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Elements and Relationships within a records classification scheme[1]

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ABSTRACT

The construction of records classification schemes is an undeveloped topic to which the archival discipline has dedicated little effort. This is not easily understandable, as records classification schemes are the main tool traditionally used to organize and manage records. This article analyzes the elements that are taken into consideration when building a classification scheme, as well as how these elements can interrelate. Hierarchical versus non-hierarchical relationships are also examined, and future research directions are identified.

KEYWORDS

Records management; Classification; Records classification scheme; Hierarchical relationships; Associative relationship.

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Introduction

Throughout the 20th century, archival theory and research concentrated on historical archives and archival description. With the arrival of digital technology, more attention was given to records management, but soon the focus was redirected to digital preservation. Basic and fundamental activities for organizing current records, such as classification and filing, were set aside overwhelmed by newer and more pressing topics. This, in part, explains why literature on records classification is particularly scarce. Furthermore, the construction of classification schemes, which lacks a standardized methodology, is almost unexplored within the archival field. This article focuses its attention on the analysis of the constitutive elements of a records classification scheme and the interrelations that may be established between them. Traditional hierarchical records classification schemes are analyzed, as are other tools currently used to simplify classification tasks, multiply records relationships and increase access points for retrieval.

Definition of records classification scheme

A records classification scheme, also known as a record plan, is a diagram or chart composed of abstract partitions, categories or classes, which aims to logically organize the records created and maintained by an institution. Classification schemes often categorize the creator's records by hierarchical classes (from general to specific), which are uniquely identified by a coding system. Generally, classification schemes are integrated with file plans, which identify the types of files (by business, activity, natural or legal person) to be created within the abstract scheme of classes, including information about file naming and arrangement. The distinction between classification scheme (*piano di classificazione*) and file plan (*piano di fascicolazione*) was necessary in the Italian context by the end of the 1990s and early 2000s to better guide users during filing operations. A classification system without indications of which files should be created under the last level of the classification scheme, and of how to arrange and name these files, was revealed to be an incomplete tool, which mostly left the creation of records aggregations to the discretion of the users.

Elements of a records classification scheme

Several authors say that the elements to be taken into account in records classification are the competences assigned to an organization, and the functions developed by its bodies, which in turn are materialized through activities and transactions. (Cruz Mundet 2011, 65).[2] Similarly, Heredia Herrera (2011, 72) proposes the following sequence of elements: competence – function - activity/process - action/transaction (Figure 1).

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[2] On this topic, Cruz Mundet makes reference to Schellenberg, who believes that the functional sequence of any organization is composed of functions, activities and transactions. A similar chain of elements may be found in the work process analysis developed within the management discipline, especially the business process management field, which is concerned with improving working processes flows to maximize effectiveness. Thus, a given activity statement may be broken down into function, process, procedure, operation, task, step, etc. This work process analysis was transposed to the archival field to develop classificatory patterns for organizing records, as records are by-products of activities/working processes. In fact, the interdependency between the two disciplines is remarked by Heredia Herrera, who says that classification is no longer the sole responsibility of archivists, but a shared responsibility between administrative managers and archivists. Administrative managers have the primary responsibility of identifying and classifying functions and processes; archivists are responsible for identifying and classifying records' series.

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Figure 1: Chain of elements of a records classification scheme following Heredia Herrera's proposal

This sequence of elements is generally considered when defining the structure of a records classification scheme. Functions/activities determine the structure of classes. Actions and transactions define the series in which file units are created and records are filed.

Before analyzing how these elements interrelate for constructing records classification schemes, definitions of the aforementioned elements are given to better understand the way in which this sequence may be formed.

Competence

Competence is defined as "the powers, responsibilities, or assignments entrusted in an exclusive way to a public body to resolve issues concerning a particular matter." (Subdirección General de Archivos Estatales 1995).[3] In this sense, competence is understood as the subject or field of action assigned to an entity.

In the same line, De Felice (1988, 97) defines competence as "the powers, duties, functions and obligations that any public body exercises under a legal and regulatory framework."[4] Penzo Doria (2007, 42) believes that competence corresponds to the function performed in a defined time period by an office, a section or unit of an organization. For example, the function of student registration is the competence of the Students' Secretariat in a University. Therefore, while function is an abstract and logical element, competence is a concrete aspect, which corresponds to how a records creator is organized through setting up offices and resources to fulfil the job functions. In this sense, Penzo Doria argues De Felice's systematic classification based on competence, as he believes that this system binds records classification to the organizational structure of an entity,

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[3] "Competencia: Atribuciones encomendadas en carácter exclusivo a un organismo de la Administración para resolver los asuntos referentes a una determinada materia." Available online at: http://www.mecd.gob.es/cultura-mecd/areas-cultura/archivos/mc/dta/diccionario.html.

