

The Printers' Devices database of the University of Barcelona

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Library) – March 2015

Although the main subject of this conference is the discussion about the images of the printers' devices, I think that in our case of the [Printers' Devices database](#) an introduction and explanation are necessary. Image processing is integrated into the printer records and the connections between the printer and its devices are inseparable.

The origin of the [Printers Devices](#) database was 1998. Currently it has 1643 printer records and 2761 devices images. The geographical and chronological framework of its scope is general, as our collection includes from the incunabula period up to 1820. This is the date when we mark the division between the ancient books and modern books processing.

The basic instrument for the database is the [University of Barcelona Catalogue](#), from which the Authority Records of the printers are imported. The catalogue works with the Marc21 format and uses the Millennium program. Until recently, the Anglo American Rules second edition were the guidelines used for the writing of the bibliographic and authority records, but nowadays this pattern has been substituted by the Resource Description and Access from the Library of Congress.

The program of the Database is one of the CGI type, which the computer scientists of the University have adapted in order to present this database, Printers Devices as well as [Former Owners](#), the other database created by the Ancient Book and Manuscripts Library of the University of Barcelona. Both databases presents the same structure.

The writing of the Printers Authority Records is linked to the cataloguing process of the ancient books. Normally, this task is organized by chronological blocs. For example, last year we finished the cataloguing of XVIth century books. Currently, we are revising the incunabula records, and also we combine this work with the cataloguing of those books of XVII th and XVIII th century that still doesn't have any bibliographic card. The cataloguers of ancient books make the Authority records of all the printers, and, from those who present any device, the Authority Record is expanded with information about the image. It will be precisely these records that will pass to the database. The importation of the Authority Records is not complete, since some fields are rejected for the database.

The database is updated weekly with the new printer records and new images.

In the authority catalogue of the UB all the printers appear, whether they have devices or not. In the OPAC version of this catalogue, all printers appear, but the specific local fields that we have incorporated in order to present the database and that don't follow the standards rules, are not shown.

I show an image of an Authority record, one taken from the millennium program in the left and its correspondence in the database in the right. We will return later to this image.

Also, the data of all printers introduced into the Authority Catalogue of the UB have been introduced into the [CERL Thesaurus](#). During November 2012 there was the first upload of more than 2.000 printer authority records to the CERL server and then, two years after, there was a second upload with the new and modified records.

After a trial period, the printer records could be seen in their entirety in the CERL Thesaurus with all the corresponding fields, including those that present devices with the corresponding image, as we can see in this [example](#) of the printer Abraham Usque from Ferrara. There are the general fields of the printer, after the information and link of the devices and finally the sources and the variant names. In all records there is a link to the *Printers Devices* database. The intention is to make an update to the CERL twice a year.

Moreover, the Catalan printers have been moved to the collective repository [Memoria Digital de Catalunya](#), that compiles different digitized collections in relation with the Catalan heritage. The great advantage of this repository is that the printers are recoverable from Google, which is not possible with the printers in the database. Anyway, the navigation through the different concepts of the record present significant problems as it is an image repository and the structure doesn't allow for accurate research.

Coming back to the database, I will present its structure:

A Home page with the explanation of its nature and operation

A Search Page about which I will speak later

A **Bibliography page** which includes a list of reference works, printed as well as virtual, that have been used to write the printer records. These key works help to assign the accepted entry as well as to have important biographic data. It is a long list which includes the actual authority catalogues as well as other more specific works about printers or other library catalogues. In the case of being unable to find the printer in any reference work, the catalogue of the UB can become the main source to write the printer Authority Record.

This bibliography is also accessible from each printer record. For example, I choose the printer Du Pré, Jean, and in this corner we can find the link to the Bibliography page.

There are Catalan, English and Spanish interfaces. In the Spanish and English ones, only the names of fields and the content of the field “Term” is translated. I will discuss this in more detail later. The rest of the record is in Catalan.

The printer records of the database include the following fields which have a parallel structure to the Authority records in the catalogue.

I take the example of Laurent Houry in order to follow the explanation.

Some general fields that are:

Search in catalogue: As all the bibliographic records have a secondary entrance for the printers, these ones appear in the author index with this designation added at the end (impr.) to be able to distinguish from the authors. So, this link goes to all the bibliographic records of this printer.

Persistent link to this record

I come back to the comparison between the Authority Record from the catalogue and the record from the database in order to be clearer.

Printer: corresponds to the 1xx field of the Authority record.

