The Digital Platform of D.I.R.A.A.S. (UNIGE): An Informatic Application for the History of Art Criticism and Photography

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This project studies photography as an instrument for artistic and historical teaching in relation to the didactic traditions of the Humanities at the University of Genoa. This research was initially based on an analysis of the corpus of glass diapositives and phototypes mostly owned by Giusta Nicco Fasola, Genoa's first art history professor, and currently stored by D.I.R.A.A.S. (Dipartimento di Italianistica, Romanistica, Antichistica, arti e spettacolo). The corpus contextualizes Fasola's scientific and didactic interests in relation to her complex biography as a woman, professor, and political combatant in the Resistance in Fiesole and Florence. The central element of this analysis is the project for a prototype of a digital art history photo library, intended as a place of study and research and as a virtual communication platform. The overall goal of this work is to investigate the relationship between photography, history, and art critique.

Key words:
Photography, History of Art, Digital Archives, Digital Humanities.

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1. INTRODUCTION

This project studies photography as an instrument for artistic and historical teaching in relation to the didactic traditions of the Humanities at the University of Genoa. This research was initially based on an analysis of the corpus of glass diapositives and phototypes mostly owned by Giusta Nicco Fasola, Genoa's first art history professor, and currently stored by D.I.R.A.A.S. (Dipartimento di Italianistica, Romanistica, Antichistica, arti e spettacolo). The corpus contextualizes Fasola's scientific and didactic interests in relation to her complex biography as a woman, professor, and political combatant in the Resistance in Fiesole and Florence. The central element of this analysis is the project for a prototype of a digital art history photo library, intended as a place of study and research and as a virtual communication platform. The overall goal of this work is to investigate the relationship between photography, history, and art critique.

This article is a synthesis of the doctoral dissertation in Digital Humanities, presented at the University of Genoa (May 2018) with the title: *Giusta Nicco Fasola and photography as a tool for art history in Genoa. The project for a D.I.R.A.A.S photo library.*
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This analysis opened up a new art historical challenge, for the phototypes and documents connected to a broad range of art historical sources, as well as renowned Italian photography studios. In addition, this research caused us to reflect on approaches to the photographic materials. Photography is a modern cultural tool. In the first place, phototypes bear witness to events involving works of art, archaeological sites, and buildings. They are also mostly reproductions, and their distortions and selectivity are evidence of the professor's methods of art historical pedagogy. Unfortunately, many documents pertaining to the photographic materials have been lost, and it has not been possible to find their historic inventories or the initial documentation of their earliest rearrangement (in the library of the Faculty of Literature and Philosophy in Genoa). However, through direct observation of the phototypes, research in other photo archives, and discussion with professionals in the industry, it has been possible to propose a technical and formal analysis of each object retracing Fasola's approach to photography and the camera. By relating the camera to the professor's didactic approach to her research topics, this work also affords photo archives and libraries a central role as guardians of research methods and historical pedagogy.

Although university photo libraries are a largely unexplored field of study, new research attests to the historical value of such places. In 2017, two conferences hosted by the universities of Udine and Naples clarified the contributions of photo archives and libraries in institutional and academic contexts. The conferences built upon a wide range of discussions, including the relationship between analog and digital media, the digitization of phototypes, the creation of inventories and catalogs, and the elaboration of historical research methods and practices. The methodological conversation has proved necessary to the present effort of understanding the lives of particular photographs and their later representations, as well as their relationships with the teaching methods of professors.

The aim here is to understand the strategies academic institutions have used to study the photo archives of art history, focusing on their processes of digitization and preservation, as well as the theories at the basis of the different study methods. This research can be a means of communication with other existing photo archives and libraries within Italian universities that aim to advance the goal of sharing research and information, by reactivating the role of the photo library as a physical place of study on par with similar organizations at the international level.

The initial phase of artistic historical research was followed by practical research in information technologies, with the goal of creating a prototype of a digital academic photo gallery. We ultimately proposed to expand the D.I.R.A.A.S photo gallery into a university-wide digital library. In creating our proposal, we generated a survey, which helped us hone our model for a shared project between different departments and museums, each with their own academic structures and cultures.

As outlined above, art history photo libraries, intended as places of research and study as well as the everyday practice of art history, have been, at least up until the 1990s, active environments and essential points of reference for students and teachers alike. Throughout the 1990s, as digital photography and new didactic methodologies in the Humanities emerged, art history photo libraries underwent a crisis. The new trends in historiography and the explosion of online images made photo libraries appear obsolete and no longer able to fulfil their academic purposes. However, 1999, the year of a conference in memory of Paolo Costantini, saw the awakening of interest in the photographic heritage of academic institutions. This occasion marked a significant moment of reflection, in which

art historians and other experts were able to address the state of national photographic heritage. Relatedly, Digital Humanities research can exploit new technologies to support Cultural Heritage, especially tools, software, and research instruments that can classify, catalog, and archive artworks as digital resources.

