JLIS.it
Italian Journal of Library and Information Science
Rivista italiana di biblioteconomia, archivistica e scienza dell'informazione

RDA and ISBD: history of a relationship

Elena Escolano Rodríguez

Introduction

In all relationship of couples, only the lovers know the true nature of their love and differences, magnified these in function of a possible advantageous situation of one of the parts, but in continuous dialogue searching of the balance. It doesn't matter if the relation is circumstantial, an engagement, or a marriage.

It is appropriate, therefore, to speak of relationship and not of competition, as has been argued in debates that have led to questioning the continuation of the work of the IFLA ISBD Review Group (IFLA 2013, 22-23).[1] It is expected that with this article the misunderstanding that can only damage the knowledge

[1] Debates can be summarized with the following questions of the president and secretary of the Cataloguing Section to the ISBD Review Group:
"Statements/Questions to consider"

- Has the time come when developing and maintaining a standard such as ISBD simply can't be done on a voluntary basis while still securing truly international involvement?
- Even though RDA isn't an IFLA product it is hard to ignore that RDA most likely will be considered a de-facto-standard in large parts of the world.
- Will the countries using RDA put all their efforts on developing rules into RDA and not be able to contribute to ISBD? Perhaps consider ISBD less important?"

JLIS.it Vol. 7, n. 2 (May 2016)
DOI: 10.4403/jlis.it-11703

and the conscious professional practice will be dissipated, as this nature of competitive relationship does not exist, because it is not possible. It is expected to demonstrate this and convince the reader with this article. There are different points of view with regard to some contents according to the differences in scope, origin, creation and policy of the group or body in charge of its development that logically justify those differences. They don't entail any obstacle for a good relationship with the help of Linked Data technology through the work specified in this article.

A professional cataloger is currently required to have much more knowledge of international standards for their practice with responsibility and ethics than in past times. It is not possible to continue longer with the attitude of the past that it was necessary to know only one standard, the one selected and developed at the national level to carry out its application. Today more knowledge is required of information, of the data, and a greater knowledge of the standards offered. This knowledge includes understanding the relationship between the standards that act in our professional universe, to be able to employ them judiciously, with knowledge and responsibility.

Comparison between typology of standards

RDA and ISBD, both are content standards and both are performance and technical standards.

According to the International Organization for Standardization (ISO) and International Electrotechnical Commission (IEC) a standard is: "A document established by consensus and approved by a recognized body that provides for common and repeated use, rules, guidelines, or characteristics for activities or their results, aimed at the achievements of the optimum degree of order in a given context" (ISO, 2016).

It is necessary to analyze more in depth the differentiation and organization of the standards by typology and what makes their qualification as content standards or not as opposed to standards that rule the practice, something that at present seems to concern a lot in the professional literature and that is deeply rooted in the American academic community, which has been extrapolated to specialized areas (Ohio Department of Education, 2016).[2] The departments of education seem to distinguish between the content standards that indicate how to think, reason, and investigate the important ideas, problems and essential knowledge for a discipline. Performance standards (also called operating or procedural) are those that train people to be capable to do something and what must be known in order to do something with quality. But according to this concept, the performance standards include in themselves the content standards, in addition to the necessary instructions to be able to define the level of work and show the results obtained from their implementation, identifying the problems and the necessary actions to resolve them in a reasoned way (Professional Learning Board, 2016).

[2] Defines: a) Content Standards describe the knowledge and skills that students should attain, often called the "what" of "what students should know and be able to do." They indicate the ways of thinking, working, communicating, reasoning and investigating the important and enduring ideas, concepts, issues, dilemmas and knowledge essential to the discipline; b) Performance Standards are concrete statements of how well students must learn what is set out in the content standards, often called the "be able to do" of "what students should know and be able to do". Performance standards specify "how good is good enough." They are the indicators of quality that specify how adept or competent a student demonstration must be; c) Operating Standards describe the conditions for learning. These can include specific expectations and additional guidelines for school districts, communities and families to use in creating the best learning conditions for meeting student needs and achieving state and local educational goals and objectives.

In this context, if we accept the definition from Bianchini and Guerrini (2014) that a content standard is the standard that gives instructions for identifying data, then we must recognize that both are content standards and performance standards although at different levels.

According to the ALA Standards Manual AACR2 (ALA, 2003), it was considered as procedural standard.[3]

[3] "The American Library Association recognizes and distinguishes between standards documents and guidelines documents in the following manner:

- In general, there are four types of standards and guidelines relevant to libraries.
- Service standards and guidelines define a level of excellence or adequacy in performance of library service, typically for a certain type of library or library user. Examples are: ACRL "Standards for College Libraries," and ASCLA "Standards for Cooperative Multitype Library Organizations."
- Procedural standards and guidelines describe an acceptable or agreed-upon method of accomplishing a particular type of library activity or task. Examples are: Anglo-American Cataloguing Rules, and "National Interlibrary Loan Code."
- Educational standards and guidelines describe requirements for acceptable library education programs. An example is the "Standards for Accreditation of Master's Programs in Library & Information Studies."
- Technical standards and guidelines in library work are formal consensus standards developed nationally or internationally, and typically provide a measure of excellence and adequacy for a product or thing developed. ALA does not usually issue this type of standard but may collaborate on development with external organizations. Examples of the broad range of technical standards are: NISO Z39.2, Bibliographic Interchange Format, (the basis for the MARC formats), NISO Z39.9, International Standard Serial Numbering (ISSN)."