[4] "Competenza: è l'insieme delle potestà, dei doveri, delle funzioni, degli obblighi ecc, che ogni organismo pubblico esercita nell'ambito della legge e dei regolamenti."

and not exclusively to functions. As remarked by Foscarini (2009, 27), functional (sphere of activities) and structural elements (office or individual) coexist in De Felice's system by competence.

In synthesis, competence may be defined as the main function(s), sphere of action(s) or subject area(s) assigned to an organization. They are ascribed to one (or more) office(s), as a structure made of human and material resources is needed to materialize and formalize the functions/activities that the organization needs to perform.

Function

Schellenberg defines function as "all the responsibilities assigned to an agency to accomplish the broad purposes for which it was established. Usually these functions are defined in the law or directive that establishes the agency." (Shellenberg 1956, Reprint 2003, 53). Additionally, the Spanish *Diccionario de Terminología Archivística* defines function as a "homogeneous set of competences that define each of the major fields of administrative actions or public powers."[5] (Subdirección General de Archivos Estatales 1995).

The distinction between competence and function is not clear, as they seem synonymous and interchangeable terms. In fact, Duranti (1998, 90) observes that "function and competence are a different order of the same thing," and clarifies the difference among both concepts: "Function is the whole of the activities aimed to one purpose, considered abstractly. Competence is the authority and capacity of carrying out a determined sphere of activities within one function, attributed to a given office or an individual [...]. While a function is always abstract, a competence must be attached to a juridical person."[6]

In conclusion, function is the purpose or task assigned to an organization, which is carried out through activities. Function is considered at an abstract level, with a non-specific structure (office or individual) defined for its fulfilment.

Activity

Schellenberg (1956, Reprint 2003, 53) defines activities as "A class of actions that are taken in accomplishing a specific function." For Heredia Herrera (2011, 39), activity is the division and diversification of a function that is usually regulated by rules of procedures or best practices. It is manifested through a process, thus a sequence of actions that produce a certain result. The phases of this sequence are composed of actions/transactions; and the results or products of this process are records. In this sense, the documentary evidence of the activity is the records series, and the variations of the activity process give rise to records sub-series.

Heredia Herrera (2011, 152-153) also remarks that activity requires one or more processes, and in turn, the process is repeated in each of the actions that constitute the activity. The process is first and then the procedure; that is, the design of steps is first, followed by the rules to carry them out.

[5] "Función es el conjunto de competencias homogéneas que delimitan cada uno de los grandes campos de actuación administrativa o de los poderes públicos." Available online at: http://www.mecd.gob.es/cultura-mecd/areas-cultura/archivos/mc/dta/diccionario.html,

[6] Luciana Duranti, *Diplomatics: New Uses for an Old Science*, Society of American Archivists and Association of Canadian Archivists in association with Scarecrow Press, 1998. Quotation from: Richard Pearce-Moses, *A Glossary of Archival and Records Terminology*, 2005, 180.

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Process and procedure are generally used quite indistinctly. Both are a sequence of actions. However, procedure is a specific process within administrative management. It is a model, a norm, which has to be followed by the sequence of actions constituting an administrative activity. Therefore, administrative procedures regulate the activity and its actions, whose sequence constitute the activity. Procedures are composed of administrative transactions that have to be documented. They help identify the series and delimit the archival unit. Even so, some administrative procedures can be complex and lead to the constitution of more than one series.
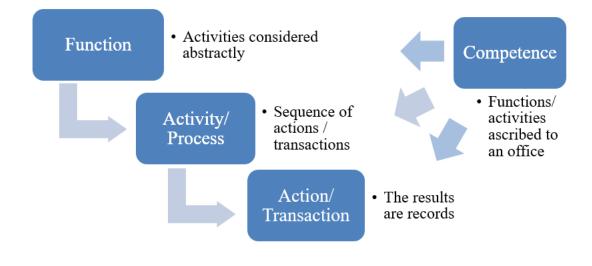
In summary, activity is a series of actions aimed at accomplishing the functions assigned to an organization. Activities are performed through a process (a sequence of actions or transactions), which may be regulated by procedures.

Action / Transaction

Action is defined as all steps in a process which is materialized in a record.[7] (Cruz Mundet 2011, 65). In the standard ISDF-International Standard for Describing Functions, action corresponds to transactions. Transaction is defined as the smallest unit of a process or business activity (Cruz Mundet 2011, 344). "Transactions should be tasks, not subjects or record types. Transactions will help define the scope or boundaries of activities and provide the basis for identifying […] the records that are required to meet the business needs of the organisation." (National Archives of Australia 2001, 8). According to Heredia Herrera (2011, 38), a record requires one or more actions, not vice versa, because actions can exist without records, i.e. commercial transactions in the past did not always produce records.

In synthesis, action is the state or process of performing or acting to accomplish an activity, a function. Action is a broader term than transaction, as transaction is considered the act of carrying out or conducting business, negotiations or exchanges with others.