The Digital Humanities have contributed to the development of strategies, practices, and working methods in various disciplines. D.I.R.A.A.S. analyzes how art historians and IT specialists use communicative strategies to link various skills and professions, implementing useful tools for the documentation and valorization of photographic heritage on the Internet. Since the early 2000s debates have persisted regarding the digitization of archives (photographic or other) and the advantages and problems introduced by the new technologies of documentation. New needs and practices involving photographs and photo libraries have developed following a number of significant nation-wide initiatives regarding digital documents, including the plan devised by Minister Dario Franceschini to create an Italian Digital Library. Also worth mentioning is the creation of the *Europeana* photography archive, which stores two million digital photographs [Tanni 2017]. Such initiatives have triggered debates and discussions of new aspects of photography, in relation to both the object depicted and its digital reproduction. In recent years, the dissemination of new information technologies has led to discussions of the "digitization rush" of materials (documents and photographs), a discourse that some scholars call "an archaeology of disciplines" [Edwards 2011].

With the growth of digital technology, institutions have had to face the question of whether to make their materials accessible on online platforms. This issue encouraged the necessary renewal and updating of the tools needed to implement and regulate digitization, while also motivating representatives of different disciplines to join forces in establishing common, shared procedures using the new IT systems. As museums and other institutions have gradually implemented standard practices for the digitization of documents, they have developed databases, platforms, and sites exhibiting digital resources and objects. At the same time, this fast growth has raised problems of storing and preserving digital materials, such as the question of how to implement these resources, transform the analog originals into electronic media, and act without a support structure for the necessary scholarly theory and criticism. The question of digitization has incited a new wave of research that has also involved professionals in the cataloging, conservation, and restoration of cultural heritage. Many of these professionals are also currently engaged as interpretive "mediators," investigating cultural as well as technical questions. This newfound awareness, however, does not seem to find a full realization in practice because the pace of digitization has outstripped the communication of the critical discourse beyond the individual or regional level. This has created a both fragmentary and fragmented context, further complicated by the cyclical obsolescence of IT media and of the guidelines for digitization.

This article thus briefly examines the working model used in the project for a D.I.R.A.A.S. photo library. In the future, this project may extend to the whole university of Genoa in order to unearth forgotten didactic material that would otherwise be doomed to oblivion.

2. CATALOGING AND ARCHIVING: NEW TECHNOLOGIES FOR DIGITAL ARCHIVES

Cataloging cultural heritage is a complex process which requires the cooperation of most humanistic disciplines. These fields are beginning to harness the wider scope of applied computer science. The diffusion of new technologies has created new, hybrid professionals, whose main task is to catalog and archive cultural heritage by linking large amounts of data and information about artistic objects. Professionals must be able to navigate new areas, moving beyond the specific knowledge of their discipline and embracing the new technical solutions of information technology. Over the past few years, museums, archives, and libraries have turned their attention towards these types of practices, creating interactive online repositories with swift and accurate web design. Managing such information can be challenging, as the platforms are created using various languages and structures, posing problems of compatibility. In addition, each institution applies the standards of inventory and cataloging that are particular to their field: librarians follow the rules laid out by library sciences, and archivists those of archival description. This raises the problem of how photography is considered from an ontological and epistemological point of view. In order to systematize objects that have been cataloged separately, museums and other institutions have invested in new multimedia digitization projects, while also making them available and accessible to a broader audience and not only specialists. The inventory goals established by previous institutions can be understood and maintained by cross-analyzing the variations of the stored objects and their means of documentation. Some of the most significant aspects that a Digital Humanities study should consider when studying documents include:

- Management systems for digital collections;
- Digital storage systems;
- Research tools and instruments;
- The means of presentation and visualization of the system.

When developing a digital platform for the D.I.R.A.A.S. photo library, we have thus considered many factors in choosing descriptive typologies appropriate to the complexity of the stored photographic materials. Consistent with debates of the recent past concerning academic art history photo libraries, our aim is to question the marginal role to which photography has been relegated, and thereby draw the attention of various kinds of professionals, who are invited to reconsider their role in the light of new research directions. Starting from the reorganization of the analog photo library and the study of Giusta Nicco Fasola's didactic material, doctoral research has laid the foundations for reconsidering the possibilities offered by new technologies, especially for the organization of information and the display of the University of Genoa's photographic material in a new web space.

3. THE D.I.R.A.A.S. VIRTUAL PHOTO LIBRARY PROJECT

The D.I.R.A.A.S. photo library intends to encompass the storage, inventory, digitization and valorization of the nuclei of images identified in the Department's photographic collection. It also follows the theoretical notion that photography is a documentary source, to be considered alongside contextual documents that help to retrace the biographies of the professors of artistic and historical

subjects at the University of Genoa. After evaluating cataloging methods and the existing online photo libraries in collaboration with Professor Marina Ribaudo at DIBRIS, we have assessed the software considered most suitable to the University of Genoa's requirements (Fig. 1).

