1 Indexing and Sharing the Early Modern Printed Page

1.1 Digital Collections and the Role of Iconographic Databases: An Overview

In the past twenty years major digitization works of early modern printed books took place in various libraries across Europe and continue at a growing rate today. From the Bibliothèque Nationale de France to the Gotha Library in Erfurt, European libraries prioritise digitizing and opening their collections often in connection with research projects and institutes to connect in a lasting way. Collections are constantly being digitized and available online. Websites such as Europeana and the Bibliothèque Virtuelle Humaniste are incrementing their online resources and are making access to digital copies of books easier.[1] Moreover, increasing attention from the Digital Humanities has been devoted to the role of images in books during the early modern period (roughly between 1480 to 1680), with particular interest in the use of images in scientific publications.[2] Different studies inquired into the contribution of illustrations to the creation and share of different types of knowledge through the printed page, and images are increasingly studied as vehicles of knowledge to disseminate ideas and practical notions. As Valleriani and others have recently pointed out (Valleriani 2021), the insertion of an image in a book is never an accident but always brings

1 See https://www.europeana.eu/it/TEL.

2 See for instance the project *Making Visible: The Visual and Graphic Practices of the Early Royal Society* funded by CRASSH (2015-19), or the in-depth study of the Sphaera by Giovanni di Sacrobosco completed by Dr Matteo Valleriani at the Max Planck Institute for the History of Science in Berlin, who has implemented methods of social network analysis in history writing (https://sphaera.mpiwg-berlin.mpg.de/).

meaning to it.[3] Despite many interesting case studies, however, fundamental questions such as why a book was published with or without illustrations and what role illustrations played in this complex object remain for the most part unanswered. It is safe to assume that this digital catalogue could not have seen the light without the major digitization works carried out by institutions such as the Bibliothèque Municipale de Lyon, the Bodleian Libraries in Oxford, the Bibliothèque Nationale de France, and other institutions involved in the project *Biblissima*. The work which is carried out by these institutions represents the bases for the digital fruition and analysis of collections. In the past few years, an increasing effort has also been put into developing new systems for describing images with the help of digital technologies.

Several projects have been taking advantage of the new developments for creating databases and digital tools to gather and make searchable medieval and early modern images of different kinds (illuminations, paintings, printed illustrations, stamps, etc.). Currently, we do not share an unique standard of iconographic indexation and we do not have an unique standard of inserting metadata in a database. Hence the need to discuss various methodologies in order to create connections among digital projects and iconographic databases utilising different systems of categorisation.

With the aim of discussing these methodologies, we organised the workshop *Digitising, Cataloguing, Searching and Sharing the Medieval and Early-Modern Image: On-Going Projects & Different Methodologies* at the Venice Center for Digital and Public Humanities in Venice. This workshop brought together professionals and scholars involved in such projects in order to discuss the objectives and the technical features of the different platforms, data gathering strategies, methodologies adopted for the iconographic and figurative description and future developments of such databases.[4] The main objective was to facilitate the exchange of knowledge and the creation of new operating connections within this community while offering an overview of the state of the art, as far as the treatment of digital images as objects of research is concerned. Along with more theoretical discussions on digital methods in art history (the use of distant reading, the annotation system in the ICONCLASS browser, for example), different case studies were reunited, including the *Essling LOD* project, the IUS ILLUMINATUM and IVS Communis online, the improvements in EDIT16, the collection of 14,000 woodblocks of the Officina Plantiniana recently digitized at the Plantin Moretus Museum, the BASIRA project about books as symbols in Renaissance art, the developments of the authoritative Index of Medieval Art in between the physical archive and the digital platform, the *Ornamento Europe* project, the *Biblissima* project, and the Warburg Institute Iconographic database.[5]

The *Biblissima* project, a digital library on the web, provides access to documentation on ancient manu-

3 See Kräutli, Lockhorst, Valleriani 2021: "By identifying and analysing recurring images, we can evaluate the 'success' of certain imagery. If we find similar images being used by different printers for the same subject, for example, this can be telling of one printer being influenced by another, or even indicate a physical exchange of woodblocks when the images are identical. In addition, we can identify when images are being replaced with new ones for the same subject. Producing woodblocks was a costly endeavour. The introduction of a new image therefore constitutes a significant and potentially informative change. The insertion of a new image represented an effective way to introduce novel scientific aspects. Tracing the use of scientific illustrations, moreover, does not show only the introduction of novel representations; it also allows to recognize which visual representation and visual language became obsolete over time, as specific kinds of illustrations were sometimes dismissed and replaced" (165-6).

4 I am very grateful to all the VeDPH staff for helping me organising this event, and to my colleagues Matilde Malaspina and Abhishek Dutta for conceiving and co-organising it.