Alternative name: names not accepted, corresponding to the 4xx field of the Authority Record

See also (in case of associations or lineages)- corresponds to the 5xx field of the Authority Record

Place of activity: it includes the city of activity followed by the name of the country in case of foreigner printers or the name of the autonomous community in case of Spanish printers. After, we include the period of the activity, that is, the first and the last year of activity. Corresponds to the 370 field of the Authority Record

Note: normally of a biographic character. Remember it will be in Catalan. Corresponds to the local 678 field in the Authority record

Ensign: corresponds to the local 667 field in the Authority Record, in case the printer has one.

Source. It includes the citations from where the information about the printer has been taken. It corresponds to the 670 field in the Authority Record. In the first times of the database there was only the name of the source and they were put in the same field. After some years, we have completed this field with the brief citation of the source and the exact form of the printer in it. Each source is put in a different line. The complete citations are available in the Bibliography page. We can find in the database both redacting models.

A dividing line separates this general information of the printer from its devices information, all kept in the local 856 field of the Authority Record with a specific structure that we have organized in different subfields in order to process them to present the database.

I take another example to show this part of the authority record, Lliberós, Esteve, and make the comparison between the subfields of the 856 field and its results in the database.

Device / Motto: First of all there is the description of the device in free text in Catalan. Secondly there is the transcription of the motto in case it appears, and thirdly, a note field if necessary. This note is normally reserved for the red ink devices and for the devices used by different printers. It is also written in Catalan.

Mark term: this field is displayed in the language selected at the beginning of the search (Catalan, Spanish or English). It contains the key terms

of the image, not more than 4. The three different languages are introduced in the 856 subfields reserved for them.

These terms follow an index created by us that we have in a excel file shared by all the cataloguers.

Here is the first page of this file, distributed in 3 columns, by language.

Català	Castellà	Anglès
abecedari	abecedario	alphabet
abella	abeja	bee
Abraham	Abraham	Abraham
Abundància	Abundancia	Abundance
àguila	águila	eagle
àguila bicèfala	águila bicéfala	Double-headed eagle
aixada	azada	hoe
ala	ala	wing
altar	altar	altar
alzina	encina	oak
àmfora	ánfora	amphora
Amistat	Amistad	Friendship
àncora	áncora	anchor
ànec	pato	duck
anell	anillo	ring
àngel	ángel	angel
Anunciació	Anunciación	Announcement
anyell	cordero añal	yearling lamb
Apol·lo	Apolo	Apollo
arada	arado	plow
aranya	araña	spider
arbre	árbol	tree
arbre de la ciència	arbol de la ciencia	science tree
arbust	arbusto	bush
arc de Sant Martí	arco iris	rainbow
arcàngel Gabriel	arcángel Gabriel	Gabriel (archangel)
arcàngel Rafael	arcángel Rafael	Raphael (archangel)
Arió	Arión	Arion
arquitecte	arquitecto	architect
Art	Arte	Art
artesà	artesano	artisan
Atenea	Atenea	Athena

Aurora	Aurora	Aurora
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Each time that a new term is added the file is updated. For the moment, the list contains more than 380 terms.

In order to see this list in one language from the database you just need to search by the field “Term mark” and select the option “Browse selected index”.

From this term in the printer record we can arrive to all the printers’ devices that use the same motif in the device. For example, from the term “salamander” we reach all the printers that use a salamander in their devices.

The incorporation of these device terms through this list took some years to be completed. It is for this reason that not all the printer records have this field. Anyway, we are introducing them gradually.

For the moment we don’t follow any controlled vocabulary and it hasn’t a thesaurus structure, therefore there are no “see” or “see also” references.

We are conscious of the structural and intellectual weakness of the list. The introduction of the terms is in some way quite intuitive. We detect the principal motifs of the image and, for the moment, we put them in the list to have a minimum control about the used terms.

In cases where the motifs can give duplicated or parallel concepts, we try to reach consensus on them between us, and try to always use the same term, but

some uncertainty always remains. Moreover, we must have clearer criteria about the motifs included in this field. Just the main ones? Or also the secondary or even those that are in the ornamental context? These are doubts that are coming up with the practice of filling this field.

Using the UB thesaurus was considered, but the opinion of our experts in it advise against this option because it is not a good idea to mix a textual thesaurus with an iconographic one. One of the guidelines that is clear is the introduction of the terms in singular. But it is obvious that some other standards to have a coherent vocabulary are missing. This is why our intention is to make a migration of these terms to a normalized list.

The following field of the printer record is **the image**. It comes from the subfield that contains the server url where the image is kept. The name of the image will always be the Authority Record number followed by a letter a, b, c, etc. depending on the images that we present from the same printer.

In the first period of the database, the image was done without a ruler and with a poor quality black and white scanner. For the last years, we have captured the images with a camera and with the incorporation of a ruler, as we think the measurements of the devices are useful for its identification. Progressively we are replacing the old images by the new ones.