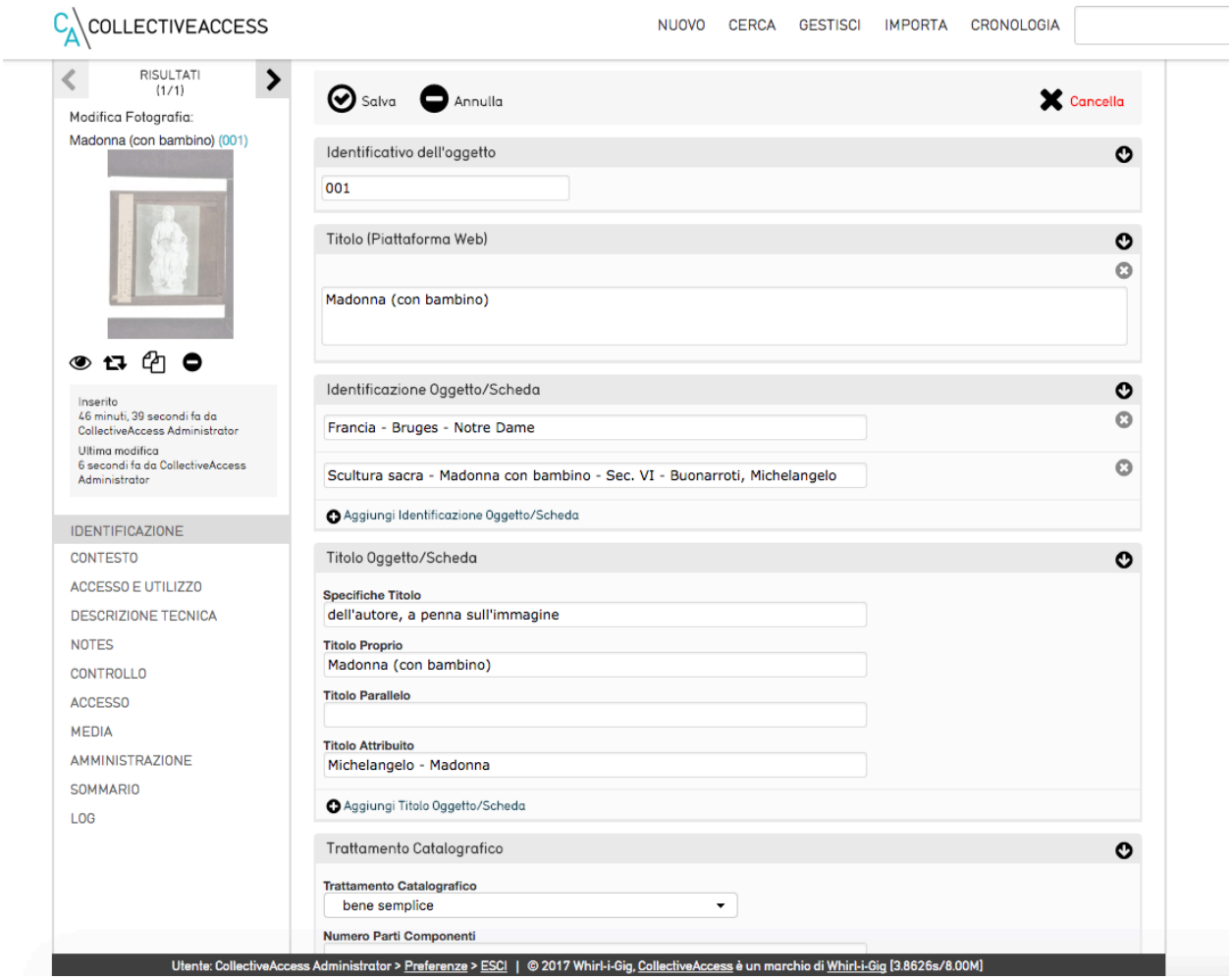

Figure 1. D.I.R.A.A.S. virtual photo library. Collective Access database platform.

Our software was available through Collective Access and was selected based on several key criteria:[1]

- Suitability for cataloging photographs and Collective Access (with the fields and sub-fields of the cataloging sheet starting from the linked open data made available by OPEN ICCD)
- Ease of use
- Long-term software maintenance
- Compatibility with the main archival standards

[1] http://www.collectiveaccess.org/configuration; http://docs.collectiveaccess.org/wiki/Metadata_Standards.

- Minimum system requirements (hardware and software)
- License

Our model, studied in collaboration with DIBRIS, employs the open-source software Collective Access as a foundation on which improvements have been implemented to enhance the exhibition of photographic materials, such as interactive timelines, network graphs charting the relationships between key players of art history in Genoa, maps and georeferences, files related to the digital objects, and digital reproductions in .jpg format.[2] The platform's ability to create internal connections and relationships between information is useful, especially considering the potential for collaboration across art historical subfields. Moreover, it served our main goal of creating new means for the online exploration of photographs and documents of potential interest to the University, starting with existing photographs, mostly teaching aids. The portal, the result of several years of research, can be a tool for non-experts and professionals alike, the latter contributing to the implementation of new search categories through a crowdsourcing micro-blog application.

