**International
Conference**
Bibliographic
Control
in the
Digital
Ecosystem

Universal bibliographic control in the semantic web

Opportunities and challenges for the reconciliation of bibliographic data models

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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 the 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 cataloging 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, more or less authoritative, driven by the web and often created by institutions or groups of users quite different from the ones to which cataloging tradition is accustomed. The free reuse of data can also take place in contexts very different from those of origin, multiplying for everyone the opportunities for universal access and the production of new knowledge.

Can different cataloging traditions coexist in such a changed context and integrate without losing their information value? Based on some recent experiences, this appears to be possible.

Universal Bibliographic Control

Universal Bibliographic Control and International MARC (UBCIM) was an office established during the 1970's by IFLA, as result of a discussion about 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 cataloged once in its country of origin, and that record would then be available for the use of any library in the world.

Background

Dorothy Anderson, *Universal Bibliographic Control: a long term policy - A plan for action.*

Pullach/München: Verlag Dokumentation, 1974

The document emphasises the responsibility of national bibliographic agencies for creating an authoritative bibliographic record of publications of their own countries and making them available to other bibliographic agencies. The process is carried out only by following international standards both in the creation of bibliographic as well as authority records*

*Gordon Dunsire, Mirna Willer, *The local in the global: universal bibliographic control from the bottom up*

Background

In the 1990's it was recognized that having data in a language and script users could understand it is extremely important, and by doing so, respecting the cultural diversity of users around the world should be addressed as well

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.

Background

Library of Congress Working Group on the Future of Bibliographic Control, January 9, 2008, *On the record*

- 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.

IFLA Professional Statement on Universal Bibliographic Control

- December 2012 - IFLA reaffirms some items:

- 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.

https://www.ifla.org/files/assets/bibliography/Documents/ifla-professional-statement-on-ubc-en.pdf

The role of National bibliographic agencies

To express the cultural richness of a country in a way that can be universally shared with other countries and agencies (Local production in a global context)

- 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 country [...]

The role of IFLA in coordinate the NBAs

Focus on standards and guidelines to make data universally sharable, in a wider community
(Local production in a global context)

- 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.

"Think global, act local"

—

- Patrick Geddes -

UBC as local and global dimension

National Bibliographic Agencies are focused on:

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

- Attention to global content of interest to its users, related (or not) to local content

- Attention to the way the content is expressed through metadata: application of international standards and rules but with frequent "local" choices (example: the rule of presenting as a favorite the form of a name understandable to your users)

- Universal standards and rules applied locally, for specific needs

"Local content is held in global carriers, and global content is held in local carriers"
- Gordon Dunsire, Mirna Willer -

The record as the protagonist of this local and global scenario

The balance between local and global views within the UBC worked well until the contents conveyed were defined...

➢ by National bibliographic agencies

...and controlled through descriptions (metadata), built in compliance with shared rules and standards:

