Global History, Visual Culture and Itinerancies

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Changes and Continuities

Edited by

Francisco José Díaz Marcilla,
Jorge Tomás García
and Yvette Sobral dos Santos

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CHAPTER 0

ENTANGLED FIELDS: GLOBAL HISTORY, VISUAL CULTURE AND ITINERANCIES*

FRANCISCO JOSÉ DÍAZ MARCILLA,
JORGE TOMÁS GARCÍA
AND YVETTE SOBRAL DOS SANTOS

Following the I (2014) and II (2015) International Workshops "Changes and Continuities", the Institute of Medieval Studies, the Centre for Humanities, the Institute of Contemporary History and the Institute of Art History—the four of them belonging to the New University of Lisbon—, have organized the III Workshop entitled "*Changes and Continuities. Global History, Visual Culture and Itinerancies*", held in Lisbon between the 14th and 16th September 2017. This Workshop aimed to bring together researchers from different chronological periods, at different stages of their research, and from different fields of specialisation, like ancient, medieval, early modern and modern history, as well as art history. This volume includes selected, peer-reviewed and adapted papers from this last conference, whose interest focused on three main research lines: Global History, Visual Culture and Itinerancies.

Global History

It took a very long time for global history to assert itself as a historiographical trend. Despite the many criticisms and the weight of traditional historiography, in recent decades global history has gained great importance as a methodology and perspective for scientific analysis.

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A reflection of its relevance in academia is the growing number of scientific journals and university chairs that emphasize the global perspective (Drayton and Motadel 2018, 6-7).

The global approach to history continues to seek a review of the Eurocentric narrative constructed by the various histories—world, national, empire—that emphasize Westernization and modernization or cultural imperialism. This review was, in fact, anticipated by historiographical trends that sought to divert the monopolized regard of the Western world, from the analysis of alternative realities. Post-colonial or subalternate studies are examples of historiographical trends that move away from conventional models and are inspiring for a global approach to history (Maurel 2014). Without neglecting the historical role of Europe and the USA, it is a matter of overcoming the Eurocentric perspective through a diverse thematic and methodological approach to societies and connections defined by their multiplicity, uniqueness and similarity. But global history also wants to move away from the various centrisms that have emerged in different spaces and which are supported by the defense of a determined civilizational space that favors the claim of autonomy and cultural fundamentalism (Conrad 2019, 211-217).

Global history is historiographically located as an alternative trend to the classical perspectives, and traditional and competing methodologies, despite the fact that some of these have opened the way for the development of the global approach. It is distinguished from comparative history—that has as its starting point a bilateral viewpoint to look at differences and similarities in each case, departing from the analysis of internal factors. Criticism has emphasized, among other factors, the homogenizing character of comparative studies and the reproduction of a national history. Transnational history, concerned with the analysis of interconnections, circularity, and transferences, highlights “the various ways in which a country eventually came to be in the world, and how the world, by contrast, produced profound effects on each society” (Conrad 2019, 61). Transnational history, for some historians, has the ultimate goal of understanding the history of a nation. Despite resorting to tools used in global history, transnational history would serve as a backdrop for situating the national history without envisioning it as a means of understanding causes and impacts.

All these historiographical currents converge in their methodology, since the national and civilizational analytical frameworks are granted privilege

based on an approach which examines internal factors as being the reason for historical processes.

While global history can be regarded as a current appealing to the crossing of frontiers, and focusing the scientific eye on global processes, it does not mean, in any way, to put an end to national histories, traditionally associated with national contexts and consequently, explained by internal factors. On the contrary, global history seeks an alternative history of the State, which also includes the analysis of the processes of domination and emancipation (Zuniga 2007). As Donna R. Gabbacia and Dirk Hoerder stated, it is not a question of disparaging the history of the State, but rather highlighting its paradigms outside its national frontiers (Gabaccia and Hoerder 2011, 7).

Global history has chosen as its privileged starting point the connections and interactions between individuals and societies. Using macro and micro perspectives, global historians insert the object of study in the processes of structural transformation at a global level. Conventional spaces or spatial units are revisited in order to determine the simultaneity of historical events. Global integration is the main methodology followed by this historiographical current. It is a question of looking at causality to reach the global level, taking into account the systemic dimension of the past and the structured character of social change and its impact.

Considered by some authors as a subgenre of global historiography, the study of globalization has been associated with global history. The origins of global integration have been studied from a long-term perspective—going back and forth over time—and within which the turning points and the origins of a global wholeness are identified and analyzed. Despite the difficulties in determining when globalization ends and begins, studies have focused on two specific periods—the sixteenth and late nineteenth centuries—which continue to represent the key moments of an integrated global whole (Conrad 2019, 119).