The platform makes it possible to view data and geo-data, zoom in on each image, understand the location of the objects through GIS and WEBGIS technologies, and superimpose various layers to enable users to navigate the map and the locations where objects are found. Among the other operations guaranteed by the platform are:

- Database searches and queries
- User-friendly content searches starting from the main menu
- A micro-blogging function that allows scholars and other users to participate

The creation of a web space directly accessible from the university's website is essential in order to make the university's resources accessible to a wider public and create synergy between different skill sets. Collective Access was chosen for the short-term goal of managing the photographic materials as well as the long-term goal of enriching the platform with diverse digital items, as in the Phaidra website. Collective Access makes it possible to manage archives and documents as well as process cataloging sheets according to the most up-to-date international models. The software guarantees the quick updating of data, separately for each user, and is also linked to a Wordpress Content Management System. The graphic interface of the gallery also uses Wordpress, and thanks to Dr. Nunzi's programming, the user experiences a smooth transition from the Wordpress home page to the cataloging system without noticing the change of platform. Version 1.7.5 of Collective Access, the latest update as of August 2017, is used for the prototype. The system is open-source and easily updatable; the text and information within the pages can be modified or hidden from the public depending on the privacy settings. The database can be customized by adding or deleting fields and subfields. Also, the files allow direct access to Google Maps for the georeferencing of locations. Finally, it is possible to structure photo galleries so that the files are related and connected to each other. This especially serves the didactic goal of the project to ensure a broader comprehension of the role of art historians and the sources they use (Fig. 2).

[2] http://www.aspi.unimib.it/centro-aspi/il-portale-web/.

Collective Access boasts an active community, and the system is continuously developing and evolving. The software has a GNU free software license. The basic user interface complies with current web standards, and its content viewer is flexible and rich in features. It is even possible to view content in detail directly from the web app and to download versions of the desired content at a range of resolutions.