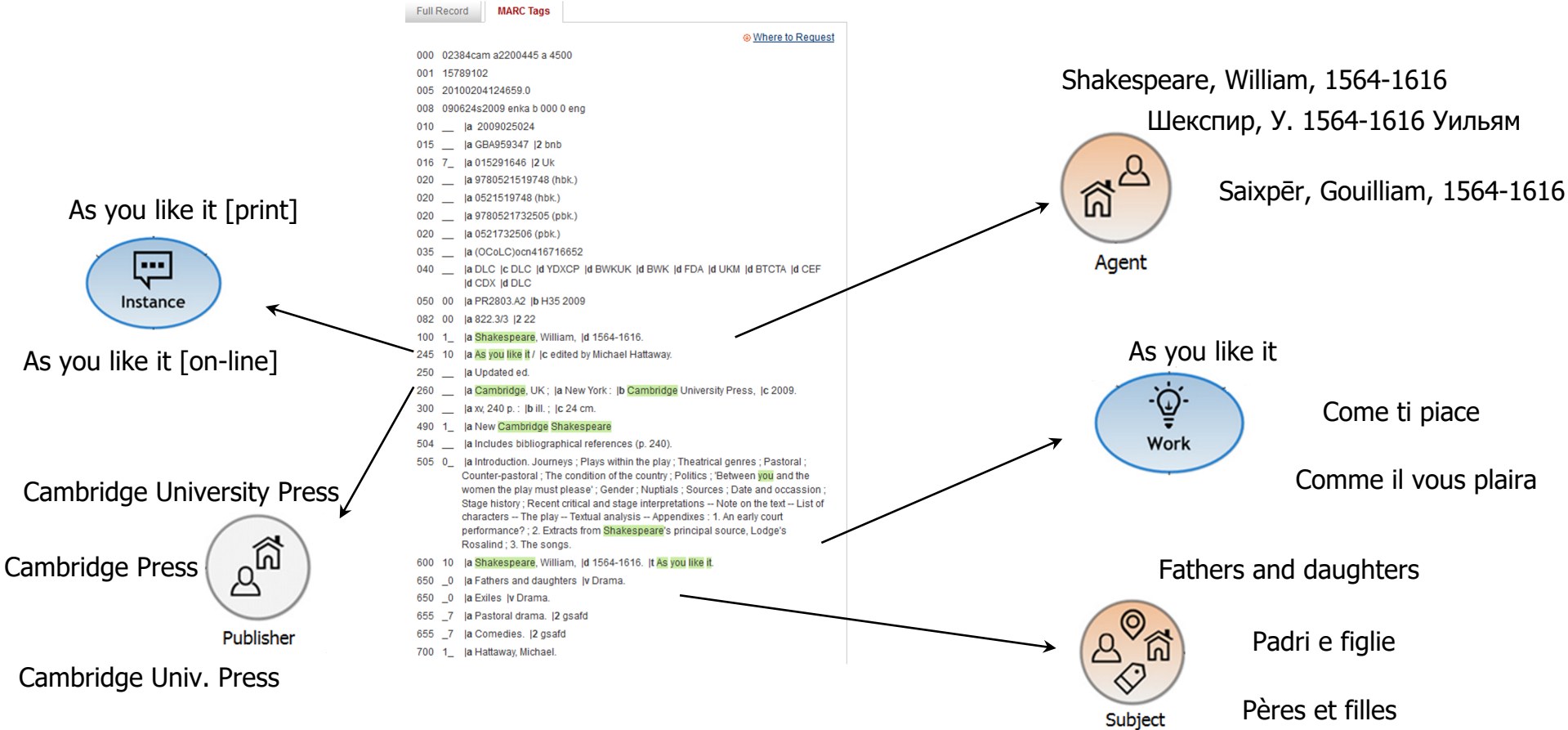➢ bibliographic and authority records

From record to entity

Each record has metadata useful to derive properties in order to build entities.
But they are hidden.

000		02384cam a2200445 a 4500
001		15789102
005		20100204124659.0
008		090624s2009 enka b 000 0 eng
010	__	|a 2009025024
015	__	|a GBA959347 |2 bnb
016	7_	|a 015291646 |2 Uk
020	__	|a 9780521519748 (hbk.)
020	__	|a 0521519748 (hbk.)
020	__	|a 9780521732505 (pbk.)
020	__	|a 0521732506 (pbk.)
035	__	|a (OCoLC)ocn416716652
040	__	|a DLC |c DLC |d YDXCP |d BWKUK |d BWK |d FDA |d UKM |d BTCTA |d CEF |d CDX |d DLC
050	00	|a PR2803.A2 |b H35 2009
082	00	|a 822.3/3 |2 22
100	1_	|a Shakespeare, William, |d 1564-1616.
245	10	|a As you like it / |c edited by Michael Hattaway.
250	__	|a Updated ed.
260	__	|a Cambridge, UK ; |a New York : |b Cambridge University Press, |c 2009.
300	__	|a xv, 240 p. : |b ill. ; |c 24 cm.
490	1_	|a New Cambridge Shakespeare
504	__	|a Includes bibliographical references (p. 240).
505	0_	|a Introduction. Journeys ; Plays within the play ; Theatrical genres ; Pastoral ; Counter-pastoral ; The condition of the country ; Politics ; 'Between you and the women the play must please' ; Gender ; Nuptials ; Sources ; Date and occassion ; Stage history ; Recent critical and stage interpretations -- Note on the text -- List of characters -- The play -- Textual analysis -- Appendixes -- 1. An early court performance? ; 2. Extracts from Shakespeare's principal source, Lodge's Rosalind ; 3. The songs.
600	10	|a Shakespeare, William, |d 1564-1616. |t As you like it.
650	_0	|a Fathers and daughters |v Drama.
650	_0	|a Exiles |v Drama.
655	_7	|a Pastoral drama. |2 gsafd
655	_7	|a Comedies. |2 gsafd
700	1_	|a Hattaway, Michael.

