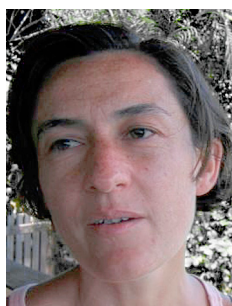


# Conceptual and Procedural Grounding of Documentary Systems

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**ABSTRACT:** Documentary activities are informational operations of selection and representation of objects made from their features and predictable use. In order to make them more dynamic, these ac-

tivities are carried out systemically, according to institutionally limited (in the sense of social institution) information projects. This organic approach leads to the constitution of information systems, or, more specifically, systems of documentary information, inasmuch as they refer to actions about documents as objects from which information is produced. Thus, systems of documentary information are called documentary systems. This article aims to list and systematize elements with the potential to a generalizing and categorical approach of documentary systems. We approach the systems according to: elements of reference (the documents and their information, the users, and the institutional context); constitutive elements (collection and references); structural elements (constituent units and the relation among them); modes of production (pre or post representation of the document); management aspects (flow of documents and of their information); and, finally, typology (management systems and information retrieval systems). Thus, documentary systems can be considered products due to operations involving objects institutionally limited for the production of collections (virtual or not) and their references, whose objective is the appropriation of information by the user.

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## 1.0 Introduction

Documentary activities are informational operations of selection and representation of objects made from their features and predictable use. In order to make them more dynamic, these activities are carried out systemically, according to institutionally limited (in the sense of social institution) information projects. This organic approach leads to the constitution of information systems, or, more specifically, systems of documentary information, inasmuch as they refer to actions about documents as objects from which information are produced. Thus, systems of documentary information are called documentary systems.

Bearing in mind the diversity of concrete systems set up in contexts of production and of use of infor-

mation, which are increasingly complex, we are supposed to explore generalizing elements which make it possible recognize its conceptual and procedural grounding. We also need to elaborate effective parameters to guide the reflexion related to what makes a documentary system become a documentary system. Thus, we aim to list and systematize elements with the potential to a generalizing and categorical approach of documentary systems.

The article is justifiable for at least two reasons. The first refers to the appearance of a large number of new research problems according to the proposition of solutions which ignored the progress already made. The second refers to the idea of universality and neutrality of processes, instruments, and documentary products, governed by the following concep-

tion: the act of making documentary representation which is independent of context. The two reasons are related to each other inasmuch as the specificity of documentary processes is disregarded when we take into consideration its objects and objectives. A question which comes up at the same time is one related to the search tools available on the Internet, whose possibilities of information retrieval are presented from a situation which is different from that of the documentary systems. Therefore, this triggers important differences which need to be better understood.

As methodology, the systems were approached according to: elements of reference, constitutive elements, structural elements, modes of production, management aspects, and typology.

## 2.0 Elements of reference

Rendón Rojas (2005, 162-163) studies the documentary informative system and its aim, which is to satisfy information needs of users by means of their ingress in the world of information thanks to the activities of the documentary informative institution. Documentary activities occur in the form of projects of information, which is elaborate according to its importance in a given institutional context (in the sense of social institution). For Smit (2000, 34), information is organized according to a utility which was assigned in the context of institutional objectives. Thus, the information user becomes one when an individual is approached within a certain institutional context in a situation of information use (real or potential) and in light of professional actions (so, systematic and objective actions).

Documents, in the documentary sense, are the product of activities of information selection and organization within a system according to their objectives. This organization presupposes the attribution of meanings in order to guide users in their processes of information search and use. Documentary systems are therefore meaning systems.

The elements of reference adopted in the formulation of documentary systems are: the documents and their information, the users, and the institutional context.

## 3.0 Constitutive elements

The identification and selection of documents are what we call collection, that is, a set of documents which is shaped as something coherent and with its own personality. Because of this, it can become mean-

ingful for certain users. From the collection, we set up registers which inform about documents. They are called references. Aspects related to the collection and to its references show the diversity of documentary systems, as follows:

- A documentary system can be an ordered collection and do without a database which is its reference.
- Likewise, it can be a database and do without the document collect and of the services of access to these documents (unless the documents are displayed electronically in the system).