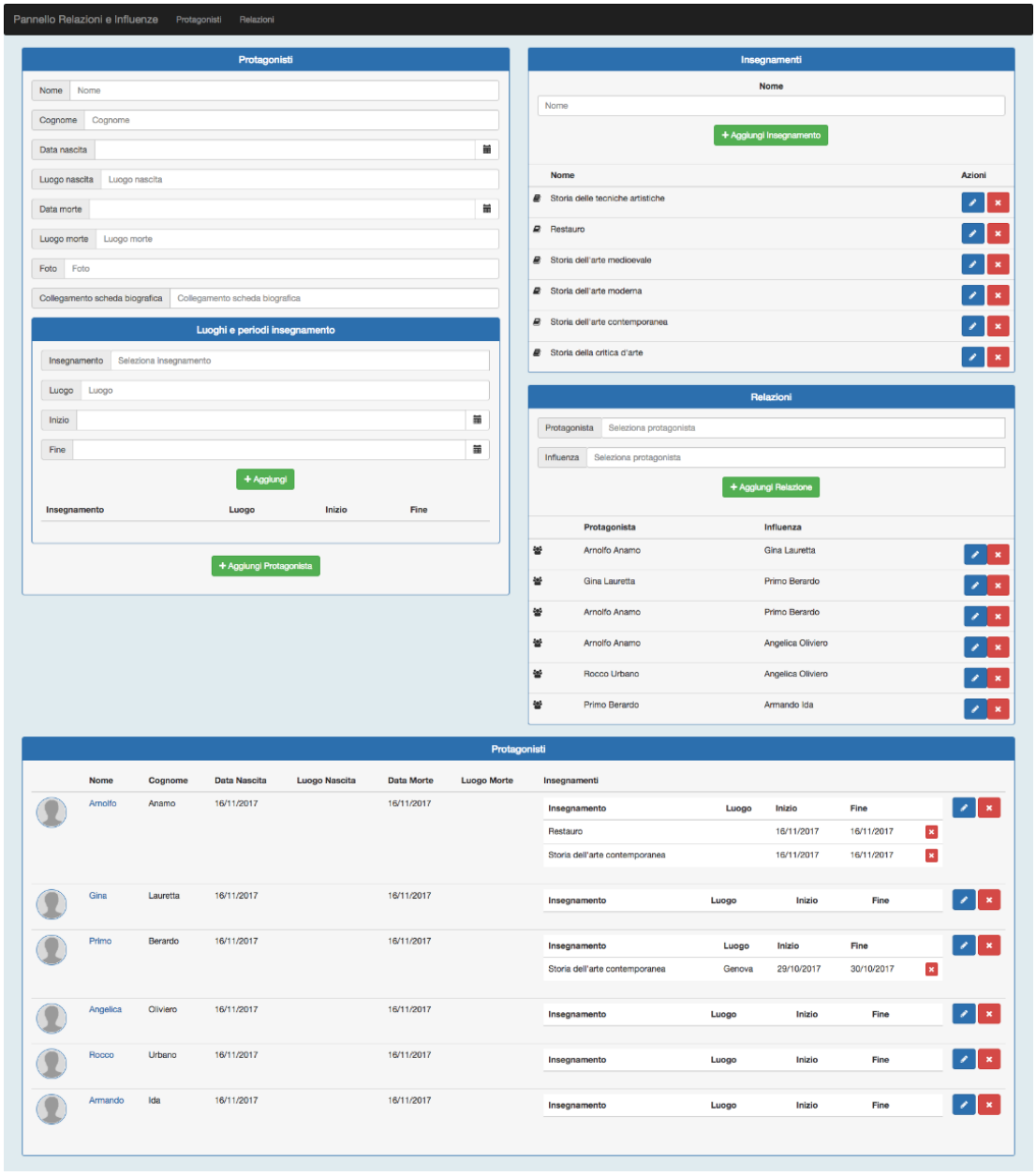

Figure 2. The D.I.R.A.A.S virtual photo library. Data entry system showing linking capabilities between files.

Collective Access currently guarantees great flexibility and can handle changes and new implementations; however, the cataloging model Scheda F has not yet been integrated according to ICCD standards. To guarantee software updates as the first usable function during the installation, we elaborated a support program for the programming language Python in collaboration with Dr. Simone Nunzi, taking as an input the XML standard provided by OPEN ICCD. Following the approach used by xDams, we integrated ISAD(G) and EAD files. Collective Access uses models with supplementary information in order to maximize the compatibility of the cataloged objects with other platforms, guaranteeing the interoperability of the data.

