Researching, mapping and promoting the cultural heritage of Florence and its territory

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Abstract

One of the most urgent challenges for European academic and cultural institutions is to promote an intelligent use of materials and resources available on the web, by implementing best practices of web archiving, and building scientifically valid databases which can have a positive social impact. This paper will present the theoretical and methodological framework of *Eredità Culturali*, an ongoing project that aims at answering this challenge by focusing on the Florentine cultural heritage. The first stage of *Eredità Culturali* consisted in surveying similar initiatives within the European research landscape and examining national and international cataloguing models and standards to build a data entry prototype that interacts with other systems. Hence, a flexible and open-access web platform has been designed to validate, preserve and consult cultural information from disparate data sets into a single archive. A geo-referenced information system has also been developed, in which four databases designed by the Department's research groups of Geography, Archaeology, Performing Arts and Book History will converge and make sound

data available for both non-academic and professional audiences. The analytical investigation is integrated with original ways of dissemination that will facilitate historical connections between different cultural heritages and legacies.

Keywords: geodatabase, multidisciplinary research, cultural heritage, story map, Florence

Una delle sfide più urgenti per le istituzioni accademiche e culturali europee è quella di promuovere un uso intelligente dei materiali e delle risorse disponibili sul web, sostenendo le migliori pratiche di archiviazione digitale e costruendo database su basi scientifiche, che possono avere un impatto positivo sulla società. Questo articolo intende presentare i presupposti teorici e metodologici che sono alla base di Eredità Culturali, un progetto che si propone di rispondere a questa sfida concentrando l'attenzione sul patrimonio culturale fiorentino. Sono stati esaminati i modelli e gli standard di catalogazione nazionali e internazionali ed è stato costruito un prototipo di data entry che potesse interagire al meglio con gli altri sistemi presenti nel panorama europeo e una piattaforma digitale flessibile e open-access per poter validare, conservare e consultare informazioni culturali provenienti da differenti datasets. Infine, è stato sviluppato un sistema informativo georeferenziato nel quale convergeranno i database implementati dai gruppi di ricerca di Geografia, Archeologia, Storia dello Spettacolo e Storia del Libro. I dati saranno a disposizione di un pubblico generalista così come dei professionisti del settore e verranno presentati grazie a originali metodi di disseminazione delle conoscenze che faciliteranno le connessioni storiche tra le differenti eredità culturali.

Parole chiave: geodatabase, ricerca multidisciplinare, patrimonio culturale, story map, Firenze

Introduction

Cultural Heritage: study, management and enhancement of the cultural heritage of the Florentine territory as a contribution to the objectives of Sustainable Development (from now on, *Eredità Culturali*) is a transdisciplinary project born within the SAGAS Department of Excellence (History, Archaeology, Geography, Art and Performing Arts) at the University of Florence.[1] Launched in January 2022 under the scientific direction of prof. Andrea Zorzi and presented last November on the occasion of the Third Mission events,[2] it was designed as a tool accounting for the cultural polyphony of the city of Florence and its territory, and supporting the local contribution to the objectives of Sustainable Development defined by the United Nations in 2015 and by the New UN Agenda 2030 for Sustainable Development [The UN Agenda 2030 for Sustainable Development - Agenzia per la coesione territoriale] to achieve one of the targets of the National Recovery and Resilience Plan (NRRP), namely Digitalisation, innovation,

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1   SAGAS was recognized by the Italian Ministry of Education as a Department of Excellence for 2018-2022, and confirmed as such for 2023-2027, on the basis of projects focused on the study, management and valorisation of Cultural Heritage in all its aspects (tangible and intangible, archaeological and documentary, artistic, monumental and spectacular, territorial and landscape), in a broad diachronic context (from prehistory up to today) and in an area centred in the Mediterranean basin, but extending from North America to Central and Southeast Asia: Eredità Culturali | SAGAS | Uni-FI.

2   During the Third Mission weeks, the Italian universities seek to generate knowledge outside academic environments to the benefit of the social, cultural and economic development: Settimane della terza missione | Porte aperte | Eredità Culturali.

competitiveness, culture and tourism [M1C3 - Investimento 1.1 "Strategie e piattaforme digitali per il patrimonio culturale" - PNRR Cultura].[3]

Eredità Culturali intends to promote an intelligent use of the materials and resources available on the web by implementing best practices of digital archiving, and building scientifically valid databases that can have a positive social impact, thus responding to one of the most crucial challenges for the European academic and cultural community. Furthermore, it intends to make available to a vast public a wealth of historical information that is often relatively unknown or obtainable only in a fragmented way.[4] In the *Eredità Culturali* web platform, it is possible to host digital collections and projects created by other institutions that do not have the skills and facilities necessary to make them fully and permanently available to the public. In this sense, *Eredità Culturali* aims at creating a model of functional inclusive system, easily applicable also to other national and international contexts. To achieve these objectives, *Eredità Culturali* is based on two fundamental elements: the system flexibility and the content variety. The system flexibility is obtained by using filing criteria formulated on shared cataloguing standards in order to allow interoperability between different systems to communicate and/or share descriptive metadata, and to take into consideration different types of cultural heritage. The variety of contents deriving from the different disciplines related to the project (archaeology, geography, history of the book, history of spectacle, history of art, medieval, early modern and modern history) and from the different types of documents acquired (images, audios, videos, 3D reconstructions, handwritten/printed documents) is made consistent and, in some way, enhanced by a specially designed geographic information system in which to bring together the surveyed cultural objects and places.