Full Record   MARC Tags

The new revolution: from **record** to **entity**

Linked data means structured information, born to be shared and reused

"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."

———

"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."

Arthur Schopenhauer, Die Welt als Wille und Vorstellung

From **identity** to a real **entity…**

This epochal transition was largely favored 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.

"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"

- Wikipedia -

...from a **flat description** to a **real-world object**

The cataloging tradition has for centuries been focused on records intended as a synthesis of the expression of an identity, forgetting, perhaps, that behind the many possible forms of expression of an identity there is a unique and, in some ways, unrepeatable entity.

"Are the winner of Austerlitz and the loser of Waterloo the same person?"

From a **flat description** to a **real-world object** as a crucial transition from a **2D** to a **3D vision**

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 cataloging 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.

"The world is my representation"
-     Arthur Schopenhauer, Die Welt als Wille und Vorstellung   -

Bibliographic record for Van Gogh's Bedrooms, Unimarc (BNF catalogue)

000 cam 22 3 450

001 FRBNF450226910000007

003 http://catalogue.bnf.fr/ark:/12148/cb45022691v

010 .. $a 9780300214864

010 .. $a 0300214863 $b rel.

035 .. $a OCoLC923796123

100 .. $a 20160630d2016 m y0engy50 ba

101 0. $a eng

102 .. $a US

105 .. $a a z 00|y|

106 .. $a r

181 .0 $6 01 $a i $b xxxe $a b $b xb2e

181 .. $6 02 $c txt $c sti $2 rdacontent

182 .0 $6 01 $a n

182 .. $6 02 $c n $2 rdamedia

200 1. $a Van Gogh's bedrooms $b Texte imprimé $e [exhibition, Art Institute of Chicago, February 14-May 10, 2016] $f edited by Gloria Groom $g with essays by Gloria Groom, David J. Getsy, Louis van Tilborgh and Ella Hendriks, Teio Meedendorp, Michel Menu, and Johanna Salvant and with contributions by Allison Perelman

210 .. $a Chicago $c Art Institute of Chicago $a New Haven $c Yale University Press $d cop. 2016

215 .. $a 1 vol. (165 p.) $c ill. en coul. $d 32 cm

300 .. $a Bibliogr. p. 156-158. Index

327 1. $a Chronology / Allison Perelman ; The empty room / Gloria Groom ; Exalting the unremarkable [...] ; Poet's garden and Gauguin's bedroom / David J. Getsy ; The bedroom : Van Gogh's quest for affection [...] mind / Louis van Tilborgh ; Materials, intention, and evolution : Van Gogh's Bedrooms / Inge Fiedler, E[...] Teio Meedendorp, Michel Menu, and Johanna Salvant ; Works by Van Gogh ; Japanese prints ; Daumier prints ; Millet prints ; Other works in the exhibition.

330 .. $a "Over the course of his life, Van Gogh lived in thirty-seven different homes. In 1888 the artist moved into the only place he considered his own: his beloved "Yellow House" in Arles, France. His second-floor bedroom became a sanctuary, and it inspired him to record it in paint. Van Gogh so prized The Bedroom, which he deemed one of his best canvases, that he created two similar but distinct versions of it almost a year later, after being forced to leave his Yellow House following a nervous breakdown. In this reunion at the Art Institute of Chicago, the public has the extraordinary opportunity to see these three paintings hanging together as they did in Van Gogh's asylum studio. Presented only in Chicago, Van Gogh's Bedrooms is a momentous occasion that, along with this accompanying catalogue, sheds new light on these iconic compositions and the circumstances of their making. The exhibition is groundbreaking also because it is the first to consider the theme of home in the artist's work"

