AUTHOR(S):

TITLE:

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1.   Introduction

The 1998 publication of the Functional Requirements for Bibliographic Records (FRBR) IFLA (1998) and the 2010 release of the new cataloguing standard based thereon, Resource Description and Access (RDA), have led to a greater amount of debate that was unusual in the relatively stable world of bibliographic cataloguing (Gorman, 2016; Tennant 2007; Coyle and Hillman 2007).

The release of new versions of RDA's predecessor, Anglo-American Cataloguing Rules, 2nd edition (AACR2) had been in response to feedback from within the profession, but the changing online environment which was part of the justification for a new standard meant that this was the first time that development of the standard would be carried out in such a public forum.

The research described here aimed to investigate practising cataloguers' experiences of using RDA, and to discover what issues they encounter and discuss, while RDA is still subject to review and amendment. The aim was achieved by establishing the nature of the changes from AACR2 to RDA, and documenting and exploring cataloguers' opinions and concerns regarding their understanding of the theoretical concepts behind RDA and the new Library Reference Model (LRM).

These objectives were met by a content analysis of the archives of two listservs, by means of a qualitative approach which enabled observation of the process of further refinement of RDA, and the concurrent level and content of interactivity amongst participating professionals.

2.   The nature of changes in RDA

The philosophy of RDA is to use FRBR as an entity-relationship model of metadata for information objects, whereas AACR2 bibliographic units are described out of context and in a single, flat record. AACR2 is based on the International Standard Bibliographic Description (ISBD), first published in 1971, with the intention to provide and promote consistent, internationally acceptable bibliographic control. This was to be done through recording or transcribing data elements in a specific sequence and employing "prescribed punctuation as a

means of recognizing and displaying data elements and making them understandable independently of the language of the description" (ISBD 2011). Although RDA acknowledges the influence of ISBD, and often uses it to provide an ordered way of presenting elements (Bianchini and Guerrini 2016), the standard does not prescribe ISBD formatting and punctuation.

The new Statement of International Cataloguing Principles (IFLA 2009), and subsequently RDA, hold that user convenience should be the principal feature or governing principle by which a cataloguer should make any decisions. In recognition of variations in the requirements of different cataloguing agencies, RDA sometimes offers alternative solutions to common problems, and the choice of solution may be left to the individual cataloguer by agency policy. In such a case, the judgement is left to the cataloguer, but the judgement should be based on the assessment of whether a particular action will enhance the user's convenience in finding, identifying, selecting or gaining access to the resource (Maxwell 2014 p.12).

The major, and most significant, practical change is the separation of document content from the carrier. Other changes include the abandonment of the "main entry" concept in favour of "authorised access points"; a move from "levels of detail" to core and optional elements; a shift from format to content as the primary focus; abandonment of the "rule of three" (under which name added entries, other than for the first named, were not made when there were more than three authors), to permit entries for any number of contributors; inclusion of all publication details; and deprecation of most abbreviations and Latinisms.

3.   Literature Review

3.1 The shift from AACR2 to RDA

Obille (2012) discusses whether the move to RDA from AACR2 constitutes a paradigm shift, as defined by Kuhn (1970). She concludes that it does not, but, as with the Paris Principles (International Conference on Cataloguing Principles 1961) and the Draft Code of Lubetzky (1960), the shift appeared in the design of catalogues and users' customary behaviour regarding the information they find

in them. The increasing complexity of rules, both in the ALA rules and RDA, echoes a shift from linear to relational cataloguing, which is only observable in the format of the cataloguing standards. Simultaneous shifts have taken place from publication/material specific cataloguing to cataloguing the work and its embodiments, and from a display specific code (AACR) to a non-display specific code (RDA).

Fredrick (2017) notes five particularly important changes in the conceptualization of library data: the adoption by International Federation of Library Associations (IFLA) of new cataloguing principles in December 2016 in the Statement of International Cataloguing Principles; the Library Reference Model (LRM); the 3R Project that began in April 2017; the Virtual Library (Cloud based) which is, according to the author, an increasing movement among metadata professionals to create, store and share metadata in the Cloud, i.e. in a virtual location; and finally, Linked Open Data for Libraries, based on the previous four changes, so that the "power of the Web" can be used to revolutionize information discovery and retrieval.

3.2 Criticism

It is understandable that such cataclysmic or fundamental change in the cataloguers' world provoked mixed feelings and doubts among the practitioners. Most critical of them, Gorman (2016), strenuously argues that the RDA was an unnecessary waste of time, effort and money, because the few (in his estimation) improvements it brings could have been achieved by changes to AACR2. Other critical voices from before the time of implementation pointed to complexity of the rules, RDA being too entangled with the former standard, lack of patience with transitional period, and the fact that RDA was still evolving but the traditional cataloguing community much preferred the known standard of full and detailed descriptive cataloguing (Coyle and Hillman 2007). Tennant (2007) strongly agreed with them and underlined his perception that the RDA Steering Committee, while on its way to developing a new standard, was in a way stuck with not being able to please either the traditionalists or the revolutionaries.