Cataloguing standards play a major role in *Eredità Culturali*, as they ensure the accuracy and consistency of the data entries, whose scientific validity is further guaranteed through periodic checks. A preliminary comparison with the filing systems adopted at an international level [[16]: 179-187] has enabled us to identify the most suitable data models for the acquisition of different kinds of documents, bearing in mind that the resulting datasheets can be modified and further increased if needed. The filing method must respond to the following *Eredità Culturali* goals: optimise the data entry procedures, so that they are modular and do not require advanced computer skills; integrate the different databases developed by multidisciplinary groups and relate them to each other; allow untrained operators from the institutional partners in the Florentine area to implement the database. Therefore, we have examined those digital libraries which improve the collaboration between the researchers implementing the databases and speed up the content management.

In the Italian digitisation panorama, the reference point is the Italian Central Institute for Cataloguing and Documentation (from now on, ICCD) [http://www.iccd.beniculturali.it], which for a long time has been defining regulations, specific terminological tools and

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3   The research lines include actions to enhance historical and cultural sites aimed at improving their attractiveness, safety and accessibility, not only with reference to the so-called "great attractors", but also to protect and enhance smaller sites (Le missioni e le componenti del PNRR | www.governo.it). The financing aims at promoting "digital strategy and platforms for cultural heritage" as well.
4   Despite being a UNESCO site, Florence lacks a physical or virtual place that accounts for the richness of its documentary collection and monumental heritage, especially after the closing of the "Florence as it was" museum.

guidelines for cataloguing the national heritage according to homogeneous and shared criteria suitable for processing and computerised management. The ICCD has created the General Information System of the Catalogue (SIGEC) [ISAD(G): General International Standard Archival Description - Second edition], a web-based platform accessible by accredited users only that manages the entire cataloguing flow. As we will see, the *Eredità Culturali* filing procedures largely follow the updated guidelines provided by the ICCD, in order to facilitate, in the future, any data entry into a wider national database. The *Internet Culturale* project [https://www.internetculturale.it], developed by the Directorate General for Libraries and Cultural Institutes, also proved to be strategic for *Eredità Culturali*, since it combines digital repositories belonging to libraries, local authorities, heritage stakeholders and cultural institutes to further improve the Italian standards and adapt them to the Europeana international project. The latter [https://www.europeana.eu] was created to support the digitisation of the European cultural heritage, to develop skills, tools and strategies according to the ever-increasing use of digital technology in the humanities, as well as to encourage international cooperation. Europeana has been very useful for *Eredità Culturali* especially in the identification of conceptual maps on which to set up customised in-depth research. Other consulted data element sets and standards are: the *Nuovo Soggettario* application manual of the National Central Library of Florence [https://doi.org/10.53263/9788878123465], which adheres to the principles established by the International Federation of Library Associations and Institutions (IFLA) and to the indications of international standards; the Dublin Core Metadata Initiative (DCMI) [https://www.dublincore.org], by the American services network for libraries (Online Computer Library Center), consisting in a set of widely used elements for the description of any digital material; the content model developed by the UNESCO International Council of Archives (ICA), known as the General International Standard Archival Description ISAD(G) [ISAD(G): General International Standard Archival Description - Second edition], which provides general guidelines to correctly describe archival materials; Gallica, [Gallica] the digital section of the National Library of France and its national partners; the guidelines for the creation, metadating and archiving of digital features by the Central Institute for the Digitization of Cultural Heritage (Digital Library) [https://digitallibrary.cultura.gov.it], which coordinates and promotes the digitization programs of the Italian cultural heritage. Finally, a whole series of digital archives focused on specific disciplines have been examined. They will be illustrated in more detail in the following paragraphs.

Eredità Culturali will be soon linked to the main website of SAGAS Department of Excellence (see note 1) and made accessible through an open digital platform based on three main elements: 1) a database containing all the information for data modelling and management; 2) a back-office to integrate and update the database as well as to insert geometries for georeferencing the cultural objects in the geographical information system; 3) a web portal where users can interface with the database, set up individual searches and navigate within the webGIS.

As far as the database is concerned, after reviewing similar cataloguing and mapping projects based on shared filing criteria, we designed our data standard through a combination of fields extrapolated from three different types of datasheet developed by the ICCD, specifically: 1) the "F" datasheet (*Fotografia = photography*), related to photographic archives; 2) the "SCAN" datasheet (*SCheda ANagrafica = registry datasheet*), valid for any type of cultural heritage and useful when it comes to acquire the minimum set of mandatory data from other information systems that are not fully aligned with the ICCD standards; 3) the "MODI" datasheet (*MODulo Informativo = information form*), which is also a multifunctional model valid for any type of entity

but, besides the minimum set of mandatory standardised data, it offers additional useful fields for entering specific information. In *Eredità Culturali*, while "F" datasheet was adopted in its entirety for photographic archives (see paragraph 3.4), fields taken from the "MODI" datasheet were added to the minimum dataset of the "SCAN" datasheet whenever we deemed that its metadata were not sufficient to describe a particular category of cultural asset. In some few cases, fields were added also from scratch. In this way, we obtained an analytical datasheet whose fields are easy to manage and consult for users with diversified skills and interests, yet capable of delivering all the complexity and specificity of each cultural object. While building the data standard for *Eredità Culturali*, we gave great importance to the relationships that cultural objects and images have with each other in the same archive as well as between different archives. We also decided to make use of a parent record that would collect valid information for a number of different child records. Furthermore, we draw on a series of tags that facilitate the fruition of the data and suggest possible readings and connection paths between datasheets from different archives.