Both standards, RDA and ISBD, give the necessary instructions to be able to identify information and to create well-formed metadata with them. It is true that ISBD also establishes a syntax, the order of presentation of the data according to the internal relationships between the metadata and also gives instructions for punctuation that makes explicit the relationship in order to offer an option for the final result, but this is a secondary aspect and certainly not the most important in the current consolidated ISBD, although it was a very important aspect in 1971. This syntax has been borrowed by RDA in some cases for reasons of giving clarity to the examples and is also offered in an appendix as a possibility for organizing displays and be able to demonstrate the results obtained from its application, as we mentioned earlier as a feature of a performance standard. In this sense the answers in the Joint Steering Committee for the Development of RDA (2010) FAQ Site must be understood:

"4.5 Will ISBD punctuation be required in RDA? The ISBD order of areas, data elements and punctuation will not be required. Information on presenting RDA data in an ISBD display will appear in an appendix (Appendix D).

9.5: If ISBD will no longer be mandatory, will RDA provide instructions for the order of descriptive cataloguing data elements?

RDA identifies the data elements used for descriptive cataloguing and lists them in an order similar to that found in AACR2. RDA does not provide instructions on the order the elements are to be given in the record (this is governed by encoding standard use); or the order in which they appear in a catalogue display. However, if a library, consortium, or metadata community decides to continue to use ISBD, it most certainly has the option to do so."

That said, it is necessary to clarify the widespread confusion that put into question the consideration of ISBD as a content standard and only considered it as a standard on order and display, as opposed to RDA, which is recognized as a content standard. This confusion may be due to these partial answers to specific questions mentioned above, taking it out of context, or simply a marketing strategy as RDA does not provide a display for the results but leaves the option open to all possibilities, including the one that provides in Appendix D the ISBD display. That is, one could even say that RDA is not entirely a performance standard or procedure standard that shows the result obtained from its application, according to the classification of the Professional Learning Board or a procedural standard, as AACR2 previously was considered. However, that RDA adopts or borrows a display from another standard is not a logical or scientific base for those who claim that ISBD is just a standard of display; rather it is the lack of knowledge, because if this were true the work of mapping and alignment of which we will speak later would not have been possible.

It is necessary to make clear that currently with the facilitates that provide the technology Linked Dates, with which it can be used metadata declared in RDF from different standards and obtain a correct and consistent cataloging, it would be erroneous then to affirm that it can not be used more than the metadata from a single standard. That is to say, it is what the Linked Data technology and the Semantic Web facilitate, the flexibility and adaptability that remove any obstacle to allowing deciding on the use or application of one standard and being able also to use metadata from another standard in the same record or set, achieving the results that better adapt to the library's needs.

The IFLA Committee on Standards provides the following definition of standards (IFLA, 2014): "IFLA standards are internationally reviewed, published and regularly updated documents. Each IFLA standard reflects current consensus on rules, principles, guidelines, best practice or models for a particular activity or service. IFLA standards in their diversity of styles and subject matter provide optimum benefit for the international library community. Standards are established by IFLA professional units who work in collaboration and by consensus. IFLA generally uses the term 'standards' to refer to the following types of documents:

- Conceptual models
- Rules for resource description
- Digital format codes
- ...

ISBD is described as Rules for description of the resources, very similar to RDA: Resource Description and Access, with regard to description since ISBD does not deal with access.

Once the typology of both standards is clarified, it is necessary to recognize and go on to analyze the consistent differences with some importance to the final result. For example, they have different scopes: RDA is a comprehensive code of rules, to carry out the description and access to information of the primary entities established by the FRBR model (Work, Expression, Manifestation, and Item) and FRAD entities (Person, Family and Corporate bodies). However, the main focus of ISBD is the information that identifies the Manifestation entity. Therefore, they are not comparable except in this specific issue and therefore they could not come into competition. It is true that ISBD has been used as code of rules in some countries directly, but this is

not its purpose. Those who want to use it in this way, as a code of rules, have to complement it with other rules or regulations on the access points and the information to identify the Work, Expression and Item. However, it is important that the cataloguer has the knowledge of the origin of the national or international rules that apply. Barbara Tillett (2008) at introducing RDA clearly said:

> Today we'll focus our attentions on the foundations for RDA, resource, description and access. We'll talk about how it's preparing us for the future generations of information search and discovery systems. The guidelines that are now under development are built on a rich tradition of cataloging that includes internationally shared cataloging principles, international standards like the ISBDs, International Standard for Bibliographic Description, and more recently on the conceptual models of the Functional Requirements for Bibliographic Records and the Functional Requirements for Authority Data known as FRBR and FRAD.

The initial revision work of AACR2 was planned as what would be AACR3, but in the evolution to RDA the structure changed by adapting to the models and in this case would focus only on description and access to resources, not on presentation. For this reason the presentation of the information remains as display options, among which is offered the ISBD display.

Both are standards that in their present version are the results of evolution. Both owe much to their past: As has been said, the work on RDA commenced as a revision of AACR2 in what was intended to be AACR3, and became RDA. The group commissioned for this preparation continued the same, and with the same composition "Then there's the Joint Steering

Committee for revision of Anglo-American Cataloguing Rules whose name changed in April of 2007 to the Joint Steering Committee for the Development of RDA" (Tillett, 2008) but with a different structural organization with the new COP (Committee of Principles). National and cultural representation remains, with Canada, US, UK and Australia, that is Anglo-American. This has meant that, although there have been changes in the preceding rules, in general RDA incorporates all the content normative basis of AACR2, which implies an Anglo-American cultural bias.[4] This past November 6, 2015, the name

[4] Tillett, Barbara. 2008. "Resource Description and Access: Background / Overview". Library of Congress: "The goals in the RDA Strategic Plan go on to declare that RDA will provide a consistent, flexible and extensible framework for both the technical and content description of all the types of resources and all types of contents; that it will be compatible with internationally established principles, models and standards. So that while RDA is being developed for use in the English language communities, it can also be used in other language communities, and we're expecting that other countries will translate it and adjust its instructions to follow their preferred language and script conventions just as now there are many translations of AACR2. Options are also being added to RDA to allow for the use of other languages and scripts, other calendars, other numeric systems and so forth so we can reach things that are common beyond those things used in the Anglo-American worlds". http://www.loc.gov/today/cyberlc/feature_wdesc.php?rec=4320
To know the changes between AACR2 and RDA the following documents can be consulted:
"Changes from AACR2 to RDA: A Comparison of Examples. Part 1: Description (July 2012)". http://faculty.washington.edu/aschiff/UW2012Presentation-Part1-Notes.pdf;
"Changes from AACR2 to RDA: A Comparison of Examples. Part 2: Access Points (July 2012)". http://faculty.washington.edu/aschiff/UW2012Presentation-Part2-Notes.pdf.
Also in the JSC Archive there are presentations from the first developments that show the biggest differences between AACR2 and RDA:

of the Joint Steering Committee was changed to RDA Steering Committee (Dunsire, 2015).

