JLIS.it vol. 13, no. 1 (January 2022)
ISSN: 2038-1026 online

DOI: 10.4403/jlis.it-12748

JLIS.it

Universal bibliographic control in the semantic web. Opportunities and challenges for the reconciliation of bibliographic data models

Tiziana Possemato[(a)]

a) Università degli Studi di Firenze, http://orcid.org/0000-0002-7184-4070

Contact: Tiziana Possemato, tiziana.possemato@atcult.it
Received: 5 May 2021; **Accepted:** 23 May 2021; **First Published:** 15 January 2022

ABSTRACT

The principles and conceptual models of universal bibliographic control and those of the Semantic web share the common goal of organizing the documentary universe by highlighting relevant entities and mutual relationships, in order to ensure the widest possible access to knowledge. This drives a significant change in the entire information chain, from the analysis and structuring of the data to their dissemination and use. From the construction of bibliographic data models, the point of view, the semantic web paradigm pushes the boundaries of the exchange of records among relatively homogeneous cataloguing systems and opens a transversal dialogue between different actors and systems, in a digital ecosystem that is not contained within cultural, linguistic, geographical or thematic limits. In this context, it is necessary to dialogue with heterogeneous communities of varying authority, driven by the web and often created by institutions or groups of users quite different from the ones to which cataloguing tradition is accustomed. The free reuse of data can also take place in very different contexts from those of their origin, multiplying for everyone the opportunities for universal access and the production of new knowledge. Can different cataloguing traditions coexist in such a changed context and integrate without losing their information value? Based on some recent experiences, this appears to be possible.

KEYWORDS

Semantic Web; Real World Object (RWO); Entity reconciliation; Universal Bibliographic Control (UBC); Entity; Identity.

JLIS.it vol. 13, no. 1 (January 2022)
ISSN: 2038-1026 online

DOI: 10.4403/jlis.it-12748

> Es ist die Maja, der Schleier des Truges, welcher die Augen der Sterblichen umhüllt und sie eine Welt sehn läßt, von der man weder sagen kann, daß sie sei, noch auch, daß sie nicht sei: denn sie gleicht dem Traume, gleicht dem Sonnenglanz auf dem Sande, welchen der Wanderer von ferne für ein Wasser hält, oder auch dem hingeworfenen Strick, den er für eine Schlange ansieht.
> Arthur Schopenhauer, *Die Welt als Wille und Vorstellung*

Background

The 1970's IFLA Universal Bibliographic Control and International MARC (UBCIM) office can be considered the starting point for a larger discussion about Universal Bibliographic Control: it defined some core items, such as the importance of the international sharing of bibliographic data to help reduce costs and to encourage greater cooperation worldwide. The aim was that each national bibliographic agency would catalog the works published in its own country and establish the names of its authors, and that the data would be shared and re-used around the world. Under the theoretical UBC, any document would only be catalogued once in its country of origin, and that record would then be available for the use of any library in the world. In 1974 Dorothy Anderson publishes *Universal Bibliographic Control: a long term policy – A plan for action*, originally prepared as a working document presented by IFLA to the Unesco Intergovernmental Conference on the Planning of National Overall Documentation, Library and Archives Infrastructures, which was held from 23 to 27 September 1974. The document emphasizes the responsibility of national bibliographic agencies to create an authoritative bibliographic record of domestic publications and to make them available to other bibliographic agencies. The process is carried out only by following international standards, in the creation of both bibliographic and authority records (Gordon and Willer 2014).
In it, some items are clearly underlined:

1. the responsibility of national bibliographic agencies for creating an authoritative bibliographic record of publications from their own countries;
2. the need to follow international standards in the creation of both bibliographic and authority records.

As Dorothy Anderson affirms "Under the title Universal Bibliographic Control (UBC) IFLA is proposing that Unesco adopts as a major policy objective the promotion of a world-wide system for the control and exchange of bibliographic information. The purpose of the system is to make universally and promptly available, in a form which is internationally acceptable, basic bibliographic data on all publications issued in all countries" (Anderson 1974, 11).
In the foreword of the UBC publication, Herman Liebaers, President of IFLA in 1974, gives an historical background of the context in which the UBC was born: the watershed in the conception of a concretely international approach to collaboration between institutions was given by World War II. Before World War II, institutions expressed international inspirations but were held back by evident technological limitations; project with an international vocation – not only related to librarianship – were proposed and discussed in international context, yet still with a strongly nationalist

JLIS.it vol. 13, no. 1 (January 2022)
ISSN: 2038-1026 online

DOI: 10.4403/jlis.it-12748

approach and conception. It was only after WWII that the library community, as well as many other professional communities, found itself dealing with the international technological revolution, which completely transformed it. This transformation was absorbed and made its own by IFLA which, from a sort of amateur club of leading European librarians, became "an international professional association prepared to take the lead in policy and in action to serve the library community. It also discovered that at the international level an organization cannot build on national strengths alone, but also to take account of regional weaknesses" (Anderson 1974, 5).