The ideal condition for the access to information and its use would be the one of existence of database and of services of access to documents; the database allows us to communicate the information of documents, whereas the services enable the access to these documents.

A documentary system can still be a database whose documents, which are references, could never be collected and ordered in the form of a local collection, but their registers make possible the identification and location of documents. That is what Buckland (1991, 354) called the virtual collection of documents, for it refers to people, buildings, and other objects, which, in any situation, could not be collected and stored. We still have the documentary system, which is a database that makes no reference to documents, but to sparse data (the so called factual database). Here the stages of information retrieval and of access to the document do not occur, inasmuch as the registers of the database answer directly to the users' questions.

In the cases mentioned above, in which there is not a collection in the traditional sense (as in conventional libraries, electronic or hybrid), it is possible to identify a virtually constituted collection, according to Buckland's concept; it is based on this collection that the references are elaborate. Collection and references characterize the documentary systems in their essence and allow us to observe and distinguish their various manifestations.

## 4.0 Structural elements

Documentary systems are composed of potentially informative units which are selected and organized in such a way that the selection carried out and the relation settled between these units trigger the hypothesis of organization adopted for the system. In the sys-

temic approach, signification occurs in a given context and according to the relation settled between one unit and the other one. The notion of system or structure is explained from the relations among its elements and implies articulation both internally and within the system (Ortega and Lara 2010). In the strict sense of the database, we ought to determine the fields and their filling, making up units from the common elements that characterize each document typology, and from questions (predicted) of users. The registration of information is a structure composed of shape (fields) and content (about fields)—these are shapes which determine and are determined by the contents.

Within the area of library science, descriptive representation, and thematic representation are the groundings for the elaboration of models of information registers in the context of production and management of documentary systems, whose processes are carried out from appropriate instruments, for example: rules of cataloging, the formats for bibliographic data, the bibliographic classification systems, and the thesauri. The structural elements of documentary systems are their constitutive units and the relations among them, which are elaborated from documentary instruments.

### 5.0 Modes of production

The documentary representations which are part of the systems have been diversifying over time, leading to some products such as: notation of bibliographic classification systems, catalogs and bibliographies in the form of books, catalogs in the form of paper cards, electronic catalogs, and databases in general, including electronic documents attached to the registers and databases of electronic documents.

Firstly, the documentary representations were attached to the document. Later, they were also elaborated and displayed separately from the documents which they represented, making possible the assignment of a larger amount of information, and more and better retrieval resources. Finally, documentary representations were conceived within the text itself of the document.

The production of electronic documents inaugurated the documentary representation carried out directly within the text by means of markup languages. This new mode of documentary production led to concepts of “pre-representation” and “pos-representation” (studied by Biojone 2001, 69), according to the moment of the construction of the document, that is, the transformation of the text into a docu-

mentary product aimed at the manipulation, dissemination, access, and use of its contents. In the pos-representation, the document already exists, that is, it is completed. That is when we resort to the traditional methods of representation, like the cataloging and the index. In the pre-representation, the phases of representation are carried out in the moment of the construction of the document. This way, part of the elements that will constitute the representation of the document must be in the form which is appropriate for representation and access.

The modes of production of documentary systems—both at the moment of document production and of its representation—can be named pre-representation and pos-representation of the document.

### 6.0 Management aspects

That is about the management of the flow of input and output of documents and information (from documents) within the system. The phases which constitute these flows must be articulated among them, making possible their working in an economical way.

The management aspects involve, when appropriate, the phases of document identification, acquisition, shelf arrangement, production of registers of the database and maintenance of their consistency, storage and preservation of documents and their registers, besides the production and updating of instruments, search interfaces, etc, under the orientation of policies especially carried out for such purpose, and according to the various types of resources that make it possible to effectuate these activities.