As an example, there are rules such as RDA 6.29.1.18 that are not understandable outside the Anglo-Saxon legal system (common law system), a rule that was already present in AACR2. To avoid this cultural bias rules should also be included regarding other legal and judicial systems such as the continental legal system (civil law), which applies to many countries in the world, and also the Muslim law and legal system, and others. If we take into account not only the geographical area but the percentage of population affected by the implementation of that law, we have that the Anglo-Saxon world system affects only 6.31% of the population compared to the civil system that affects 23% or 0.85% of the Muslim system and 69.89% of the population that are affected by mixed systems, according to studies by the University of Ottawa: JuryGlobe - World Legal systems Research Group[5].

The evolutionary process for ISBD began in 2007 with integration of the pre-existing different specific standards for the

---

"Differences between RDA and AACR2". http://www.rda-jsc.org/archivedsite/docs/6-CREPUQ-Differences-between-RDA-and-AACR2-Paradis.pdf.
Maxwell, Robert. "RDA in depth: differences between RDA and AACR2 (May 2010)". http://www.rda-jsc.org/docs/RDA_part_2_201005.pdf. Tillett, Barbara. "RDA changes from AACR2 for texts (Jan. 2010)". http://www.rdajsc.org/archivedsite/docs/10_1_12_RDAchangesfromAACR2fortexts.ppt.

[5] University of Ottawa: JuryGlobe. "World Legal Systems Research Group Wikipedia", shows the following graphics and statistics: "World map" http://www.juriglobe.ca/eng/rep-geo/cartes/monde.php and "Graph distribution of the world population (%) per legal systems" http://www.juriglobe.ca/eng/syst-demo/graph.php.

description of different types of resources. The almost exhaustive integration of the provisions of these standards was intended to keep the confidence of the specialized cataloguers, only modified where there were inconsistencies among the provisions for different types of resources. Once the consolidated edition was ready, the evolution continued to adapt ISBD to the new technological environment of the Semantic Web. In this sense both standards, RDA and ISBD, adapt and allow the use of information in the new environment created by Linked Data technology.

The more concrete and reduced target of ISBD on identification of Manifestations, mainly based on the analysis and description of how information represented itself, presents fewer opportunities for cultural confrontation, although it is not exempt entirely. The group responsible for maintaining ISBD is always formed by IFLA members who volunteer to work on the group and are representatives of a variety of cultures, languages and cataloging traditions. This implies that each content rule that is accepted, revised or modified must have the consensus of all the members and in some cases where consensus could not be reached at least there is a compromise. Thus, ISBD represents an agreement, an accord among cultures on the main elements or metadata to identify the resource, and also the content of the metadata, how to recognize the information to be recorded and how to record it.

The inherited basis of origin regarding the content, the standardization group and its composition responsible for the development and maintenance of a standard and the procedure for development work, distinguish between different degrees of internationality of the two standards. It is somewhat clear that both are international standards and widely applicable.

The effort involved in cultural neutrality is laudable but is an enormous endeavor and to do it on an initial biased base will make it difficult to obtain the agreement of all. Furthermore, the solution to accept different cultural options in a code of rules or content standard can be considered contradictory with the essence of a standard, as we have seen at first, and run the risk of failing to get the results that all standards pursue, that is to guide the cataloger.

As another example that affects both standards: for cataloging serials there are fundamental rules to guide the cataloger on the issue that should serve as the basis of the description and in which situations the change in the title should be considered significant enough to consider it a new publication (manifestation), earlier or later, that will require a new description. Therefore, it is essential that guidelines, the knowledge of the issue from which the description will be based, and other considerations about major or minor changes be clear. The first issue has been chosen, as is done in ISBD, AACR2 and RDA, for obvious reasons: there is more probability that all the libraries that cooperate have the first issue published (which does not mean that is number 1 but the oldest) as part of their collections, which may or may not be completed and therefore do not have the last issue or the same most recent issue; another reason is economy, to base the description on the first issue that appeared makes it more economic to serve for successive issues than to rely on the last or latest issue, which requires constant revision and modification of information, even with minor changes, and all this affects the final economy of the process. However, there are countries and libraries that have sufficient resources and can afford this investment in updating the information. The debate on the first issue vs. the latest presented by the Deutsche

Nationalbibliothek that is under consideration for acceptance by the RSC.[6]

The standardization institution or group has to provide guidelines and guidance on the choice of decisions according to the available resources for the general area of the application, which are not same in all cases. A standard can not accept all the available options and confirm them all in the interests of universality, because then it loses its effectiveness as a content or performance standard and can be confused with a registry or inventory of international rules. Even in this case, that it is a record of international rules, it could be practical if it should specify for which linguistic, geographical or cultural cases it is applicable, in order to achieve its goal of guidance for the application. As an example on how to do it, the "Names of Persons" (IFLA, 1996) can be cited.

The flexibility pursued requires more knowledge and preparation from the cataloguer to choose consistently.