The result of this new IFLA maturity is the UBC program. What is immediately evident was the fact that many concepts concretely expressed in the UBC Program already existed before this formulation. And when the LC announced its Shared Cataloging Program at the IFLA General Council in The Hague in 1966, the impression was that so many of the concepts and issues expressed there already existed in the library community, even if not explicitly expressed. As Herman Liebaers recalls in the same Foreword to Dorothy Anderson's work, Carlos V. Penna, a UNESCO official, after listening to the presentation of the Library of Congress's Shared Cataloging Program exclaims: "but this is universal bibliographic control". The conclusion of Liebaers' same preface is significant in expressing the heart of the UBC as it is now formally defined: "UBC may appear to offer at the technical level of librarianship a balance between humanities and sciences in any new society which is under construction. In its essence UBC is no more than a specific expression of that continuity of knowledge, experience and wisdom for which libraries have always existed" (Anderson 1974, 7).

While the concept of Universal Bibliographic Control was maturing, a crucial moment was constituted by the theoretical and technological ferment that was produced towards the 1990's: the extension of resource formats, with the relative cataloguing rules and standards[1] combined with the centrality of the user's needs brought out the importance of having understandable data "locally", even in a world of shared data. It was recognized that having data in their own languages and scripts, users could understand them; this is extremely important, and by doing so, respecting the cultural diversity of users around the world should be addressed as well. This aspiration was welcomed and accompanied by new web technologies, which however opened the frontiers to another binomial: the relationship between *local* and *global* dimensions and their balance. Web technologies offer new possibilities for sharing data at a global scale and beyond the library domain, but also show a need for *authoritative* and *trusted data*.

In 2008 the Library of Congress Working Group on the Future of Bibliographic Control published the Report *On the record*, that seemed to start from the milestones already defined by Tim Berners-Lee in his linked data design (Berners-Lee 2006)[2]. Some of the most significant themes featured in the report were:

[1] Interesting is the evolution from ISBD(CF) to ISBD(ER), to express the urgent exigence to manage electronic resources for the large extension of this kind of resource. See how this evolution is outlined by Stefano Gambari and Mauro Guerrini (Gambari and Guerrini 2002, 75-76).

[2] Tim Berners-Lee outlined four principles of linked data, paraphrased along the following lines:
1. Uniform Resource Identifiers (URIs) should be used to name and identify individual things.
2. HTTP URIs should be used to allow these things to be looked up, interpreted, and subsequently "dereferenced".
3. Useful information about what a name identifies should be provided through open standards such as RDF, SPARQL, etc.
4. When publishing data on the Web, other things should be referred to using their HTTP URI-based names.

JLIS.it vol. 13, no. 1 (January 2022)
ISSN: 2038-1026 online

DOI: 10.4403/jlis.it-12748

- the transformation of textual description into a set of data usable for automatic processing by machines;
- the need to make data elements uniquely identifiable within the information context of the web;
- the need for data to be compliant with web technologies and standards;
- the need to use a transversal and interoperable language in the reality of the web.

The *On the record* report officially declares the need to adopt, in the definition of standards and rules, new web technologies and related languages, in order to evolve from a rigid, monolithic language and limitation to the domain (MARC in all its declinations) to something open and comprehensible on a global level (the wider web). This is an important and highly influential reflection for an in-depth re-foundation of Universal Bibliographic Control which, as it encounters new web technologies and the more general paradigm of linked open data, must modify itself to continue to make sense in a web of information that reaches much further than any single, national or international domain of knowledge (Working Group on the Future of Bibliographic Control 2008).
So, assuming that this whole context was the cultural and technological substratum for a new vision of bibliographic control, in December 2012 IFLA reaffirmed the different but closely related positions and roles of IFLA and National Bibliographic Agencies (NBA) in the context of Universal Bibliographic Control. IFLA's vision was expressed through the following principles:

- A National bibliographic agency (NBA) has the responsibility for providing the authoritative bibliographic data for publications of its own country and for making that data available to other NBAs, libraries, and other communities [...]
- NBAs, as a part of the creation of authoritative bibliographic data, also have the responsibility for documenting authorized access points for persons, families, corporate bodies, names of places, and authoritative citations for works related to its own countries [...]
- IFLA has [...] the responsibility for creating, maintaining and promoting bibliographic standards and guidelines to facilitate this sharing of bibliographic and authority data (e.g., ISBD, the FRBR family of conceptual models, etc.);
- IFLA works collaboratively with other international organizations (e.g., ISO, ICA, ICOM, etc.) in the creation and maintenance of other standards in order to ensure that library standards developments, including compatible data models, are coordinated with those of the wider community.[3]

Think global, act local

The National Bibliographic Agencies thus approach their fundamental role by pursuing a number of important issues and paying particular attention to specific themes, including:

- production that expresses the cultural richness of one's country, be it produced locally or from another country;

[3] <https://www.ifla.org/files/assets/bibliography/Documents/ifla-professional-statement-on-ubc-en.pdf>.