Regarding the management of spatial data, we believe it is essential to connect *Eredità Culturali* to a webGIS because the spatial and territorial dimension represents the perfect bond between the datasheets and their associated cultural materials. At the same time, the spatial dimension exploits those cultural services that enhance the study of the territory and its cultural heritage, and that concretely support the social and economic development of the communities living on it. Moreover, it helps deploying regulatory instruments and creating new strategies for the preservation of cultural heritage. Therefore, we use the open-source software QGIS to create a webGIS referring to the WGS84 coordinate system in order to georeference the cultural objects catalogued in the database. The webGIS is customised and configured inside the digital archive, according to the requirements of the researchers and to the needs of the cartographic representation of the specific cultural materials. Hence, three vector shapes have been implemented: lines, points and polygons.

Once the filing criteria had been agreed, we started entering the data and GIS geometries in the back office, the heart of the system in which all documents are managed through appropriate interchange formats and interface functions. Each cataloguer can work on the data using the filing profile that most suits his/her archive or document collection. Additional details can be provided by attaching images, PDF, 3D documents, etc. to every datasheet. All data will be accessible via a web platform that will present a synopsis of the project and its research lines, and will allow the user to set up individual searches in text form, through a special mask that offers the possibility of searching in all fields, or directly through the map, drawing the area of which he/she wants to investigate. A specific section will inform users about cultural initiatives such as conferences, seminars, publications and other forms of dissemination of scholarly results.

With its large and scientifically solid collection of data on Florentine cultural heritage, *Eredità Culturali* also aims at disseminating cultural content to an audience not necessarily made by specialists, but by people with heterogeneous skills and interests. Indeed, the web platform was conceived from the very beginning as a virtual space for a dialogue between the University of Florence, the scholarly community, the Superintendency, public and private entities, local cultural institutions (museums, academies, libraries), schools of all levels, and the general public. Besides highlighting already existing data, or the results of new and targeted research on single cultural objects and places, the web platform facilitates a virtuous process of valorisation of external contents (whether they are archival, bibliographic, cartographic or iconographic collections) and allows implementations both of archives as a whole, and of each datasheet. Last

but not least, it paves the way for constant updating according to the progress made by research in the various disciplinary sectors. Finally, the database can also be profitably used to develop initiatives and projects aimed at raising the awareness of institutions and citizens towards the knowledge, protection and enhancement of the complex and varied cultural heritage of (and beyond) Florence.

Although the content consultation in the *Eredità Culturali* web platform is already quite intuitive, we intend to create reading paths that actually lead to identify common and transversal themes among the various digitised document collections to further ease the use of information from school students. We have paid special attention to forms of storytelling that can connect diversified contents within the databases, like the story map tool which allows the combination of texts, photos, videos and audios on a geographical viewer, enabling each medium to provide its own specific contribution to the analysis of a given topic. At the same time, the story map emphasises the educational and training purposes of *Eredità Culturali*, since pupils can access the web platform at school and carry out in-depth research on the issues of their interest, by identifying and selecting verified multimedia contents and inserting them into their map. They can even build cultural contents from scratch rather than only recover them from the internet. The application makes it possible to display points of interest on a map, providing them with images and text to understand their meaning and characteristics. It also offers the possibility of searching, selecting and identifying multimedia content on the platform and inserting it into one's own personal map. This means retrieving the appropriate elements from the web to carry out a search, but it could also mean building from scratch. Moreover, by using the 'Story map tour' template, the points related to the selected datasheets will be described in a special window, where the attached title and image, as well as a short textual content, will appear.

In the following paragraphs we will describe the four databases which, at present, form the core of the project: History of Publishing, Geography, Archaeology and History of Spectacle. In particular, the choices we made in the construction of our databases and the filing criteria we adopted in setting up the datasheets. We will show the preliminary results achieved and the activities planned in the second stage of the project to implement the potential of the web platform and expand the contents and information present therein. In conclusion, it is worth mentioning that the involvement of young researchers in the fields of Art History, and Medieval and Modern History is foreseen in the project's financing, particularly in view of the greater significance of a multidisciplinary approach when it comes to valorize such a complex and broad cultural heritage. Together with them, we intend to create a set of shared guidelines explaining clearly and precisely the criteria adopted on a case-by-case basis as well as the reasons for the choices made in the selection of datasheet fields and vocabularies.

Mapping the actors and places of the Florentine printing industry

One of the first four lines of the *Eredità Culturali* project development relates to the creation of a database dedicated to the actors and places of publishing production: professionals (publishers, printers, booksellers) as well as cultural and scientific institutions (academies, museums, scientific societies, that promoted and financed the printing of collections of books, periodicals, translations, etc.) that, from the late fifteenth century to the first decades of the twentieth century, have played

a leading role in the development and consolidation of the Florentine printing industry. All actors who, borrowing the words of Carlo Maria Simonetti, have always moved in the twofold perspective of 'traders' and 'cultural organisers' [Simonetti 1993: 82].