The way in which the evolution of the content has been treated marks a considerable difference between the standards and it seems that RDA looks to the future, whereas by comparison the false image that ISBD looks to the past has been created. RDA

---

6 "First issue v. latest (current) issue." Discussion paper: 6JSC/DNB/Discussion1 (July 29, 2013). http://www.rda-jsc.org/archivedsite/docs/6JSC-DNB-Discussion-1.pdf. JSC report in 2014: "6JSC/DNB/Discussion/1 [Discussion paper: First issue v. latest (current) issue]: JSC affirmed its decision, taken in 2012, that RDA should be sufficiently flexible to support any approach to recording changes over time. Pending the realization of these changes, agencies following the latest entry technique should continue to do so and may encode their records as RDA." http://www.rda-jsc.org/archivedsite/2013JSCmeetingoutcomes.html.

from the start is more focused on digital resources and for cataloging in the digital environment, with a web technology of consulting the standard. Initially it was tried to make the standard lighter, but with time and the proposals required by communities of specialists who saw disappearing data that was very important for them regarding printed documents, it has been necessary to restore many rules that were removed from AACR2. ISBD treats all resources equally, whether electronic or printed, and the fact that it continues with the traditional form of publishing and consultation, printed and electronic, serves as an argument against, saying that it remains stuck in the past.

Venturing further, it could also be said that the future development of RDA should be focused on including rules concerned with the interoperability with other areas; however the scope of ISBD is only about library resources and will continue reviewing its cataloging and the emerging needs in the light of new technologies, looking at the relationship and interoperability with other standards from other fields. For example, it is expected that in the next revision the necessary guidelines for describing manuscripts of any period (including electronic) and also many requests for description of astronomical map resources will be included. Obviously standards must adapt to their time and environment and now both standards conform to the Linked Data technology. When considering the change of the rules the IFLA working group must take into account continuing to enable the use of the standard even by libraries using non-automated catalogs, allowing the transition and the scalability in development, depending on the possibilities and means the library has. This does not mean that the standard is obsolete, as has been said, but flexible with essence and content valid in any medium. There are still manual catalogs, printed and computerized to different degrees that cannot be said is a

situation from the past. RDA, by its orientation from the start, as web tool.[7]

Designed for the digital world, it is difficult (although not impossible) to implement in printed catalogs or even in current electronic management systems, without counting with a knowledge basis inherited of the previous standard AACR2 and coding format MARC, or taking the syntax from ISBD. What should not be a requirement for new catalogers, demonstrating that the current standard RDA is more a content standard and less a technical or performance standard as it was AACR2. In addition, integrated library systems still work with MARC formats and this format is closely related to ISBD since its beginning.[8] However, current developments present us how a record

[7] Tillett, Barbara. 2008. "Resource Description and Access: Background / Overview". Library of Congress. "The Joint Steering Committee stated our goals for RDA as follows: "We envision RDA as a new standard for resource description access designed for the digital world. In other words, RDA will be a Web-based tool that is optimized for use as an online product. It will be a tool that addresses cataloging all types of content and media and a tool that results in records that are intended for use in a digital environment through the Internet, also through Web OPACs and other future systems. The records that are created using RDA will be readily adaptable to new emerging database structures". http://www.loc.gov/today/cyberlc/feature_wdesc.php?rec=4320.

[8] Tillett, Barbara. "Resource Description and Access: Background / Overview (2008)" Library of Congress. "Whether you are working with a card catalog, an integrated library system with an OPAC, or a system that makes internal links and expresses relationships between entities, RDA can be used... RDA is being designed as a Web tool, that is, it can be viewed on your computer and have keyword access in addition to an index. It's being designed and coded to enable displays of different views". http://www.loc.gov/today/cyberlc/feature_wdesc.php?rec=4320

completely RDA can be.[9] Objective: simplification. ISBD has maintained the same mandatory level and requirement of information elements that exist in specialized standards. However, RDA has aimed from the beginning to simplify and facilitate the cataloging in order to solve the problem of cataloging an increasing mass of resources. But what can be considered a good solution for a type of general libraries, it is very troublesome for the appropriate management in special libraries. Therefore, specialized communities in these particular types of resources have not seen recognized in RDA their information needs to control materials in their field. However, this is something that continually is modified by the process of the proposals for amendments to RDA, so the differences between the two standards are each time minor.

In addition, as already mentioned, there is the option where you can choose to apply RDA and the ISBD specificity in some occasions, as RSC offers, by application profiles. Other times RDA is more specific individualizing information that for ISBD is inferred, something that ISBD will have to modify in its forthcoming review.

Actions for collaboration

Therefore to prove this good relationship and promote interoperability between the standards, a series of actions have been undertaken.

The attendance at working meetings of the IFLA ISBD Review Group by a representative of the JSC has been constant, first as

[9] RIMMF (RDA in Many Metadata Formats) http://www.marcofquality.com/wiki/rimmf3/doku.php?id=rimmf

an observer, and after 2007 as an official liaison with the group. During meetings there was the possibility of commenting on issues and influencing decisions. But this situation didn't happen on the other side. The invitation to the representative of the ISBD Review Group to attend meetings of the JSC didn't happen until 2011, during the JSC Glasgow meeting, when RDA was already published. The IFLA group has to follow the same procedures for requests for rule revision established for non-members of RSC.

The current environment of Linked Data has helped much to analyze the provisions offered by both standards and to promote and facilitate interoperability between them. The work required to carry this out entails much time and effort. Therefore, in order to maintain a balanced relationship in the efforts of investment that is required to prepare the necessary materials for functional interoperability, it was considered important to prepare and confirm a document that establishes the protocol of collaboration between both standardization groups, approved in 2015. As stated in the text: "The purpose of this protocol is to support the maintenance and development of functional interoperability between data created using the RDA and ISBD instructions and element sets"[10].