JLIS.it vol. 13, no. 1 (January 2022)
ISSN: 2038-1026 online

DOI: 10.4403/jlis.it-12748

- extension to global content of interest to its users, related (or not) to local content;
- attention to the way the content is expressed through metadata with the application of international standards and rules but with frequent "local" choices (example: the rule of presenting as a favoured the form of a name understandable to your users);
- universal standards and rules applied locally, for specific needs.

The focus is on the NBA's responsibility to provide authoritative bibliographic data for their country's publications and share them with a wider community. The role of the National Bibliographic Agency is to express the cultural richness of a country in a way that can be shared with other countries and agencies, coordinated by IFLA in providing standards and guidelines to make data universally shareable, in a global community. The two-dimensional vision of local production in a global context is evident: the popular remark made by Patrick Geddes "*Think global, act local*", probably used originally in city planning and extended in many wider contexts including the environment and culture, seems to match exactly with the new aspiration expressed by IFLA and NBAs.

Patrick Geddes' statement seems to definitively express this duality, in cataloguing, between local expression and global aspiration, between local vision and global perspective, which does not only concern the content of what is conveyed by the NBAs, but also the form and therefore the way of expressing them. As Gordon Dunsire and Mirna Willer affirm in their article *The local in the global: universal bibliographic control from the bottom up* "Local content is held in global carriers, and global content is held in local carriers" (Gordon and Willer 2014).

This balance of local and global vision within UBC worked well until the content being broadcast was defined by National Bibliographic Agencies and controlled through descriptions (metadata), built in compliance with shared rules and standards. All expressed through bibliographic and authority records. The *record* maintains its position as absolute protagonist and conveys this dual trend quite effectively. The Marc format, which can be declined into various dialects of the same family, has largely contributed to creating an object around which services have been built and has, at times, become something that can condition cataloguing choices even more than the rules themselves, giving rise to the expression "cataloguing in Marc" instead of cataloguing according to one of the existent cataloguing rules and guidelines. From an *exchange format* it has become a *cataloguing format* to the point that in many public calls for the acquisition of cataloguing software the constraint "cataloguing must take place in Marc" is, in a technically misinformed sense, usually included. This enormous success is also evidenced by its long duration and the investments made to keep it constantly updated in order to keep pace with the requirements of users and institutions, while always showing some difficulty in getting out of the domain of librarianship.

From identity to entity: the veil of Mâyâ

A good story doesn't necessarily last forever: the record, after almost 60 years of widespread use within the library community, has begun to show its limits in comparison with the languages of the web, which are lighter, partially more understandable and above all transversal (Tennant 2002, 26-28). The record, both bibliographic and of authority, is traditionally rich in information,

JLIS.it vol. 13, no. 1 (January 2022)
ISSN: 2038-1026 online

DOI: 10.4403/jlis.it-12748

readable by machines but still not "understandable" to them: it maintains the characteristic of being a flat, auto consistent[4] description of an object but not the object itself, not the Real World Object (RWO) that has taken the leading role in the new dimension of the semantic web (Coyle 2015). So, in the context of cataloguing approaches, the record becomes again a protagonist of a new revolution: from the *record*, as a whole with meaning in its entirety, to *entities* as real things in the world, as Real World Object. Each record has metadata that are useful to derive properties in order to build entities. But they are hidden and usually expressed in a way that only partially represents the entity, which could be expressed in various ways.

The language of the web runs in support of traditional standards in order to simplify the information and make it understandable. The goal is to have a method so simple that it can express anything and at the same time so structured that it can be used – and reused – by computer applications: the Resource Description Framework model,[5] in its extreme simplicity of a triple (a subject – a predicate – an object), able to express everything, seems to respond to the need to make data globally shareable, understandable, reusable, in a wider and cross-domain environment. This new perspective is not reducible only to a change of format or technologies, but it expresses a change of approach in the vision of the world: it is a new, umpteenth attempt by humanity to bring the heart of things closer, to go beyond mere representation of them and get to grasp their essence. But the description of things, despite all attempts to go beyond appearance, means giving a *representation of reality*. The new languages of the web express the attempt to bring down the veil of Maya, the one that obscures the sight of humans and does not allow them to reach reality:

> It is Mâyâ, the veil of deception, which blinds the eyes of mortals, and makes them behold a world of which they cannot say either that it is or that it is not: for it is like a dream; it is like the sunshine on the sand which the traveller takes from afar for water, or the stray piece of rope he mistakes for a snake.