Figure 2 graphically represents the progressive sequence of the hierarchical relationship existing between the superordinate (broader) and subordinate (narrower) concepts of the chain. Based on the previous definitions, the sequence of elements should be formed in the following way: function - activity/process - action/transaction.

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[7] "Cada uno de los pasos de un proceso que se materializa en un documento."

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Figure 2: Sequence of hierarchical relationships between the elements of a classification scheme

The actions that an organization undertakes to sustain its work are a sequence of elements nested into one another. These elements fall into hierarchies, from general to more specific aspects up to the materialization of actions into records. Functions are high-level responsibilities or tasks considered abstractly, which are implemented through activities. An activity is manifested through a process, which is a sequence of actions or transactions. An action or transaction results in records.[8]

In this sequence, competence (functions/activities assigned to an office, called 'competenza-ufficio' by De Felice) is left out of the hierarchy because it can be placed at any level, or it cannot appear at all. In organic schemes, competence tends to be the primary class: *competence - function - activity/process - action/transaction*. In the case of pure functional records classification schemes, competence is not considered an element of the chain: *function - activity/process - action/transaction*. In hybrid schemes, competence may be located at different levels. For example, Duranti (1997, 61) proposes the following sequence: *function – competence - activity/process - action/transaction*: "[…] each functional classification system must have primary classes based on functional areas, secondary classes based on functions, tertiary classes based on competences, categories based on activities (that produce series of records) and, finally, the reference to the files or other archival units."[9] Páez García (2002, 20) proposes the sequence: *function –activity/process - action/transaction - competence*, as the organic elements should occupy the last level of the hierarchy.[10] This indicates that the relations of competence with the other elements of the hierarchy, especially function, is still an unresolved issue when building classification schemes. A similar problem is confirmed in the relationship between activity/transaction (abstract concept) and records series (which represent concretely the records produced in relation to activities). The lack of an established methodology to identify and create relationships between abstract (function, activity, action or transaction) and concrete concepts (competence-offices and their by-products, which are the records) does not help. Most of the records classification schemes are built in such a way that functional, organic and subject-based categories are mixed, and often the lack of (or the difficulties to establish) clear processes and

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[8] For example, the function of Human resources management, which is one of the competences of a Finance and Administration Department, is implemented through several activities, such as Recruitment of personnel, Establishing conditions of employment, Determining salaries, Calculating pension benefits, etc. These activities are performed through several actions or transactions; i.e., within the activity 'Determining salaries', which is the specific competence of an Accountancy Office, transactions are related to Salary costs, Salary scales, Post adjustments, etc. The transactions undertaken within 'Salary costs' produce monthly pay-records. Therefore, 'Salary costs' is a records series, organized chronologically by year and month, which contains staff payslips.

[9] "[…] ogni sistema funzionale di classificazione deve avere classi primarie per le aree funzionali, classi secondarie per le funzioni, classi terziarie per le competenze, categorie per le attività (che producono serie di documenti) e infine il riferimento ai fascicoli o altre unità documentarie."

[10] According to Páez García, the organic elements must be present in a functional classification scheme, but they should occupy the last level of the hierarchy, instead of the first ones (as occurs in organic classification schemes). For example, in an organic scheme the series 'Policies and procedures' appear as many times as there are administrative units; instead, this series will appear only once in a functional scheme, as the different administrative units must be specified at the last level.

procedures (with linear sequence of steps) within institutions determine the creation of contingent and incongruous series/files.

Hierarchical and non-hierarchical relations

Our interest now is to further understand the types of relationships that can be established between the classification elements, as they will define the structural model of the classification tool to be used for records management. Generally, hierarchical structures are preferred to any other structural association in the archival field; thus, the purpose of this section is to analyze why these hierarchical structures are applied to records classification, and if this type of structural relationship is still effective to manage digital records.

Relationships are based on the cognitive process known as analogy. Analogy is a substantial process of knowledge by which objects or concepts can be compared or related based on their similarities, that is, by establishing analogies. This allows identification of general and specific common characteristics between these objects or concepts. Types of analogies include the relationships of equivalency, hierarchy and association. These relationships establish semantic or conceptual links, through which a word/concept/object is mentally linked to another. These three types of relationship can also be found in the logical structure of records classification schemes, even although at different levels of the scheme:

Hierarchical or subordinate relationships, which form chains of elements/concepts that are subordinated one to the other. They are partitive relationships between the whole and its parts, that is, between the levels that identify function, activity and series (Barbadillo 2007, 20). These relationships are mostly of two types: whole to part, and genus and species. In the whole to part relationship, the part, or section of something larger is contained in the whole, or the entire entity (a child is part of the parent). This type of relationship applies to the abstract categories of the classification scheme that are equivalent to the function and activity levels. It also applies to the transaction level, in which the series are identified. For example, the function of 'Financial Administration' involves the execution of several activities; this means that it is composed of activities such as 'Budget preparation', 'Income management', 'Income accounting', etc. Similarly, these activities are performed through a series of operations or transactions; for example, the activity of 'Income management' involves tax collection, transfer of capital, disposal of investments, etc. These transactions identify records series, which in this case are as follows: 'Direct taxes', 'Indirect taxes', 'Transfers', 'Property income', etc. The second type of relationship, genus and species, is an inclusion relationship that identifies the link between an object/concept and its members (a child is a type of the parent). The relationships between records series and subseries are relations between genus and species (Barbadillo 2007, 20). For example, the records series 'Direct taxes' can be divided into two subseries, based on the type of direct taxes collected: 'Inheritance tax' and 'Income tax'.