Communication between standards-Interoperability

Currently, in addition to publishing our online catalogs, making them openly accessible and publishing our data with Linked Data,

[10] "Protocol between the JSC and the ISBD Review Group" (6JSC/Chair/13 14 (February 2014). http://www.rda-jsc.org/archivedsite/docs/6JSC-Chair-13.pdf.

there is much work in process on interoperability of information, for which elaboration of mappings between standards is necessary.

The document "Alignments between the namespaces of ISBD, other IFLA standards, and external standards" (ISBD-XML Study Group, 2013) shows the mappings that IFLA must make between bibliographic standards and the ones already elaborated.

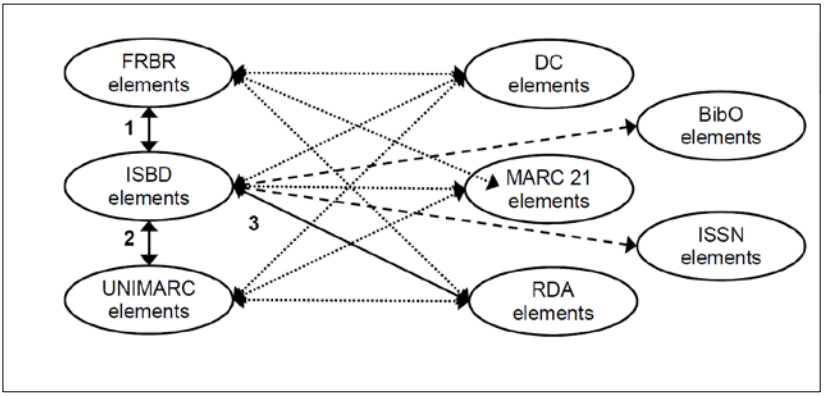

Figure 1: "Alignments between the namespaces of ISBD, other IFLA standards, and external standards", ISBD-XML Study Group. Version , 25 July 2013

As already explained above and shown by the image of the table, the two standards are closely related to the FRBR model, but at a different level, so it was not difficult to carry out these works, although implied rather time and effort given the particularity.

Mappings are made between the element sets and vocabularies also declared in RDF. They are based on previously made alignments that not only establish when two elements are equal, but when an element is more specific or more general that the other. That is, to be precise, it is necessary to differentiate if the correspondence is equivalent (=) or different (> or <).

The objective of the alignment is to enable the harmonization between the content standards. This harmonization is achieved if data are functionally interoperable, i.e. the data according to one standard can meet the functional requirements of the other, which does not imply that the content is identical, but even being different is not enough to have contradictory effects. Also it can be used to limit the possible impact of the differences detected. The functional interoperability was defined by the two standardization groups in the Glasgow meeting in 2011 (JSC, IFLA ISBD Review Group, ISSN Network, 2011) as:

> records valid under one of the standards should be capable of being mapped to either of the other standards. It is recognized that some issues will take longer to resolve than others and a few issues may prove to be irreconcilable, but steps can be taken to limit the impact of such differences.

The alignment realized by Gordon Dunsire (ISBD Review Group consultant) and the ISBD Review Group itself, between the ISBD and RDA sets of elements, has the direction of alignment from ISBD to RDA (Dunsire and IFLA Cataloguing Section's ISBD Review Group, 2014). In this alignment the definitions, scope notes, text and content in the standards documents have been taken into account as well as the examples given in these in order to reach and understand all the semantics of the element. However, the recognized and existing differences in sources of information of each standard for each element have not been taken into account, unless this would affect in a special way the semantics of the elements and not the contents of a specific instance.

Now the opposite alignment starting from RDA to ISBD should be developed by the RSC.

Previous to this work of alignment, the ISBD / XML Study Group, afterwards called the ISBD Linked Data Study Group, worked on the analysis in depth of the content of the rules of both standards to get the knowledge and certainty that even having different textual wording, the intended essence of the rules were the same for obtaining similar or different data. The result of this work was published as *ISBD Profile in RDA: Constructing Functionally Interoperable Core Records* (Gentili-Tedeschi et al., 2013). It is a profile with recommendations that enable those who want to apply RDA as a cataloging code and at the same time also meet the standard cataloging required by ISBD, ensuring with this that the records created using one standard were easily mapped to another standard. The work focused on the ISBD "mandatory" elements and rules and what RDA deals with as "core". In this paper the mandatory rules on punctuation were not considered, as explicitly stated in the introduction to the document. Only the content rules of the elements were addressed. This textual comparison table between the rules provides a recommendation to follow one or another option offered by RDA for a particular issue, the one that is consistent with the provisions set by ISBD. Therefore this work was essential to reach a deeper understanding of the semantic similarity or differences between the two standards and to be able to carry out the alignment on Linked Data. However it is necessary to recognize some differences due to the sources of information established for each element in each standard.

The profile and alignment do not require that elements of both structures are equivalent. They show that there are elements and rules that exist in one standard that do not exist in the other or even that one element, with the same name or label, is considered in a more broad or general way in one standard than in the other,

where it is considered in a more specific and concrete way. To give two examples:

> "Title proper" is the element with the same label or name in both standards; however, the ISBD element is more specific as it contains sub elements that can compose titles such as "Common title" and "Dependent title" that are not declared in the RDA set of elements (Joint Steering Committee, 2015), although they can be included in the future according to the proposal (Joint Steering Committe, 2014). Another example of the opposite situation, also of an element with the same name in both standards "Other title information" in which the concept is a broader element in ISBD with respect to RDA element since the ISBD one can also include variant titles.

Based on the alignment, it has been possible to do the mapping of the sets of elements and also the vocabularies of both standards declared in RDF, which since June 2015 RDA has published on its new registration site.[11] As soon as IFLA has its own space for it, the mapping will also be there.