This epochal transition from strings to things, from a description to an entity, was largely favoured by the linked open data paradigm and by the new way of understanding and structuring data, decisively shifting the focus from identity, as a form of presentation of an entity, to a real entity, consisting of a series of properties and relationships useful for its identification. The long cataloguing tradition, with its rules and standards that have followed one another over time and that have guided the cataloguing choices, both semantic and syntactic, was born and raised on a distinction between entity and identity (one entity, many identities) that was never clearly defined. Although seen as a simplification, the definition of identity (as a philosophical concept) in its rela-

[4] The Marc record, with its Directory that clearly expresses it as a whole, has a meaning and a value in its entirety: each element of the description, outside the record itself, loses meaning and identity.

[5] "RDF is a standard model for data interchange on the Web. RDF has features that facilitate data merging even if the underlying schemas differ, and it specifically supports the evolution of schemas over time without requiring all the data consumers to be changed. RDF extends the linking structure of the Web to use URIs to name the relationship between things as well as the two ends of the link (this is usually referred to as a "triple"). Using this simple model, it allows structured and semi-structured data to be mixed, exposed, and shared across different applications. This linking structure forms a directed, labeled graph, where the edges represent the named link between two resources, represented by the graph nodes. This graph view is the easiest possible mental model for RDF and is often used in easy-to-understand visual explanations." <https://www.w3.org/RDF/>

JLIS.it vol. 13, no. 1 (January 2022)
ISSN: 2038-1026 online

DOI: 10.4403/jlis.it-12748

tionship with an entity, proposed by Wikidata, is meaningful: *"Identity is all that makes an entity definable and recognizable, because it possesses a set of qualities or characteristics that make it what it is and, for that very reason, distinguish it from all other entities".* [6] This transition in the cataloguing approach can be seen as a shifting from identity, as a form of presentation of an entity, to a real entity, consisting of a series of properties and relationships useful for its identification.
The cataloguing tradition has for centuries been focused on the record intended as a synthesis of the expression of an identity. Behind the topos "*Are the winner of Austerlitz and the loser of Waterloo the same person?*" there is the meaning of this philosophical but also practical passage: behind the many possible expressions of an identity there is a unique and, in some ways, unrepeatable entity.

Fig. 1. The entity Napoleon is represented by many identities

The world is my representation

The shift of attention from the record to the entity, understood as a Real World Object, could be represented as the passage from a flat, static, 2-dimensional worldview to a dynamic, 3-dimensional worldview. In cataloguing terms, we are facing a crucial transition from a representation of the world, to the world in itself, in its concreteness and variety, and to the attempt, which remains so, to express it in its reality. However faithful or authoritative the description is, it always remains a *representation* of a reality, which is other than reality itself. But the change of view helps the observer to get closer to that reality and to interpret it in a different way, hopefully, more respectful of the object represented: this is easily and visually expressed as the passage from a flat, static, 2-dimensional worldview to a dynamic, 3-dimensional worldview. The record, often expressed through a globally shared syntax, but within specific communities and specific domains, manifests all the limits of a monolithic and flat object: the resource told through the traditional bibliographic or authority record, is as if it assumed the same two-dimensional and static features of its representation.

