The Catalogue of Italian Art with Iconographical Analysis, realized with the Use of the Computer *

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Introduction to the Project

In 1972, Prof. Fabio Bisogni was put in charge of the realization of an iconographical index of Italian painting at Villa I Tatti, the Harvard University Center for Italian Renaissance Studies, in Florence.

This index was intended to include the iconography of saints in Italian painting, since Prof. Bisogni had worked for more than ten years on the third and fourth volumes of Iconography of Saints in Italian Painting, as a continuation of the series by George Kafkal.

After mature consideration and extensive study, the conclusion was reached that the use of the computer would be the best solution for the realization of this project, and Prof. Myron Gilmore, then director of Villa I Tatti, obtained for this purpose a generous grant from the Kress Foundation, for a period of five years.

For about two years a preliminary study was made by Prof. Bisogni and several technicians of IBM, especially Dr. Gianluigi Spada, and it was finally decided to adopt the STAIRS (Storage and Information Retrieval System), since this seemed to be the system best equipped to satisfy the scope of this project.

At this point, an agreement was made with CNUCE, Institute of CNR in Pisa, for the realization of a pilot project. The CNUCE has provided its machines, and Dr. Anna Pia Cuscito has been in charge of the creation and

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management of the data bases. Her contribution to the development and continual up-dating of the work has been invaluable.

For the pilot project, the Trecento Riminese school of painting was chosen, because of the short existence of this school, and the relatively small amount of material it involves. The pilot project was carried out by Prof. Fabio Bisogni with the collaboration of Dr. Laura Corti.

At the same time the following decision was taken: The index was not to be limited to the iconography of saints, but was to include all subject matter represented in the works of art under study. It was also decided to include all information obtainable relative to each painting, such as, besides the author, school, period, and location, other items: the inventory number or catalogue number, the medium used, the type of the work, present condition, provenance, size, restorations, bibliography and photographical references.

In the Spring of 1975, Prof. Giovanni Previtali, Dean of the Faculty of Letters and Philosophy of the University of Siena, recognizing the merits and the utility of this project, made possible the association of the University of Siena with Villa I Tatti, for the purpose of the creation of the section dealing with Sienese art, the «Corpus of Sienese Art».

The first stage of this section, which includes Sienese painting and illumination of the XIIIth century, was undertaken by an equipe of young scholars, affiliated with the University of Siena, and the basic material will be completely memorized by the end of 1978.

At the same time, Prof. Paola Barocchi, Professor of the History of Art Criticism at the Scuola Normale Superiore of Pisa, and Professor Ulrich Middeldorf, acting in the role of consultant, requested to be associated with the project, through a programme at the Scuola Normale Superiore, concerning the study of documentary material (information obtained from archival and primary sources) relating to the history of art collecting.

The first nucleus of documents under study concerns the Collection of Cardinal Leopoldo de' Medici.

As a first step, the entire body of material (inventories and correspondance equivalent to over 2,000 STAIRS documents) connected with the collection of Cardinal Leopoldo de' Medici, which later became the major part of the Pitti and Uffizi Galleries, has been checked and memorized.

This section of the project is particularly important for its value in the recovery of provenances and old attributions, for a historical survey of the tastes of the period, or of the economical values, etc.

Following this development, and taking into account the increased possibilities of collecting material, the project outline, that is, the scheme according to which the mass of material to be included is organized, was expanded.
Through the concatenation of the data bases, all these three sections can be merged into a single archive, so that through the research procedure, archival documents can be joined to the object of art to which they refer. Once this merging process is achieved, a new and definitive STAIPS document can be created, in which all the information pertaining to an object of art is unified.

**Description of the project**

The Catalogue of Italian Art with Iconographical Analysis is not intended as an inventory restricted to geographical nuclei and diachronic divisions, but instead as a research instrument, the preparation of which is based upon criteria which are traditionally accepted and universally employed.

If the History of Art in its true sense is in fact none other than the reconstruction of artistic personalities and movements, that is, the history of «style», the criteria followed in the preparation of a catalogue of this sort must take into consideration the necessity of making its research material valuable in accordance with this concept.

Thus, the underlying principle which guides this project is, above all, the reconstruction of those artistic movements which, in the context of the history of Italian art, have been concretely defined as «schools». The legitimacy of the definition of the individual schools not only relies on the existence of the numerous and varying political-cultural realities of the Italian centers throughout the centuries, but also on the actual presence of homogeneous nuclei of stylistic facts, that is, of the homogeneous mental attitudes which formulate an autonomous figurative reality.