From the point of view of the advancement of knowledge in the historiographical field (now more than ever attentive to the role played by publishers as 'cultural mediators'), the analysis of this specific sector of the Florentine cultural heritage has the ambitious goal to bring out the richness and dynamism of a publishing market characterised by the presence of small and large companies at the centre of networks of cultural and commercial relations of national and international dimensions. Furthermore, in line with the main objectives of the project, and thanks to the tools made available in the web platform – *primarily* the georeferencing system – the work will offer the opportunity to make analytical and descriptive information and digital resources – often little known or only fragmentarily known to non-specialists – available to a wider public.

The starting point for the construction of the digital collection consisted of an examination of the scholarly literature (from general studies on Italian and Tuscan publishing to monographic studies available on individual publishing houses, academies or institutions),[5] followed by a comparative analysis of national and international projects dedicated to editorial production. Both the projects that involved the compilation of printed catalogues (for instance, with regard to the contemporary age *TESEO. Tipografi e editori scolastico-educativi dell'Ottocento e del Novecento* [TESEO] a catalogue dedicated to nineteenth and twentieth-century Italian school publishing, or *EOI. Editori Italiani dell'Ottocento* [EOI]), and those aimed at the creation of *open access* databases have been carefully considered. In this last regard, in addition to the aforementioned projects taken into consideration by all the researchers involved in *Eredità Culturali*, we can mention by way of example the project *EDIT-16. Edizioni italiane del XVI secolo*, [https://edit16.iccu.sbn.it/web/edit-16] which provides useful information, not only for the management of authority files, but also for georeferencing printing works; the *Censimento degli archivi editoriali toscani* [https://www.fondazionemondadori.it/censimenti/toscana/], funded by Regione Toscana and realised by the Fondazione Mondadori; or the database *Bibliografia delle edizioni giuridiche antiche in lingua italiana*, result of a project promoted by the former Istituto per la documentazione giuridica – CNR [http://nir.ittig.cnr.it/bandi/bandiIntroduzione.php#Premessa].[6]

This preliminary work was crucial, not only for compiling a general list of the subjects to be mapped[7] and for collecting the main information useful for the creation of the contents of the individual datasheets referred to them, but also – and above all – for identifying and analysing the criteria adopted in the indexing.

One of the most significant difficulties encountered in the initial phase of setting up the work and construction of the datasheet was, in fact, undoubtedly, the need to make the particular

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5   Some of the essential points of reference include the *Dizionario degli editori, tipografi, librai iti-neranti in Italia tra Quattrocento e Seicento* [2013], and the *Dizionario dei tipografi e degli editori ita-liani* [2013, 1997], or, just to name a few examples, the works [8],[9], Part I and II, [77],[63],[65], or [68] and [74].

6   In this regard, see [10].

7   Thanks to this specific research and the use of other sources, it was possible to identify about 500 subjects (professionals and institutions). A specific datasheet in the database is dedicated to each of them. Compared to the other digital *Eredità Culturali* archives, the compilation of parent records is rather small; the latter will be mainly used to produce content related to large companies (such as that of the Giunti family) that are characterised by the participation of different actors in production activities (heirs, children, brothers, etc.).

characteristics of this specific digital archive dialogue with the parameters of the ICCD datasheet models chosen as a reference for the entire project. It was a challenge to which we tried to respond by proposing a series of changes to be made especially to some of the "open vocabulary" fields or free-text fields, which allow us to insert specifications that are more suitable and respond to the characteristics of editorial cultural heritage. A rather paradigmatic example of this is provided by the field Definition of the Cultural Venue (OGD). Since most of the categories included in the *Thesaurus generale per la definizione dei beni culturali* (General thesaurus for the definition of cultural heritage) provided by the ICCD cannot be used, it was decided to add specific definitions to classify each actor or venue (for example, the list of definitions includes those of 'publishing house', 'museum', 'scientific society', 'peddling printer', etc.). This was all undertaken with a clear view as to the specific purposes of *Eredità Culturali* (starting from the importance given to georeferencing and the maintenance of the principle of interoperability) and the need to adopt adequate solutions to make the data collected and scientifically validated usable both by experienced users and non-specialist users.

Drawing the attention on the datasheet, first of all, it should be emphasised that also for this digital archive, all the key fields of the project are fundamental, starting from those dedicated to data that allow the georeferencing of the listed item.[8] Even more relevant is the section DA – Analytical Data, in which all the information of a descriptive nature regarding the item is provided. In particular, the most relevant fields of this section are Description (DES) and Historical News (DTN). In the latter case, we are faced with a field no longer present in the SCAN datasheet, but obtained from the previous model of the MODI datasheet. The decision to recover the field is mainly due to the desire and need to add and clarify - giving more prominence to them - a series of information, concerning, for example, the various phases of activity of a single producer: since it is a repeatable field, specific data are highlighted and displayed as a bulleted list. In this sense, the Historical News field can be used to offer, for example, an even more detailed description of what are the main phases of the 'history' of a given listed individual, starting from any transfers of ownership or changes in the name or corporate structure of the company, to the reporting of transfers or temporary cessations of activity. In addition, in order to guarantee the most complete description of the asset, it was chosen to maintain and systematically use the Name/title (OGN) field that allows for the insertion, divided from each other by a separator, of all the names of the listed item (for example, it allows for the inclusion of the details of the variants of the names present on the different frontispieces). Regarding the Description field (DES), we are faced with a free text field designed to describe the material characteristics of the place/building/item listed. In our case, however, it becomes a space to create general content inherent to the particular characteristics of printing production. Taking up and expanding what is proposed, for example, in catalogues such as *TESEO* or *EOI*, data are added on the subject of printed publishing genres,[9]

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8   The data to georeference the places of editorial production have not been identified, at present, for all the individuals surveyed: targeted archival research is needed to obtain information that enables the more precise spatial placement of all the actors within Florence. Considering it useful at this stage to have a large number of datasheets that are as complete as possible to be added to the platform in order to test it, it was decided to postpone to the second year of activity, such as necessary archival research (to identify the documentation relating to printing licences or to the registration to the *Arte di stampatori, tipografi e librai* [Guild of printers, typographers and booksellers]), and more targeted bibliographic research. As already highlighted, it is, in fact, possible to intervene later on the datasheets, updating them with the addition of data acquired with more specific research.