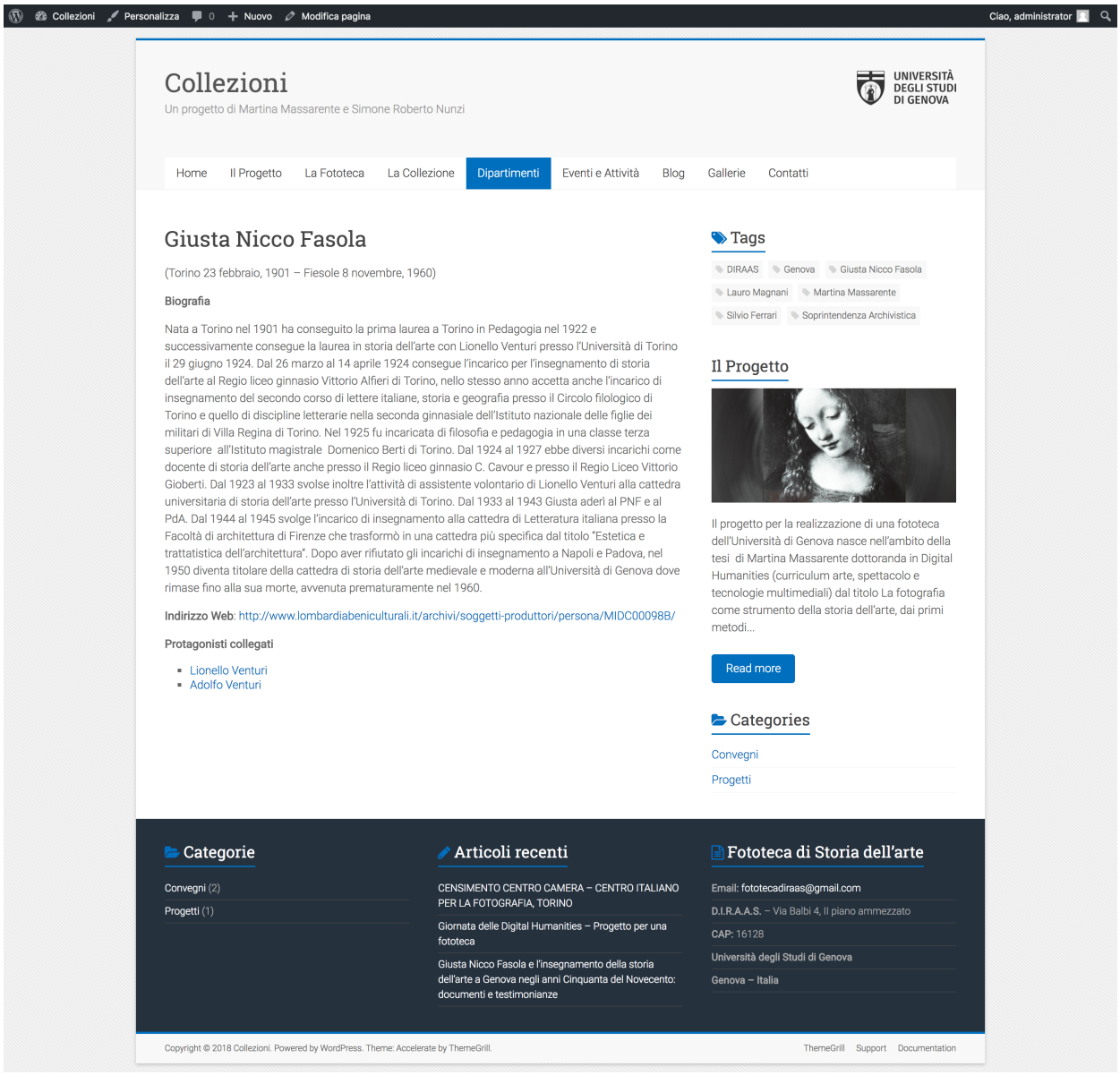

Figure 3. The D.I.R.A.A.S. virtual photo library. Biographical page for Giusta Nicola Fasola.

For the most part, GLAMs (galleries, libraries, archives, and museums) lack an approach to data interoperability that makes materials accessible to specific disciplines and fully exploits the potential of digitization. At the same time, these institutions have opened up to a wider and more diversified audience, which has made it all the more important to consider models for documenting heritage that provide the correct context and directly involve users, exploiting, for example, virtual exhibits of digital objects.

There exist effective open-source tools that institutions use to create a network of digital objects and resources, but they are often difficult to navigate and use. Let us therefore shift our focus from exhibition methods to the audience's ability to interact and participate. Digital archives are fertile ground for experimentation with innovative access models, making full use of digitized heritage.

In the light of such considerations, our research has focused on the modalities of exploration, research, selection, and display of the digital material in order to present contexts, characters, and locations involving the University of Genoa. To this end, the platform was implemented with a system that maps the relationships between art history professors, using a JavaScript app that represents relational data according to conceptual map models. The JavaScript data extractor and the functions connected to the visualization of the data allow for users to navigate and discover information within the portal. This type of application makes it possible to input the personal data of the art history faculty in a search bar, and call up their conceptual relationships, such as their relocations between places, research and study activities, academic experiences, and teaching traditions (Figs. 3, 4).

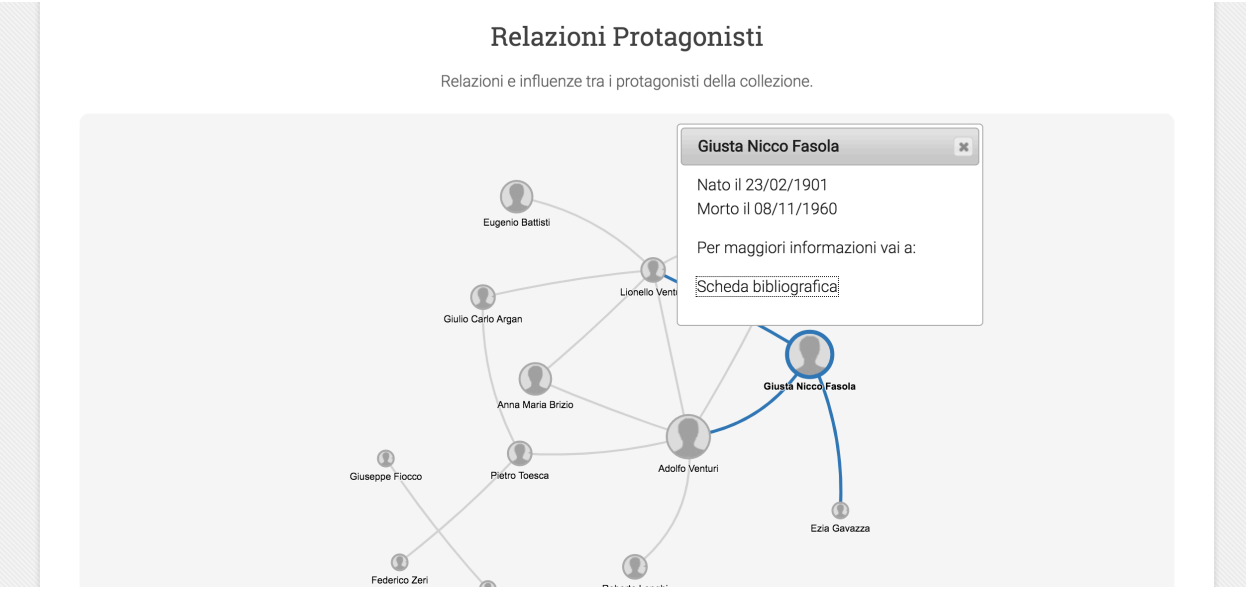

Figure 4. The D.I.R.A.A.S. virtual photo library. A map of biographical networks among art historians.

Thanks to this application, implemented and modified to make data input simple and intuitive, it will be possible to visualize how certain theoretical positions have spread in Italy and abroad. In short, the program creates a georeferenced conceptual map of the history of art critique.