5 For a full list of the projects discussed, see https://apps.unive.it/server/eventi/52382/01-10-2021_speakers_abstracts.pdf.

scripts and printed material, enquiring on the nature of these texts, their circulation and their readers between approximately the eighth and the eighteenth century: the corpus includes digitized ancient documents, documentary databases, editions of texts, tools for understanding these documents and producing new data. Its creation is divided into two parts: the observatory (the tools) and the corpora of scientific data (content). The Equipex Biblissima (Bibliotheca bibliothecarum novissima: Observatory of the Written Heritage of the Middle Ages and the Renaissance, 2012-21) recently evolved in Biblissima+ (Observatory of Written Cultures, from Clay to Print), and it is one of the structuring facilities for research selected in 2020 within the framework of the *investissements d'avenir* program.[6]

As we are aware, the workshop organised was only one drop in the ocean, as many institutions now offer possibilities of reflecting on what has been called "the digital turn in the humanities and science".[7] However, these are important and much-needed opportunities to discuss the theoretical aspects of digital 'r-evolution' which brings along with the dissemination and development of the digital media, new questions about the methodology and the theoretical framework behind it. As the MPI research group Visualizing Science in Media Revolution puts it, the use of new digital tools (such as online catalogues and databases, AI prompts, or 3D modelling software) led to new ways of finding answers, and in some cases of posing questions. Especially when dealing with database collections, one needs to be aware of the reality that database designing is critical to the successful implementation of a database management system that meets the data requirements. In addition to this, when gathering a corpus of digital images, we have to acknowledge the specifics that this corpus requires in order to be represented and presented in a digital collection. As for the *Biblissima* project on Lyon illustrations, we did not build our own database. Therefore, the choice was made to utilise an existing database designed to host the collection of the project.

1.1.1 Collecting, Indexing and Sharing: The Warburg Institute Iconographic Database

The iconographic database of the Warburg Institute in London [fig. 1] follows the categorisation used in the photographic collection of the Institute. The Collection contains around 400,000 photographs of different types of artworks and it includes paintings, drawings, prints, tapestries, and others. Notably, it was begun by the art historian Aby Warburg in the late 1880s, and it is ordered by subject according to the iconographic classification system first designed by Rudolph Wittkower and Edgar Wind during the 1930s. The database follows this classification by subject, which proved to be particularly suited to the Lyon project since it focuses on the description of the images themselves, providing the possibility of ensuring a deep level of granularity in the iconographic description of each scene. The Warburg database is organised thematically: all the images are indexed according to the iconographic subject and not by year or artist, thought this information is also present. This indexing method makes it possible to directly identify the subjects of different works of art, to find images for which the artist is

6 See https://projet.biblissima.fr/en/project/presentation. The program is supported by the French government and managed by the National Research Agency (ANR). It will end on 31 October 2029.

7 I am referring here as an example to the workshop of 2021 at the Biblioteca Hertziana in Rome (https://www.biblhertz.it/3069990/seminar-series-reflections-on-the-digital-turn-in-the-humanities-and-the-sciences2).