503 1. $a Exposition $m Chicago $n Art institute $j 2016

600 .| $3 11927591 $a Van Gogh $b Vincent $f 1853-1890 $2 rameau

604 .. $3 12503252 $a Van Gogh $b Vincent $f 1853-1890 $t La chambre de Vincent à Arles $2 rameau

608 .. $3 11938837 $a Catalogues d'exposition $2 rameau

702 .| $3 12530111 $o ISNI0000000116249327 $a Groom $b Gloria Lynn $f 1954-.... $4 070

712 || $3 11873060 $o ISNI0000000121588163 $a Art institute $c Chicago, Ill. $4 070

801 .3 $a US $b OCoLC $c 20160630 $h 923796123 $2 marc21

801 .0 $b DLC $g rda

930 .. $5 FR-751131010:45022691001001 $a 2016-146255 $b 759999999 $c Tolbiac - Rez de Jardin - Littérature et art - Magasin $d O

Vincent Van Gogh - De slaapkamer

Bibliographic record for Van Gogh's Bedrooms, Marc21 (LOC catalogue)

=LDR 03141cam a2200409 i 4500
=001 18920848
=005 20161108130006.0
=008 151230s2016\\\\ilu\\\\\\bc\\\001\0deng\\
=906 \\$a7$bcbc$corignew$d1$eecip$f20$gy-gencatlg
=925 0\$aacquire$b1 shelf copy$xpolicy default$eclaim1 2016-07-22
=955 \\$brk11 2015-12-30$irk11 2015-12-30 ONIX to Dewey$wxl04 2016-01-04$axn12 2016-08-25 1 copy rec'd., to CIP ver.$frk05 2016-09-21 to CALM
=010 \\$a 2015051280
=020 \\$a9780300214864 (hardback)
=040 \\$aDLC$cbeng$cDLC$erda$dDLC
=042 \\$apcc
=050 00$aND653.G7$bA62 2016
=082 00$a759.9492$223
=084 \\$aART016030$aART015100$aART006000$2bisacsh
=245 00$aVan Gogh's Bedrooms /$cedited by Gloria Groom ; with essays by Gloria Groom, David J. Getsy, Louis van Tilborgh and Inge Fiedler, Ella Hendriks, Teio Meedendorp, Michel Menu, and Johanna Salvant with contributions by Allison Perelman.
=250 \\$aFirst edition.
=264 \1$aChicago :$bArt Institute of Chicago,$c[2016]
=300 \\$a165 pages ;$c32 cm
=336 \\$atext$2rdacontent
=337 \\$aunmediated$2rdamedia
=338 \\$avolume$2rdacarrier
=500 \\$a"Van Gogh's Bedrooms was published in conjunction with an exhibition of the same title organized by and presented at the Art Institute of Chicago, February 14 to May 10, 2016."
=504 \\$aIncludes bibliographical references (pages 156-158) and index.
=520 \\$a"Over the course of his life, Van Gogh lived in thirty-seven different homes. In 1888 the artist moved into the only place he considered his own: his beloved "Yellow House" in Arles, France. His second-floor bedroom became a sanctuary, and it inspired him to record it in paint. Van Gogh so prized The Bedroom, which he deemed one of his best canvases, that he created two similar but distinct versions of it almost a year later, after being forced to leave his Yellow House following a nervous breakdown. In this reunion at the Art Institute of Chicago, the public has the extraordinary opportunity to see these three paintings hanging together as they did in Van Gogh's asylum studio. Presented only in Chicago, Van Gogh's Bedrooms is a momentous occasion that, along with this accompanying catalogue, sheds new light on these iconic compositions and the circumstances of their making. The exhibition is groundbreaking also because it is the first to consider the theme of home in the artist's work"--$cProvided by publisher.
=600 10$aGogh, Vincent van,$d1853-1890.$tBedroom (Van Gogh Museum, Amsterdam)$vExhibitions.
=600 10$aGogh, Vincent van,$d1853-1890.$tBedroom (Art Institute of Chicago)$vExhibitions.
=600 10$aGogh, Vincent van,$d1853-1890.$tVan Gogh's bedroom in Arles (Musée d'Orsay)$vExhibitions.
=650 \0$aHome in art$vExhibitions.
=650 \7$aART / Individual Artists / Monographs.$2bisacsh
=650 \7$aART / History / Modern (late 19th Century to 1945).$2bisacsh
=650 \7$aART / Collections, Catalogs, Exhibitions / General.$2bisacsh
=700 1\$aGroom, Gloria Lynn.$eeditor.
=710 2\$aArt Institute of Chicago,$eorganizer,$ehost institution.