For all of these reasons, the possibility of realizing the «Catalogue of Italian Art» by means of a computer could not avoid the requirement that the process used to gather the information must proceed according to schools. This procedure also facilitates the work because of the resultant homogeneity of the material. Of course, also those works of art located outside Italy are considered, as well as those whose whereabouts are unknown.

The problems concerning attributions to schools and periods are carefully considered, but as a bibliographie raisonée is also included, the responsibility for these attributions is generally left to the scholars cited. Thus an historical survey of all critical positions held about any specific work is provided.

Of course, no one pretends that the use of the computer can, or ever will, substitute those mental comparisons that enable the connoisseur to reconstruct artistic personalities or movements. However, a collection of data, scrupulously controlled both for the physical aspect and for the iconographical content pertaining to a work of art, can serve as an aid to the scholar, even more so when it offers continually checked and up-dated material.
We must therefore decide which categories of information are indeed indispensable to the art historian in his work, and which a catalogue conceived as a research instrument must be capable of offering. Let us begin by stating these three types:

1) Information pertaining to the physical data about a work of art. For example, in the case of late Medieval and early Renaissance panel paintings, for the most part dismembered and scattered around the world, the knowledge of the exact measurements of the individual fragments would be a factor of great importance in determining the reconstruction of the original entity of the work.

The exact definition of the format of a work (dossal, diptych, etc.), although an external factor, could provide at the same time precious clues about the circulation of stylistic facts, through the study of the geographical diffusion of such formats.

As one of the physical aspects of a work should be proposed the physical movements that it experiences, the knowledge of which could be of great aid to the scholar in the historical reconstruction of that work.

2) The possibility of rapid access to the most complete bibliography possible, detailed in such a way as to permit immediate comparisons of all the critical positions held about a specific work of art.

When we consider the enormous amount of bibliography already in circulation concerning artists and movements, it is easy to understand how we have arrived at the point where this mass of material must be memorized by means of a computer. This prevents a scholar’s work from being paralyzed every time by the need to research the critical history of the object under study.

The bibliographical listing thus compiled becomes even more useful if, in addition to the bibliographic raisonné, which, save for a few exceptions, spans little more than a century, it contains citations derived from documentary sources.

Another prime consideration is the importance that the critical listings of photographic references can hold for the scholar. Not only is it useful to know immediately where photographic reproductions can be obtained, but the systematic collection of photographic material, combined with their dates of execution, indicating as well whether before or after restoration, is of particular aid to the researcher.

It should be emphasized, furthermore, that in the case of many works now destroyed due to war or to natural causes, etc., the only remaining testimony of them exists in the form of photographic reproductions or even engravings.

Another very frequent case in which the photograph represents the only testimony of a work of art occurs when the work is in private hands, or else
has recently changed ownership through a commercial transaction. Here again, the scrupulous checking of this type of material located in specialized photographic libraries, or in the collections of scholars, antique dealers, or private individuals, assists the art historian in his research.

3) The iconographical description. This section represents perhaps the most significant aspect of the Catalogue under discussion here.

In the first place, it should be clarified that iconography is an auxiliary science both to the history of art and to history in general. But having stated that much, it should be emphasized that, as in the case of every other science, iconography necessitates unlimited research, as well as a progressive classification method. This classification evolves and increases, both by means of new discoveries which augment the basic iconographical material already verified, and by demands made upon iconography due to new conceptions, especially sociological and iconological, which arise about the history of art.

For the study of iconology, a scientific iconographical approach is fundamental. In fact, very often iconographical and iconological research coincide, but it is indeed obvious that iconology must be based on some form of iconographical description and subsequent classification, the formation of which constitutes the enormous and never-ending task of the iconographer. Indeed, very many years of study will be necessary before a satisfactory identification of all the subjects in Italian art can be achieved.

But just as iconographical motifs are developed in the sense of a mirror reflecting historical evolution and change, a serious iconographical classification cannot be made unless all the necessary details of time, place, and destination are specified. Consider the importance which the reconstruction of the geographical diffusion of an iconographical motif holds for the study of facts and/or the circulation of ideas. Since at the present time objects of art are found in their place of origin only rarely, but instead the majority of them have been barbarously dismembered and dispersed all over the world, a reconstruction of provenances would be of major importance, as would a careful consideration of the interplay of critical attributions.