It is necessary to keep in mind the following considerations: the domain of both sets of elements is different. The elements are declared as property or predicate in a triplet or sentence in which the subject (or domain) is different for both standards. In RDA the domain of the properties is represented by the entities of conceptual models, while in ISBD, with a more practical view, the domain declared for the entire set of elements is the "resource" as representative of the Manifestation, that has aspects of other entities Work, Expression and Item. This option

[11] http://www.rdaregistry.info.

facilitates the application in current management systems to be able to declare that a specific instance of Resource X (which has traditionally been given an identifier in the libraries catalogs) has some of the properties declared as the ISBD ontology concerning description of the aspects from the contained Manifestation.[12] This practical level is difficult to apply when the domain is the conceptual entities themselves.

This fundamental difference in the domain of the properties, along with the differences between the properties themselves that we have commented on already, have required that to enable these mappings between the ISBD and RDA sets of elements and vocabularies[13] it has been necessary to find a level in which to establish the relationship. That is, it has been necessary to be on a more general level in which the elements are related and, in order for that, "unconstrained" ontologies have been created, that is,

---

[12] The following documents show the debate and the important difference in this domine:
Joint Steering Committee for Development of RDA. Mapping ISBD and RDA element sets: briefing/discussion paper. 6JSC/Chair/4 (24 October 2011).
ISBD Review Group, Alignment of the ISBD element set with RDA element set – RDA, Appendix D.1 6JSC/ISBD/Discussion/1 (September 25, 2012). http://www.ifla.org/files/assets/cataloguing/isbd/OtherDocumentation/ISBD%20to%20JSC%20discussion%20paper%201.pdf.
Dunsire, Gordon. Resource (ISBD) and Work, Expression, Manifestation, Item (FRBRer) semantic relationship (28 July 2013) Amended 6 October 2013, following comments by Patrick Le Boeuf and discussion at IFLA 2013. http://www.ifla.org/files/assets/cataloguing/isbd/OtherDocumentation/resource-wemi.pdf.
ISBD Linked Data Study Group. Minutes of the ISBD Linked Data Study Group's Meeting: Paris, Bibliothèque nationale de France, 7-9 April 2014". http://www.ifla.org/files/assets/cataloguing/isbdrg/isbd-ld-minutes_042014.pdf.

[13] RDA Registry. http://www.rdaregistry.info/Maps/#isbdrda.

their use is not limited to the standard. We know that ontologies or elements declared must be referenced with regard to a published standard; these ontologies are limited in use by the standard, "constrained" by the standard. Therefore, it has been necessary to create these ontologies that are not limited in order to enable the relationship.

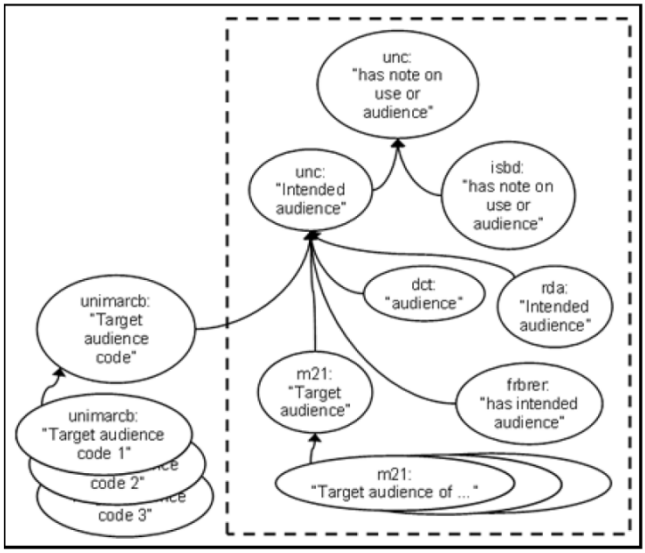

Figure 2: Dunsire, G. ISBD unconstrained elements and other extensions (2013), modified.

Figure 2 shows this process graphically. The image by Gordon Dunsire (2013) has been modified by highlighting in red the level without limitation or unconstrained "unc". It exemplifies the relationship between the same element from different standards. The properties of limited or restricted to the standard (in green) are declared as sub-properties of their respective unconstrained

properties "unc". At this level the mapping between ontologies of both standards can be established.

The publication of the ISBD unconstrained set of elements took place in August 2015. A decision by the ISBD Review Group is that the elements of this ontology have the same initial part of URI, the same label and definition of the constrained version but without the domain resource declared. References between ISBD ontologies have been created from the constrained property to the unconstrained property.

All these works allow that metadata from different standards can be used in the same record. The important thing is that the library (in this case the librarian who makes such decisions) has the necessary basic knowledge of this technology and the knowledge of the cataloguing policy of its own catalog, the institution's needs and the possible standards in use to take from them the higher benefits.

Therefore, if desired to combine in a bibliographic record ISBD metadata with other metadata that fit RDA, the librarian has to know under what standard the information contained in the metadata has been recorded.

Other mappings are made by IFLA with other international standards,[14] but this is beyond the scope of this article.

Currently the Linked Data Technical Subcommittee (LIDATEC) under the IFLA Standards Committee, formerly IFLA Namespace Group, will be responsible for the maintenance of

[14] For more information the ISBD-Linked Data Study Group can be consulted ISBD Linked Data Study Group site http://www.ifla.org/node/1795.

ontologies and vocabularies in the IFLA namespace.[15] It is hoped that IFLA itself has its own registration space in which these mappings that currently are in the RDA registration site will be posted.

Conclusion

There are differences of interpretation, but not enough to have a confrontation. As in a loving relationship, there are influences between lovers, adoptions / assumptions, loans, interpretations, changes in customs and communication, until the couple and the role of each one is stated. In short, one should speak of healthy evolution and this is only possible if there are two consistent standards, with mutual respect for their own aims and principles.