Tosaka and Park (2013) analysed the emerging literature on RDA published from 2005 to 2011 and postulated that RDA was a very important step in making the transition to achieve improved bibliographic control in the emerging linked data

environment. Categorising the critique of the pioneer development of RDA (Tennant 2007; Coyle and Hillman 2007), as being not relevant for the present web environment, they explained that at that initial stage RDA still needed time to undergo refinement and that continuing research on many aspects was crucial in order to achieve best results in the improvement of RDA. They also dismissed recurring accusations of RDA being too much rooted in AACR2, arguing that this was a specially designed compatibility feature and not a fault.

3.3 Current state

The literature on RDA seems now to be moving its focus towards using the capabilities of RDA as a linked data schema (Perez-Lizano 2016). At present, the cataloguing community is focused mainly on three large projects that have the potential to be the most impactful for cataloguing world. Sprochi (2016) describes the first as IFLA's Functional Requirements for Bibliographic Records (FRBR) Library Reference Model (FRBR- LRM) with its aim to correlate three FRBR models into one (FRBR, Functional Requirements for Authority Data FRAD, and Functional Requirements for Authority Records FRSAD). The next project is the ongoing development of RDA with its aim to standardize bibliographic description for access and sharing around the globe. The third project is BIBFRAME, which it is hoped will replace the Machine-Readable Cataloguing (MARC) encoding system. Sprochi acknowledges that these three initiatives create unease and discomfort in the library community but underlines the fact that these very closely related initiatives and the opportunities they present are revolutionary.

3.4 Functional Requirements for Bibliographic Records (FRBR) Library Reference Model (FRBR - LRM)

As yet, there has been limited discussion of the FRBR-LRM model in the literature.

Kelley (2016) explained the model's origins and the differences between FRBR-LRM and FRBR, while others focused on its philosophical underpinnings (Gemberling 2016), and discussed semiotics and the realist – nominalist debate. The latter also pointed to the innovation of dropping *Thema* from FRSAD in

favour of *Res,* which represents "any entity in the universe of discourse" (Riva and Žumer 2015) and extending *Nomen* to represent "any sign or arrangements of signs by which an entity is known" (Riva and Žumer 2015).

Hider (2017) provides a critique of FRBR user tasks which are generally accepted as functions of a library catalogue. The author asks if the modifications of the tasks are sufficient and valid in the FRBR-LRM draft report and proposes an extended set of six end user tasks: locate, collocate, connect, identify, select and obtain in contrast to the five FRBR-LRM tasks: find, select, obtain and explore. The user tasks are also reviewed by Strader (2017) who compares the development of user tasks in FRBR, FRAD, FRSAD and FRBR-LRM and speculates on embedding them within a Want-Find-Get-Manage (WFGM) framework (Slowinski 2004) derived from the business world. This, they argue, would be a step towards providing "transformational growth" (Strader 2017) in opening innovations, enabling more effective use of catalogues and optimising the accessibility of services.

3.5 Cataloguer involvement

Most of the literature so far has taken the form of introductory debates and overviews, largely focussing on explaining the differences between the two codes. As Tosaka and Park (2013) comment, studies addressing the responses of cataloguers to RDA have been conducted only sparingly and they deduced that there was a critical need to examine practitioners' views on the new cataloguing code. The surveys they discussed covered a) three US national libraries, during the RDA test period, b) 25 serials cataloguers, and c) cataloguers and cataloguing manager in 459 small- and medium-sized libraries. In all cases, the results showed ambivalence, the most positive group being those participating in the national libraries' tests. Various aspects of RDA revisions have been identified as areas of potential new research. This is why, as RDA is more and more widely used and new issues are emerging, it is important to follow Tosaka and Park's (2013) recommendation to conduct systematic research in relation to practitioners' views on this code and ease of application using an array of methods.

The introduction of this new standard has been the most significant change in the cataloguers' world in the last 40 years and from the very beginning its development was characterised by a great degree of interactivity among professionals and institutions. Thus, a unique opportunity presented itself to observe discourse around the current process of further refinement, illuminating cataloguers' experiences with cataloguing in RDA. Previous publications have considered the suitability and usability of both AACR2 and RDA, sometimes in very specific areas (Sheridan 1981; McGarry & Yee 1990; Tosaka & Park 2013), and while opinion pieces on both from the cataloguing community have been plentiful (Martell 1981; Sanchez 2011; Randall 2011), it has not been possible previously to witness in "real time" the engagement of the community in the ongoing development of a code. AACR was presented, in all its editions and revisions, as a "fait accompli".

The research discussed in this paper was novel and empirically based. The findings of the research added to knowledge of the operating of RDA and may help to address the question of how the cataloguing community can best move forward to the post AACR2/MARC world. The literature review findings indicate that previous research based on Autocat and RDA-L listservs has only been conducted in relation to the roles and competencies of librarians as reflected in job adverts (Park and Lu 2009 and Park et al. 2009). On the other hand, studies that focused on the issues of RDA implementation or cataloguing were conducted as case studies of chosen institutions (Perez-Lizano 2016; Moulaison 2015, Ducheva and Pennington 2017) or surveys around the time of RDA testing or readiness for implementation (Lambert et al. 2013; Acedera 2014). The current research fills a gap by exploring the general views, issues and questions expressed by the international community of cataloguers already experienced with using RDA, in response to the substantive changes taking place in their field. It also illustrates the ways in which a professional and expert group of practitioners use the mailing list medium as a means to shape an area of critical professional importance.