Vincent's Bedroom - 3D Model
Reproduction from the original created by Julieta Lucia Vicente (https://vimeo.com/82588190)

Authority record for Vincent van Gogh, Marc21 (LOC catalogue)

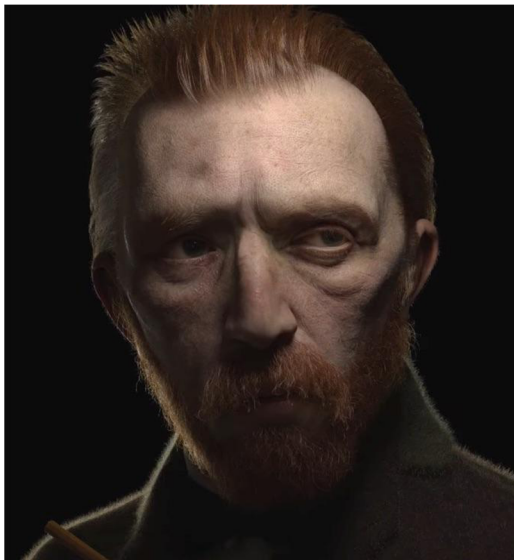Authority record for Vincent van Gogh, Unimarc (SBN catalogue)

Van Gogh's portrait

Authority record for Vincent van Gogh, Unimarc (BNF catalogue)

<http://id.loc.gov/authorities/names/n79022935>
mads:authoritativeLabel "Gogh, Vincent van, 1853-1890"

<http://www.wikidata.org/entity/Q5582> wkp:P106
wkp:Q1028181 .
wkp:Q1028181 rdfs:label "pittore" .

<http://id.worldcat.org/fast/32032> skos:prefLabel
"Gogh, Vincent van, 1853-1890"

<http://share-vde.org/sharevde/rdfBibframe/Agent/536>
rdfs:label
"Gogh, Vincent van,1853-1890."

<http://id.loc.gov/rwo/agents/n79022935> mads:birthDate
_:b8iddOtlocdOtgovrwoagentsn79022935 .
_:b8iddOtlocdOtgovrwoagentsn79022935 rdfs:label "(edtf) 1853-03-30" .

<http://viaf.org/viaf/9854560> skos:altLabel "Vincent van
Gogh pintor post-impresionista neerlandés" .

Van Gogh's 3D portrait by Sina Pahlevani
(reproduction from the original, available here:
https://www.youtube.com/watch?v=JB1bC8Dw0oQ&feature=youtu.be)