The limitations of the history of globalization, as well as its usefulness for the analysis of global history, continue to be questioned (Douki and Minard 2007). The myth of continuity is discussed, as it focuses on linear paths, disregarding, on the one hand, the phases of divergence or de-globalization, and, on the other hand, the diversity of trajectories and repercussions of past developments. Even its future is questioned as a conceptual reference of global history, because this approach values the synchrony, the location of events in a global space, and a choice of

fractional periods as a temporal unit to challenge the idea of a long-term continuity.

Global history does not neglect structures to determine an integrated global contextual framework. In fact, the literature points to five main drivers of change that help define this context: technology, the empire, economy, culture and biology. In this structural framework, there is a need to include individuals as historical agents that focus on actions, since integration is not necessarily automatic. These agents may be diverse, differing in socioeconomic profiles—bureaucratic, economic, political, commercial agents—, geographically and socially situated on different scales.

In the search for a move away from Eurocentrism, the choice of space is an important tool to achieve this goal. Rather than opting for a world perspective, preference is given to transregional geographic spaces by alternating and crossing different scales—macro and micro, world and local, and vice versa—to highlight interdependencies.

According to Sebastian Conrad, "the real challenge is to vary between the different analytical scales and to articulate them, and not so much to limit the analysis to fixed territories" (Conrad 2019, 144). On a global scale, different or similar civilizational and geopolitical areas intersect, and stories such as the history of disease, famine, the oceans, or migrations are constructed (Maurel 2009). Historians have particularly drawn attention to the compatibility of a scientific approach combining microhistory and global history (Douki and Minard 2007, 21; De Vito and Gerritsen 2018). This option has shown fruitful results from the intersection with global processes.

This perspective can be conceived from the analysis of individual actions, small groups, or localities. In all of them, the traces of global processes are identified. The homogeneity of global narratives and the convergence of interconnectedness are placed into question. Apart from appealing to the intersection of scales, global history has no rules in terms of timescale. By focusing on a dual approach—synchronic and diachronic—, long-term analysis no longer represents the only possible time approach in global history. Finally, it appeals to the need to resort to the generally neglected sources that historiographical trends—like postcolonial, or subordinate studies—had already highlighted, and to propose a rereading/reinterpretation of sources in order to propose unprecedented global perspectives.

Visual Culture

The insertion of visual culture into the theoretical methodology of global history points to the need to vindicate interdisciplinary. Through this theoretical approach, it will be possible to build a place of convergence for the different areas of Humanities; with the ultimate aim of creating a space for dialogue between the concepts of "Global History" and "Visual Culture". Only then, we would be authorized to act through a "cultural visuality". A better knowledge of the mechanisms of cultural interaction—underlining the process—remains an important problem, because the construction and deconstruction of visual global history is still taking place today. Therefore, rather than the study of images it is the study of the social life of images that will make sense.

In the postmodern context, visual culture plays a broader cultural role than the field of traditional art history, and it poses new alternatives to fragmentation, the dissolution of boundaries and contradictions through the visual. Beyond the stereotypes formulated on this interdisciplinary discipline, visual culture is shown with a fluid structure that focuses on the interpretation and understanding of the responses of individuals and groups to visual media. The consumer is the key agent of a capital-dominated society that has commercialized all aspects of everyday life including the same process of observing and being observed. From this formulation, a displacement of the term "art" is perceived for the benefit of the visual term, which implies updating the ocular tradition and legitimizing the concept of image (film, television, virtual or artistic image).

Art history is transformed by visual culture in a story or theory of images that extends his focus of research towards the practices of seeing and showing. The social fabric of seeing and showing—and the cultural phenomena with it—changes, as well as the way of formulating and enunciating aesthetic experiences. At a time when culture appears more saturated with images than ever, visual studies rethink the traditional methods of analysis used by art historians. In this perspective, Keith Moxey (2013) announced the need to find aesthetic elements in places where art history has not wanted to search. In the past, art history has always been conceived as a discipline addressed to the development of Western art. At the same time, art history was shamelessly elitist in its assumption of how knowledgeable the art should be to the public. Art history has been more severely affected because, unlike literary studies, it

cannot avoid a direct discussion of the visual. Visuality is the critical point on which art history necessarily clashes with the study of visual culture.

It is often confused with contemporary art, art history, the history of images, and even the history of visual media. And it is indeed part of it. But visual culture goes much further. It is a new field of study emerged from an imposition of the new visualized world. The supporters of visual culture affirm that interdisciplinary does not necessarily presuppose eclecticism, arbitrariness, or pluralism. In this sense, this interdisciplinary field is a place of convergence and conversation between different disciplines. Visual culture is interested in visual events in which the consumer seeks information, meaning or pleasure, connected with visual technology. Visual technology means any form of device designed to be observed or to increase natural vision, such as oil painting, photography or internet. We understand better through the visual, which does not mean that it is "only" through the visual. However, just as the writing press and the editorial context have marked the 19th century, so too the visual culture is the intellectual trend that defines the current era. Visual culture is a tactic to study the functions of postmodern everyday life from the perspective of the viewer and the consumer. But not only that, it is also a discipline that helps us asking new questions about images that belong to our cultural memory. That is, the fragmented postmodern culture understands better through the visual.