4.   Methodology

The investigation took place in the virtual environments of two popular listservs dedicated to cataloguing - Autocat and RDA-L - and, in this way, allowed direct and immediate access to opinions expressed by cataloguers around the world. A listserv is an automatic mailing list server that transmits messages as e-mails and therefore is available only to individuals on the list. The scope of the research included mailing lists participants' questions and opinions. Because it is a virtual environment, there were not any geographical constraints, but the participants had to use the English language for communication. The participants were of varied professional levels, but all of them shared an interest in cataloguing in RDA.

The fact that the listservs have an influence on the process they are discussing makes this a particularly fertile approach. In order to explore their experiences, a qualitative content analysis of posts from January 2016 to September 2017 was conducted and 582 entries were examined. The analysis, based on elements of grounded theory, was compared with the literature from the initial period after RDA implementation. The participants' names have been anonymized. An alternative research approach that might have been adopted is ethnography or rather "netnography" (Kozinets 2010), which also uses participants' observation in a community as its primary data collection technique (Pickard 2013, p.135). However, the aim of this research was not to explore the cataloguers' online community and culture or investigate their identity, social relations, learning and creativity (Kozinets 2010), but rather to use their posts as primary data for investigation of their experience in using RDA. Having said that, there were certain cultural elements that appeared in the body of evidence as a response to, and critique of, the RDA standard.

Autocat was chosen because it is a well-known, international mailing list hosted by Syracuse University and devoted to issues related to cataloguing and classification. It provides a good overview of current trends and problems related to this area of librarianship. The current number of subscribers is over 6200 (September 2017). RDA-L is an electronic forum for discussion of RDA. The purpose of this listserv is to facilitate informal discussion on RDA. This listserv is an initiative of the Joint Steering Committee for Development of RDA (JSC) and

is hosted by the American Library Association (JSC 2014). There are currently just over 3000 subscribers (September 2017).

The mailing lists were appropriate for the research question because they offered the most current insight into the issues and questions encountered by cataloguers, regardless of their position and professional experience. Therefore, the data came from a wide spectrum of international professionals from different institutions and of varied cataloguing expertise. Although the correspondents were international, it should be noted that they were primarily North American so that the North American perspective is most strongly represented. Contributors from elsewhere were more likely to be academics or senior professionals involved in their own national or institutional implementations, than practising cataloguers. This means that the views expressed might not be necessarily representative of cataloguers in Europe or elsewhere in the world. Although discussions occasionally became very animated, they were conducted with suitable professional decorum.

The approach to this research was based on the elements of grounded theory which involves analysis by applying specific codes to data through a series of coding cycles. The first cycle of coding was based on the pre-set codes that emerged from the literature and then additional open codes were added as they emerged from the content analysis. There were over 50 descriptive codes which assigned basic labels to data in order to provide an array of topics, for example "WEMI and Venus", "treatment of aggregates", "Against BIBFRAME", "Authorised Access Points" or "RES". This type of coding is used in many qualitative studies as a first step in data analysis (Saldana 2009, p. 66). Following the first cycle of coding, the next stage of analysis followed which consisted of further management, filtering, highlighting and focusing on the salient features of the qualitative data record for the purpose of generating categories (Saldana 2009, p.66), including for example: "Comments on LRM", "RDA principle explanation", "Turning point for further change" or "language issue". During this process, some memos and mind maps were created in order to analyse the data as some findings and categories were already emerging. This approach allowed the categories to be rooted in and developed from the original data.

Individual consent from people who had posted to the listservs was not sought, because the views were published on public fora with their names and affiliations exposed to every reader. Participants are identified here by initials.

5.   Listservs Data Analysis

5.1 Introduction

This discussion considers first the Library Reference Model, then RDA, Bibframe and FRBR. Each main topic is now described briefly, followed by an account of the main themes of discussion under the topic.

5.2 Library Reference Model

The Library Reference Model (IFLA FRBR Review Group 2016) is a combination of conceptual Functional Requirements models: FRBR (Functional Requirements for Bibliographic Records), FRAD (Functional Requirements for Authority Data) and FRSAD (Functional Requirements for Subject Authority Records). It was created in order to consolidate these models "into a single coherent model to clarify the understanding of the overall model and remove barriers to its adoption" (IFLA FRBR Review Group 2016, p.2). It serves as a high-level conceptual model, not intended to be implemented as it is, but to serve as a guide to describe cataloguing rules and implement bibliographic systems. It represents the entity hierarchy as having a top-level entity superclass called Res, then second level entities: Work, Expression, Manifestation, Item, Agent, Nomen, Place and Time-span and finally third level entities: person and collective Agent.

A number of themes, set out below, emerged on the topic of the Library Reference Model.

5.3 Fictional characters

One question that sparked a discussion on this theme concerned the future of fictitious characters and whether they are going to be recorded as personal name authority records or subject authority records. In the past, they had been recorded as subjects, then under RDA they were to be recorded under name authority, but the LRM model does not allow them to be authorities/people. The participant wondered if the FRBR-LRM document led to their being moved "back"

to the subject authority file. There was much confusion and uncertainty regarding this topic.