For instance, if in a representation of St. Francis of Assisi receiving the stigmata the Saint appears with a beard, wearing sandals, and kneeling on both knees, all these attributes hold specific meaning, also stylistically speaking, in the 13th and 14th centuries, but do not have the same meaning in the representations of the 17th century.

Since cases of this kind are the rule rather than exception, it becomes clear that, as already pointed out earlier, the exact significance of a representation cannot be condensed into a simple title such as 'St. Francis receiving the stigmata'. For the history of iconography, as well as for the history of art, a more detailed description is needed.
For this reason, we study the subject in order to recognize it. If it is not identifiable, we cite the subject as "unidentified", but we do give a description of all its relevant details.

When the subject has been recognized, we give it the most commonly used title, for instance: The Annunciation. Then we describe all those elements pertaining to the Madonna and to the Archangel Gabriel, and to the ambience in which they are represented. This step enables the research to proceed by themes, as well as by objects, architecture, and so on. The result is a very detailed description which, we agree, can be quite heavy and space-consuming, due to the ever increasing amount of information. However, through the analysis and comparison of similar elements in the same period, or in the same school, the identifications can be subsequently grouped in linked data bases.

For example, in the already compiled catalogue of the Riminese Trecento Painting, we have realized that in most cases the images of the Virgin and Child show the Virgin holding the Child with her left hand, and the Child is shown standing, wearing period dress, and revealing His naked right leg. Thus we can eliminate the repetition of this detailed description from every instance in which an identical representation of the Virgin and Child occurs, by creating a separate data base in which we state once and for all a standard detailed description which will remain valid for all of Riminese Trecento painting. Of course, any exceptions to this standard description will remain stated in the main data base entries.

This method makes possible an enormous amount of cross-references, thus covering the varied aspects of art-historical research.

In the organization and construction of our archive, nearly every kind of codification was avoided because if, as defined above, iconography is the history through images, one cannot risk ranking together subjects and objects which, even if apparently similar, in fact differ profoundly by virtue of their diverse collocations in time and space.

**Utility of the Catalogue for Particular Art Historical Fields**

In its most general sense, the History of Art is articulated into various aspects, not only those which concentrate on particular traits, such as the history of Byzantine Art, or the history of Medieval Art, etc., but also those aspects which either reconstruct the methodologies by which the artistic object or those which utilize artistic productions to trace the circulation of ideas or ideologies such as Iconology, or those which deal with the function and fruition of art, such as the Social History of Art. These types of research, too, can benefit from the Catalogue.

The historian of art criticism will find the bibliographic raisonne helpful, and more generally, can utilize the information concerning the various
changes of ownership of a work of art, exhibitions (which have been in use longer than is commonly believed), and auctions.

These are types of information which, together with the facts about patronage, market activity, inscriptions, subjects and objects represented, — elements which bear great importance for cultural and historical reconstructions —, constitute fundamental material for the social history of art.

For Iconology, as we have seen, a scientific iconographical description, including precise dates and places, as well as indicating literary sources, is the requisite basis without which this discipline risks to become largely unfounded.

Thus it is clear that the major part of cross-references not only responds to the needs of the researcher, but also can suggest new ideas based on concrete facts.

This is the case where the computer, while it does not create art criticism, can, however, suggest to the scholar new approaches.

THE SYSTEM USED

For the storage and retrieval of information, and in the interests of widespread utility, the STAIRS system, a product of IBM, was chosen since this system offers the following advantages:

1) It is interactive and flexible in conformity with the requirements of this project, which is at the same time both a cataloguing and a research project.

2) It allows the use of natural language. The use of natural language is fully justified by the fact that, since we use words to specify subjects and objects, there is no reason to resort to other languages, which are in effect always artificial.

In this regard, it should be remembered that this archive can be consulted through a network of terminals by scholars, by curators of museums, by the staffs of Fine Arts Commissions, etc.

Since each word is in itself a key word, in order to facilitate the research process, charts of synonyms can be constructed and utilized.

In fact, the information memorized must reach the user in the most normal and natural form possible. In this case it is obvious that this facility offered to the user implies a great need for homogeneity during the preparation of the material.

Here we touch upon the central point. In fact, the primary characteristic of the Catalogue is that the preparation of the material is, and should always
be entrusted only to scholars who, in the course of homogenizing the language, rationalize, in the first place to themselves, the often chaotic terminology used in art history.