Associative (non-hierarchical) relationships, where the elements/concepts are related at the same level in a hierarchical structure. The sequential relationship is the most common type of associative relation between files and among records. It refers to the order in which these are placed
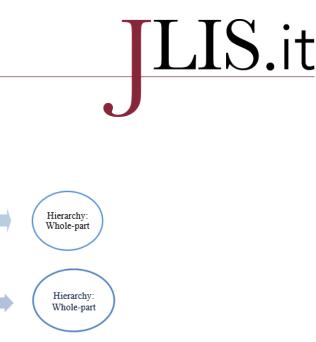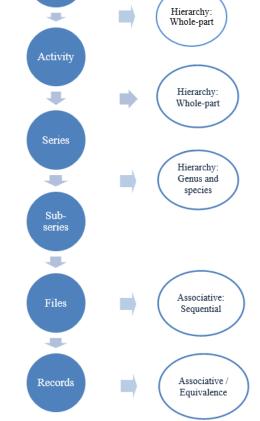
in terms of time and space. It is connected to arrangement,[11] and implies sequential order (alphabetic, chronological, numeric or a combination of these), without any clear hierarchy.

Equivalence (non-hierarchical) relationships, where records in an aggregation are equivalent. This occurs in those series organized by records typology, in which records are essentially equal, with same formal characteristics (series of contracts, administrative circulars, etc.). As in the associative relationship, records are related at the same level, without hierarchy.

In synthesis and generally speaking, hierarchical relationships characterize the relations between both functions and activities, and activities and transactions (thus, abstract categories and series are connected through whole-part relations). Series and sub-series tend to establish hierarchical genus and species connections between them, while non-hierarchical associative relationships are generally established among files, and also between records, as well as between classes at the same level of the hierarchy. Non-hierarchical equivalence relations can be also created among records. Figure 3 illustrates these hierarchical and non-hierarchical relationships established within a records classification scheme:

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[11] Arrangement can be defined as the archival operation that consists of putting elements (such as records and files) into a sequential order or relation, according to several criteria: alphabetic, chronological, numeric or a combination of some of these (i.e., alphanumeric). Arrangement is complementary to classification and does not suppose hierarchy.

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Figure 3: Hierarchical and non-hierarchical relationships within a records classification scheme

The whole-part relationships are normally displayed in the form of a tree or arboreal structure. As a consequence, one category is inherently included in or is part of another, with the whole treated as a broader category. Tree structures reflect the way we think; the mental model of our logical thinking process or reasoning. They are powerful in displaying cause-effect relationships; this is why literature says that hierarchies are or must be predictable, so as to implement inference along the visual hierarchy in order to help users in their classification/filing and retrieval tasks.

The hierarchical partitive relationship well applies to corporate bodies, where administrative units, except the one at the highest level of the hierarchy, are subordinate to others within the organization. This hierarchical organizational structure ensures command and control of the organization. Its layout consists of multiple entities that descend into the base of the tree. Hierarchical organizational structures were the base to build the so-called organic classification systems, which traditionally were perceived as the only valid system to organize records and archives, as it reflected the original structure and natural order of the institution. However, the organic classification system entails several disadvantages due to its rigidity. When applied to current organizations, which may change structure, configurations and names quickly, classification schemes need to be constantly revised.

An alternative method of classification, the functional one, was promoted along the 20th century. Although the functions of an organization are subject to change, they do so less frequently than the administrative organization, providing a safer ground on which to keep stable classification structures. Schellenberg considered that records should be classified according to function, as they are the result of function and are used in relation to function. But, like earlier writers, he assumed a close relationship between organizational structure and function. He affirmed that the organization that is given to an agency is usually determined by the purposes or functions it is designed to accomplish. In other words, functional classification follows an entity's organizational lines (Orr 2005, 41). Function-based classification is also displayed as a hierarchical structure following whole-part, part-whole relations.12 As Hurley (1993, 211) writes: "Functions also fall into categories and hierarchies. Any functional expression can be broken down into more specific aspects or drawn together with closely related functions to form a larger "generic" unit."