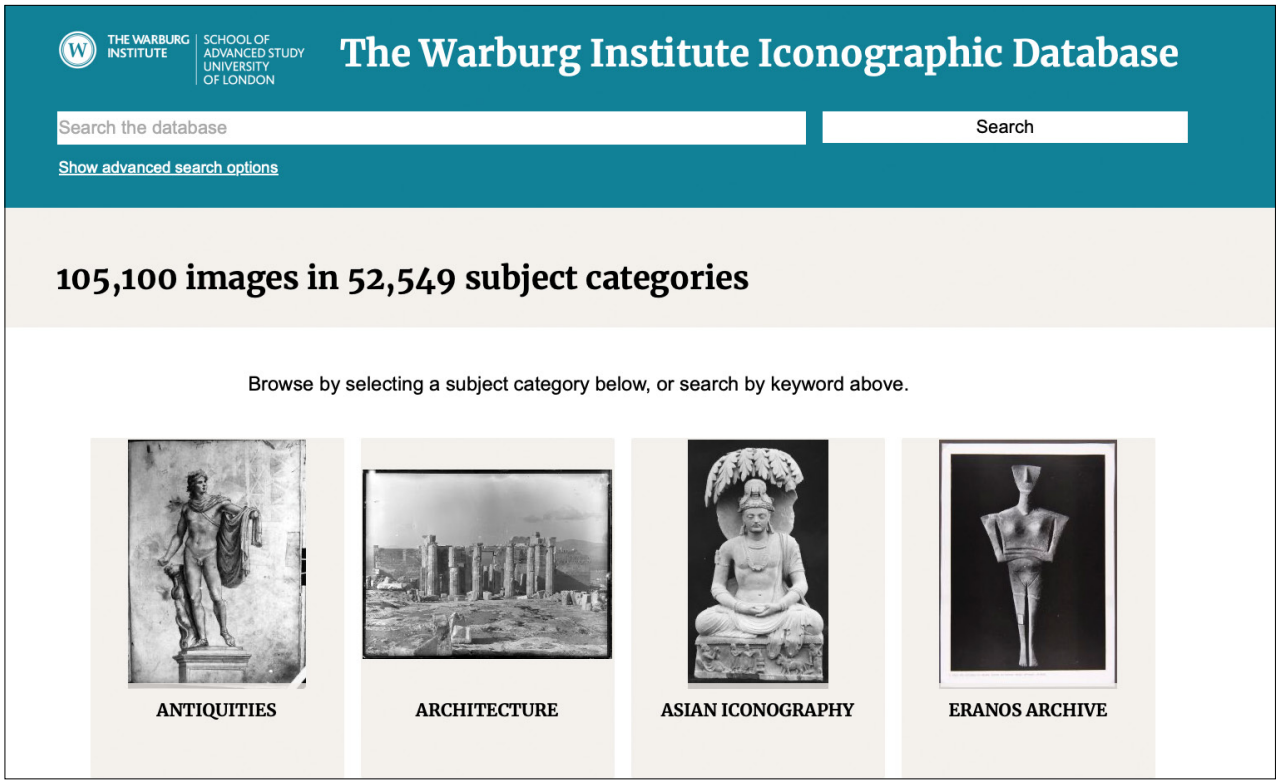

Figure 1 The Warburg Institute iconographic database homepage (https://iconographic.warburg.sas.ac.uk/home)

unknown, to trace the iconographic developments of the period studied, and to analyse the relationships between the images and their textual sources.

Each record in the Warburg database describes the illustrations in detail: techniques used, iconographic indexing, references, links to bibliographies, catalogues and other Digital Humanities projects that can all be included in the same digital document. The database itself is currently being developed, and the *Biblissima* project has contributed to introducing iconographic categories by creating several subcategories in the database.

Thanks to iconographic categorisation, users have the possibility of indexing all the typologies of images (religious, mythological, scientific, etc.). The indexation work can provide detailed indexing of the different scenes depicted in each illustration. The base allows several independent yet correlated indexations, meaning contributors can index complex images according to themes or

Figure 2 Database entry portraits *Francesco Petrarca* (Lyon, images 4, 5, 6) in comparison with other portraits of him (images 1, 2, 3)

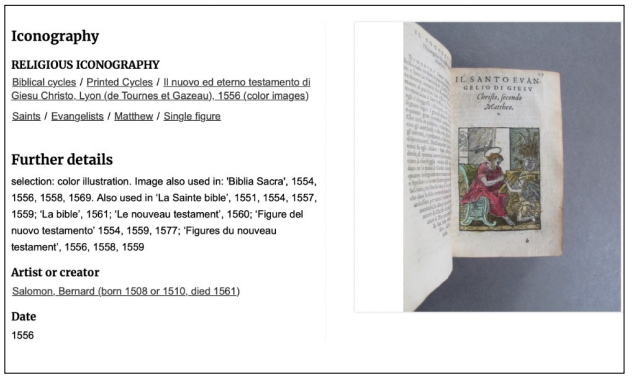

Figure 3 Categorisation of St. Matthew's image, with reuse of this image inserted in "Further details"

categories. The base also gives the possibility of comparing the different images used by the same printer, or by different printers, to directly see the iconographic developments of the same subject represented by different artists, and to trace a path between the illustration as a whole and the parts of the image. Because of its organisation, all types of images – religious, mythological, portraits, emblems, coins, antiquities (of which the Lyon collection hosts a good number, due to the interest of this subject in the city during the century), scientific illustrations such as astrological, anatomical, and botanical – can be included in the database.

At present, above 800 editions have been listed and 2,889 images taken from these illustrated editions were indexed in the database, starting from (but not limiting the corpus to) the case study of the two printers Jean de Tournes and Guillaume Roville mentioned above. The corpus of illustrated editions that they published is searchable online under the special collection name *Le livre illustré à Lyon (1480-1600)*. The database's structure provides a straightforward comparison of the developments of similar iconographies in different editions such as the development of the portraits of Petrarch and Laura in various editions of Petrarch's *Triumphs* printed by Jean de Tournes and Guillaume Roville [fig. 2]. Also, the versatility of its organisation allows comparisons between the material gathered in the project with other images provided by other research scholars working on it, proving quite effective to retrieve and discover material useful for one's own research [fig. 2a-b-c].

The aim of the project *Le livre illustré à Lyon* was not only to identify the iconographic subjects of these illustrations (therefore investigating the trends and popularity of certain types of images over others), but also to pin down the reuse of the same images respectively in different editions of the same book as well as in different books. This approach ideally promotes an understanding of how images travelled and how printers cooperated with – and copied from – one another. To draw this information, we inserted the details in the general category "Further details", although it soon became obvious that such a category was not sufficient in order to systematically retrieve

the reuse of images in different books, especially for religious images widely used at the period [fig. 3].