In the dynamics of content generation in visual culture, globalization processes are currently articulated around the roaming of images, their objectivity and consumption. Embedded in the dialectic between the global and the local, the images participate in a kind of audiovisual geopolitics through which knowledge and our encounters with difference are managed. The works presented here on visual culture put special emphasis on the previously described arguments. Rime Fetnan's chapter aims to analyse the influence of the "global turn" on large-scale international contemporary art exhibition. Considering globalization not only in its historic or economic aspects but also as an ideology, the author questions the system of values that determines number of artistic and curatorial productions since the 1990s. By questioning the emergence and development of a "visual global culture", she highlights the main features but also pitfalls and limitations induced by this specific perception of artistic production. In the same chronological spectrum, Kuniko Abe reveals the art of the Akita Ranga school, related to the contemporary diffusion of natural science and its travelling images. Akita Ranga, the first Western-influenced school of painting in Japan, is still today often

seen as a local cultural phenomenon, providing at the most anecdotal evidence of the way in which East met West.

The alteration and destruction of images is a common process in those cultures using visual support as a primary means of communication and generating control dynamics over the visual imaginary. The supervision of cultural memory through a planned strategy of visual censorship is part of the political narrative of some past empires. In the specific case of the Roman Empire there are many written and visual sources that accurately describe this process. Pedro Conesa studies the portrait of Empress Plautilla in this context of *damnatio memoriae*, and Rafael Jackson focuses both on the nature of *damnatio memoriae* in a culture obsessed with visuality and cultural memory, and on the active reception of images closely associated with a visual culture prior to the Era of Art.

In this context, and from a globalized perspective of images, art autonomy presupposes a debate on the research field of visual culture, which implies a meditation on the values of the "artistic object". The itinerances of visual models is one of the main routes of hybridization between cultures in the capitalist global world. However, this social phenomenon is not new. In this sense, Adrián Ares studies the graphic models used in the manuscripts of Santiago de Compostela between 1450 and 1550 as a component of the city's visual culture. Through the palaeographic methodology he analyses who wrote the books, the writing they used, its characteristics and evolution, and the function they fulfilled. This allows us to observe how the expressive elements of writing were related to the aesthetic and cultural values of the time.

Itinerancies

One of the fundamental characteristics of global history is interconnection. All human beings interact with each other, either passively or actively. In this context, one of the most relevant parameters of change emerges: the itinerancy of culture and knowledge. Therefore, itinerant agents take with them a cultural baggage, transporting and transmitting it to other spaces. In this way, the interconnection begins producing active changes in global history and visual culture. The relevance of the concept is due to the fact that it covers different areas of action: people who act as itinerant agents; materials that are brought in and taken away (traveling objects); places like origin and reception points of itinerant elements (anthropology of itinerancy); the visual, artistic or written representation of the phenomenon of itinerancy.

The less-known word "itinerancy" appeals to the act of traveling from place to place, according to its original Latin form "*iter, itineris*"—that means "travel". In fact, people, books, objects, but even ideas or news can travel from one culture to another, producing one of the effects studied in this volume: the change. Sociologists and anthropologists must deal with this dichotomy of change/continuity in the contemporary world; historians and art historians have to do the same for past times. Why do some of these itinerant agents provoke a change, and why others not? The answer resides in the local context and how the object/person/idea is received in the destination place. In such a way, an interdisciplinary study on the matter is needed. According to Timothy D. Hall (1994, 2), "itinerancy" could be used as a category of thought.

On the one hand, objects—the material level of itinerancy—must be studied not only from an art historian or archaeological point of view, depending on its usefulness and function, but also from an anthropological one. Questions like what the religious value or the cultural significance of an object is, need to be answered for a correct understanding of changes and continuities. Likewise, people—the factual level of itinerancy—can be approached both from a historical and a sociological frame. The social background of somebody who moves from one place to another has a special relevance to a better understanding of historical processes. And on the other hand, ideas—the symbolic level of itinerancy—need both the history of philosophy and psychology to be correctly understood. And the interaction between the three elements of itinerancy (objects, people, ideas) completes the circle of research in this "category of thought", multifaceted and dynamic.

Following the pattern presented above, this section includes six articles: three devoted to the itinerancy of objects; one to the itinerancy of people; and two to the itinerancy of ideas. Kimberly Cassibry shows us the usefulness of four silver vessels to writing a global history of the Roman Empire, offering new insights into the visualization of mobility, the instrumentalization of travel, and the acquisition of knowledge about distinct and interconnected imperial cities. Larissa Carvalho focuses on the "costume books" printed in the 16th century, investigating the manipulation of identities, the way they were presented to the reader and the power of these objects to transmit stereotypes among different peoples. And Marta Fernández Siria considers how the written culture and its transmission capacity were decisive elements in consideration of manuscripts during the Middle Ages, presenting the specific case of Peter IV of Aragon, the Ceremonious, and his library.