But, as it has been explained, hierarchy is not the only type of relation used in records classification/filing. Systematic displays (tree structures) mix hierarchical and associative relations, although at different levels of the tree. The archival theory has traditionally advocated for the use of this (mono-)hierarchical structure, which offers a well-understood and highly stable basis for the association of related records. Yet, by the end of the 20th century, several authors had questioned the traditional hierarchical records classification system used for records management, as will be analyzed in the next section.

Other structural models

Bearman and Little (1985, 19) once wrote about the weakness of the mono-hierarchical structures in modern organizations, in which complexity and dynamism are not within the scope of superior/subordinate relationships (in the classical view of organizations, a bureaucratic unit is directly subordinate to no more than one higher unit). Instead, structure, processes and activities of modern organizations are better understood through poly-hierarchical structural relationships and non-hierarchical relationships (as "some of the most important relations are not hierarchical at all"). These multiple relations can be established through a complex networking model. Later, Bearman (1996) proposed that logical relationships between electronic records be documented at the item level through metadata. He wrote that physical aggregations are not necessary, and not desirable for electronic records. "It will be both more efficient and less expensive to control and describe records at the item level from the moment of their creation than it is to try to carry over into the electronic environment the methods of the paper world."13

Bearman's theories find many concordances with Hurley's. When Hurley analyzes relationships in records, he distinguishes between logical hierarchies (used by the bibliographer and taxonomist) and the contingent approach to hierarchy in recordkeeping. He believes that a taxonomic structure is a true hierarchy: it is logical; it is timeless. Each subordinate entity is part of a higher entity, and cannot be assigned elsewhere. In contrast, the taxonomies of recordkeeping are not truly hierarchical. The relationships are not logical, they are contingent, which means that they are

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12 Relationships established between functions, activities and transactions have been generally developed through hierarchical part-whole structures, as they reflect the way in which the organization's working processes were performed. Institutions in public administrations (or other environments) were and still are characterized by a hierarchical corporate culture, which depends upon structure, rules and top-down control to guide business practices and activities. This hierarchical decision-making system is reflected on the relationships established between the records generated by business processes.

13 Available online at: http://www.archimuse.com/papers/nhprc/item-lvl.html.

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unpredictable, dependent on or conditioned by many circumstances. Moreover, they are time-bound. This happens because recordkeeping taxonomies cannot predict what is yet to happen, as recordkeeping involves documenting what actually happened (instead of what should have happened). Furthermore, "the relationships an entity has at the time it is used may be different from the relationships it had when it was created and both must be documented." It follows that a relationship is never implicit in an attribute; as a consequence "anything can be related to anything else and usually is." (Hurley 2001-2004, 38). For this reason, a classification structure based on pre-determined logical relations is inefficient. Automated mechanisms and methods to establish context and records relationships in object-oriented systems through metadata are the materialization of Hurley's theories.14 He also pays particular attention to terminological control for naming business functions/entities, which makes the use of supporting thesauri of terms a means of classification and, extensively, of recordkeeping.

Similarly, Shepherd and Yeo (2003, 96) think that classification can be enhanced by exploiting the functionality of computers; that is, by avoiding the arrangement of records in folders. More flexible and faceted classification can be obtained through the use of contextual metadata from an authority file listing the various functional levels of an entity. In this way, "any aggregated record of a particular process or activity can be assembled on demand in response to a user's search. The record series becomes virtual, as it is derived purely from metadata applied at item level." Therefore, thesauri, authority files, and other controlled vocabularies are considered classification systems or indexes. In Shepherd and Yeo's opinion, they simplify the process of records categorization, allowing records multiple relations and random aggregations, depending on the faceted search.

More recent contributions in the Spanish context are along the same line. Delgado Gómez (2010, 130-131) believes that mono-hierarchical classification schemes reduce the possibility of polysemous relations. Inspired by Hurley's ideas, he understands classification as the activity that brings intellectual order to records systems, independently of the physical record aspect in the digital world. Classification is not placing records into electronic boxes or folders. In the words of Delgado Gómez, few things have done as much harm to electronic records management systems as the illustrative and false image of a virtual folder, in which the also virtual records are saved. Delgado Gómez proposes a classification system by which activities, records and records creators are classified simultaneously from different points of view. This eliminates the limitations of a hierarchical records classification scheme, and satisfies both information retrieval and the need to ensure that records remain the authentic evidence of activities by providing an enriched context. Three instruments are needed to accomplish this: 1) a thesaurus of functions, which establishes relationships (hierarchical, sequential, of ownership, etc.) between functions and activities (this allows a record to be simultaneously related to multiple activities); 2) a thesaurus of agents (records creators) that defines which creator unit has generated the records in a given period; and 3) a thesaurus of series, which allows records to be grouped according to the criterion of sharing an activity with other like records.

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14 HERO (Hurley's Enduring Recordkeeping Object) functions within a system as the validation or source entity/object for some recordkeeping metadata. It is based on the results of the SPIRT Recordkeeping Metadata Project (http://www.infotech.monash.edu.au/research/groups/rcrg/projects/spirt/about.html) and assumes an object-oriented technological environment of the kind presaged by David Bearman (BEARMEOs: Bearman's metadata-encapsulated-objects).