Therefore, to obtain a systematic survey of the reuse of printed images, the project started to look for collaborations and found a solution in the VISE software of automatic image retrieval developed by the Visual Geometry Group (Faculty of Engineering Science, University of Oxford).[8]

1.2 The Corpus Biblissima: Categories and Iconographic Developments

The corpus *Le livre illustré à Lyon* in the Warburg database presents a selection of illustrated titles which we list partially here: *Bible en Françoys* (Arnoullet, 1531); *Le mirouer de la rédemption de l'humain lignage* (Huss, 1483); *Biblia Sacra* (de Tournes, 1556); *Il Nuovo Testamento di Giesu Cristo* (Roville, 1549); *Cosmographie de Levant* (de Tournes, 1556); *De prodigii* (de Tournes, 1554); *Hymne du temps et de ses parties* (de Tournes, 1560); *Il Petrarca* (de Tournes, 1547); *L'Apocalypse figurée* (de Tournes, 1561); *Chiromance & physionomie par le regard des membres de l'homme, faites par Iean de Indagine* (de Tournes, 1571); *Marguerites de la Marguerite de princesses* (de Tournes, 1547); *Sausalye* (de Tournes, 1547); *Il Petrarca* (Roville, 1551); *Il Petrarca* (Roville, 1558); *Eneide* (de Tournes, 1560); *Astronomique discours* (de Tournes, 1557); *Paraphrase de l'Astrolabe* (de Tournes, 1546); *Fables d'Esope* (de Tournes, 1551, 1570, 1571); *Clement Marot* (de Tournes, 1553); *La métamorphose d'Ovide figurée* in various editions (de Tournes); *Pourtraits Divers* (de Tournes, 1557); *The emblems of Alciat in different editions* of Alciati in different editions; *Devises héroïques* (de Tournes, 1551); *Dialogue des devises d'armes* (Roville, 1561); *Quadrins historiques de la Bible* (de Tournes, 1583); *Le théâtre des bons engins* (de Tournes, 1545); *La fontaine des amoureux des sciences* (de Tournes, 1547); *Thesaurus amicorum* (de Tournes, 1596); *De turcarum moribus epitome* (de Tournes, 1555); *Illustrazione de gli epitaffi e medaglie antiche* (de Tournes, 1558); *Commentaires de M. Pierre André Matthiole* (Roville, 1572); *Funérailles et diverses manieres d'ensevelir des Romains, Grecs, et autres nations* (de Tournes, 1581); *Délie* (Sabon, 1544); *La magnificence de la superbe et triumphante entrée de la noble & antique cité de Lyon* (Roville, 1549).

As one can see, a considerable portion of the illustrated production by Jean de Tournes has been indexed along with other editions by Guillaume Roville and some of the highlights of the sixteenth century illustrated books printed in the city. Each file follows in some respects the FAIR principles of Digital Humanities, that is to be findable, accessible, interoperable and reusable.[9]

As not to burden the database with images that repeat, so as we usually inserted the reuse of the image in "Further details" when an iconography was identical, while we reinserted it in case the iconography changed (for instance in the case of the *Pourtraits Divers* and in the *Chiromance*). Whenever possible, the image was entered into the database in high quality. To ensure this, the photographer of the Institute, Dr Ian Jones, came to take pictures of some of the books for which we did not have images of sufficient quality for the databases' standards. When the time came to choose the existing online editions already available, we chose the one with the best images. For example, we chose the Italian edition of the *Illustrazione de gli epitaffi e medaglie antiche* not only because

8 The outcomes of this collaboration will be analysed in detail in the next chapter.

9 See https://www.go-fair.org/fair-principles/.

that specific edition of the book presents more images in comparison with the French edition, but also because better digital images were available. All the images are under Creative Commons License.

The indexation has been done within the iconographic categories developed by the Institute and follows the subdivision of the macro-categories:

1. Antiquities;
2. Architecture;
3. Asian Iconography;
4. Eranos Archive;
5. Gestures and Expression;
6. Gods and Myths;
7. History;
8. Literature;
9. Magic and Science;
10. Image of the Black;
11. Non-Eurasian Iconography;
12. Ornament;
13. Portraits;
14. Pre-Classical Iconography;
15. Religious Iconography;
16. Ritual;
17. Secular Iconography;
18. Social Life;
19. Unidentified.

These macro-categories are then declined in granular sub-categories for a total of 52,549 subject categories and more than 105,000 images overall. The indexation work during the project also developed new features in the database working page or encouraged it. For example, for what concerns the database records of book illustrations, there is now the possibility to add more than one book title if the same illustration was used in more than one edition of the same text or in different publications.

On the working form, in the section where information about a text or book can be added or adjusted, there is now an option called "Additional text or book". This changes the metadata of an existing photo (not available to the public, only accessible to those working on the database itself). This option opens a separate form which allows for an unlimited number of extra titles to be tagged onto the record. The titles must be drawn from the same drop-down menu as the book titles in the regular form. There is a drop-down menu and a free field for additional information, e.g. page number. The working form has also the option to copy all the titles from the list of an existing record. The titles added via the new form will show up on the record of the image in the public interface in chronological order and underneath the main book title to which the image in the database is related. The additional titles are fully searchable through the basic and advanced search functions of the database.