[6] <https://it.wikipedia.org/wiki/Identit%C3%A0_(filosofia)>

JLIS.it vol. 13, no. 1 (January 2022)
ISSN: 2038-1026 online

DOI: 10.4403/jlis.it-12748

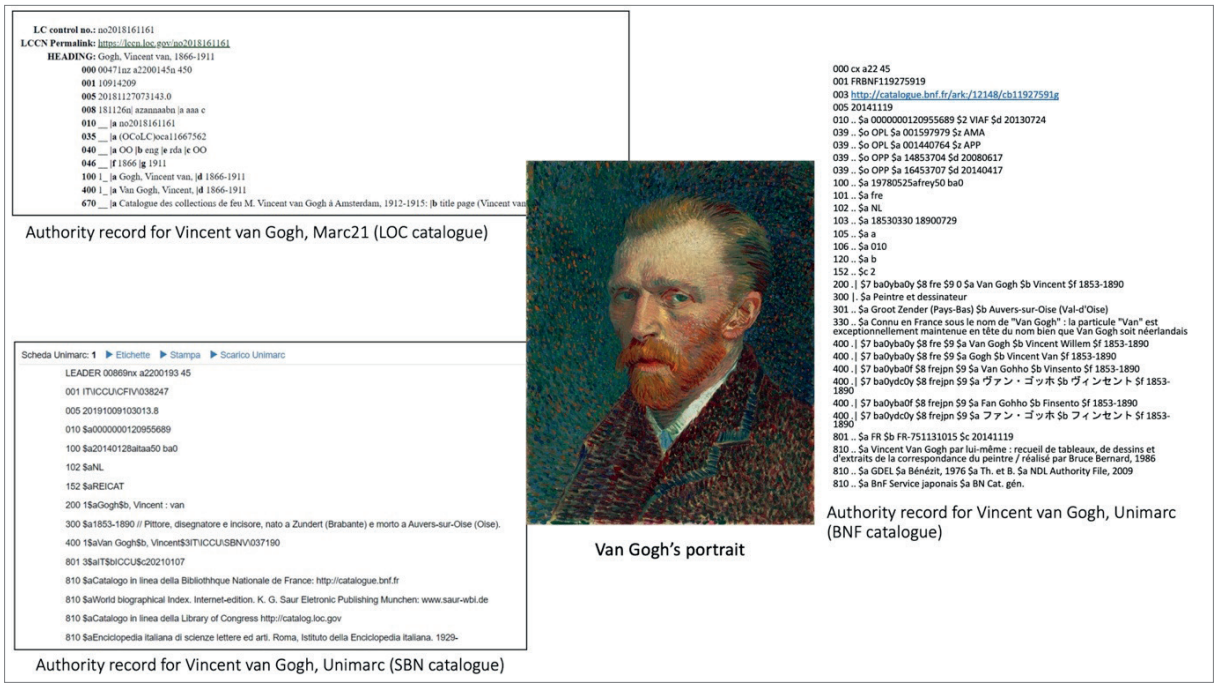

Fig. 2. Van Gogh's portrait with its different descriptions in Marc records

The transition to the Real World Object refers to another way of understanding the object, in its three-dimensionality and concreteness. Those who produce metadata are still obliged to remain on this side of the veil of Mâyâ that we were talking about, but they come close to a three-dimensional object, which can be observed from a variety of points of view. A view that best allows you to tell the "thing" (Thing) in its being a thing (a work, a person, a place, an abstract concept...). The view of the producer of the metadata becomes the same view of whoever (in the example of Van Gogh's portrait) tries to look at it as the original creator must have seen and imagined it, thus approaching what his idea should have been originally, although still being able to give "only" one (or more) representations.

Entity is built by putting together properties expressed through different ontologies and vocabularies, from different institutions. And the same entity, the Real World Object, can continue to be expressed through one or multiple identities.

JLIS.it vol. 13, no. 1 (January 2022)
ISSN: 2038-1026 online

DOI: 10.4403/jlis.it-12748

Fig. 3. Van Gogh's 3D view, with properties expressed through different ontologies and vocabularies

What is striking in this new perspective is the change in the cataloguing geography: new sources, not necessarily institutional, can contribute to represent the same entity, in a network that goes beyond local or national borders creating a digital ecosystem that is not at all contained within cultural, linguistic, geographical or thematic limits. We are living on a cloud of data: many domains meet on the web to enrich and extend the informative power of data. Libraries are, in a certain way, forced to reorganize themselves in a similar way, proposing a wider network where each node can be constituted by a library, an archive, a museum or any information provider. In this context, it is necessary to dialogue with heterogeneous communities of varying authority, driven by the web and often created by institutions or groups of users quite different from the ones to which the cataloguing tradition is accustomed. The purpose of this cooperation between different domains is articulated: it includes the possibility of making data creation and management processes sustainable in the long term with the ability to enrich data using different sources and reuse something that was not originally created in its own domain, without any political, cultural and technological barrier. The free reuse of data can take place in very different contexts from those of the origin of that data, multiplying for everyone the opportunities for universal access and the production of new knowledge.

To give a clearer idea of the wealth of standards and metadata limited to the cultural heritage sector alone, which can be used to build and format data, ten years ago Jenn Riley published a metadata map: it provides an impressive representation of the standards for the digital collection (105 standards) (Riley 2009-2010). We can only imagine how this map and its relationships can expand out of the limited cultural context and meet with the standards and languages of other communities. In such a broad, complex and heterogeneous ecosystem, which is not always authoritative, does UBC still make sense and do the national agencies that take charge of it still have a role?

JLIS.it vol. 13, no. 1 (January 2022)
ISSN: 2038-1026 online

DOI: 10.4403/jlis.it-12748

Can different cataloguing traditions coexist in such a flowing context and integrate without losing their information value and authoritative character?

Anyone can say Anything about Anything

Each ontology or dataset refers to an institution or a community, with its strength and authority guaranteed, for the most part, by the strength and authority of the community responsible for creating and managing this source. The strength of a community, which guarantees the *authoritativeness* and *certifiability* of a source, is also given by the number (*quantitative* aspect) and by the typology (*qualitative* aspect) of the community guarantor of the source. These precepts should partially stem the risks inherent to the AAA Principle, which is the founding base of the Semantic Web: *Anyone can say Anything about Anything*.[7]

But if it may seem rather simple to frame, verify and certify the quantitative data of a community that supports and produces a source, through measurement criteria, the evaluation of the qualitative data is not so easy. And this is all the truer if we think of a global dimension, such as that of the web, in which a community can be spread beyond any possible measurable boundary. It is here that the concept of authority risks having to give way to the concept of *consensus*, and it is here that, perhaps, even more so, we need to rethink and strengthen the concept of certified authority of a source.