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Further contribution on the poly-hierarchical and faceted classification techniques is made by Barbadillo (2007, 22-23). He thinks that these methods have not been applied, in a strict way, to the archival field due to the complexity of the administrative organizations and functions. Only in some cases are a small auxiliary number of facets used to establish uniform partitions among all classes. Barbadillo points out that the limitation posed by mono-hierarchical systems, where an archival unit can only belong to a series, can be overcome to some extent by developing poly-hierarchical systems, which use parallel classification schemes. For example, it is possible to construct separate functional and organic schemes to classify the same series from different viewpoints.[15]

This multidimensional approach and the use of a non-hierarchical, faceted classification, mostly advocated by authors of the Anglo-Saxon archival community, is seen as questionable by archivists from the European tradition, especially among Italians. Fiorella Foscarini (2009, 57-58), in her doctoral dissertation on function-based records classification systems, asserts that this approach exposes to serious risk one of the fundamental records characteristics, which is the necessary and determined nature of their relationships. The creation of virtual files on demand, based on contingent requirements, introduces uncertain, accidental and artificial relationships that should not replace the fixed or stable arrangements (to be maintained stably) that provide evidence of the way records have originally accumulated in the course of business. Lodolini (2007, 24) also remarks that a stable (and unique) relationship between the record and the function or activity performed is needed in order to know which records were used to carry out a specific administrative process and in which order records were produced or acquired by those responsible for the process.

Maria Guercio (2001, 250) reflects about the characteristics of records relationships, and mentions Giorgio Cencetti's theories about the archival bond, its necessity and stability. Records and their reciprocal relationships are persistent and determined in time and space. From this assumption, two essential records characteristics are derived: impartiality and authenticity. The impartiality of records is linked "to the fact that they are not accumulated in an extemporaneous manner, but as essential instruments of practical activities and for purposes of arrangement and use." Records authenticity is connected to the "real need for self-documentation of the creator," who organizes records to guarantee their reliability. Therefore, stable records relationships are considered necessary to guarantee the archive's impartiality and authenticity. Furthermore, Maria Guercio (2016, 4-5) expresses perplexity and concerns on the exclusive use of thesauri (albeit referred to functions and activities) for classification purposes. She regards thesauri as an insufficient archival tool. They provide valuable solutions for the quality of access and search methods, but they should not be used in place of the instruments aimed at ensuring a systematic and orderly records sedimentation process, consistent with the tasks entrusted to the institution and with the workflows followed, unless it is decided not to qualify the specificity of archival sources in terms of provenance and context at the same stage of their creation. The use of thesauri to manage the richness and flexibility of the documentary information makes that the task of managing records and flows exclusively relies on the end-user (the person in charge of the individual administrative process), without even the certainty of a rational and shared creation of files linked to the individual affairs. In this scene, fragmentation and self-referential definition of the connections between records are unavoidable and involve the loss of a common vision of the archive organization.

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[15] Barbadillo mentions the classification scheme proposed by Páez García (2004) for the archives of the Regional Government of Andalucía, in which there is a combination of organic and functional records classification schemes, whose codes are juxtaposed according to the information retrieval needs. See: Páez García's bibliography at the References.

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Conclusions

From an analysis of the elements that compose a classification scheme (competence, function, activity/process, action/transaction) it emerged that the relationship between function and competence (functional and organic aspects) is still not clearly addressed in records classification schemes. Most of the literature analyzed recommends the use of function-based classification schemes; even so, there are authors who believe that competence should be considered a classification level, as the presence of organic elements is needed to link reality (an office task) with the abstract components of functional schemes. In practice, functional schemes tend to move the organic element to lower levels, as offices need to keep (and classify) records that are not directly linked to their main areas of activity. Thus, they use headings predominantly assigned to other offices by creating their own file (identified by the office name) at the last level of the scheme (file/sub-file level).[16] Another challenging topic, linked to the previous one, is establishing the relationship between activity/transaction (abstract concept) and records series/files (which concretely represent the records produced in relation to the activities). Again, the abstract and concrete dimensions of records classification present operative difficulties that are not sufficiently recognized in the literature and need further theoretical and empirical thinking.