There were also questions about guidance on practice for distinguishing fictional characters, but no such guidance was given, although there were voices that said that it would be helpful to have a relationship designator that indicated a non-human or fictitious person who has been credited with the creative role (**A**). Ultimately there remains a lack of clarity about the treatment of fictional characters which may represent a common user approach to literature.

5.4 Agency

Another participant regarded the "LRM restriction of the entity 'agent' to only humans or groups of humans as an arrogant and speciesist restriction that ignores the reality of a great deal of the world" (**B**) as it does not allow for the situation when an animal might be a performer but must be treated as a subject. According to LRM, "Agent" is "an entity capable of exercising responsibility relationships relating to works, expressions, manifestations, or items". "Agent" has two subclasses, "Person" and "Collective Agent". "Person" has a scope note "the entity person is restricted to real persons who live or are assumed to have lived."

5.5 Nomen

The relationship between titles and the Nomen Entity was a further subject of discussion. In FRBR title is an attribute of the Work, Expression, Manifestation, and Item entities, whereas in LRM title is a Nomen (an entity) that has a relationship to WEMI and not an attribute of WEMI. That was further explained by another participant citing the newest version of the IFLA LRM from March 2017 (p.50) which states that "Nomens may be categorized in terms of: the type of thing named (personal name, work title, etc.)", so in fact titles can be Nomens.

5.6 Res

According to IFLA (2016, p.13) Res is defined as:

Res ("thing" in Latin) is the top entity in the model. Res includes both material or physical things and conceptual objects. Everything considered relevant to the bibliographic universe, the universe of discourse in this case, is included. Res is a superclass of all the other entities that are explicitly defined, as well as of any other entities not specifically labelled.

The Res is the concept or thing itself behind the entity. The Res is distinct from and not to be unified with, any of the nomens or identifiers used to refer to it in any identification system (thus in particular, a Res is not the same as a URI assigned to refer to it in a namespace, as the URI is an identifier, a type of nomen).

The full definition of Res is given here to better understand the cataloguers' criticism and the reactions it caused. According to **C**, who supported the abandonment of Latin abbreviations, to have the notions more transparent to users, this "paragraph and many others like it (...) subvert this shift toward clarity and unpretentiousness". For **D** the notions of "universe of discourse" and "bibliographic universe" were not clear and meaningful. He also proposed using "entity" instead of Res. **E** was of the same opinion regarding Res and would go even further and choose "name" instead of "Nomen" as, according to him, these terms conveyed more simply the meaning and definitions of Res and Nomen. There were numerous calls for this kind of clarity and simplicity to prevail with references made to the William of Ockham's razor and his advocacy for avoiding unnecessary complications (for example **HH**, **M** and **C,**)

5.7 Comments on LRM

When discussing the repetition of information about WEMI in RDA (**P)**, it was clear that the participants were looking forward to the restructuring and greater clarity that RDA would provide once the FRBR-LRM is accepted. It was, however, acknowledged that "LRM needs considerable work, first" (**F**). Although in the discussion about the treatment of pseudonyms **D** did not like the idea that FRBR-LRM excludes everything which is not human from being an agent, he found the proposed new model very logical and convincing. Another person expressed their excitement in finding representative expression in this model as this was something they had wanted to see for a long time (**G**) and considered

representative expression attribute as similar to and often the same as original expression but on more abstract, work level that is considered to best characterize the creator's intention or is considered canonical by users.

On the other hand, there were voices strongly against LRM, accusing the authors of the model of doing it "on the nod", without consultations and not reflecting cataloguing needs (**F**). It was also noted that at the moment a period of stability is needed (**F**). However, according to the Chair of RDA Steering Committee (Update on RDA meeting in Edinburgh 2017), the LRM has to be introduced in order to consolidate FRBR, FRAD, FRSAD and the report of the working Group on Aggregates in order to provide a seamless and generalized model.

5.8 Toolkit Restructure and Redesign Project

The LRM was published in August 2017, after the data collection period, and the RDA Toolkit Restructure and Redesign (3R) Project aims to make the current RDA entities and the elements compatible with the LRM.

The project and the activities undertaken by the Toolkit Restructure Working Group were eagerly awaited by the participants of the listservs. During an update on an RDA meeting in Edinburgh (2017) the goals of the new Toolkit were presented and they included meeting the needs of users in a better way by providing a more productive environment, offering greater flexibility and utility in access and display of the Toolkit content, and enabling efficient and reliable work processes and tools for RDA editors, translators, and creators of derivative products.

The issue being discussed in this thread was the numbering of the Toolkit (**D**; **H**; **I**) and experimenting with new ways of visualizing its contents. Another idea concerned openly releasing RDA text in basic but structured format (**J**), in order that it might be more widely used and understood. This, according to **D**, would help to fulfil one of the strategic priorities of RDA Board to "develop a sustainable business model" (RDA Board strategic priorities 2015-2020). The participants in the discussion also pointed out the necessity of numbering the rules for the purposes of teaching cataloguing and the need to have a quick and easy way to verbally refer to certain documents (**E**; **K**; **L**). So far, the numbering is based on ISO standard no.2145:1978 regarding documentation, numbering of

divisions and subdivisions in written documents, and discussions about renumbering would have to take into account backward compatibility and also the fact that this ISO standard refers to written documents and not databases with hyperlinks.