We have also made technical improvements to simplify the user's process of inputting data. For example, when filling in the "F file," the program suggests to the cataloger the correct compilation procedure, marking the mandatory fields and the free text ones.

By logging into the back end, accessible by signing in under the heading "Galleries," the cataloger can easily compile the file while simultaneously working with the physical object. We have facilitated the task of describing complex items, especially photographs, by introducing in the left sidebar a series of categories structuring the fields of object description. Thanks to the Linked Open Data system made available by Open ICCD, it was possible to implement Collective Access's cataloging system for all the data in the "F file." The software makes it possible to save at every step during the compiling and enables a PDF export at the end.

It was also considered necessary to expand the closed vocabularies for inputting data in the cataloging file, as Collective Access, despite providing many international ontologies and thesauruses, did not contain all the necessary references for a correct object description according to ICCD's standards.

As for graphic appearance, Collective Access, combined with Wordpress, provides a great number of standard and customizable templates. While developing the graphic design, we kept in mind the institutional value of this initiative. After verifying the data-harvesting possibilities of the PRIMO system (managed by the University of Genoa library system), we ultimately chose graphics and colors that preserved the University's brand identity and satisfied its requirements for communicative clarity.[3] The virtual photo library is organized according to a menu bar with the following sections: "Home" (main home page with direct access to the particular elements of the digital photo library); "The project" (explains the ongoing project and the interdisciplinary collaborators who are involved); "The photo library" (provides a short description of the photo library, its structure and the heritage objects stored within); "The collection" (presents the photographic collections); "Departments" (a 'work in progress space hosting all the departments that intend to take part in the university's digital library); and "Events and activities" (sharing activities carried out by scholars who use the photo library). In addition, the Blog is devised as a space for open discussion available to junior and senior scholars alike, as well as a bridge between the University and outside users. This space also enables the continuous updating of information, with news regarding projects and activities, research on specific photographic collections, and workshops. The Gallery allows direct navigation of photographic material and includes a space dedicated to insiders (art historians and catalogers) that is directly linked to the catalog files (temporarily limited to diapositives on glass). A final section contains contacts and our location.

In order to facilitate the use of the platform as a working tool and research laboratory, we equipped it with a micro-blogging system, separate from Collective Access, making both systems independent and specialized. Due to its simple and versatile features, we used a Wordpress system for data entry, the front end, and active blogging by users.

[3] The term harvesting refers to the operations of collection, interchange and interaction between data repositories (database) adopting, in this case, the open protocol OAI - PMH (https://www.openarchives.org/pmh/).

We our currently devising, in collaboration with Prof. Annalisa Barla and Dr. Giancarlo Gasparini of DIBRIS (Unige), an application that allows the use of GIS to navigate repositories of photographic heritage. WebGIS can be accessed via a web browser and allows the online floor-by-floor navigation of the structures. The spatial subdivision into floors and rooms will allow users to access data on the collections and images, as well as the building's blueprints and the locations of the individual works.

4. LATER DEVELOPMENTS: A CENSUS OF THE ATHENAEUM'S COLLECTIONS

During the years of my doctorate, the idea of creating of a larger online space that may spread awareness of the D.I.R.A.A.S. collections has raised the interest of other interlocutors, especially from the fields of science, medicine, ethnography and anthropology, and mathematics. We relished the opportunity to study a wide-ranging project that could involve many disciplines. In order to analyze the needs of the university and stakeholders, we set up an online survey in collaboration with Dr. Federica Imperiale (CeDIA) and Dr. Ludovico Sassarini (Perform – Unige). The purpose of the survey was to create a proposal for a multi-annual project on the management of the university's digital heritage, promoted by CeDIA and SBA (Sistema delle biblioteche di ateneo) and currently still in progress. The project has involved many people and institutions, especially the libraries, departments, and museums connected with the university.

The goals of the investigation were organized into a survey in order to coordinate a network of people interested in developing the project for a university digital library. On one hand, the survey aimed to identify the university's collections of digital material (or material to be digitized). On the other hand, it aimed to assess the existence of laboratories and enough equipment to start up digitization campaigns. For example, we specified whether there were pre-existing inventory and cataloging procedures for the collections.

The questionnaire on the management of digital material has shed light on the presence of analog and digital material throughout the University. For this reason, a section of the questionnaire was devoted to the material that needs to be digitized, with questions seeking to identify the types of materials and objects stored by different departments as well as their value, quantity, and variety. The survey on the presence of laboratories equipped for digitization practices and the specific equipment stored at the facilities also played an essential role. Of particular interest during this initial investigation was the existence of operational plans for the conservation and restoration of the assets owned, as well as inventory and cataloging plans already being implemented or developed.

A second phase of the survey was devoted to the collections of already digitized material. We collected information about cataloging operations, acquisition types, data storage practices and solutions, and chosen standards.