9   Regarding the addition of information related to the editorial genres produced, the data is also

but also on collaborations with specific authors, with other printers, with academies or cultural institutions.

Taking advantage of the possibility of making changes to the ICCD models, it was also decided to add additional items to the drop-down menus available for the compilation of some specific fields: for example, to the list of possible relationships between datasheets, it was decided to add the specification "lavora con" ("works with"), which highlights the nature of the relationship between two or more individuals (e.g. in the case of academies that use different printers to print their book products).

Finally, it should be mentioned that, as for the other databases created within the project, in order to suggest possible reading paths and insights for different categories of users of the platform, ample space has been reserved for the sections related to Bibliography (BIB) and Documentation (DO): the objective, in both cases, is to make the web platform a tool for research and information acquisition. Thanks to a careful and meticulous survey of the scholarly literature currently available, each entry includes a rich, up-to-date bibliography, which can be progressively implemented.

Mapping and georeferencing the spaces of Florentine spectacle

The *Eredità culturali* project also involves the census and georeferencing of the spaces for the history of the Florentine spectacle, which are considered a relevant part of Florence's cultural heritage both because of the centuries-old chronological span addressed (15th-21st centuries) and because of the rich variety of the venues involved. The theatres, cinemas and concert halls are included in the census, as well as occasional places of spectacles such as churches and convents, halls of public and private palaces, squares and streets, gardens and courtyards. It is a history full of experiences that was decisive for the birth of theatre in the modern sense and that lends itself in an exemplary way to be studied through new types of knowledge based on digital technologies. In particular, the GIS mapping approach makes it possible to re-read the geography and history of such spaces in a new way, putting them effectively in relation to the city and its urban development, in the belief that only in this way is it possible to understand all their historical and cultural complexity as an instrument of strong civic identity.

The study of the relationship between the theatre and the city, to quote the title of a fundamental book for the history of the spectacle [79], acquires greater legitimacy also thanks to the transdisciplinary approach of the project. If it is true that «l'analisi di un luogo o di un edificio teatrale deve essere sempre *contestuale, unitaria* e *globale*»[10] [[57]: 222] and that the theatre space [22] must be studied with the broader historical, cultural and political context of which it was a part, it is equally true that none of us alone possesses all the multiple disciplinary skills necessary to study its variation in the diachrony of history [[57]: 224-225]. From this point of view, *Eredità culturali* allows the user to compare different points of view and skills, acquiring and practising working methods open to interdisciplinary comparison and, above all, to the connection between

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further emphasised by a series of tags that allow the user to create connection paths between the various datasheets.

10   «The analysis of a theatre place or building must always be contextual, unitary and global».

different branches of knowledge. A useful team effort, which does not take away from the need for rigorous first-hand research and a close correlation with reference studies, but which can offer us an unexpected key that allows us to have access to a non-reductive knowledge of theatre spaces.

As for the definition of the *Spettacolo* datasheet, two questions needed to be first addressed: what criteria should be used to categorise and represent spaces that differ so much in type and chronology? How does one convey effectively to the end user the reasons behind certain choices? Indeed, the concern was that a less experienced user or a user with interests other than purely theatrical ones might be at least surprised to find places such as Piazza Santa Croce, Florence Cathedral or St. Mark's Church in a fund dedicated to performance spaces.[11] How does one explain, in the size of a datasheet, that those very places are so important, also from the *Eredità Culturali* perspective? These questions are of no small importance, and they unfortunately have yet to be answered by either the SCAN and MODI datasheets, which have proved to be insufficient, or by the recent projects dedicated to Performing Arts. While much thought has been given in recent years to the formulation of shared cataloguing standards for the description of material from spectacle and performing arts archives - characterised by the presence of disparate documentary typologies such as scripts, photographs, sketches, newspaper articles, playbills, scores, audiovisual materials, costumes, theatre programmes, etc. [6] - we are still far from a definition. Things are much better when it comes to the problems of audiovisual analysis, transposition and cataloguing of theatrical memory in videos [61], of materials related to live performance [5] and of use of new digital technologies to create theatre. However, the very spaces of the spectacles remained excluded from the debate. It was, therefore, necessary to compare with similar experiences conducted on the architectural heritage, such as the close *Repertorio delle architetture civili di Firenze* (*Repertoire of Civil Architecture of Florence*) [Repertorio delle Architetture Civili di Firenze - Palazzo Spinelli]. An exception worth mentioning is the *Inventario dei teatri storici (Inventory of Historic Theatres)* commissioned by the Emilia Romagna Region, in which about one hundred buildings constructed before the 1940s are recorded with files accompanied by a wealth of technical and historical-artistic information and iconographic documentation amounting to several thousand black and white and colour images [Teatri storici - Patrimonio culturale dell'Emilia-Romagna].