Apparently, these voices were listened to, as during a meeting in the National Library of Scotland on 4 August 2017, the Chair of RDA Steering Committee revealed that the new toolkit will have a radically new structure but no significant change in overall approach. There will be general chapters, chapters containing one chapter per entity with all elements for the entity, appendices, relationship hierarchies with supplementary material (e.g. Books of Bible) and user generated material (e.g. workflows). The element layout, with each element being a "chunk" of content, will comprise reference data, instructions for recording data values, navigation to related elements and entities and context with appropriate examples for each method of recording, the correct level of granularity, and "view in context" or sets of examples for an entity. The toolkit display will have customising options and a completely new graphic interface.

5.9   Resource Description and Access

5.9.1 General comments on RDA

An aspect that stirred quite a lengthy discussion concerned the extent to which the changes in RDA could be understood and applied by cataloguers. A concern regarding wording was expressed, and **M** advised that wording or terminology should avoid any fuzziness regarding WEMI, in order that it be fully understood, without ambiguity. Since, according to him, a "resource" includes all WEMI levels simultaneously, the glossary entry for "resource": "A work, expression, manifestation or item. The term includes not only an individual entity but also aggregates and components of such entities (...). It may refer to a tangible entity (e.g., an audiocassette) or an intangible entity (e.g., a Web site)" (RDA-Glossary) should be revised. Since a "resource", in **M**'s view, cannot be simply a work or an item, the statement about it being tangible or intangible is confusing and incorrect.

In response to this discussion, the Chair of the RDA Steering Committee explained - to the list, thus demonstrating a real responsiveness to the discourse - that currently large libraries, like national ones, are at a critical point in terms of metadata management for collection description and access and are flooded by digital resources in multiple formats. That is why, he said, "the models used by RDA, etc. are explicitly designed to maximize the use of digital, networked technologies to support the necessary human mediation of bibliographic metadata", they are to allow data management system to perform the "grunt work" invisible to the cataloguer and because of that "everything has to be consistent, unambiguous, etc. for a programmer to get the best out of them. That is why, RDA appear to be based on philosophical, metaphysical, or theoretical ideas - it's actually digital/mathematical logic". He compares it to a cataloguer being a General commanding a modern army of "smart" applications that would process the data.

In response to this explanation, **C** summarised the recent changes as being inapplicable to the real world of FRBR and WEMI and another participant (**A**) contrasted traditional, practical and pragmatic cataloguing with FRBR/RDA and Bibframe, where theory took priority over such practical operational considerations. Moreover, his concern was that in a situation when the leaders of a project do not pay enough attention to the questions from the lower rank, everyday practitioners, or if their replies "are abstract, theoretical or even metaphysical, it is terribly disheartening and not a little frightening" (**A**). The participant argued that for the leaders it is just "easier to ignore practical concerns and instead remain focused on theories and imagining the 'radiant future' that beckons to library cataloging!" (**A**).

5.9.2 Sources of information

Another theme concerned RDA principles for treating the landing page of a digital document. The participants wondered whether there should be an amendment to RDA 2.2.2.1 to treat it as part of the resource or, as others suggested, handling it as a book jacket or a cardboard wrapper on a CD case (**N**), and using it as a preferred source of metadata information (without square brackets).

5.9.3 Treatment of aggregates and the increasing level of abstraction

A lengthy discussion about aggregates (started by **M**) referred to a variety of problems: knowing who the compiler in augmentations is; comprehensive descriptions; collocating all editions and identifying particular translations. The RDA Aggregates Working Group is trying to deal with such issues by proposing a new relationship called "creator of content" to represent the relationship between the aggregate work and the creators of aggregated components of the aggregate work. However, according to another contributor to the discussion, the proposal could go a step further and offer not one new relationship but two: creator of contents and creator of principal content (**O**). This would allow differentiation amongst compliers, authors of forewords, afterwords, translators and creators of principal content.

5.9.4 Relationship designator, relator terms and relationships

Several topics were discussed here. One of the threads discussed a change that appeared in Appendix K regarding "founded corporate body" which was given three designators: founded corporate body of person, founded corporate body of a family and founded corporate body of corporate body. This gave rise to questioning whether all relationship designators in MARC 21 5XX fields should be replaced with the new designators, or if all the relationship designators should be revised. Additionally, there were questions around the practical utility of these relationship designators, and whether this information would be at all useful for the users. As **E** understood, currently, there is no need for every possible relationship combination to have a separate relationship designator and only different types of relationship would need separate designators. The RDA Chair (2016) responded that the RDA Development Team's work on extending RDA vocabulary will inform the RSC's discussion on RDA and new entities in LRM and its emphasis on relationships.

5.9.5 Authorised access points

An interesting, multidimensional, discussion appeared on the RDA-L listserv concerning AAP and the best practice of writing titles, debating whether to write them with or without initial articles, as seemingly there is no RDA instruction for that (**P**). This issue was explained by **M**, who cited a German rule to ignore it in any case. On the other hand, it was also noted by **R** that due to keyword

searching the alphabetical order lost its importance and almost disappeared in computerised searching. **R** thought it might become obsolete in Linked Data where the searches would be performed on URIs and not on textual strings.