Although it is not the scope of this book to go further into the technical explanation, it is worth mentioning all the improvements as the database itself is *de facto* a living creature that needs the help and support of its users in order to be sustained. Few practical examples of the sub-categories added can be found in the following scheme:

A. EMBLEMS – SYSTEMATIC CATALOGUE

Hand
.....Handling objects
.....Holding fire sword

10. Fire and Light
Candlelight
Fire burning branch
Tongues of Fire
→ Hand → Handling objects → Hands breaking coin
→ Minerals and Metals → Flintstone
→ Weapons and tools for warfare, torturing and executions → Helmet → With birds
→ Mammals → Sheep → Tied up
→ Plants and Trees → Branch (generic)
→ Domestic tools → Pail
→ Domestic tools → Smudge pot
→ Plants and Trees → Olive branch → interlaced with arrow
→ Weapons and tools for warfare, torturing and executions → Arrows → interlaced with branch
→ Domestic tools → Sack
→ Mythological figures, creatures and objects → Phoenix
→ Buildings → Portcullis
→ Insignia and Jewels → Crown (generic) → Crown on portcullis
→ Mythological figures, creatures and objects → Sphinx
→ Celestial bodies → Moon → Interlaced moons
→ Insignia and Jewels → Crown (generic) → Crown on moon
→ Insignia and Jewels → Necklace

B. RELIGIOUS ICONOGRAPHY

.....07. Old Testament
.....05. Genesis
.....25. The Fall and Expulsion
.....42. Adam and Eve clothing themselves (Gen. 3-7)
.....25. Abraham and the three angels
30. Prophecy of the destruction of Sodoma (Gen. 18:20-5)
.30b. Lot and the destruction of Sodom
55. Lot and his daughters hide in the cave (Gen. 19:30)

...50. Abraham and Isaac
.....55. Sarah's death

Burial
Genesis
.....70. Jacob
.....02. Birth of Esau and Jacob (Gen. 25)
.30c. Jacob after his return to Canaan (Gen. 32-5)
48. Jacob buries the idols under the turpentine tree (Gen. 35:4)
..60. The division of Israel, Roboam and Jeroboam, the Man of God (3 Kings 11-14)
.....04. Ahias and Jeroboam (3 Kings 11:26-35)
.....Ahias divides his garment into twelve parts
.....65. Ahias predicts the destruction of the family of Jeroboam (3 Kings 14)
....25. 3 Kings (A.V. I Kings)
.....68. Asa (4 Kings 15-16)
.....13. Asa destroys the idol
16. Zambri destroys all the house of Baasa (3 Kings 16:12)
3 Kings (A.V. I Kings)
.....83. Achab and Benadad (3 Kings 20)
.....Achab frees Benadad
4 Kings (A.V. II Kings)
.....08. The kings of Israel, Juda, and Edom, fight against the king of Moab (4 Kings 3)
15. Miracles of Eliseus (4 Kings 4-6:7)
.....05. Water without rain (4 Kings 3)
.....05. Punishment of Adonibezec (Jud. 1:6-7)
.....07. Exodus
.....45. The Tabernacle
…….97. Moving of the tabernacle
17. Judges
.....30. Deborah, Barak and Jael (Jud. 4)
.....55. The canticle of Deborah and Barak after their victory (Jud. 5)

35. The men of Dan rob Michas in his house (Jud. 8:14-25)
98. The cloud of the Lord by day and the fire by night (Exod. 40:36)

C. GODS & MYTHS

Adonis
→ Venus and Adonis
62. Adonis transformed into flower
Historia Troiana
.....25. Heroes and Heroines
.....Hecuba
.....60. Taken by the Greeks

Vulcan
Myhts
25. Forging the arms of Achilles
.....Polydorus
Aeneas
45. The transformation of Aeneas' ships (Ov. Book XIV:527-65)
Diana
.....30. Myths.....Diana resuscitating Hyppolitus

Substantial work has been done on the two main categories of 'Emblems' and 'Religious Iconography'. Links to other useful projects related to emblem books have been added such as the French Emblems at the Glasgow project.[10] This information is inserted via the 'Web resources' section which includes the links to the catalogue entry of the Bibliothèque Municipale de Lyon, the link to the digital copy of the work, and the links to useful parallel projects. Originally, a link to the USTC (Universal Short Title Catalogue) was also included, which is now in need of being updated as the old link no longer applies.[11]

Priority was given to illustrations that were iconographically relevant in order to provide useful descriptions of the images. It is challenging to summarise the work done on digital resources, which is usually the issue when explaining in detail the work of digital humanists. However, in the iconographic apparatus of this monograph (see Part Two) I selected different examples following the main types of iconographies indexed in the database (religion, history and literature, emblems, science, pattern books and miscellanea). The work could be expanded in different directions: only a few examples were given, for instance, for what concerns illustrations of antiquarian books, such as the *Illustratione de gli Epitaffi et Medaglie Antiche* or the *Thesaurus Amicorum*, which were also a noticeable genre of illustrations in Lyon during the sixteenth century, and the project did not focus on the vast production of illustrated incunabula.[12]