Helena Maria de Resende addresses the *Societas Iesu* as an institution created by the Catholic Church to fight heresies and converting the Gentile. Her article studies the Jesuit priest, in the South American context, like an agent of change in a double way: external, for the indigenous people; and internal, for the own Catholic Church.

Pedro Pereira goes into the symbolic level of itinerancy analysing the cult of Our Lady of Health in the Portuguese context, from the very beginning of the 12th century to the present. He uses an interesting anthropological approach to explain the quality and extension of this veneration. Finally, Océane Boudeau reveals the transmission of musical sequences from the Northern Europe to the Iberian Peninsula, studying the repertoires preserved in the Iberian cathedrals. She also keeps an eye on the political and ideological relevance of these transmissions.

Final Remarks

All the articles of this volume have been peer-reviewed by highly qualified researchers—two peers for each article. Therefore, the editors of this volume want to thank all of them for their collaboration in the achievement of this high-quality book. Likewise, the editors want to thank also the Institute of Medieval Studies, the Centre for Humanities, the Institute of Contemporary History and the Institute of Art History, as well as the Faculty of Social Sciences and Humanities and the New University of Lisbon, for their support in every step of the production of this volume. Last but not the least, a special thank needs to be addressed to the Foundation Calouste Gulbenkian for his altruism and support.

Bibliography

Conrad, Sebastian. 2019. *O que é a História Global?*. Lisbon: Edições 70.

De Vito, Christian G. and Anne Gerritsen (eds.). 2018. *Micro-Spatial Histories of Global Labour*. London: Palgrave Macmillan.

Douki, Caroline and Philippe Minard. 2007. "Histoire globale, histoires connectées: un changement d'échelle historiographique? Introduction." *Revue d'Histoire Moderne & Contemporaine* 54, no. 4bis: 7-15.

Drayton, R. and D. Motadel. 2018. "Discussion: The futures of global history." *Journal of Global History* 13, no. 1: 1-21.

Gabaccia, Donna and Dirk Hoerder. 2011. "Editor's Introduction." In *Connecting seas and connecting oceans rims. Indian, Atlantic, and Pacific Oceans and China Seas Migrations from the 1830s to the*

1930s, edited by Donna R. Gabaccia and Dirk Hoerder, 1-11. Leiden and Boston: Brill.

Hall, Timothy D. 1994. *Contested Boundaries: Itinerancy and the Reshaping of the Colonial American Religious World*. Durham (NC): Duke University Press.

Maurel, Chloé. 2009. "La World/Global History: Questions et débats." *Vingtième Siècle. Revue d'histoire* 104, no. 4: 153-166.

Maurel, Chloé. 2014. *Manuel d'histoire globale. Comprendre le «global turn» des sciences humaines.* Paris: Armand Colin.

Moxey, Keith. 2013. *Visual Time: The Image in History*. Durham (NC): Duke University Press.

Zuniga, Jean Paul. 2007. "L'histoire impériale à l'heure de l'«histoire globale». Une perspective atlantique." *Revue d'Histoire Moderne & Contemporaine* 54, no. 4bis: 54-68.

GLOBAL HISTORY

CHAPTER 1

AN ENDANGERED SPECIES? THE POLYMATH IN THE AGE OF SPECIALIZATION

PETER BURKE

Abstract

Following the rise of specialization, including the division of universities into more and more faculties, departments and institutes from the mid-19th century onwards, one might have expected polymaths to disappear. On the contrary, the species has survived. Indeed, it continues to survive, despite the decline in the niches in which it makes it habitat. How has this survival been possible?

Keywords: polymaths, specialization, interdisciplinary.

Historians have been taking more and more interest in the history of knowledge in the last few decades. The phrase "cultures of knowledge" is now current in English, German and perhaps other languages as well. In France, two massive volumes have been published on "sites of knowledge" (*Lieux de savoir*), modelled on the famous series of volumes *Lieux de mémoire*, but global rather than French in their contents (Jacob 2007, 11).

The rise of this new approach to the past should not surprise us. Many new approaches to the past have arisen as a response to changes in the present, and especially to debates about such changes. It is no accident that the history of the environment is attracting more and more interest. In similar fashion, debates about our "knowledge economy" or "information society" have encouraged historians to ask similar questions about the past. For example, today's anxieties about the "glut", "flood" or even "tsunami" of

information, “too much to know”, “information overload” had their parallels in earlier periods (Blair 2010).

In this chapter I shall be concerned, in the spirit of the chronological experiment mentioned by Francisco Diaz Marcilla, with the history of knowledge in the West from the seventeenth century to the present. I shall argue that there have been three major crises of knowledge, focussed on the problem of overload: one in the seventeenth century, the second in the nineteenth century, and the third in our own time. Each of these crises is linked to a revolution in communication—first the proliferation of printed books, then the rise of cheap print, including journals and newspapers, and finally the rise of the internet and the digital revolution that we are experiencing today.