5.9.6 Language

When the RDA Chair was asked about complexity of the language in RDA (private conversation) he acknowledged that the written text of the rules had to be readable in literary terms, so, for example, the authors had to use synonyms to avoid repetitions, or use some vocabulary from AACR2 that the cataloguers were already familiar with. The discrepancies between the synonyms, and the overuse of synonyms, were discovered during the translation process, and since then the RDA committee are aware of the discrepancies and try to avoid them.

However, the complaints about the complexity of the language of the rules appeared quite often in the listservs' discussions. For example, in the discussion about founded corporate body, the Chair's reply was very difficult for the participants to understand. They asked him to "boil this down into readable English" (**P**) or explain it, "kind of like how Einstein would explain his complex theories in terms of 'thought experiments' that lay people could understand" (**Q**). Another person felt that "as a professional cataloger of over 25 years with some experience in the areas you mentioned, I still feel like I've gone some black hole on the space time continuum or maybe the rabbit hole." (**L**). In the discussion on systematic changes to RDA, the language of LRM was described as "Borgesian" – relating to fantasy and magic realism (**C**). This discourse clearly demonstrates a demand for a simplified description of rules, something that Michael Gorman argued for in his criticism of RDA (2016), and which was repeated by **P** describing the RDA language as "verbose and arcane".

In summary, these linguistic criticisms (overly obscure language, use of variant terms, and theoretically diffuse explanations) appear to result in the user becoming unnecessarily confused, and perhaps attributing to the code weaknesses which are actually a result of its expression. This can be at least partly attributed to the difficulty of synchronising updates and edits to large and complex bodies of text (the LRM, and, particularly, RDA).

5.9.7 RDA and MARC21

The fit of RDA into MARC21 was discussed from various facets depending on different issues being discussed, for example redundancy of relationship information ($i, which might, for example, indicate that one resource is a parody or a paraphrase of another) in 700, 710, 711, and 730 fields and 760-787 linking fields (**S**). On this occasion, a participant expressed their views by stating that "MARC is old & RDA is new, and catalogers have a problem smushing RDA into MARC" (**T**), and at the same time saying that whatever format of recording is used in the future, the redundancies will still occur as "the 'R' in RDA actually means "redundant" (**T**). **U** thought that such problems occurred as the cataloguers were still in the transitional period with MARC trying hard to translate their previous practice into RDA data.

On the other hand, during his critique of the future of BIBFRAME, **C** informed readers that the National Library of France was planning to continue using the French variation of MARC format, i.e. INTERMARC, and mutate it to more closely integrate with LRM. This may suggest that new ways of MARC and RDA fitting are still being explored as a safer and cheaper way than experimenting with Linked Data, and BIBFRAME. Another participant in this thread expressed his respect to the creators of MARC as because this format "developed way back in the 1960s where computer systems and software were still in their infancy, (...) has been a phenomenon in standardising/transforming bibliographic record sharing, delivery and its compatibility with almost all types of library management systems. Fifty years passed and here we are still with good-old MARC" (**V**).

5.9.8 Work Expression Manifestation Item

These entities which refer to products of intellectual artistic endeavour seemed still not to be fully comprehended by some cataloguers who thought that "WEMI has absolutely no connection (…) to the realities of a public catalog." (**X**). The misunderstanding appears to have resulted from lack of knowledge about WEMI and a false idea of WEMI as a model for record structure and public display.

In the period covered by this research, the discussion about WEMI took place in a thread started by **Y** with an apparently facetious question as to whether the Work related to Venus de Milo had arms. With this example, the participant

elegantly presented the entities and their attributes, and his description was enjoyed by many of the participants who provided their own examples of how WEMI can be illustrated as in, for example from a musician's point of view (**Z**). Generally, it was acknowledged that WEMI is a useful model, however there are some weak points for cataloguers, such as the application of WEMI to photographs (**AA**), works of architecture (**M**), or serials (**BB**). After an initial concern about duplication of the cataloguer's work, the community seems to comprehend that WEMI represents the hidden processes behind cataloguing and "is just an analysis of what we are already doing" (**Y**), and the mental activity that might be hard is deciding which attributes apply at which levels (**Y**), and that WEMI "was intended to help us figure out exactly what the relationships are, so that we can shape bibliographic data into more useful forms" (**CC**). Therefore, what is actually happening is cataloguing Manifestations of Expressions, with Items being holdings records, and Works being effectively Authority files.

5.9.9 ISBD

Although the issue of ISBD was repeatedly discussed in the literature around the time of implementation, surprisingly there were no discussions or complaints about abandoning ISBD format in RDA on the listservs in the researched period. In the only entry about it, from the very beginning of 2016 (**DD**), the author accused the creators of RDA of ignoring, "at our peril", the long tradition of ISBD which drew on many years of experience and was a culmination of centuries-long development of descriptive standards. "I fear what we are now experiencing is revolution, not evolution." The point was supported by another participant who described it as "devolution" (**EE**).