The new digital ecosystem: a network of data
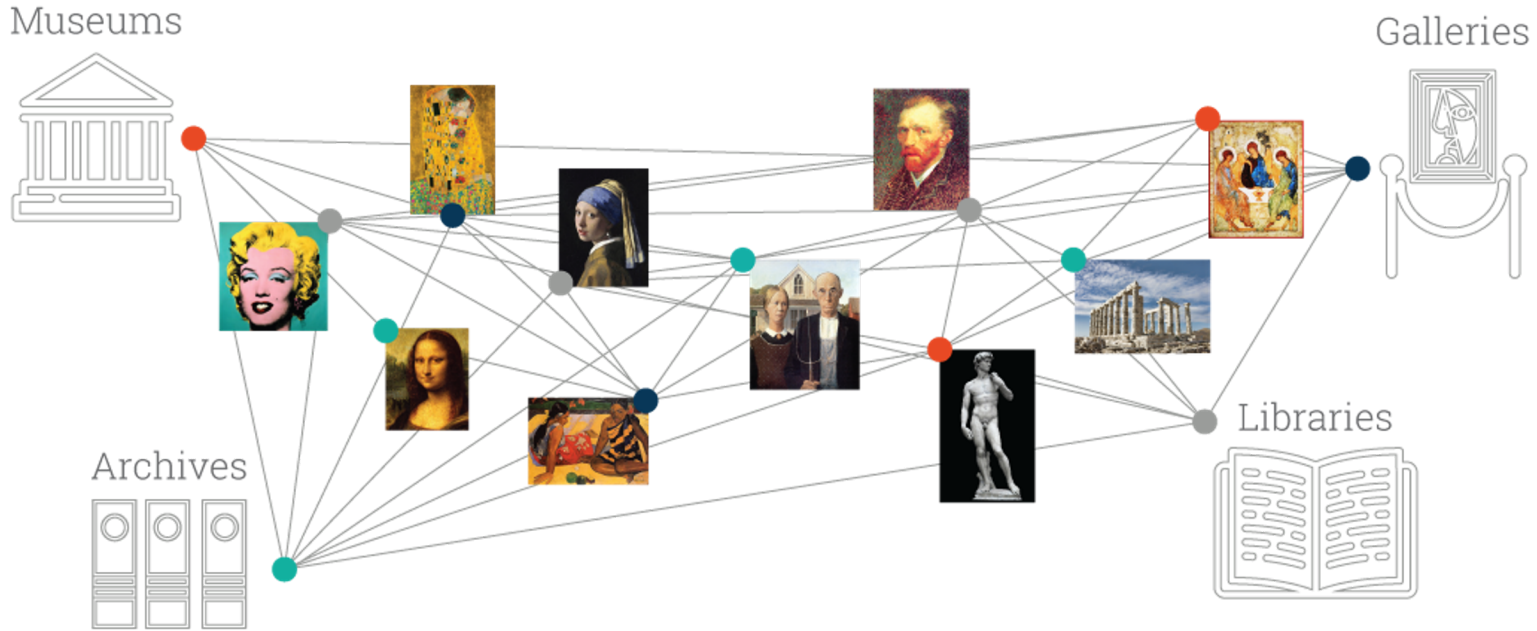
Standards for Digital Collections
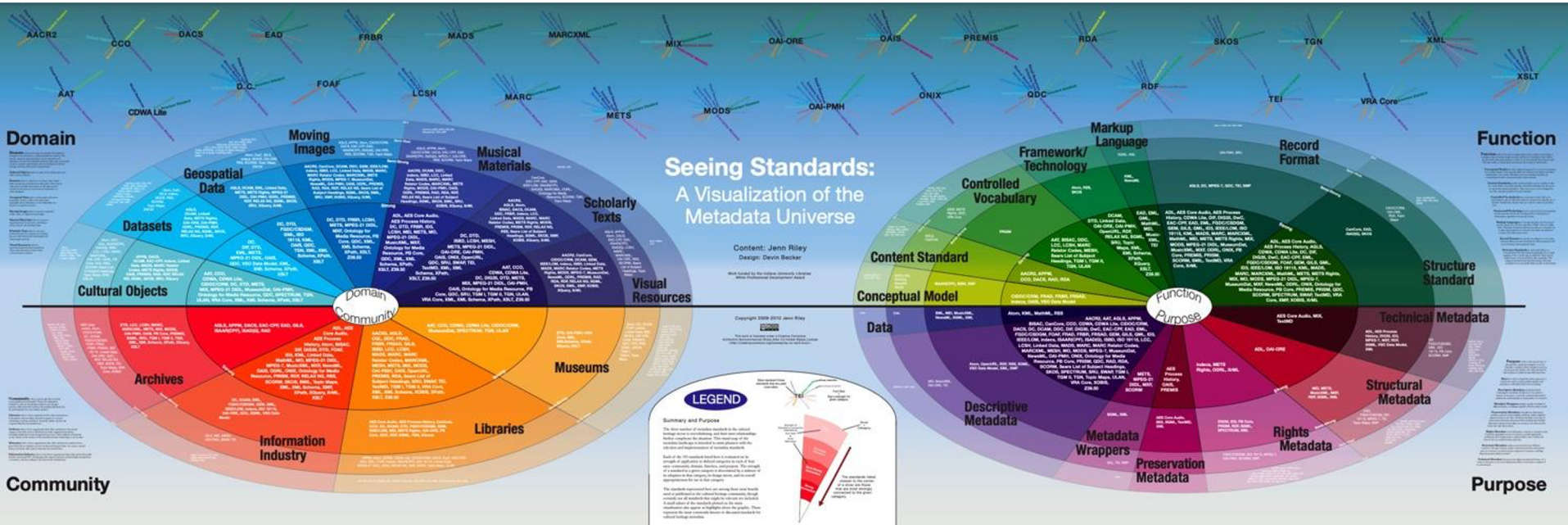
Jenn Riley's Seeing Standards: A Visualization of the Metadata Universe
(http://jennriley.com/metadatamap/)