It was from the middle of the nineteenth century, in response to the second crisis of knowledge, that a system composed of many different departments, faculties or institutes devoted to a great variety of disciplines began to replace the traditional academic division between the art courses for undergraduates and the three vocational postgraduate courses for clergy, lawyers and physicians. In its turn, specialization has provoked responses, notably the movement in support of interdisciplinarity, but also a certain nostalgia for the age before knowledge was divided. This nostalgia has expressed itself, for instance, in three recent, or fairly recent books about polymaths.

Curiously enough, all three books have the same title, *The Last Man Who Knew Everything*. In fact, they concern three different individuals living in three different periods. The first “last man” is the seventeenth-century German Jesuit Athanasius Kircher; the second is Thomas Young, a Cambridge don at the turn of the eighteenth and nineteenth centuries; while the “last man” is Joseph Leidy, a nineteenth-century American professor of anatomy and natural history (Findlen 2003; Robinson 1995; Warren 1998).

The difference in dates between these three men suggests that a general study of polymaths over the long term is needed as well as biographies of individuals. At the moment, I am engaged in writing such a study, a cultural history of this intellectual species from the Renaissance to our own day. By “polymath”, I mean a scholar who has mastered many academic disciplines. As the amount of knowledge that needs to be assimilated has increased, the bar over which polymaths have to jump has been lowered and “many” disciplines have been reduced to two or three.

I did not and do not want the book to turn into nothing but a series of intellectual portraits. A red thread through the labyrinth of individual biographies is necessary. The thread that I hope and believe will hold the book together is a narrative. As an intellectual species, the polymath has become endangered, indeed threatened with extinction, by the rise of intellectual specialization. I nearly wrote "the irresistible rise of specialization"—but in fact the process *has* been resisted, by individual polymaths as well as by relatively recent attempts at collective, indeed institutional, interdisciplinarity.

Remarkably enough, a few members of the species still survive, carry out research and publish books in what their specialist colleagues call different "fields". Like their predecessors from the eighteenth century onwards, they are engaged in what we might call a long retreat, a rear-guard action that includes some remarkable examples of intellectual heroism.

The First Crisis

I begin the story in the seventeenth century, the period when the word "polymath" (and its synonym "polyhistor") first came into general use in Latin, French, English and German. By this time, scholars were beginning to be expected to contribute to the community's store of knowledge, not simply to preserve and disseminate it. All the same, it was not unusual for seventeenth-century scholars to contribute to a number of different fields, while a few intellectual giants, described at the time as "monsters of erudition", stand out for their range.

It reveals more about us than about them that we usually remember these giants today for a small proportion of their achievements. Isaac Newton, for instance, not only made his well-known contributions to mathematics, optics, mechanics and astronomy but also studied alchemy and chronology, attempting like other scholars to reconcile ancient Greek and Roman chronologies with those of the Jews, the Arabs and so on (Manuel 1963; Dobbs 1975).

Newton's rival in the study of calculus, Gottfried Wilhelm Leibniz, is now best known as a philosopher but also made important contributions to the study of history, languages, law and theology. Leibniz was known in his own time as an expert on China, while his manuscripts reveal that he was also interested in astronomy, botany, geology and medicine (Antognazza 2009). Another "monster", the German Jesuit Athanasius Kircher, has already been mentioned. He wrote on subjects as different as (once again)

China, ancient Egypt, acoustics, optics, language, fossils, magnetism, music, mathematics and mining, as well as on "universal knowledge" itself (*scientia universalis*). He was also an inventor, constructing new kinds of sundial and magic lantern.

A few women of the seventeenth century overcame the obstacles that society put in their way to become learned, if not monsters of learning. The Mexican nun Sor Juana Inés de la Cruz planned to attend the University of Mexico dressed as a man, and in her convent, surrounded by books, she wrote on philosophy and theology as well as studying science, law, languages and music and composing poems. Still more famous for her erudition, the Dutchwoman Anna Maria van Schurman listened to lectures at the University of Utrecht from a cubicle next to the lecture-room. She was supposed to have known fourteen languages. She produced but did not publish a grammar of "Ethiopian", probably Amharic (Paz 1982; Baar 1996).

The age of these giants, or monsters, now appears to be a golden age of polymaths, but there was also a dark side. Readers may be surprised that the consequences of the Gutenberg revolution took so long to make themselves felt, but complaints about too much to know and about the fragmentation of knowledge only multiply in the seventeenth century. One such scholar, an Englishman, made the point dramatically when he wrote about the "vast *Chaos* and confusion of books"; "we are oppressed with them, our eyes ache with reading, our fingers with turning". Another well-known complaint came from a French librarian who feared the return of barbarism as a result of "the multitude of books which grows every day in prodigious fashion", making it increasingly difficult to identify what was really worth reading (Burton 1624; Baillet 1685).