It was however difficult for participants to reach final conclusions on this debate as the cataloguers felt they were on hold waiting for the successor of MARC, introduction of the Library Reference Model, the new toolkit, common use of linked data in libraries, and other developments necessary to allow for full utilization of RDA.

6. General Conclusions

It seems that the change from AACR2 to RDA was indeed a big shift for practitioners and challenged their views towards cataloguing in line with Obille (2012) and Frederick (2017). Although Obille argued that it was not a paradigm shift in terms of Kuhn's (1970) definition, the move from linear cataloguing to a relational model, and the change of focus from material-specific cataloguing to work-and-its-embodiments cataloguing has shaken the cataloguing community considerably. It is significant that some cataloguers (**FF**, **R**) are calling for a redefinition of the purpose of the library catalogue so it "can help searchers make sense of the myriad search results they encounter" as they observe that the change of models for cataloguing and their conceptual theories have shifted the purpose of cataloguing "to turn catalogs into endpoints in the linked data universe" (**R**). Equally, they are questioning the reduced emphasis on the ISBD standard that has formed the bedrock of catalogues, sensing this is a revolutionary change that speaks to the purpose of the catalogue.

One could also consider the current period of RDA development as a transition to maturity when looking at development of FRBR-LRM model, BIBFRAME and BIBFLOW. These technological developments seem to be especially confusing to average librarians because, as Frederick (2017) says, these technologies do not exist yet in a complete operational form and cannot be observed in real-life, familiar context. That makes it harder for many cataloguers to understand how they function and to feel reassured that they will serve the desired purpose of satisfying user needs.

However, bearing in mind how quickly new digital technologies appear and how they change users' behaviour and expectations, it may also turn out that after finding a successful replacement of MARC and full implementation of Linked Data in libraries or Cloud based Virtual Libraries, one will witness an even bigger shift in the perception of cataloguing as potentially new, yet unknown, catalogue applications and user needs will emerge.

6.1 Cataloguers' responses to RDA and issues encountered

6.1.1 Transition time

After years of relatively peaceful, familiar and well-structured work with bibliographic data, cataloguers have been undergoing a prolonged transitional period, with the first change being the transition from AACR2 to RDA, learning things anew to move from description into discovery in cataloguing. As Tennant (2017) described it: "I humbly submit that this has been the mission of cataloging for the last X number of decades. And now, I also submit, we are about to turn the tables. Rather than focusing our efforts on description, we will be focusing more of our efforts on discovery".

Then another new phenomenon occurs, which is the shift of focus not only to discovery but additionally to linked resources, and potentially to open access. In this context, the term "transition" is mentioned frequently by the listservs' participants. Being aware of that, Sprochi (2016) asked the question, what should cataloguers be doing in preparation for "the new world of bibliographic data, Web visibility and discovery". Firstly, she says, there should be a shift in thinking from the notion of bibliographic records to not-format-specific data that can be shared and manipulated. Secondly, she postulates that cataloguers should possess some basic understanding of linked data, RDA triples, RDF/XML and other formats for data interchange. Sprochi (2016) acknowledges that in order to shape and contribute to the creation of the "catalogue of the future", cataloguers should possess solid foundations in the basics of Internet data formats and applications of the Semantic Web. They do not need, however, to be able to code RDF triples, but to understand the fundamentals of data models and formats of interchange. Thirdly, Sprochi endorses and calls others to become involved in promoting a quicker development of a post-MARC system.

On the other hand, Frederick (2017) used the analogy of an average person's understanding of the theoretical underpinnings of the electronic technology and concludes that it is not surprising that for an average cataloguer "it is extremely difficult to conceptualize the new model of library data" but still possible to function "despite not knowing how and why everything in that technology works" (p.5).

The listservs' contributors are aware of and negotiating their way into this new domain of discovery not description. They recognise that the model is in development but they appear to feel overwhelmed by several factors, including insufficient manpower, funding, and the FRBR - LRM model being too philosophical and difficult to grasp and relate to their practical everyday work. Some of them, however, support and express commitment to the notion that cataloguing is at the edge of an even bigger shift as "the proliferation of data models and ontologies is (…) one symptom of a profession (cataloging) in crisis, trying desperately to remain relevant" (**C**).

The research was able to study the reactions of cataloguers during part of this transition period, showing how the focus of discussions has changed over the time. The issues discussed in the literature a few years ago were no longer, or only sparingly, debated (for example the fear of abandonment of ISBD) and, on the other hand, issues that had recently surfaced in the literature were passionately debated on the listservs (for example, the FRBR-LRM model of a new RDA toolkit). The shift is also noted in changing perceptions of what is the biggest issue in RDA cataloguing. Depending on the individual participant's level of understanding of RDA and its conceptual models, the biggest issue varies quite significantly and the participants divide into a small number of distinct groups, which are discussed in the following section.

6.1.2 Division of participants

The first group might be characterised as "traditionalists", who openly criticized and opposed any changes and innovations whether in RDA and Linked Data or LRM. According to them, the old ways of cataloguing were, still are, and will always be good enough. They felt that there was no convincing argument for systems to become more complicated than they were presently: "40 years ago things were much better for me and the rest!" was a comment by a participant who described themselves as an "almost retired cataloguer", (**GG**).