We have known the phenomenon of globalization. In the cultural field of information management and with current technology, globalization today doesn't need to have a pejorative meaning of imposition of one culture over another. On the contrary, we now have the tools to make sure that cultures are understood, at least in this area, respect each other and engage in dialogue in a healthy relationship. The elimination of cultural conventions and habits from practice in the information organization is unrealistic, since interpretation always will be conditioned by the cultures. Therefore, a possible future scenario for RDA would be like the one for AACR2 that was and is applied by different countries directly or adapted to their national cultures, embedded within their own cultural rules code. This last situation was possible in another environment (manual or automated catalogs), but today it

[15] For more information of the Linked Data Technical Subcommittee can be consulted: http://www.ifla.org/lidatec.

has greater importance and implications in the current environment of the Semantic Web.

In this environment, the possible reusability of data without limits is the reason why it has so much importance and value that these data be of quality, precise, and with a good identification of the standard to which they fit, because it is in the standard where the semantics of metadata are, as qualifiers of the data. Therefore it is critical that the metadata are well reference in the Linked Data and Semantic Web 3.0 environment. Consequently, it is necessary to take into account that if the rules of RDA for a national application change, then it is not RDA. If the metadata are well identified and qualified with the standard of content to which they fit, this will increase the quality recognition from the source of origin of these metadata. On the other hand, if RDA in its intention to be more international and universal adopts or includes all the possibilities of entities for description as cultural options exist, it will lose the character of guidelines that is a standard, becoming a registry of possible existing rules. One option for RDA to reconcile this intention and continue to have value as a content standard and a performance and technical standard, would be to organize and qualify all these possible cultural options specifying and identifying the culture, language / script of application, at the same level of importance and value as other cultural options. Only in this case you could say that it is truly international, not just Anglo- American.

However, having said that, it must be recognized that such a code is very valuable, based on the FRBR model, with its ontology of

element sets and vocabularies declared in RDF, and the tool that demonstrates that is RIMMF.[16]

But these comments, totally personal, are outside the scope of this article that focuses only on the comparison of the description of the Manifestation represented in the resource, because the descriptions of other entities are the ones that present more problems as they are the most affected by cultural conventions.

Nova Spivack (2014b) says on the Web 4.0 that we move towards an ubiquitous Web where the main objective will be to unite the minds, so that both people and machines talk to each other to generate the decisions. The same author in his Weblog (2014a) says that these past years Google is moving away from ontologies manually created and Google's philosophy has been influenced by *big data* rather than by structured knowledge built manually. It is expected that these decentralized systems that also use unstructured information quickly contribute to the Semantic Web. This will be possible because in these systems, such as Knowledge Vault, knowledge base created by Google, are included as parameters the value of confidence with the capability to distinguish between knowledge statements that have a high probability of being truer than others.

That is, it is being worked on how to integrate unstructured data, not standardized data. These social data inevitably will respond to a cultural convention not directed, controlled, altered or guided by any standard and they will be the ones that will be imposed over the structured and controlled data. Could this be seen as a loss in the field of our profession? or should we think we still have time to influence machine decisions? We must work harder

[16] http://www.marcofquality.com/wiki/rimmf3/doku.php.

to offer a range of information structured and well organized, consistent, with interrelationships and adaptable to all possibilities. The search for interoperability not only has to be restricted to archives, libraries and museums, there is much more information to relate with. Our contribution must necessarily recognize, respect, preserve and relate cultural differences, so that in this way our expertise could influence the creation of this parameter of confidence for the future organization to come. That is, we have now and urgently to meet a cultural responsibility, as was clearly said by Bianchini and Guerrini (2015)[17] translated, "who manage the vocabularies and ontologies from the technical, semantic and linguistic point of view, will play an essential role in defining the lemmas and their relationships; the terms, therefore, will be used automatically through inference processes performed by machines".

Finally it can be concluded that if in the future ontologies and mappings will be generated by the machine that will combine languages and structured and unstructured data from the end user, consequently with their cultural conventions of which they may not even be aware, our professional role as information managers must be to facilitate interoperability and management of that information, whether by humans or machines. This work can only be carried out from a base of cultural respect, for the simple reason that the majority isn't the information generated by

[17] "...porta con sé il concetto di responsabilità culturale: chi gestisce tecnicamente, semanticamente e linguisticamente vocabolari e ontologie svolge un ruolo determinante nella definizione dei lemmi e delle relazioni tra di essi; le voci, infatti, saranno utilizzate automaticamente e, dunque, acriticamente dai processi inferenziali compiuti dalle macchine."

libraries (in the Semantic Web Graph updated to 2014,[18] the portion related to publications, within which is the libraries information and ontologies, only represent the 15% of the whole pie) which will be imposed; on the contrary it will be the information generated by other professionals and general end users, who generate information without rules or with rules with their culture imbued. History has taught us that cultural traditions remain, evolve, are influenced but stay even in front of dominant imposition. Therefore we should not change these cultural conventions that cause the information to take the form it takes, but we have to put the means to be recognized, identified and semantically relate whatever the cultural convention affecting that information will be. That is our challenge now, our cultural responsibility, not judging, not competing, but cooperating and respecting any existing organization of knowledge and relating them. If we assume this responsibility as ours, in this new environment provided, then (opposite to what Spivak (2014a) says in his blog) the data, ontologies and mappings manually produced with quality will remain interesting for the semantic web and could become even more indispensable than ever.

[18] Cyganiak, Richard, Jentzsch, Anja. *Linking Open Data cloud diagram*. http://lod-cloud.net.

References

American Library Association. 2003. ALA Standards Manual. http://www.ala.org/tools/guidelines/standardsmanual/manual#1.1.

Bianchini, Carlo. and Mauro Guerrini. 2014. RDA: Resource Description and Access. Il nuovo standard per la metadatazione e la scoperta delle risorse nell'era digitale. *Biblioteche oggi* 32.4. p. 46-50. http://www.bibliotecheoggi.it/2014/20140404701.pdf.

Deutsche Nationalbibliothek. 2013. First issue v. latest (current) issue. Discussion paper: 6JSC/DNB/Discussion1 http://www.rda-jsc.org/archivedsite/docs/6JSC-DNB-Discussion-1.pdf.