The authority of the sources and the still fundamental role of the UBC

In such transversal, heterogeneous and not always authoritative information sources, does UBC still make sense and do the metadata and distribution agencies that take charge of it still have a role?

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

"Data constitute the backbone on which the communication scaffold is grafted. But the more the data is authentic, truthful, authoritative, certified and verifiable, the more difficult it is to invent fake news"

"I dati costituiscono la dorsale su cui si innesta l'impalcatura della comunicazione. Ma più i dati sono autentici, veritieri, autorevoli, certificati e verificabili, più è difficile inventare fake-news"

- Giovanni Pirrotta, 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-qualit%C3%A0-attraverso-il-web-semantico-la-storia-di-liliana-6cd81f05e9fe)

Data modeling and authority of the source

Each ontology or dataset refers to an institution or a community; the *strength* and *authority* of the source are, for the most part, guaranteed by the strength and authority of the community that creates and manages 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 - often hard to define-) of the community guarantor of the source.

Anyone can say Anything about Anything
- AAA Principle -

The truthfulness of the information depends on the quality of the source

Elio Morpurgo, 1858-1944
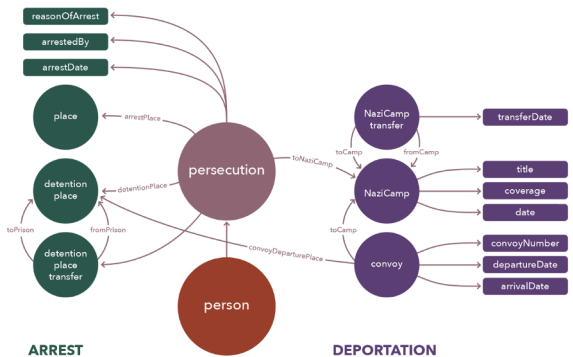
ARREST

DEPORTATION
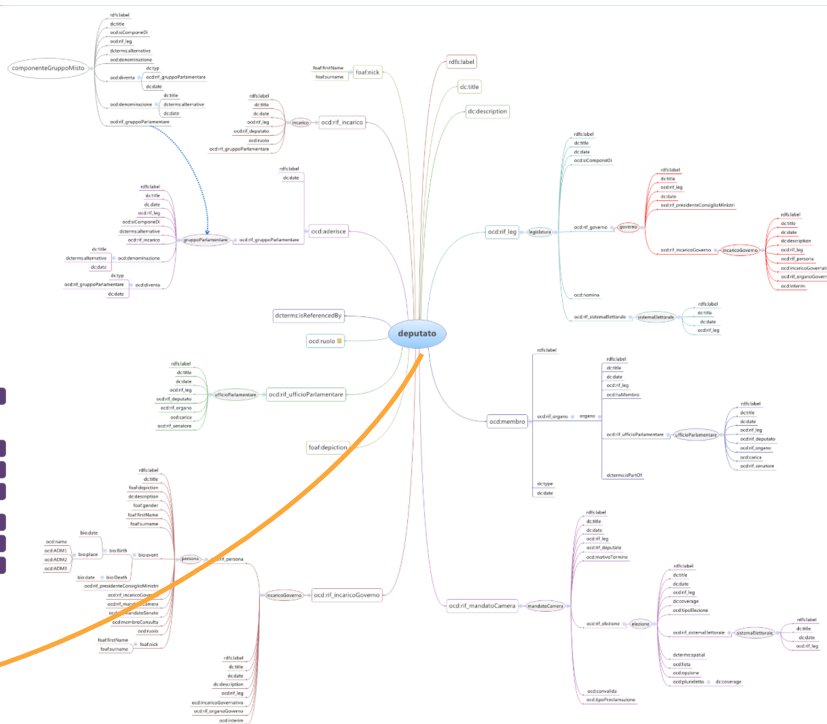
Data modeling and authority of the source

The contribution in terms of authority of each National bibliographic agency 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* of it.