In conclusion, we observed, from the analysis of the survey data, that *scientific sectors expressed the clearest interest*. These sectors have large and heterogeneous collections of photographs, books, drawings, models, films, and dissertations. No Humanities departments, apart from D.I.R.A.A.S., showed comparable interest in the digital library. There was also a marked *lack of appropriate equipment for the digitization of materials* among Humanities departments. Some responses to the questionnaire showed an interest in the digitization of materials and the need to transfer videos and

images currently stored on analog media (DISFOR) to a digital format, while another set of responses highlighted the presence of appropriate equipment for setting up initial inventory surveys through information management and cataloging software, management systems for audio recordings, and 3-D models. The problem of *non-differentiation of material* also arose.

The results of our survey highlighted several difficulties that are still widespread within universities, which are often not aware of their heritage objects and their value. In particular, the Humanities fields are still somewhat isolated and separated from digitization and online validation practices. This is especially clear in the case of photographs, which are often considered as purposeless acquisitions or as additional and "ancillary" material alongside books and manuscripts, and therefore relegated to dusty shelves and boxes.

The strong interest shown by scientific departments is encouraging our group to broaden its views. The initial project for an art history photo library that could preserve photographic material and make it accessible in analog and digital form has developed into a flexible platform system that can integrate a wide range of collections. Each department will thus have access to a dedicated area for their specific activities, with its own procedures for cataloging items and presenting analytical data, all the while elaborating shared criteria that link the analytical requirements of each field of study.

Finally, the survey has highlighted the *scarceness of existing experience in digital technologies*. Thus far, the level of experience in the digital acquisition, sharing, and communication of collections, as well as in the acknowledgment and mapping of assets, has been low. Many inventories no longer exist or have been replaced over time, while others have been created in computer formats that are no longer accessible.

5. CONCLUSIONS

The history of photo libraries and of the scholars who created them (and developed them over time) is multifaceted. This history includes the individuals and their publications and the relationships between scholars, photographers and publishers. Nowadays, it is enriched by new technologies and the innovations of Information Science, fields which are now extensively involved in humanistic research. Ever since 1865, when Hermann Grimm wrote an essay on the need to own a photo library, launching a tradition of art history pedagogy based on diapositives and photographic collections, humanists have taken on new and diversified tasks as their profession has evolved in line with the emergence of new instruments. The discovery of the photographic material stored in D.I.R.A.A.S. opened new opportunities to study and retrace this tradition, as carried on by important art historians in Genoa [Caraffa 2011].

The work on this photographic material made it possible for the University of Genoa to form part of a research discourse that has expanded in recent years to highlight several organizations attentive to the history of their universities and of the scholars who have worked there. In addition to valuing the opportunity to study the photographic heritage, these organizations share the goal of forging an online presence, in order to make their collections available to the non-specialized public. Most of the universities state the existence of their photo libraries on their own institutional websites but have not yet provided historical information about themselves or uploaded their material online. For

example, this is the case with the University of Florence, whose library holds photographs by art historians such as Mario Salmi and Roberto Longhi. This raises critical issues concerning the visibility of the information and the still widespread mindset that photography (and the photo library as a physical place) has a merely instrumental function, meanwhile new technologies are revolutionizing and hybridizing the way we "do" art history. This mindset blinds us to the important role that the photographic instrument has played for professors who have used it to establish new collaborations with contemporary scholars and photographers.

For these reasons, our work has tried to link two different discourses: the historical-critical study of the role of the first art history professor in Genoa and her photographic material, and the model of a digital gallery, which may in the future host a platform for the University's heritage. It was also necessary to address the matter of the publication and exhibition of said material in the light of recent studies on the use of new technologies in the Digital Humanities, which is contributing in a major way to the analysis, archiving, cataloging, conservation, and dissemination of the photographic heritage held in archives and universities.

The photo library can bring to light the pedagogical methods of the university faculty by making it possible for students and users to freely explore it, and thereby learn the interdisciplinary and documentary references that help to contextualize the works, as well as to compare images and retrace the formation of each professor. Collective Access allows the creation of virtual exhibition spaces, and the project aims to stage exhibits highlighting the research of professors and their students. In this way, we may give new value and vigor to the research of Genoese art history culture.

The web projects made possible by this software may, in the future, be developed in the following ways: analytical filing and cataloging, exploring paths for in-depth studies, recreating lectures from the past, and delving deeper into the research conducted by Giusta Nicco Fasola and her contribution not only to the University, but to the whole city of Genoa.

By contextualizing works from a wide artistic range, we can underline the methodological peculiarities of individual protagonists of the University of Genoa. By presenting the material online, with the images front and center, it is possible to create transversal paths that interact dynamically across disciplines and fulfil the educational purposes of the photographs stored on the D.I.R.A.A.S. premises.

The hope is that this long-term project may continue naturally in the years to come, opening the University to the public and thereby spreading the knowledge of an immense heritage that is still unpublished.

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