Nonetheless, the selection presented here aims at giving a meaningful overview of the type of iconographies circulating at the time, how we indexed these types, and how they were reused in the city during the sixteenth century. Most of all, it illustrates the digital methodologies utilised for this kind of research, from the iconographic database to the use of the VISE software for the reuse of images (see chapter 2). As for the indexation work, the Warburg system is a good example of how the material was analysed, as we followed this model for our analysis of the corpus, but we are aware that other effective and authoritative systems exist, as for instance the Iconclass software (recently published with a new interface) and the Index of Medieval Art.[13] These different methodologies have many advantages and should be considered in more detail in order to understand the possible intersec-

10 See https://www.emblems.arts.gla.ac.uk/french/.

11 See https://www.ustc.ac.uk.

12 For the former see https://iconographic.warburg.sas.ac.uk/category/vpc-taxonomy-014276; for the latter (edition printed in Geneva) see https://iconographic.warburg.sas.ac.uk/results?mi_search_type=adv&mi_adv_search=yes&adv_reference_id=vpc-book-01389.

13 For Iconclass see https://iconclass.org; for IMA: https://theindex.princeton.edu. I wish to thank Etienne Posthumus for his participation in the workshop in 2021 and his invaluable work on developing and promoting the new Iconclass version.

tions and to envision a shared future for the indexation of the digital image.[14]

As David Landau recently stated (Landau 2024), the act of making a catalogue, analogical or digital, implies a selection and a series of compromises on what to exhibit and what not to. Especially for prints and printed illustrated books, this selection is necessarily a painful one, as we have no choice but to take these illustrations out of their context. One of the benefits of the digital realm is that such lost context is partially retrievable thanks to the link to the whole digitized book. Additionally, when inscribed into the digital context, a corpus of images can be further enquired upon.

1.2.1 The Role of Matrices: The Collection at the Musée de l'Imprimerie in Lyon

Fairly in recent years, art historians increasingly shifted their research focus to the role of materials and tools as key narrators of the artistic process as well as bearers of artistic value in themselves.[15] There is a growing number of scholars working on exciting material (Savage 2018).[16] For a comprehensive study of printed images, surviving cut woodblocks convey essential information which the final product cannot offer, concerning (but not limited to) artists' techniques and ways of working, which are fundamental to addressing the complex issues of style and attribution.

One central focal point of the project is to understand how these objects were produced, used, and shared among printers and artists in the early modern period. However, the research on them faces three main challenges related to the following issues. Firstly, early modern surviving matrices are relatively rare compared to the final print. Secondly, museums and cultural institutions still need a universal system to categorise them and to display them (there are cases in which collections matrices have been found in Museums' basements or attics). Finally, these collections are rarely available online.[17] The project included the study of a selection from the collection of 400 sixteenth-century woodblocks photographed and catalogued in the Musée de l'Imprimerie et de la Communication Graphique in Lyon, which gives a substantial contribution in these three directions, by including these matrices in the Lyon16ci database and making them available online for analysis and automatic comparison.[18]

The digital methodologies for the study of this material are being developed at a very fast pace, and in this growing field often the theory usually follows the practice (Bergel 2019). We will focus on the technical aspects in the following chapter, and we wish to give an overview on the collection of the Lyonnais Printing Museum which is not yet available online. The Museum itself constitutes an interesting reality in the context of printing museums, as it explains and analyses all the phases of the printing process, from the discovery of typography to the creation of

14 On this matter I mention the work of Hans Brandhorst (2022), whom I thank for the discussion in the Venice workshop: `https://iconclass.org/read/2022_meaningfulpatterns.pdf`.

15 See for instance the ARTECHNE project on the concept of 'technique' funded by the ERC at the Universities of Amsterdam and Utrecht.

16 On the technical aspects of printmaking see the latest work of Savage 2021; Stijnman 2012; Bushart, Steinle 2015. For a collective study on collections of early modern woodblocks, see Aldovini, Landau, Urbini 2016. My project does not consider the German production on which extensive work has been done.

17 One notable example of digitization is the excellent work carried out at the Plantin Moretus Museum in Antwerp by the curator Joost Depuydt: they have digitized over 4,000 woodblocks of botanical illustrations belonging to the museum, and they are currently working on copperplates.

18 I am very grateful to Dr Hélène-Sybille Beltran for her invaluable help and collaboration during my research and teaching in the Museum.

Figure 4 Image for the burial of different biblical figures, in *Les Figures de la Bible*. Sixteenth century. Woodblock, 5 × 8 cm. Lyon, Musée de l'Imprimerie et de la Communication Graphique

the modern book. It also has a model of an original printing press, and it offers a printing workshop where students can practise the art of printing. It further showcases the first book printed in French, a French translation of the *Legenda Aurea* (1476), and the first French illustrated book, namely the *Mirouer de la rédemption de l'homan lignaige* (Lyon, 1478). A useful introduction on the appearance of the image in the book is given to the visitor at the beginning of the permanent exhibition (room 2).