The second group consisted of the "confused or sceptical". Accepting the need for changes, these participants disliked the fact that changes were happening too quickly and were justified by theoretical underpinnings that were simply too esoteric and abstract to be easily understood. These people wanted the more practical, operational voices to be heard, taken into consideration and more

frequently involved in discussions, with a real opportunity to express their doubts. This group needed more time to get used to new ways of thinking about cataloguing and felt a bit left behind in the process of change. The confusion they felt resulted from the speed of RDA development and introduction of amendments and the appearance of new and sophisticated conceptual models. This group may not have fully understood the bigger picture of global information discovery, or the scale of national libraries' needs working in conjunction with others in pursuit of universal approaches to bibliographic description. These needs may seem very abstract to the cataloguer of a university or public library with a more confined and predictable set of users.

The third group characterised by, for example, **HH** as "High priests of RDA" reflect participants who are part of the leading force in imposing the changes, understanding the theoretical nuances, the complexity of issues, the "bigger picture" and trying to take into account not only the cataloguing community, but also that of other catalogue users, like cataloguing agencies. This group are committed to revolutionising and moving forward cataloguing practices in order to achieve their idealistic aims and are willing to risk all kinds of operational critique. They envision an ideal goal more or less clearly and are prepared to face the unsolved yet problems in its pursuit. At the same time, they also try to sell the product and prove that such technologies can be profitable.
However, they might alternatively be perceived as mentors, generously coaching the more confused or sceptical correspondents, while challenging the complaints of the traditionalists, and dismissing the abstractions of the philosophers.

The "Philosophers" constituted a fourth group of disputants who liked to engage in lengthy discussions on purely theoretical and abstract notions. These discussions could be heated and on a few occasions the moderator or the Chair of RDA Steering Committee had to intervene. These discussions might be seen as not very relevant to the actual practice of cataloguing and it was observed that these discussions were led by a relatively small number of participants in comparison to the whole number of subscribers. The group had enjoyed the exercise of dispute and the demonstration of profundity and learning. On the other hand, due to the nature of the discussions and the language used, these were difficult points for others to follow, and there were frequent requests for

the "Philosophers" to use simpler language so they could be understood by everyone.

6.1.3 Current issues

It could be observed from the body of evidence, that there were certain topics that involved a lot of questions and attempts to answer them. Treatment of fictitious characters, aggregates, Latinisms or relator terms were among the most discussed. However, very often these were just starting points that led to wider discussions about FRBR, the Library Reference Model, or the notions of Res and Nomen. Participants continually mentioned the fact that the rules were becoming overly complicated and difficult to understand and they wondered whether such a level of complexity was really necessary. These abstract, theory-saturated discussions and an array of interpretations were the most common issues mentioned by the listservs' subscribers.

7.   Recommendations

This research endeavoured to explore issues associated with RDA cataloguing from the perspective of practising cataloguers a few years after RDA implementation. The discourse analysed took place before the introduction of the new RDA toolkit (to be released in 2018) and of a new conceptual model FRBR-LRM, which was just announced to be endorsed by RDA Steering Committee on 19 September 2017. It might be useful to look at the community's issues again in the future to see how they have reacted to the full implementation of RDA. The study illustrates the debate and feedback that was being provided and which developers could take on board and respond to: whether or not this feedback was useful to the developers would be an interesting subject for further research.

RDA has potential to greatly improve discovery, search and retrieval, by virtue of its relational nature, which can enhance both systematic enquiry and serendipitous browsing. The FISO model lets the user discriminate amongst search results, choose amongst expressions, select manifestations, and gain access to materials. It offers control to the user who desires it.

Uptake in other areas will, perforce, have to await stabilisation of the standards, and development of systems which expose the catalogues to new markets.

Cataloguer training now has to concentrate on RDA, which certainly is not going to go away, but still needs to include AACR2, in recognition of the huge embedded legacy of AACR2 records, and the inertia of a significant proportion of the profession, whether on the grounds of record quality or simply cost of access. It ought to be possible in future to reduce the AACR2 content, but it's still of significance to be aware of where practices came from.
The characterisation of cataloguers presented in the study could be explored in light of research into innovation adoption and learning models, in order to investigate whether cataloguers differ markedly from other professional groups in their reaction to change.

What is certain, is the fact that cataloguers live in interesting times now, for some of them it is an exciting revolutionary transformation that they did not expect when they entered this profession a few decades ago. For others it means the end of a peaceful era and entering into a stressful unknown. Our research illustrates that in general cataloguers understand how to apply FRBR and RDA. But, the abstractions of theoretical models, including LRM, can be challenging for some and "the learning curve tends to be slow and non-linear", as Frederick concluded. Therefore, it is recognised that with the acceptance of both LRM and the new cataloguing principles, cataloguers are faced with yet another significant amount of learning, which is not unlike but much more far reaching than the task of RDA implementation in 2013" (Frederick 2017). This is why a continuous dialogue between the RDA Steering Committee and the community of cataloguers is of utmost importance in order to achieve the required community's support and the success of the Library Reference Model. This dialogue, however should be conducted in a comprehensible way, so that an "average" cataloguer would feel comfortable asking questions and fully understand the answers.

8.   REFERENCES

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