For this, the phases need to be explicit. In the case of the production of the registers of the database, we have to:

- Determine the structure of fields and their characteristics, according to specific document typologies and users’ questions (predicted);
- Establish criteria for the filling of the fields and for the choice and shape of the access points that will constitute the search index;
- Elaborate the shape of reference presentation and of the reference document, when it is the case;
- Describe form and content, that is, fill in the fields and elaborate the access points; and,
- Review periodically search and register indices which keep the consistency of the system, that is, the coherence among the descriptions.

The management aspects refer to the phases of management of documents and their information, taking into consideration decision making for the execution of each phase and rationalization of resources, according to the objectives of the system.

## 7.0 Typology

Documentary systems can be divided, according to their vocations, into systems of management or of control of transactions (usually called systems of information); and systems of information retrieval. Codina (1994, 441) explains these distinctions, respectively, by means of ideas of systems "which are interesting because they do things" (systems of human activities), and systems "which are interesting deposits of information" (systems or "deposits" of knowledge).

For him, in a system of human activities, what is in question is the administrative information, necessary to the institution management. In relation to the systems of knowledge, according to Abadal and Codina (2005, 26), they would be those that operate in the context of knowledge acquisition and satisfaction of more or less complex information needs, aiming at study activities, project research, teaching and learning processes, support to research and development, etc.

Table 1 below shows a proposal of types of documentary systems.

The table allows us to identify the control of management processes as aspects of archival science of current records, and the representation of information assigned to documents for purposes of retrieval as aspects of library science, museology, and archival science (historical archives).

The activities in these areas refer to the operations of production of meanings about objects in order to promote certain informational apprehension for various purposes. The operations about the objects, however, are different regarding the type of look performed, which is defined according to interests which will be manifested in correspondent institutional contexts.

The typologies of documentary systems are based on the purposes of the system, that is, control of transactions or representation of information for retrieval. The information science studies usually refer to the second type.

## 8.0 Final considerations

We have pointed out that the theoretical and methodological comprehension of documentary processes based on normative approach does not help users with abstraction exercises, which are essential to the teaching and learning processes, the production of knowledge and the elaboration of solutions to the various social demands of information. We believe that the technical and technological aspects must be replaced, however, bearing in mind the (recurrent) problem of performing or reinforcing displacements and fragmentations.

About the relation between documentary systems and search tools available on the Internet, each one of the identified elements points to different ways of dealing and searching information which have their own features in the possible accesses to this information. Among the questions approached in this paper that distinguish documentary systems, we can mention a bigger segmentation of users that occurred based on a given institutional context, which is basic

types of systems characteristics	MANAGEMENT SYSTEMS	INFORMATION RETRIEVAL SYSTEMS
designations	management systems	bibliographic, cataloguing, textual, referential and factual systems
mode of data collect	resulting from the processes of transaction control	collected with informative intention
documentary unit	set of data related to a transaction	set of data related to a document (as a whole, in parts or a set of documents) or to sparse data
type of provided answer	provides directly the requested answer	provides the references of documents which can satisfy information needs, or provides directly the requested answer
objective	control of transactions and, afterwards, support to the management of these operations	representation of information for retrieval
comprehended areas	Archival Science (current records)	Library Science, Museology, and Archival Science (historical archives)

Table 1. Types of documentary systems (Source: Ortega 2009)

for the constitution of the collection and their references, which are, therefore, developed in a structural or systemic perspective, and must be managed appropriately so that they reach their goals. The search tools are guided—more weakly—to specific users, for they aim to be able to—at least theoretically—deal to all and any available content on the Internet.

In this way, we propose that documentary systems are products resulting from operations involving objects—institutionally circumscribed—for the production of collections (virtual or not) and their references, and whose purpose is to promote information appropriation by users.

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## Scope

The more scientific data is generated in the impetuous present times, the more ordering energy needs to be expended to control these data in a retrievable fashion. With the abundance of knowledge now available the questions of new solutions to the ordering problem and thus of improved classification systems, methods and procedures have acquired unforeseen significance. For many years now they have been the focus of interest of information scientists the world over.

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