At the ending of the record, we present the link to the **Bibliographic Record** of the catalogue from which we have taken the image. This field isn't included in all the printer records since at the beginning of the database this

information was put in the copy record of the catalogue, without giving this link. The intention is to incorporate this field into all the records, but this task takes a considerable time.

In case of different devices from one printer, there are two proceedings. The first one is for the devices of a printer that are iconographically the same but with little variants. In this case we put them together in the same 856 field with the different url. So, we can see them one after the other in the same divisor line. An example of this case are two devices used by Janon Carcain, the same one but with different measures.

However, when one image is totally different to another, or in case one of them presents a motto and the other is missing it, each one will be in a 856 different field and therefore the display of them will be separated by the divisor line. An example to illustrate this case are the devices of Bernardino Vitali.

The **search** in the database can be done through different concepts and in four different ways: searching by all the words introduced, this means using the AND operator, using the OR operator, the exact phrase and finally by browsing the selected index, which we have introduced as the defect search.

The different searches can be done by these different concepts:

Printer: Here we will obtain the accepted as well as the unaccepted forms

Device/Motto: Remember that here the description is in Catalan, so the search has to be in this language. We can find the motto here too.

Ensign: In the original language

Place of activity: The search can be done by the name of a city in Catalan or even by a country name in case of foreign countries, also in Catalan. In this last case, the search doesn't function if it is through the index, as the country name is introduced after the city name and hasn't got an own index. So, we have to search using one of the three first options.

The next search offered is by the **Mark term**, and in this case has to be done in the language selected at the beginning as it refers to the list of terms I have talked before.

The last possible search is by **keyword** of any place in the printer record.

Now, to end the speech, I would like to mention the principal shortcomings of the database:

Some of the problems have an informatics nature, and for the moment there are no solutions in the short term or in other cases we are studying possible changes. The main three computing problems are the following:

After an index search through the fields that include different printers, these don't appear in alphabetical order but in a random order. This is a programming problem that for the moment remains unresolved. For example, if we search Venecia as place of activity, we can see this problem.

Another important problem is that the printer records are not available through Google search. From next year all the UB catalogue will be included in one collective catalogue of the main libraries in Catalonia. It is still unknown if

the new system will adopt a linked open data system, but if this is the case, this problem will be solved.

It's not possible to make searches with two different concepts at the same time, for example by city and mark term. This problem can be solved by a modification in the program but for the moment we are not sure that it's really necessary, as we can achieve from a keyword search.

Nowadays it is not possible to search by a chronological period. This concept is introduced in the Activity field and, if we want it to be recoverable we need to change the questionnaire by another one more complex as well as to change the data processing from the authority record.

Is a similar case of the search by countries, that doesn't function from the index search modality, as it is introduced after the city name and has not a special index. We are considering this improvement, as it is possible by adding a specific subfield in the 856 and by adding a new possible search by country in the database.

Another kind of problems are due to the introduction of the records.

There isn't a standardization for all the printers' entries. As the database is quite old and some criteria for the introduction of the printers' names have been changed, these different ways are reflected in the database. I refer specially to the association and printers entities.

For example, in a first moment, in case of associations, the different printers were introduced separately. After, it was thought that they had to be just in one entry.

Another example is the entry for a printer's heir. In the beginning, the input was back to front, this is, first the name of the printer followed by the designation of Heir, "hereus" in Catalan, and later the criteria has changed to the direct order, this is, Heir and the name of the printer.

So, we find the different models and we still have to uniform them.

The introduction of the fields that were incorporated later has not been completed. I am referring to the mark term in the three languages, the bibliographic record from where we have taken the device, the sources in different fields with all the information, and to repeat the photographs with the ruler. This example of Lilius, Domenicus, shows all these missing fields.

For the moment, all Catalan printers and almost all the incunabula printers have the complete records. Those from foreign and Spanish printers of XVI to XVIII centuries we are doing the task to complete them, but it is still missing an important part.

Finally, to end with the weaknesses of our database, there is a structural problem, referring to the application of an iconographic classification for the

mark terms. First, we have to study the different alternatives, then to choose the one that convinces us the most and finally, the adaptation of the database to this new vocabulary. I hope that after these days here it will be easier to have a clearer idea of what we need and even think in a corporative work with other similar initiatives where the efforts and the resources can be shared.

Apart of the new vocabulary, the certainty of writing a good mark description and giving the adequate terms I think is also a fundamental theme. Possibly, this aspect is more difficult to achieve as our knowledge in iconography is not based in any specific formation. To be able to dispose of the adequate resources and even to be able to have a specialist contact to ask some iconographic doubts would be an important point in order to give a printer devices database with the quality expected.