Another issue is the dichotomy between traditional and new technical and technological solutions for establishing records relationships. With the digital revolution, the proliferation of electronic records and the advancement of the communication technologies applied to content management, the need for classification, as well as classification systems and methods, have been questioned in the archival field. Despite this evolution and new solutions offered by current information management systems, classification is still considered an essential archival function in the digital environment, as electronic records (like analogue records) need to be organized according to a model structure that provides the basis for records relations and contextualization. The issue mainly falls on the classification methods and tools to be adopted. Different examples have been presented so far, from the traditional and mostly accepted functional records classification scheme based on a mono-hierarchical structure (in which associative, non-hierarchical relationships are also contemplated), to more recent systems in which poly-hierarchical, faceted or network structures provide many-to-many relationships to records (these structures privilege associative relationships, even though hierarchical relationships may also exist). In these last cases, tools such as thesauri of functions, agents, types of records, series, etc., or rules for establishing types of relations, are used to categorize and provide metadata (attributes) that connect records with information describing the actions surrounding their creation and use. Practically, these solutions split the functional sequence of working processes that determine the classification elements (functions, activities/processes, transactions or series) and use them separately as categorization metadata. Multiple links may be created between records aggregations, which can be grouped following different categorization criteria. In this way, the relationships between functions, processes and

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16 Each section of a classification scheme is primarily assigned to one administrative area and, even if other units can classify in the different sections (as functional classification schemes generally avoid duplication of headings), each unit creates its own file at the last classification level. The records produced by the unit responsible for the proper records maintenance and preservation within the assigned area have higher value and different retention periods than those records produced by a unit that is not responsible for that function/activity (and which just produces partial or incomplete files, containing sporadic contributions to the activity or copies for information). At the same time, different access permissions apply to the files organized by an administrative unit or office. In synthesis, even if there is no duplication of headings at higher levels in functional classification schemes, there are recurrent files identifying the different administrative units at lower levels. Therefore, the redundancy of headings appears to be unavoidable.

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transactions do not follow a pre-established logical and hierarchical sequence, but are defined randomly by users. The application of these solutions may vary, but generally they tend to create flatter structures that do not clearly provide a comprehensive overview of the working processes, that is, the sequences of transactions required to produce an outcome that complies with an organization's governing rules. They tend to enrich the access points to records, simplifying the structure behind them. The issue is that the creation of too many relationships with a non-rule-driven control may produce incomprehensible aggregations in which the record-originating activity and the sequence of production are difficult to identify, as records generated by different processes or activities may be mixed in the search result. Such indiscriminate and unlimited growth of relations only leads to system complexity and fails in supporting the evidential value of records. Retrieval becomes unsuccessful and unfruitful for users due to the enormous, variable and inconsistent results obtained.

Thus, digital technology solutions facilitate the increase of associations between records. A record can be associated with one or more files, which in turn may be linked to one or more series, etc. Yet, records relationships should not be established randomly. Records should be part of files and series, which are properly (pre-)defined and identified to reflect working processes. Relationships/aggregations need to be stable to provide evidence of the records used to perform a specific process. In synthesis, hierarchical relationships are necessary, as are associative relationships. An archival system includes both, hierarchies in which records series are part of processes and functions, and associative relationships in which the semantic connections between archival units and records series are enriched, increasing the perspectives and avenues of access. Records classification schemes, in which hierarchies and associative relationships can be (pre-) established, are fundamental to effectively manage digital records and constitute organized archives.

Finally, it is worthwhile to remark on the need for future research on classification and filing practices, in which multidisciplinary working teams of archivists, administrative managers, process analysts, and related professionals, have the capacity to further develop common principles and methods for constructing classification systems, including the identification of classification elements (functions, activities, transactions). Empirical research should also be applied to records management performance to inform the elaboration of more detailed and accurate guidelines for classification and filing, as basic questions, such as what should be classified, how and where, by whom and when, need to be clarified to users.

References

Barbadillo Alonso, Javier. 2007. "Apuntes de clasificación archivística." Legajos: Cuadernos de Investigación Archivística y Gestión Documental 10, 1-38. http://www.archiverosdiputaciones.com/wp-content/uploads/2015/07/barbadillo1.pdf.

Bearman, David A., and Lytle, Richard H. 1985-1986. "The Power of the Principle of Provenance." Archivaria 21, 14-27.

Bearman, David A. 1996. "Item Level Control and Electronic Recordkeeping." Archives & Museum Informatics 10, n. 3, 195-245. http://www.archimuse.com/papers/nhprc/item-lvl.html.

Cruz Mundet, José Ramón. 2011. Diccionario de Archivística. Madrid: Alianza Editorial.

JLIS.it

De Felice, Raffaele. 1988. L'archivio contemporaneo: Titolario e classificazione sistematica di competenza nei moderni archivi correnti e privati. Roma: La Nuova Italia Scientifica.

Delgado Gómez, Alejandro. 2010. "Sistemas de clasificación en múltiples dimensiones: la experiencia del Archivo Municipal de Cartagena." Tabula (Innovar o morir: Entorno a la clasificación) 13, 125-136.

Duranti, Luciana. 1997. I documenti archivistici: La gestione dell'archivio da parte dell'ente produttore. Roma: Ministero per i beni culturali e ambientali, Pubblicazioni degli Archivi di Stato: Quaderni della Rassegna degli Archivi di Stato 82.