As Giovanni Pirrotta writes, data constitute the skeleton upon which the structure of communication is built. The more the data is authentic, truthful, authoritative, certified and verifiable, the more difficult it is to invent fake news (Pirrotta 2019). In his article, Pirrotta tries to demonstrate that it is possible to certify and verify data also with the support of new web technology. Using authoritative sources, he demonstrates that the possibility for a machine to cross different sources and to certify data is possible and it constitutes a way of getting proof and giving trust to an assertion.

In the example of figure 4, the entity *Elio Morpurgo*, an Italian politician of Jewish origin, a victim of the Holocaust, is rebuilt through highly authoritative sources:

- CDEC - Ontology of the Fondazione Centro di Documentazione Ebraica Contemporanea[8]
- OCD - Ontology of the Italian Camera dei Deputati[9]
- Ontology of the Italian Senato della Repubblica[10]

The sources used to identify the entity are created and maintained by very authoritative institutions, able to assure the quality and the accuracy of the data: the truthfulness of the information depends on the quality of the source.

[7] "To facilitate operation at Internet scale, RDF is an open-world framework that allows anyone to make statements about any resource. In general, it is not assumed that complete information about any resource is available. RDF does not prevent anyone from making assertions that are nonsensical or inconsistent with other statements, or the world as people see it. Designers of applications that use RDF should be aware of this and may design their applications to tolerate incomplete or inconsistent sources of information". <https://www.w3.org/TR/rdf-concepts/#section-anyone>

[8] <http://dati.cdec.it/>

[9] <http://dati.camera.it/ocd/reference_document/>

[10] <http://dati.senato.it/sito/21>

JLIS.it vol. 13, no. 1 (January 2022)
ISSN: 2038-1026 online

DOI: 10.4403/jlis.it-12748

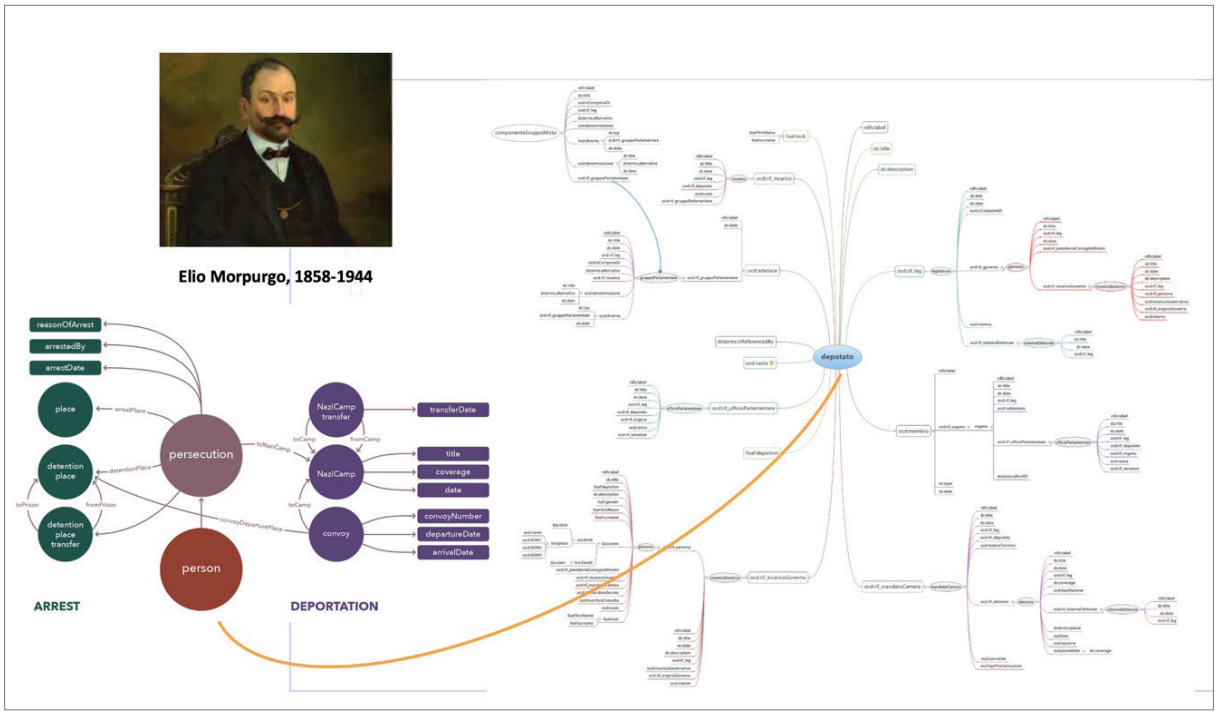

Fig. 4. The Italian politician Elio Morpurgo is identified through highly authoritative sources