Useful suggestions have also come from other projects of the SAGAS department with which *Eredità culturali* will be in conversation. The first is the *Dionysos* digital archive, founded by Cesare Molinari and directed by Renzo Guardenti [42]: the largest database of theatrical iconography in existence, at least on a European scale, with over 22,500 images and catalogue entries referring to theatre and entertainment from classical antiquity to the first half of the 20th century [Dionysos | Linee di ricerca | Eredità Culturali]. This is an excellent methodological example of the use of iconographic sources for the history of theatre and entertainment. The other one is the *Archivio Multimediale degli Attori Italiani* (*Multimedia Archives of Italian Actors)* (AMAtI), conceived and

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11   At the same time, a more accurate archival-bibliographic investigation was carried out on each place starting from the following reference studies: the catalogues of the important exhibitions organised by Zorzi [[81] and [80]]; the repertoires *Melodramma, spettacolo e musica nella Firenze dei Lorena* [24], and *I teatri storici della Toscana. Censimento documentario e architettonico* [36]; the volumes by Sara Mamone, Caterina Pagnini, Leonardo Spinelli, Paola Ventrone. The aim is to summarise the already known information and highlight any historiographical gaps in order to fill them, whenever possible, with further targeted investigations.

directed by Siro Ferrone and of which Francesca Simoncini is the scientific coordinator [Archivio Multimediale Attori Italiani]. The main aim of the *Archivio* is to create a database for a new Encyclopaedia of spectacle keeping with the rigour and scholarly assumptions initiated by Silvio and Alessandro d'Amico, starting from the reconstruction of the biographies of Italian actors from the 16th century to the present day [[32];[72]] and represents an indispensable tool at the service of the history of the spectacle.

Eventually, it was decided to start from the SCAN datasheet and to supplement its layout with dedicated fields. For example, in the section dedicated to the Definition of the Cultural Venue, the field Classification/Other Specifications (OGT) was strengthened, making it useful both to indicate previous uses of the venue (e.g. in the case of a theatre turned into a cinema) and to give more information on places only occasionally used as theatre spaces (e.g. churches and squares). At the same time the field Name (OGN), which serves to indicate the official name of the venue and/or the one of current use, has been supplemented with a specific one, called Other Names (OGAD), in which to enter all the variations by which that place has been identified over time.

Nevertheless, the most important paragraph has been identified in the Analytical Data (DA) section, in which the catalogued asset is described in detail, highlighting its specificities and framing it in a historical-critical manner. This made it possible, especially in the case of theatrical venues, to solve the problem of effectively restoring their use in a spectacular context. The dataset was divided into two parts. The first provides both a free text description of the venue under examination - giving particular attention to its type, structural characteristics, and the activity carried out, as well as all the additional information and insights useful for understanding the space described as a spectacle venue (DES) - and an account, again plain text, of its iconographic and decorative apparatus (AID). In the second, repeatable text, the chronology of the use of the property is reconstructed, with specific attention paid to certain particular situations in which it was used (e.g. as a venue for relevant drama schools or for significant spectacular events).

The sections on Documentation (DO) and Bibliography (BIB) are no less important. Both repeatable and implementable, they have been designed to offer a constantly updated academic literature of reference and possible in-depth studies through the reporting of archival, manuscript, printed and iconographic sources and their location, with particular attention to the documents preserved in Florentine museums and archives, with the possibility of suggesting dedicated itineraries to discover the Florentine theatre heritage through the creation of guides and story maps.

Mapping and georeferencing the archaeological evidence of Roman Florence

Eredità Culturali provides for the georeferencing and cataloguing of the archaeological evidence relating to the Florentine plain outside the ancient urban walls with the aim of reconstructing the substrate and the context on which the city, and its development, is based. A particularly important cultural site has been identified in the Roman aqueduct of Florentia, rescued from oblivion by the study of the architect Frido Chiostri, published in 1973 and then updated in 2002 [21]. Chiostri's essay brought the scholars' attention back to a monument which, as occurs in similar contexts in Italy and in Europe, turns out to be an excellent witness of the engineering skills and technological achievements relating to hydraulic systems that allowed the

Roman civilization to raise the standard of living, transforming the public offering of a precious commodity such as water as an expression of power, an *instrumentum regni* [12]. I believe that today it is necessary to implement this study with the new data that has emerged from the archaeological excavations of the last twenty years. It is even more important to give back to the community the great informative potential of this data, using dissemination strategies that enable as wide an audience as possible to use it. To respond to this need, I have elaborated and inserted in the *Eredità Culturali* geodatabase twenty-five analytical datasheets, aggregated into a parent record that summarises the main characteristics. They concern the still existing sections of aqueduct, or excavated and then covered, or documented in literature but no longer existing, along a route of about 15 km from the Val di Marina, in the municipality of Calenzano, up to the city of Florentia.

