista" (<https://www.statista.com/markets/410/topic/961/pulp-paper/#statistic1>) and the 2023 data brief of UNECE/FAO on pulp, paper and paperboards ([https://unece.org/sites/default/files/2023-11/2023-data-brief-pap-final-web\\_1.pdf](https://unece.org/sites/default/files/2023-11/2023-data-brief-pap-final-web_1.pdf); both sources last accessed July 1, 2024).

book usages (including literacy levels, cultures of learning, and reading practices), and the availability and accessibility of paper books (libraries, households, public spaces).

A global view of paper as an artifact, as it has been developed in this article, sheds light on the simultaneous existence of historical processes within book media. Still, paper regimes had various careers and exerted different effects in diverse regions of the world. Over a span of more than two thousand years, paper has been the primary material in the history of publishing since it first became available and was integrated into regional cultures and markets. In the last twenty years, profound material changes have occurred with the digital reproduction of books previously published on paper and digital publishing, further transforming the protean paper regimes of the past.

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