In such a complex information production chain, where data are built and distributed by heterogeneous sources, ranging from authors to publishers, from blogs to libraries, from social networks to ontologies, the role of National Bibliographic Agencies cannot fail to become central; their contribution in terms of authoritativeness remains fundamental, and indeed, acquires centrality again in a new global scenario in which each source can contribute to building the most effective representation of an entity, but many sources cannot guarantee the character of *authority*, *persistence* and *updating*. In this transition phase, where processes are evolving from bibliographic and authority control to entity management in a shared environment, where it seems that the strongest approach is the AAA Principle, where authority seems to have been superseded by consensus, a founding criterion has to be defined to harmonize the different voices speaking about a thing: *democracy* seems the most effective way of balancing and coordinating a community in which anyone can say anything about anything.
How this principle is applied to building entities and how it affects entity identification and presentation strategies can be briefly summarized as follows:

- each National Bibliography Agency can choose any preferred form and all variants to identify or to present an entity (it can choose the number and type of its attributes); the constraints on the formats lapse;
- all "locally preferred" forms have become equal in a globally shared environment, in a cluster of variant forms that is not affected by hierarchical structure and logic.

But, as in all democratic systems, it is necessary to choose someone who represents people; thus, even in the representation of entities, different institutions can choose from among different vari-

JLIS.it vol. 13, no. 1 (January 2022)
ISSN: 2038-1026 online

DOI: 10.4403/jlis.it-12748

ant (literal) forms the one that best represents the entity in their own community, in order to better meet the needs of its users (whether cultural, geographical, domain, linguistic needs, etc.).

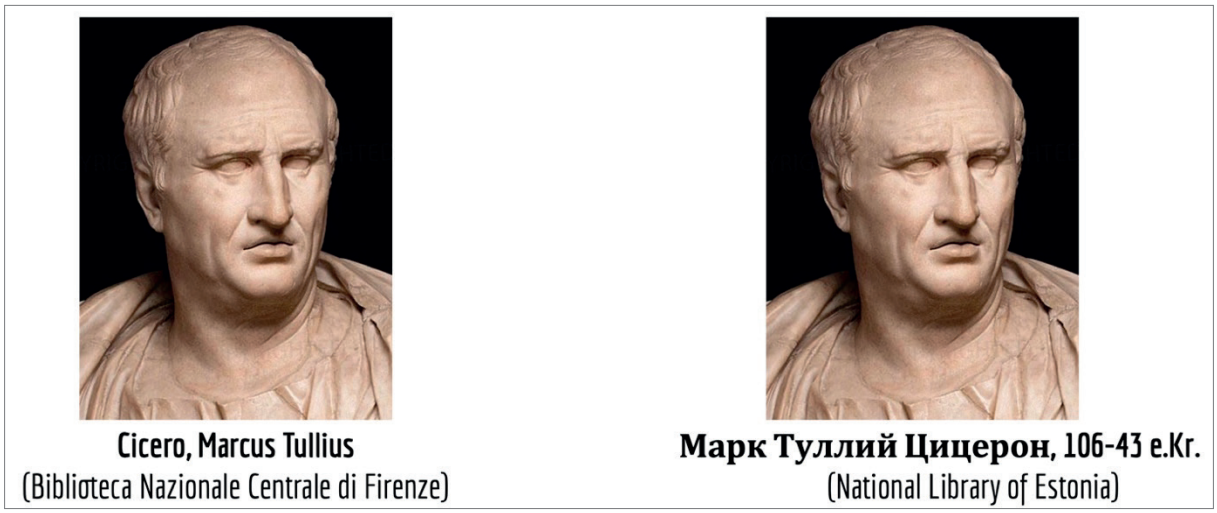

Fig. 5. The form of the name for Cicero, chosen by the Biblioteca nazionale centrale di Firenze and by the National Library of Estonia

As clearly expressed in the AAA Principle, the RDF model used to structure data in the semantic web does not presuppose and guarantee that the assertion is correct in the message conveyed, but that it is formally well structured, with a subject, a predicate, an object. RDF does not warrant that nonsense or inconsistent statements will not be made with other statements. Consequently, we are aware that an enormous number of triples are created in the Semantic Web, regardless of their quality and truth.

So, if the assertion expressed by the triple is:
"the Earth – is – flat"
or if the assertion expressed by the triple is:
"the Earth – is – round"
in term of RDF is exactly the same: both are well structured assertions.