The investigation carried out for the elaboration of the datasheets took into account the indications provided by the National Geoportal of Archeology (Italian Central Institute for Archaeology) [il geoportale nazionale per l'archeologia - GNA], the online platform of a broader project for the standardisation of scientific documentation produced by all the Italian archaeological expeditions that will soon become the national infrastructure for the collection and publication of all archaeological data [15]. In addition to the sources available in libraries and archives, my research has benefited significantly from some digital archives and geodatabases freely accessible online, such as: the Internet Archive [Internet Archive], an American activist non-profit organisation and digital library that provides free public access to digitised materials such as books, websites, software applications, music, videos, moving images, advocating a free and open Internet [[2]: 141]; the Library of Archeology and Art History (BiASA) [Periodici Italiani Digitalizzati], founded in Rome in 1874, which collects and makes available online, among many other digitised Italian periodicals, the reports of the archaeological excavations (*Notizie degli Scavi di Antichità*) carried out in various Italian locations, including Florence, and published by the Accademia Nazionale dei Lincei between the late 19th and early 20th decades; ArcheoFI, [ArcheoFI] the cartographic web portal for the management of the main urban archaeological information (potential maps, historical cartography, data on finds and excavations from 1860 to 2007) of the Municipality of Florence which allows to visualise the archaeological evidence of Florence as recorded up to the year 2007, and to consult the related files; the MAPPA project, Methodologies Applied to the Prediction of Archaeological Potential, [Mappa Project] an open digital archaeological archive and webGIS platform designed and structured by the University of Pisa and funded by the Tuscany Region which makes accessible all public data from archaeological investigations in part of the Tuscan territory through a network of standardised systems and procedures for the management of archaeological data.

As far as the georeferentiation of archaeological evidence is concerned, although the use of geographical information systems is by now a key part of the archaeologist's background, and georeferencing the archaeological heritage has long been recognized as an essential basis for its study, protection and valorization, methodologically uniform initiatives have not yet been undertaken in Italy and, sometimes, even large-scale national projects present incomplete data [31]. For the georeferentiation of the archaeological evidence in *Eredità Culturali*, GEOscopio, [GEOscopio - Regione Toscana] the geoportal and webGIS tool of Tuscany, was fundamental to view, query and download a large amount of geographical data related to the territory, since it makes available to users the Historical Land Registers (CASTORE service), which offer very useful information for archaeological investigations on ancient and modern toponyms, and a

series of orthophotos covering all of Tuscany, which document the state and evolution of the territory from 1954 to today. Some frames, together with others consulted at the National Aerophoto Library (Central Institute for Cataloguing and Documentation), were used to deepen the investigation on those underground sections of the Roman aqueduct of Florentia located in areas that remained cultivated until recently, on which it is possible to recognize traces of alteration in the vegetation due to the presence of structures in the subsurface.[12]

The significant extension in length of the aqueduct led to search for the filing criteria that best suited its correct description. In this sense, I used a tree-like structure in which a parent record describing the aqueduct's whole (partially hypothetical) route would collect a certain number of child records, namely the sections of the aqueduct documented by excavations or just by literary sources, and would outline their logical link due to their cartographic nature. In this way, the parent record provides information valid for the entire structure, whilst the child records supply extra information. For both of them, the association with the GIS geometries specifies shapes and positions in the space. Each child record can have more than one parent.

In the section "Relation" (RV), information concerning the relationships between different catalogued objects are recorded. In appropriate fields, the following features can be described: a) the type of relationship (RSER) that exists between the catalogued objects, which can be vertical, describing a parent-child relationship, or horizontal, describing a parent-parent relationship; b) the specifics of the relationship type (RSES) as identified by the ICCD as the most recurring ones among the different types of cultural materials, explaining if it is a direct or inverse one; c) additional notes (REZ), which allow for the acquisition of any other information in a text form. As far as the roman aqueduct is concerned, the parent record describes the monument in its entirety, and the polygonal geometry associated with it on the webGIS outlines its full path. The parent record is correlated to the child records through the relationship type "it is in an urban-environmental relationship with" (controlled vocabulary), defining, in a coherent context, an inverse vertical relationship. Among the fields chosen for the *Eredità Culturali* filing model, the most relevant ones for archeological cataloguing are: the archaeological provenance (RES, section DA - Analytical Data), because it provides crucial information on the archaeological investigation (date, supervisor name, scientific director of the excavation, etc.) and on the place where it was carried out (province, locality, sector, etc.); the historical-critical news (NSC, section DA - Analytical Data), because they frame the catalogued objects from a historiographical point of view, referring to old published and unpublished sources, reports, etc.; the administrative-specific measures (NVC, section MT - Technical Data), because they indicate whether the archaeological record is subject to protection devices, i.e. safeguard areas of archaeological complexes, sites and monuments, architectural monuments or landscape contexts of particular interest and relevance, and so on; the degree of accuracy in positioning the GIS geometries (AFF, section GE - Georeferencing), which can be conveniently expressed as low, medium, or high. For example, the location of the three sections of the Roman aqueduct that still exist today have been marked as highly reliable in the map, while the location of those sections that can be known only from literary sources show lower reliability. Finally, attachments in various formats (jpg, tiff, pdf, png, etc.), 3D reconstructions and digital elevation models within the section DO - Documents allow the users to gain informative insights.

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12   The photo-aerial interpretation work could not be carried out without the precious contribution of the archaeologist and photo-interpreter Dr. Giorgio Pocobelli, from the National Research Council research group Archaeology, Settlements and Territory - Institute of Cultural Heritage Sciences (ISPC).