3) The system allows, by means of the appropriate operations, the continual up-dating and eventual corrections of memorized data. In fact, this archive is not conceived as one restricted by temporal limits, but rather as a data bank in constant growth. In this regard, it should be pointed out that our first aim is not to publish catalogues of Italian art, but to create an archive which must be and can be continuously enlarged and brought up-to-date, as the result of new research and studies or by means of a re-organization of the data memorized.

4) In the iconographical description, in principle we do not attempt to create abstract categories. Should this need arise, however, we have foreseen this possibility through the actual analysis of the material and by using the TLS of STAIRS for the management of categories.

THE REALIZATION OF THE PROJECT

The construction of this kind of catalogue depends on three major assumptions:

1) The availability of qualified centers of study and research in terms of the quantity and of the structures at disposition.

From this point of view, the project was begun in the most suitable place, that is, in the Harvard Center at Villa I Tatti. As the former residence of Bernard Berenson, one of the greatest connoisseurs of Italian art, it offers all the necessary means for study, as well as the stimulation ideal for the continuation and pursuit of the aims which Berenson set forth.

It was thanks to the generous contribution of the Kress Foundation of New York that the Catalogue of Italian Art got underway, with the constitution of its first section, namely, the Riminese Painting of the Fourteenth Century. Subsequently, the project benefited from a grant by UNESCO.

2) The availability of a scientific center capable of furnishing the necessary technical support.

Again in this case, the project has had the benefit of the collaboration and support of the most prestigious Electronic Center in Italy, namely, the CNUCE, Institute of CNR in Pisa. This Institute has provided the project not only with the use of its computers, but also the experience and skills of its technicians.

3) For a project like this one, once the experimental stage is over, the coalition of several qualified forces becomes, and continues to be, essential.
It is in fact thanks to the far-sighted policies of Giovanni Previtali that the project has been able to jump ahead, due to the commitment of the University of Siena to undertake the important section of the Catalogue related to Sienese art.

Since most of the teachers of the various aspects of the history of art at the University of Siena have been pupils of Roberto Longhi, this seems to be the best place to proceed in the reconstruction of the movements in Italian art following the philological methods of the greatest connoisseur of the past generation.

The work at the University of Siena benefits from the funds given by the Italian Ministero della Pubblica Istruzione, and by CNR (Centro Nazionale della Ricerca).

The additional collaboration of Paola Barocchi and of the Scuola Normale Superiore of Pisa has not only confirmed the validity of the project, but has also given it new perspectives and has brought to completion the part regarding commercial information and general documentation derived from archival documents.

The work of the section related to the archival documents concerning the collection of Cardinal Leopoldo de' Medici has been supported by a grant 'Premio Raffaele Mattioli' of the Banca Commerciale Italiana. The checking and memorization of the documents related to the collection of Vittoria della Rovere benefits from a grant of CNR.

THE WORKING PROCESS

The four institutions involved in this project at the present time each have its own staff. In practice, however, all scholars and students involved in the project work together and share a single computer center which manages all the data bases. The CNUCE Institute of CNR has put its 370/168 IBM system at the disposal of the project. The three collaborating institutions are linked to this system, each one through their own terminals. These terminals are used not only for research but also for the input of material using virtual machines.

The use of virtual machines as a form of input is by far the most convenient, because it allows the operator to maintain a direct control over the material.

It should be underlined that each student or scholar participating in the project has the responsibility for not only this own scholarly research, but also for the technical aspects of the procedure; that is, for the operation of the terminal and the input of the material under their study. For all of these operations, the computer centers of the University of Siena and of the Scuola Normale Superiore of Pisa are utilized, as well as the terminal loca-
red at Villa I Tatti. These local computer centers serve as technical intermediaries between the research groups and the CNUCE of Pisa.

Regular courses for the preparation of scholars and students who actually work or will eventually work on the Catalogue of Italian Art are organized by the University of Siena in its Electronic Center. The aim of these courses is to provide a new generation of scholars who will continue and amplify the work already done.

As previously mentioned, the primary aim of the entire project is not to publish a Catalogue of Italian Art, or a section of it. Nevertheless, to give an example of the assistance that the computer can provide to scholarly research, the publication of the entire catalogue of Trecento Riminese Painting is in preparation, including a kind of indices which, at least in part, are quite an innovation in the field of art-historical research.

This catalogue is not conceived as an immobile archive, but instead, thanks to the technical system employed, is intended as a vital archive, one which experiences growth and internal adjustments. Thanks to an ample diffusion and control on the part of those scholars using this archive, it has the further advantages of the possibility of modifications wherever necessary.