In the same way, if the assertion is:
"The preferred label – is – Pirandello, Luigi, 1867-1936"
or
"The preferred label – is – י'גיאול, ולדנריפ, 1867-1936"
it's absolutely neutral for RDF.

The certification of "who says something" is expressed through the *fourth element* – the Provenance – added to the original triple.
Its role, in a shared environment, is fundamental:

- it ensures that each institution, as a source, assumes responsibility for the data (data trust);

JLIS.it vol. 13, no. 1 (January 2022)
ISSN: 2038-1026 online

DOI: 10.4403/jlis.it-12748

- it allows institutions to share their data in wider contexts, keeping track of their contributions (data traceability);
- it allows users (professionals or end-users, as well as machines) to apply filters to select data from specific sources (application profile).

So, to go back to the example used above, triples become quadruples and declare the responsibility of whoever makes an assertion:

"The ICCU says that – the preferred label – is – Pirandello, Luigi, 1867-1936"
or
"The National Library of Israel says that – the preferred label – is – ולדנריפ, י'גיאול, 1867-1936"

In this way, anyone can say anything about anything, assuming the responsibility of the assertion.

Conclusion

The attention of the entire data production chain, from the publisher to the cataloguing and distribution agencies, returns to focus on the real and essential information power of the data, which is structured so as to be universally understood and shared. In this new ecosystem, in this new geography with completely open borders, in which the actors and information elements are themselves open and heterogeneous, the constraints and rigidities expressed in the past by formats, standards, rules of national cataloguing, often closely linked to specific domains, completely lose their meaning. Authoritative institutions, both local and global, reaffirm their role and their centrality, provided they are able to adapt themselves and their services to the runaway evolution of the times. In the allegory of Plato's Cave, people who have lived chained to a blank wall of a cave all their lives, watch shadows projected on the wall from real objects and give names to these shadows. The shadows are the prisoners' reality, but are not accurate representations of the real world. The librarian, like any institution that provides data, should become like the philosopher who is freed from the cave and comes to understand that the shadows on the wall are actually not reality at all. Anyone can try to get to the real world knowing that it will probably remain an attempt, and cataloguing and data providing will remain a description of it. But as accurate as possible.

JLIS.it vol. 13, no. 1 (January 2022)
ISSN: 2038-1026 online

DOI: 10.4403/jlis.it-12748

References

(Last consultation of the websites: 22th April 2021)

Anderson, Dorothy. 1974. *Universal Bibliographic Control: a long term policy, a plan for action*. Pullach/München: Verlag Dokumentation.

Berners-Lee, Tim. 2006. "Linked Data". Design issues for the World Wide Web." W3C. https://www.w3.org/DesignIssues/Overview.html.

Coyle, Karen. 2015. "Coyle's InFormation: Real World Objects." http://kcoyle.blogspot.com/2015/01/real-world-objects.html.

Dunsire, Gordon, and Mirna Willer. 2014. "The local in the global: universal bibliographic control from the bottom up." http://library.ifla.org/817/1/086-dunsire-en.pdf.

Gambari, Stefano, and Mauro Guerrini. 2002. *Definire e catalogare le risorse elettroniche*. Milano: Editrice Bibliografica.

Gonzales, Brighid M. 2014. "Linking Libraries to the Web: Linked Data and the Future of the Bibliographic Record." *Information Technology and Libraries* 33 (4):10-22. https://doi.org/10.6017/ital.v33i4.5631.

Pirrotta, Giovanni. 2019. "Generazione e verifica di notizie di qualità attraverso il Web Semantico: la storia di Liliana Segre." https://medium.com/@gpirrotta/generazione-e-verifica-di-notizie-di-qualità-attraverso-il-web-semantico-la-storia-di-liliana-6cd81f05e9fe

Riley, Jenn. 2009-2010. "Seeing Standards: A Visualization of the Metadata Universe." http://jennriley.com/metadatamap/.

Schreur, Philip. 2018. "The Evolution of BIBFRAME: from MARC Surrogate to Web Conformant Data Model." 13-07-2018. http://library.ifla.org/2202/1/141-schreur-en.pdf .

Schreur, Philip E., and Amy J. Carlson. 2020. "Bridging the Worlds of MARC and Linked Data: Transition, Transformation, Accountability." *The Serials Librarian* 78:1-4, 48-56. DOI: 10.1080/0361526X.2020.1716584

Tennant, Roy. 2002. "MARC must die." *Library Journal* 127 (17):26–28. http://lj.libraryjournal.com/2002/10/ljarchives/marc-must-die/# .

Working Group on the Future of Bibliographic Control. 2008. "On the Record: report of the Library of Congress Working Group on the Future of Bibliographic Control". https://www.loc.gov/bibliographic-future/news/lcwg-ontherecord-jan08-final.pdf.