The problem of overload was not simply the multitude of books. More and more information was becoming available in seventeenth-century Europe, thanks to two processes in particular. In the first place, the European discovery, not to say invasion, of other continents led to an increase in European knowledge of Asian, African and American languages, histories, animals, plants and so on. The second process is now known as the "scientific revolution": in other words the rise of experiments and observations, aided by the new inventions from the telescope to the microscope, which gave access, like the expansion of Europe, to new worlds of knowledge, famously symbolized in the frontispiece of a book by another seventeenth-century polymath, Francis Bacon, representing the ship of knowledge sailing beyond the Pillars of Hercules. Bacon reclassified

knowledge in the service of what he called "The Advancement of Learning" (Bacon 1605).

Like other forms of progress, the advance of learning had its downside, its disadvantages. The proliferation of books and discoveries encouraged the fragmentation of knowledge, about which some seventeenth-century scholars were already complaining, notably the Czech scholar Jan Amos Comenius. Comenius and his followers dreamed of reuniting the fragments in what he called *pansophia*, knowledge of everything. According to their utopian vision, the pursuit of *pansophia* would lead to the recovery of the knowledge that Adam possessed before the Fall and this would lead in its turn to the reform of the world (Rossi 1960, 179-200; Blekastad 1969).

Retrospectively, the rise of terms such as "polymath" and "polyhistor" in the seventeenth century looks like a bad sign, a sign that "general learning", as the English called it, could no longer be taken for granted. Another sign that something was going wrong was the increasing criticism of some of the monsters of erudition that I already mentioned. For example, Descartes called Kircher a "charlatan", in other words someone who promises what he cannot perform, like the individuals who sold what they called miraculous medicines in places such as Piazza San Marco in Venice. Kircher was unable to read the ancient Egyptian hieroglyphs, as he claimed. It was only at the beginning of the nineteenth century that the hieroglyphs were successfully deciphered.

All the same, polymaths did not disappear at the end of the seventeenth century. During the Enlightenment, some individuals were still able to master a wide range of disciplines, even if they did not make original contributions to many or even to any of them. The intellectual ideal of the period was that of the "man of letters" (or occasionally, "woman of letters"), whose interests were wide. An obvious example is that of Denis Diderot. Diderot was able to edit the famous *Encyclopédie* because his interests were encyclopaedic. He wrote several hundred articles for it on philosophy, literature, acoustics, biology, art, music and the crafts. Another well-known example is that of the Spanish monk Benito Feijoo. The nine volumes of his famous *Teatro Crítico* include essays on *todo genero de materia*, as the title-page says): theology, philosophy, philology, history, medicine, natural history and so on (Feijoo 1726, 39).

The Second Crisis of Knowledge

Of course Feijoo and Diderot were popularisers of knowledge rather than discoverers. Again, in the seventeenth century it had still been possible for a single individual, Johann Alsted, to compile a seven-volume encyclopaedia by himself, but the famous *Encyclopédie* was the work of a team of at least 139 contributors. In any case, from the end of the eighteenth century, signs of a second crisis of knowledge become visible. The problem once again was that of overload, even more overload, as scientific expeditions brought back more and more information, while the steam press and the shift to paper made from wood pulp reduced the price of books.

Information anxiety revived. A British man of letters, Thomas de Quincey, vividly expressed this anxiety in a nightmare about a cart that kept unloading piles of books outside his house (McDonagh 1994). The institutionalization of specialization in universities, especially from the later nineteenth century onwards, may be regarded as a kind of defence mechanism, so many walls or dykes erected to contain the deluge of information but at the same time cutting workers in each discipline off from communicating with their neighbours.

New words, like "polymath", are often signs of new trends. In English, the word "scientist" was coined in 1834, as specialists in the study of nature began to separate themselves from specialists in the study of the humanities. The term "man of letters" shrank its meaning, coming to refer to an interest in literature (formerly *belles-lettres*), rather than in the whole of learning. In France, also in the early nineteenth century, we find the new words *spécialité, spécialiste* and *spécialisation*, appearing first in medical contexts and then more generally. While new institutes or departments multiplied in universities, in the world outside new professions with their special knowledges were also recognized, among them architect, engineer, accountant, librarian and archivist.

In many disciplines, teams were coming to replace individual searchers for new knowledge. Scientific expeditions included specialist botanists, geologists, zoologists, astronomers and so on. In Germany at the beginning of the twentieth century, teamwork in the laboratory was a feature of what was becoming known as "Big Science" (*Grosswissenschaft*), the collective production of knowledge that was already being compared to the mass-production of goods in factories. Specialization has of course made new discoveries possible, including many benefits to humanity. On the negative side, what has suffered is general education or general knowledge. For this

reason, I like to describe the result of specialization as the "explosion" of knowledge, in the double sense of that metaphor, both expansion and fragmentation.