Before the contemporary part, the museum also offers a comparison between local styles, presenting two editions of the *Songe de Poliphile* and the two Terences: by

Figure 5 After Bernard Salomon, *The Drunken Noah with His Sons* (Gen. 9:22-3). Sixteenth century. Drawing on wood, 5 × 8 cm. Lyon, Musée de l'Imprimerie et de la Communication Graphique

Trechsel (Lyon, 1493) and by Grüninger (Basel, 1496). Many examples of the golden age of Lyon books, from Hans Holbein and Guillaume Le Roy, are displayed of de Tournes Bibles and Roville's production.

Among the most beautiful pieces on display are the *Herodiani historicae*, printed in 1493 in Bologna, and belonging to Guillaume Du Choul. The 400 sixteenth-century woodblocks are part of the exceptional collections of 600 printing matrices on wood (most measuring 5 × 8 cm), which illustrate various printed editions of the Bible. As Vanessa Selbach pointed out (2008, 77), the particularity of this set of woodcuts – in addition to their number,

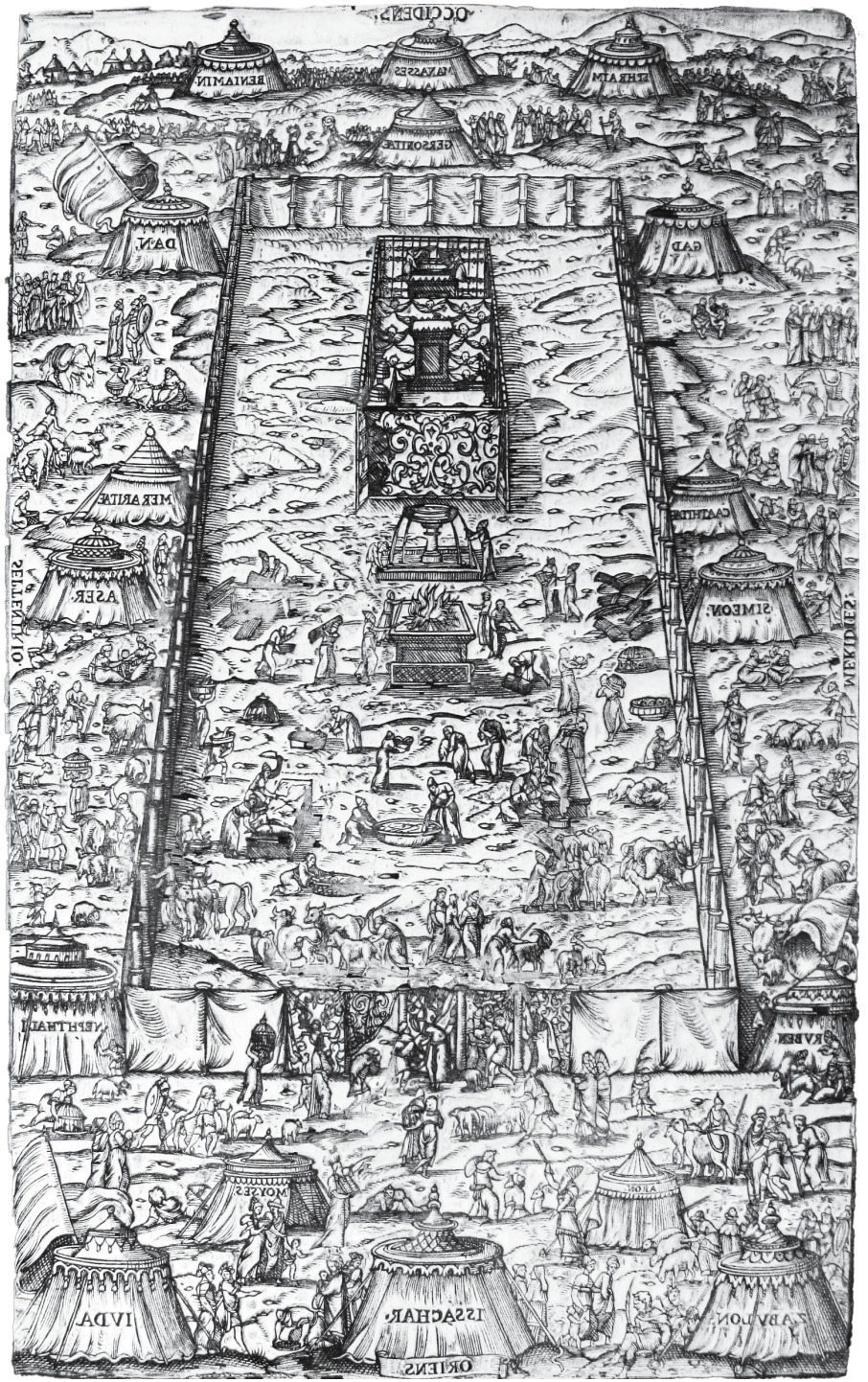

Figure 6
The Building of the Temple, in *Les Figures de La Bible*. Sixteenth century. Woodblock, 5 × 8 cm. Lyon, Musée de l'Imprimerie et de la Communication Graphique

which constitutes a rarity in the context of surviving matrices from the period – is their remarkable homogeneity since they are true series which continue: almost 400 woodcuts from the sixteenth century, supplemented for the sake of harmonisation by more than 200 woodcuts engraved at the turn of the seventeenth and eighteenth centuries. These served for many editions of *Les Figures de la Bible* in Lyon, Paris, and Brittany, from the sixteenth century up to the nineteenth century.[19]