Dunsire, Gordon. 2013. ISBD unconstrained elements and other extensions. http://www.ifla.org/files/assets/cataloguing/isbdrg/isbd-extensions.pdf.

Dunsire, Gordon. 2015. Outcomes of the 2015 JSC Meeting, RSC/Outcomes/2015. http://www.rda-rsc.org/sites/all/files/RSC-Outcomes-2015.pdf.

Dunsire, Gordon and IFLA Cataloguing Section's ISBD Review Group. 2014. Alignment of the ISBD: International Standard Bibliographic Description element set with RDA: Resource Description & Access element set. http://www.ifla.org/files/assets/cataloguing/isbd/OtherDocumentation/isbd2rda_alignment_v3_1.pdf.

Gentili-Tedeschi, Massimo. et al. 2013. ISBD Profile in RDA: Constructing Functionally Interoperable Core Records (Version 1.0). http://www.ifla.org/files/assets/

cataloguing/isbd/OtherDocumentation/isbd_profile_in_rda_ver_1.0.pdf

IFLA. 1996. Names of Persons: national usages for entry in catalogues. München: K.G. Saur. http://www.ifla.org/node/4953.

IFLA Cataloguing Section Standing Committee. 2013. Minutes. Appendix III: ISBD Strategy in 79th IFLA General Conference (Singapore, 17-23 August 2013): p.22-23 http://www.ifla.org/files/assets/cataloguing/reports/meeting_2013.pdf.

IFLA Committee on Standards. 2014. What is an IFLA Standard? http://www.ifla.org/node/8721.

ISBD International Standard Bibliographic Description. 2011. Berlin; München: De Gruyter Saur.

ISBD-XML Study Group. 2013. Alignments between the namespaces of ISBD, other IFLA standards, and external standards. http://www.ifla.org/files/assets/cataloguing/isbdrg/namespace-alignments_v1_20130725.pdf.

ISO Consumers and Standards: Partnership for a Better World. http://www.iso.org/sites/ConsumersStandards/1_standards.html#section1_1.

Joint Steering Committee for Development of RDA, IFLA ISBD Review Group, ISSN Network. 2011. Harmonization Meeting, (3-4 November 2011, Glasgow, UK). http://www.ifla.org/files/assets/cataloguing/isbdrg/JSC_ISBD_ISSN_Outcomesfinal.pdf.

Joint Steering Committee for Development of RDA. First issue v. latest (current) issue [Discussion paper:] 6JSC/DNB/Discussion/1. http://www.rda-jsc.org/archivedsite/2013JSCmeetingoutcomes.html.

Joint Steering Committee for the Development of RDA. FAQ, 2010. http://www.rda-jsc.org/archivedsite/rdafaq.html.

Joint Steering Committee. RDA elements. 2015. 6JSC/RDA/Element analysis table/rev/3. http://rda-jsc.org/sites/all/files/6JSC-RDA-element-analysis-table-rev-3.pdf.

Joint Steering Committee for the Development of RDA. 2014. "Revision of RDA 2.3.1.7 (Titles of Parts, Sections, and Supplements) and RDA 2.3.2.6 (Collective Title and Titles of Individual Contents): 6JSC/CCC/11/Sec final/rev". http://www.rda-jsc.org/archivedsite/docs/6JSC-CCC-11-Sec-final-rev.pdf.

Ohio, Department of Education. 2016. Ohio's Learning Standards - Terminology Definitions. http://education.ohio.gov/Topics/Ohios-Learning-Standards/Ohios-Learning-Standards/Ohio-Learning-Standards-Resources/Ohio-Learning-Standards-Terminology.

Professional Learning Board. What is the Difference between Content Standards and Performance Standards? http://k12teacherstaffdevelopment.com/tlb/what-is-the-difference-between-content-standards-and-performance-standards.

RDA Steering Committee. Submitting Proposals to Revise RDA http://www.rda-rsc.org/submitting-proposals.

Spivack, Nova. 2014a. A Turning Point for the Semantic Web. http://www.novaspivack.com/uncategorized/2014-a-turning-point-for-the-semantic-web.

Spivack, Nova. 2014b. New Era in Semantic Web History. http://www.dataversity.net/nova-spivack-new-era-semantic-web-history.

Tillett, Barbara. 2008. Resource Description and Access: Background / Overview. Library of Congress. http://www.loc.gov/today/cyberlc/feature_wdesc.php?rec=4320

ELENA ESCOLANO RODRÍGUEZ, Ministerio de Defensa, Jefa de la Unidad de Normalización. elena.escolano@yahoo.es.

Escolano Rodríguez, E. RDA and ISBD: history of a relationship. JLIS.it. Vol. 7, n. 2 (2016): Art: #11703. DOI: 10.4403/jlis.it-11703.

ACKNOWLEDGMENT: The Author acknowledges Carlo Bianchini, Luis Ángel García Melero, Massimo Gentili-Tedeschi, Mauro Guerrini and Dotrothy McGarry for their comments.

ABSTRACT: This article attempts to clarify the nature of the relationship between the RDA and ISBD standards in order to be able to understand their differences and vinculations, as well as to remove some misinterpretations about this relationship.

With this objective, some aspects that can affect their differences, such as types of standards, points of view, scope, origin, policies of the creation and development group or organization in charge that logically justify these differences, are analyzed. These have not presented any obstacles for a correct relationship with the help of the Linked Data technology. In this article, account is also given of the work done of mappings and alignments between the standards in order to contribute properly to the Semantic Web. This knowledge is the one fundamental required for current catalogers to use standards judiciously, knowledgeably and responsibly.

KEYWORDS: Cataloging; Content Standard; Linked data; Mapping; Metadata.

Date submitted: 2016-01-28

Date accepted: 2016-02-16

Date published: 2016-05-15