All the same, it is not difficult to find individuals in the nineteenth and early twentieth centuries whose interests and knowledge ranged widely across the disciplines: Karl Marx, for example, or Sigmund Freud. Marx and Freud were not polymaths in the strong sense, in the sense that Leibniz was a polymath, making major contributions to a number of different intellectual fields. They contributed to a few fields but otherwise they were simply educated individuals with wide interests.

A few scholars were still able to make original discoveries in a number of fields. The Englishman Thomas Young, for instance, already mentioned as the second "last man to know everything", was trained in medicine, but his interests expanded to include optics, acoustics and languages. He was making good progress in the decipherment of hieroglyphics when he was overtaken by a French scholar, Champollion. No wonder that he was known in Cambridge as "Phenomenon" Young. Still more spectacular were the many contributions to knowledge made by Alexander von Humboldt, a monster of learning comparable to Leibniz. Humboldt's contributions to knowledge (many of them a result of his famous expedition to South America, 1799-1804) include the disciplines of geography, geology, botany, zoology, anatomy and astronomy. Humboldt also wrote on archaeology, ethnography and demography (Wulf 2015).

As specialization increased, wide-ranging achievements provoked suspicion as well as admiration. Young published some of his contributions anonymously so that his medical colleagues and his patients did not lose trust in his work, while Humboldt noted that some people complained that he was interested in too many things at once. One might have thought that the institutionalized specialization would mark the extinction of the polymath. It didn't. Paradoxically, polymaths became a new kind of specialist, specializing in connecting different parts of the fragmented world of learning, but subdivided into types such as the serial polymath, the clustered polymath and the cultural critic or public intellectual.

Polymaths began to be described as "generalists", a new word in English in the 1890s, used of himself by the Scotsman Patrick Geddes. Geddes was what might be called a "serial" polymath (on the model of serial polygamy). Serial polymaths notice unexpected connections because they use the habitus acquired in one discipline to investigate another. Geddes

began in biology but problems with his vision made it impossible for him to use a microscope and he moved on to geography and sociology, especially urban sociology. Geddes was concerned with connections and practised what he called "bio-sociology", wanting to see the city as a whole, as an organism, and concerned with the relation between cities and their regions (Kitchen 1975; Meller 1990).

Geddes became a kind of guru. One of his disciples, the American Lewis Mumford also called himself a generalist. Mumford was a journalist, a literary, architectural and cultural critic, and finally an urban sociologist and historian. He saw himself as reassembling fragments that had been separated "because specialists abide too rigorously by a gentleman's agreement not to invade each other's territory". Appropriately, Mumford loved bridges. He wrote a play about Brooklyn Bridge, and another one about Leonardo da Vinci (Hughes and Hughes 1990; Beckwith 1996).

The role of cultural critic is a natural one for polymaths to play. Another example from the USA is Susan Sontag. Sontag was trained in both literature and philosophy but became famous when she wrote for journals like the *New York Review of Books*. She once declared that "I do not want to be a professor and I do not want to be a journalist. I want to be a writer who is also an intellectual". She directed two films, wrote novels and plays, but once confessed to an "addiction" to essay writing as well as to smoking. Many of these essays discussed photography and film, but others were concerned with fashion, dance, illness and the war in Vietnam (Schreiber 2007).

One result of specialization was debated in the 1960s, thanks to a lecture given in Cambridge in 1959 by Charles Snow, a physical chemist who became a civil servant and finally a novelist. Snow complained about the growing gap between what he described as "two cultures", science on one side and the humanities on the other (Snow 1959). I believe that he was right about the existence of this gap, and especially about the ignorance of the natural sciences on the part of students of the humanities—including myself. All the same, some individuals in Snow's generation—he was born in 1905—were still able to cross the frontier between the two cultures. One remarkable example from this time is the Austrian Otto Neurath. Another is the Russian Pavel Florensky.

Neurath, who was active as a philosopher, an economist, a museum director, an inventor, and a socialist, spent much of his life in an attempt, like Comenius (whom he admired) to restore the lost unity of knowledge,

pursuing this goal by means of a journal, international congresses, an institute and a project for a new encyclopaedia, inspired by the *Encyclopédie.* As a refugee in Britain in the late 1930s, he called his project the "Unity of Science", but in German it was the unity of knowledge, *Einheitswissenschaft*, thus including the social sciences and history (Cat, Cartwright and Chang 1996).

As for Florensky, he wrote of himself that his "life's task"—not unlike Neurath's—was to continue along "the path toward a future integral world view". This serial polymath began his career as a mathematician and went on to study philosophy and theology, becoming a Russian Orthodox priest. He studied religious art, concentrating like a mathematician on the representation of space in icons. Mathematics also led him to electrical engineering. He once addressed a conference on electrification, after 1917, in his cassock. Arrested in Stalin's purges, and later shot, he was working in prison on a new topic, the production of iodine from seaweed.