The museum acquired this collection in 1963 (see Audin 1963), and to the extent of my knowledge, the corpus has not been digitized in its entirety yet. The collection of woodblocks after Salomon were ordered by Philippe Tinghi for his 1569 edition of the Bible. Tinghi wanted 131 woodblocks for the considerable sum of 947 *livres* (Selbach 2008, 82). These woodblocks copied the compositions of Bernard Salomon for the Old Testament **[fig. 4]** **[cat. I.12-13, I.18]**, some in the same direction, others in the opposite direction to those of Salomon. Figure 4, for instance, shows a woodblock which was used in many editions for the burial of many protagonists of the Bible, and it could be inscribed in that genre of 'generic image' such as those angels without attributes which we find several times in one single book with different iconographic meanings.

The cutter is not known for certain although the name of Jean Rosset was one possibility (Audin 1963). Tinghi sold the woodblocks and two other series of matrices to the bookseller Barthélémy Honorat, who completed the series adding 190 woodblocks. He also orders 150 more woodblocks to be executed, whose engraver Selbach identifies with Pierre Eskrich (Selbach 2008), of which some are signed "Petrus Eskricheus inventor". A part of this collection was reused again at the end of the seventeenth century in the three cities of Paris, Geneva, and Lyon.[20]

Moreover, the collection also presents a 'second stage' of the making of a print and includes some sixteenth-century drawings on wood, which were not cut in the end for various possible reasons. For example, figure 5 describes the scene in which the sons of Noah cover him to hide his drunkenness, a scene which was represented visually in the majority of illustrated bibles of the period **[fig. 5]**. The same goes for the scene of the building of the temple **[fig. 6]**. In this case, we have for some of the scenes an already cut scene, with different compositions. Therefore, it is safe to agree with Selbach that the drawn block was a backup woodblock which, in the end and most probably for reasons of economy, was not cut.

The collection in addition presents some botanical images from Mattioli **[cat. V.60-1]** and other types of later woodblocks. We did not digitize this corpus, but we were able to take pictures and receive some other pictures from the generosity of other scholars working on this material.[21] The matrices were not included in the Warburg database, but the digital images of these materials were collected in the Lyon16ci database at a later stage of the project.

Certainly, this material is an excellent way of investigating the reuse of images and printing tools, and a comprehensive catalogue would be needed in order to open up the research on matrices. Compelling projects in this direction exist, such as the already mentioned collection of woodblocks of the Officina Plantiniana, which digitized

19 As Selbach notes, the interest for this particular set arose quite early already in the eighteen century (see Papillon 1766, 1: 259).

20 For a detail account of the fate of these blocks, see the informative article by Selbach 2008.

21 I wish to thank especially Prof. Richard Field from Yale University, who was kind enough to share some photos he took in Lyon and Geneva.

the entire massive collection of woodblocks linking them to basic descriptions in the online catalogue.[22]

In Italy, we have the exceptional collection of 4,000 woodcuts by Ulisse Aldrovandi preserved at the Palazzo Poggi Museum and at the Biblioteca Universitaria in Bologna.[23] In Venice, the Museo Correr notably holds a substantial collection of 875 woodblocks used from the sixteenth to the nineteenth century in the printing of book illustrations, loose leaves, and fabric (see Andreoli 2015). To mention another example of good practices, the Fondazione Giorgio Cini published in 2019 the *Atlante delle xilografie italiane del Rinascimento*, which includes a substantial selection of woodblocks in its online collection, providing detailed descriptions of each woodblock as well as complete bibliographical references.[24]

However, despite these interesting cases, a comprehensive catalogue of French woodblocks, following the lines of Schreiber (1926) for German matrices, does not exist. Another level of complexity in dealing with this material is the lack of comprehensive and standardised metadata insertion in online and offline catalogues. This is therefore a field of study that opens up different research directions, and the tools for image recognition offer new methods of analysis and categorisation for the study of these materials.

22 On this, see the article by Van den Bossche (2023). For the collection of woodblocks online see: https://museumplantinmoretus.be/nl/impressedbyplantin/.

23 See https://sma.unibo.it/it/il-sistema-museale/museo-di-palazzo-poggi/catalogazione-della-collezione-di-tavolette-xilografiche-di-ulisse-aldrovandi.

24 See Aldovini, Landau, Urbini 2020 presenting the database "L'atlante delle xilografie italiane del Rinascimento: obiettivi, struttura, prospettive", in the workshop organised by the Giorgio Cini Foundation, *Discorso sul metodo. Stampe e illustrazioni nel Rinascimento* in 2020. I thank the organisers for the invitation. For the database see https://archivi.cini.it/storiaarte/archive/IT-SDA-GUI001-000038/atlante-xilografie-italiane-del-rinascimento.html.