------. 1998. Diplomatics: New Uses for an Old Science. Society of American Archivists and Association of Canadian Archivists in association with Scarecrow Press.

Foscarini, Fiorella. 2009. Function-based records classification systems: An exploratory study of records management practices in Central Banks. PhD Thesis. Vancouver: The University of the British Columbia. https://open.library.ubc.ca/cIRcle/collections/ubctheses/24/items/1.0067282.

Gruppo di lavoro nazionale sui titolari delle università (Ed.). 2007. I calzini del Principe Carlo: Titulus 97. I titolari per gli archivi delle università italiane in vigore dal 1° gennaio 2007. Padova: CLEUP. http://www.uniroma1.it/sites/default/files/allegati/I%20CALZINI%20DEL%20PRINCIPE%20CARLO%20-%20Instrumenta%20n%203.pdf.

Guercio, Maria. 2001. "Principles, Methods, and Instruments for the Creation, Preservation, and Use of Archival Records in the Digital Environment." The American Archivist 64, 238-269.

Guercio, Maria. 2016. "La classificazione nell'organizzazione dei sistemi documentari digitali: criticità e nuove prospettive." Padova: Seminario ANAI. La gestione informatica dei documenti. http://media.regesta.com/dm_0/ANAI/anaiCMS//ANAI/000/0422/ANAI.000.0422.0033.pdf.

Hart, Susan. 2015. "Entry: Records Classification." In Encyclopedia of Archival Science, edited by Luciana Duranti and Patricia C. Franks, United States of America: Rowman & Littlefield, 331-334.

Heredia Herrera, Antonia. 2011. Lenguaje y vocabulario archivísticos: algo más que un diccionario. Sevilla: Junta de Andalucía.

Hurley, Chris. 1993. "What, If Anything, Is A Function?" Archives & Manuscripts 21, n. 2, 208-220. http://www.infotech.monash.edu.au/research/groups/rcrg/publications/whatif.html.

------. 2001-2004. "Relationships in Records." New Zealand Archivist. http://www.infotech.monash.edu.au/research/groups/rcrg/publications/relationships-in-records-rev-3b.rtf.

International Council on Archives. 2007. ISDF - International Standard for Describing Functions. First Edition. Paris: International Council on Archives. http://www.ica.org/sites/default/files/CBPS_2007_Guidelines_ISDF_First-edition_EN.pdf.

Lodolini, Elio. 2007. "Prefazione." In I calzini del Principe Carlo: Titulus 97. I titolari per gli archivi delle università italiane in vigore dal 1° gennaio 2007. Gruppo di lavoro nazionale sui titolari delle università (Ed.), 17-25. Padova: CLEUP.

Mesa de Trabajo de Archivos de la Administración Local. 2010. Indicadores de gestión para los archivos de la Administración Local. Valladolid: Diputación Provincial. http://www.ssreyes.org/acces/recursos/doc/Nuestra_ciudad/Mesa_archivos/Publicaciones/12813 87481_1762014135058.pdf.

National Archives of Australia. 2001. DIRKS: A Strategic Approach to Managing Business Information. Part 2. Steps A-H. http://citeseerx.ist.psu.edu/viewdoc/download;jsessionid=0C3A1180761281EDAA9626BA5D40A9 99?doi=10.1.1.178.6655&rep=rep1&type=pdf.

Orr, Stuart. 2005. Functions-Based Classification of Records: Is it Functional? Master's thesis. Northumbria University. https://www.researchgate.net/publication/228787956_Functions-based_classification_of_records_is_it_functional.

Páez García, Mateo Antonio. 2002. Cuadro de Clasificación Funcional para Fondos de Archivos del Subsitema Autonómico Andaluz: El Fondo de la Consejería de Agricultura y Pesca. Sevilla: Junta de Andalucía. http://www.juntadeandalucia.es/export/drupaljda/Cuadro%20de%20Clasificaci%C3%B3n%20Funci onal%20para%20Fondos%20de%20Archivos%20del%20Subsistema%20Auton%C3%B3mico%20And aluz__BAJA.pdf.

------. "El cuadro de clasificación integrado: normalización de la clasificación archivística." Revista PH 47, 084-095. http://www.iaph.es/revistaph/index.php/revistaph/article/view/1691/1691#.WDsCdH1dyao.

Pearce-Moses, Richard. 2005. A Glossary of Archival and Records Terminology. Chicago: Society of American Archivists. http://files.archivists.org/pubs/free/SAA-Glossary-2005.pdf.

Schellenberg, Theodore Roosevelt. Reprint 2003. Modern Archives: Principles and Techniques (1956). Chicago: The Society of American Archivists.

Shepherd, Elizabeth, and Yeo, Geoffrey. 2003. Managing Records: A Handbook of Principles and Practice. London: Facet Publishing.

Subdirección General de los Archivos Estatales. 1995. Diccionario de Terminología Archivística. 2ª ed. Madrid: Ministerio de Cultura.