The Situation Today

Today, the gap that Snow lamented has widened still further. Increasing specialization even threatens communication between different kinds of scientists. We should probably talk of many rather than two cultures of knowledge.

One might have expected polymaths to have become an extinct species, along with so many other species in the world of today. All the same, a few individuals have continued to resist specialization, apparently with success.

The American Jared Diamond offers another good example of a "serial" polymath. He was trained as a physiologist but moved into ornithology, biogeography and ecology. Even though, he is perhaps most widely known today for his essays on world history, notably *Guns, Germs and Steel* (1997) and *Collapse* (2005), to say nothing of his lifelong interest in languages. His work has often been criticized by specialists, but it has also been taken seriously (McAnany and Yoffee 2010). One might say that whether or not one agrees with his answers, the questions—that this outsider has asked—have been original and fruitful ones. In the course of his intellectual itinerary, Diamond has remained at the University of California at Los Angeles, simply moving along the campus from a chair in physiology to a chair in geography.

The Frenchman Bruno Latour is more of a clustered polymath, since his original contributions are usually in philosophy, anthropology and sociology, though he also demonstrates a surprising knowledge of other disciplines, from theology to law. No wonder then that a recent study on Latour calls him "a prolific writer on an amazing variety of topics" who shows a creative "lack of respect for disciplinary boundaries" (De Vries 2016, vii, 3).

Some living polymaths have become famous beyond the academic world, thanks not only to the range of their interests but also to their ability to represent themselves in the media, notably two philosophers who do not confine themselves to philosophy, Peter Sloterdijk, from Germany, and Slavoj Žižek, from Slovenia. Žižek has been described as writing about "global capitalism, psychoanalysis, opera, totalitarianism, cognitive science, racism, human rights, religion, new media, popular culture, cinema, love, ethics, environmentalism, New Age philosophy and politics" (Khader and Rothenberg 2013, 3). It is necessary to add that both Sloterdijk and Žižek have sometimes been described, like Athanasius Kircher, as charlatans, or in the case of Žižek, a "comedian" or "Marx Brother" (Mead 2003).

One might say that such accusations are an occupational risk of polymaths. Their breadth inevitably leads to the accusation that they lack depth and that they are in too much of a hurry. On occasions the accusation is well-founded, on other occasions it is not.

Polymaths: psychology and sociology

That point leads me, at last, to the question, how do polymaths achieve so much? What makes a polymath? It is, I believe, a combination of psychological qualities with a social situation.

Polymaths need unusually strong curiosity, a drive to learn, and also to work unusually hard. They need the capacity to concentrate their attention, a capacity that observers often call "absent-mindedness", and to see connections between apparently distant topics. These psychological qualities may be timeless, but different cultures encourage or discourage them. Some Christians have believed that curiosity is a sin. Others, particularly Protestants, emphasize the work ethic and the need not to waste time. The idea of the Protestant ethic formulated by Max Weber applies to polymaths as well as capitalists–appropriately enough, since Weber himself was a polymath.

For this combination of qualities to bear fruit, polymaths need to find a social niche, something that has become increasingly difficult in a world of increasing specialization. Humboldt, for instance, was an independent scholar whose inherited wealth gave him the leisure to think and even paid for his famous expedition to South America. Feijoo was a monk, Sor Juana was a nun (in the case of females, for a long time only nuns and widows had the leisure to study). Universities have often been a niche for polymaths. Some serial polymaths such as Jared Diamond or Michael Polanyi have been allowed to move from one department to another, in Polanyi's case from chemistry to social studies and philosophy. Libraries offered another niche for wide-ranging individuals from Leibniz to Jorge Luis Borges, who was an essayist as well as a writer of fiction. From the nineteenth century onwards, another niche has been the journal or newspaper in which polymaths can publish articles on a variety of subjects.

The Third Crisis of Knowledge

I should like to end this article with a reference to the third crisis of knowledge, the current crisis. In the long term, the process of specialization has deprived or is depriving polymaths of most of the niches in which they flourished. It is now rare for intellectuals to have a private income like Alexander von Humboldt. Sor Juana studied in her convent but there are fewer nuns today than there were in the seventeenth century and—with exceptions such as the art historian Sister Wendy—they are generally expected to devote their time to prayer or social work rather than to writing books. Librarians are becoming managers who lack the time and possibly the inclination to read the books of which they are the custodians, as Leibniz did at Wolfenbüttel. Universities are less hospitable to polymaths than they used to be, now teaching and administration take up so many hours of the week. Intellectual journals such as the *Times Literary Supplement* and the *New York Review of Books* still exist, but they are losing readers and also advertising. They may survive in online versions, but the longer the article, the less likely it will be read carefully on the screen.

In the short term, the digital revolution has led to information overload on a more spectacular scale than ever before. The phrase "information anxiety" is often heard. There is even a glut of books on the glut of information, otherwise known as a "flood", "deluge" or "tsunami". New units of measurement were needed and the mass of information is now