Mapping and georeferencing the photographic archives of the University of Florence

Eredità Culturali also provided for the analysis and cataloguing of the photographic collections inherited by the former Institute of Geography at the University of Florence. They are part of a strategic project that includes also the photographic and cartographic heritage preserved in the Italian Geographical Society and in the former Agronomic Institute for Overseas Agriculture, which was included in 2016 by the Italian Agency for Development Cooperation owned by National Aerophoto Library and *Accademia dei Georgofili*. These collections were representative of the SAGAS Department main research lines, and this makes them part of the Florentine cultural heritage.[13] They consist of approximately 1.500 photographs, most of which were taken by Vittorio Sella during the five expeditions organised and led by Luigi Amedeo di Savoia-Aosta, Duke of the Abruzzi. The photographic campaign was carried out during the 1897-98 expedition to Alaska, culminating with the ascent of Mount St. Elias (5514 m.a.s.l.) on the US-Canadian border. It includes about a hundred images. A second photographic campaign, also curated by Vittorio Sella, concerns the exploration and ascent of the Ruwenzori range in Africa, carried out in 1906, with a total of around 470 images. However, the 1909Duke of the Abruzzi's expeditions to Karakorum in Central Asia, aiming at reaching the summit of K2, is undoubtedly the best known. Although unsuccessful in this endeavour, the Italian explorers reached the highest altitude ever reached, during the ascent to Bride Peak (7498 m). Vittorio Sella's images of majestic mountain landscapes are part of this collection and some panoramic shots by Federico Negrotto, about 440 photographs in all. Finally, the exploration and topographical survey activities carried out in 1928-29 along the Uabi-Uebi Scebeli river, between Somalia and Ethiopia, are documented by 525 shots taken by Fabrizio Palazzolo, Orazio Pavanello and Edmondo Angeli [Azzari-Berti-Cassi 2019].

I catalogued and georeferenced those collections, most of which are already available in a digital format. All of them constitute sources of relevant interest for the study of places and territory from a diachronic perspective; therefore, archiving this specific photographical heritage is an important step not only for its protection and preservation but also for its valorisation and dissemination, which is fundamental to significantly increase the collective knowledge, since these collections are numerically important and qualitatively remarkable. The differences in the documents and their varying state of preservation will allow not only to test further ways of describing them, but also to implement the geographic subject archive with documents of a different nature, such as historical cartography collections.

In the early stages of the *Eredità Culturali* project, one main issue in defining the Geography datasheet was to meet the specific needs of the studied documents, maintaining a dialogue with datasheets of the other scholarly fields. The reference point for building a datasheet concerning the photographic collections was the "F" datasheet from ICCD. For its morphological structure

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13   Olinto Marinelli and his successors Renato Biasutti and Aldo Sestini constituted a significant portion of the scientific heritage held today at the SAGAS Department. It consists of a number of photographic funds, studied since the mid-2000s within *Territorio è Culture* (TèC) research unit coordinated by Laura Cassi, and whose digitisation activity has been resumed in recent years by Margherita Azzari with the *Memorie Geografiche* project. The images relate to three main collections, in addition to Luigi Amedeo di Savoia-Aosta's fund: De Filippi's expedition to Central Asia (1913-1914); Renato Biasutti's anthropological collection (1930s); Aldo Sestini's collections (1930-1980).

and methodological approach, this datasheet model is a starting point to formalise a catalographic apparatus specifically focused on photographic assets, which by their nature cut across different disciplinary fields. One of the main problems evidenced during the indexing of the photographic collections, was the assignment of a subject, including the analytical and descriptive information which are necessary to the semantic and thematic individuation and description of the object of the photograph; a specific field in the datasheet has been created for the attribution of a subject.

Each record will be visible on *Eredità Culturali*'s website and is related to each other and to a specific section corresponding to the expedition during which the document was produced. For each photograph, coordinates have been given to geolocate both its place of conservation and its identification in the historical-documentary dimension. Moreover, the reconstruction of the itineraries is being carried out using the open-source QGIS software to implement dissemination and usability, as deduced from the numerous studies already published, travel diaries and other documentary sources.

The above-mentioned activities are the first step for the knowledge and enhancement of such a scientifically relevant historical and cultural heritage. Therefore, digitization of all these contents, and their publication on the *Eredità Culturali* website, will enable the public to access them and will safeguard all the information from hackerage and physical damage due to natural hazards. Hopefully, these contents should be fully studied to understand the details of each artefact, with the goal of investigating also interests, researches and activities carried out by the Florentine geographers in the widest network of Italian academic geography.

Conclusion

In this article, we presented the first phase of *Eredità Culturali* to reflect on the results we want to achieve, both on the scholarly research side and on the dissemination side. The work to be done in the short and medium term necessarily takes into account this dual vocation of the project. Given the richness and complexity of the Florentine cultural heritage, more researchers in the fields of Art History, Medieval and Modern History will be recruited and involved to implement the database. To integrate them in the research team and, above all, to open *Eredità Culturali* to external collaborations in the near future, a set of guidelines for consistent cataloguing will also be created that can accommodate the needs of multiple communities having different types of data entry.

During the first year of work, we had scheduled some activities to present the preliminary results on a double track: on the one hand, we aimed for the involvement of the academic community by organising seminars for the students enrolled in the doctoral programs at the University of Florence, and by delivering monographic publications and scholarly articles; on the other hand, we focused on expanding collaborations with Florentine cultural institutions, in order to implement the number of digital archives in the project platform and to organise events and activities aimed at a non-specialist audience. In this last regard, in November and December 2022, two initiatives have already been carried out that have allowed us to structure and propose a reading path through the records already uploaded on the website, above all using a story map dedicated to the theme of water. This is a work perspective that will surely be implemented over the next few months.

Funding

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