Democracy, as the main concept in building an Entity

In this process from bibliographic and authority control to entity management, in a shared environment, *democracy* is the main concept.

How it is applied to build entities and how it affects cluster/entity identification strategies:

- Each National Bibliography Agency can choose any preferred form and all variants for 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 global shared environment, in a cluster that doesn't is affected by hierarchical structure and logic.

Democracy, as the main concept in building an Entity

As in all democratic systems, it is necessary to choose someone who represents the people: thus, also in entity representation, different institutions can choose between different variant forms (literals) the one that best represents the entity in its own community.
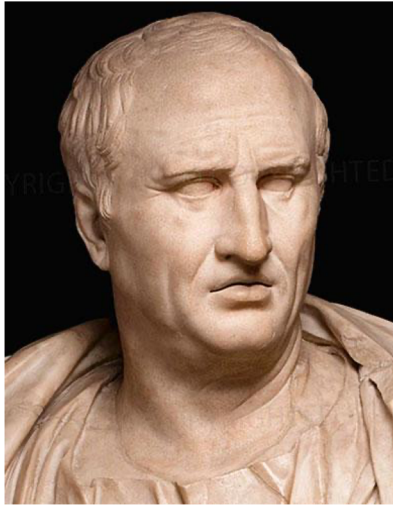
Cicero, Marcus Tullius
(Biblioteca Nazionale Centrale di Firenze)
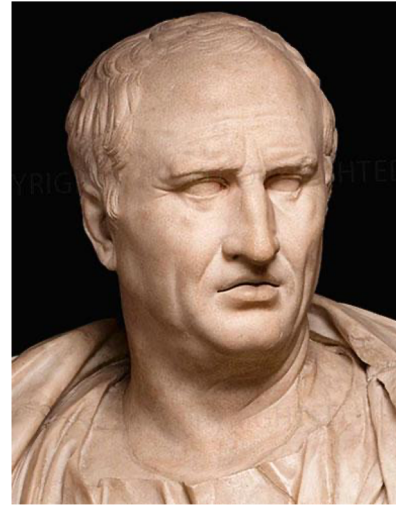
Марк Туллий Цицерон, 106-43 e.Kr.
(National Library of Estonia)

The *Provenance* and its supporting role in tracking the source

The role of the **Provenance** to manage a shared environment (in building or in retrieving the authoritative data) is crucial:

- Ensures that each Institution, as source, takes responsibility for data (data trust);

- Allows institutions to share their data in wider contexts, keeping track of their contributions (data traceability);

- Allows users (professional or end users, as well as machines) to apply filters to select data from specific sources (Application profile).

The *Provenance* and its supporting role in tracking the source

The assertion is not more
"The preferred label" – "is" – "Pirandello, Luigi, 1867-1936"
but
"the Library of Congress says that" "The preferred label" – "is" – "Pirandello, Luigi, 1867-1936".

QUAD

<http://id.loc.gov/authorities/names/n79059944> mads:authoritativeLabel "Pirandello, Luigi, 1867-1936"
<https://share-vde.org/provenance/12> . ← Provenance

<https://share-vde.org/provenance/12> prov-o:wasAttributedTo <http://id.loc.gov/vocabulary/organizations/dlc> .

<http://id.loc.gov/vocabulary/organizations/dlc> rdf:type prov-o:Entity .

<http://id.loc.gov/vocabulary/organizations/dlc> mads:authoritativeLabel "United States, Library of Congress" .

The *Provenance* and its supporting role in tracking the source: it stems the risks inherent the AAA Principle, anyone can say anything about anything

Open borders for wider data sharing

The attention of the entire data production chain, returns to focus on the real and essential information power of the data, structured so as to be universally understood and shared.

In this context, aspects such as the record format are marginalized to express local choices and needs, not at all limiting the ability of the data to convey a global shareable message.

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.

Thanks

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