

Meaningful and Inclusive Access to Information: the Challenges Brought by the Brisbane Declaration to Standardized Metadata in the Context of Linked Data and AI

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ABSTRACT

With the rise of Google and Wikidata as authoritative sources of information for many, with the use of generative Artificial Intelligence, such as Chat GPT, for the creation of new content, and with linked open data as the global means of communication for the Semantic Web, the structuring and dissemination of data has become deprofessionalized. In such a shifting landscape, what is the role of new technologies, such as Artificial Intelligence (AI), in addressing key challenges to the creation of standardized metadata and its dissemination?

The launch of the Brisbane Declaration at the close of IFLA's Information Futures Summit stresses "what principles should apply when taking decisions about the future, highlighting changing knowledge practices, the impacts of new technology, [and] the importance of trust, skills, and equity." Standardized metadata has been the lingua franca of information exchange in the library community since at least the creation of the *Paris Principles*. The popularization of metadata creation, although not challenging the intent of the *Principles* themselves, forces us to reconsider their realization. And new technologies, such as AI and linked open data, give us new opportunities to explore meaningful and inclusive access to information.

KEYWORDS

Bibliographic metadata; Linked Open Data (LOD); Artificial intelligence; Brisbane Declaration.

1. Introduction

In 2017, Tom Nichols published a book entitled *The Death of Expertise: the Campaign Against Established Knowledge and Why it Matters* (Nichols 2017). In his book, Nichols details how the rise of the information age through the integration of the Internet into every aspect of our lives has created a misguided sense of intellectual egalitarianism. Everyone considers themselves to be an expert on everything; and now Artificial Intelligence (AI) is trusted above everything else.

The focus of Nichols' book is on the political arena, but it doesn't take much of a shift to see how his observations might be applied to metadata standards and their role in the development of a sustainable, equitable, and accessible future for information. With the rise of Google and Wikidata as authoritative sources of information for many, with the use of generative Artificial Intelligence, such as Chat GPT, for the creation of new content, and with linked open data as the global means of communication for the Semantic Web, the structuring and dissemination of metadata has become deprofessionalized.

Standardized metadata, however, has been the lingua franca of information exchange in the library community since at least the creation of the *Paris Principles (Statement of Principles 1961)*. The popularization of metadata creation through such tools as WikiData, although not questioning the intent of the *Principles* themselves, forces us to reconsider their realization as technologies, such as AI and linked open data, give us new opportunities to explore the creation of meaningful and inclusive access to information by the general public.

In October of 2024, IFLA held an Information Futures Summit directly confronting some of these issues. One of the outcomes of this meeting was *The Brisbane Declaration* (IFLA 2024) which challenges us to focus on technological change, social justice, and barrier free access to information so that no one faces information poverty or exclusion. Unfortunately, it is not surprising to many of us that our Metadata Departments are overwhelmed with resources in unfamiliar languages, new formats, and sweeping digital collections.

And so, as libraries embrace the exploration of linked open data and Artificial Intelligence in the hopes of providing access to this avalanche of new resources, what ultimately will become the balance of trust and provenance between established metadata standards and a more populist approach to metadata creation and identity management? How do we balance the use and availability of these new tools with our focus on the expertise that professional catalogers bring to the issues of description and discovery through the exacting metadata standards they employ? In exploring this issue, we must first review how and why we currently apply our metadata standards. And then, how *The Brisbane Declaration*, in conjunction with the development of linked open data and Artificial Intelligence, could challenge us to move in completely new directions.

2. History of Metadata Standards Application

This first example may still seem familiar to many, an example of a catalog card:

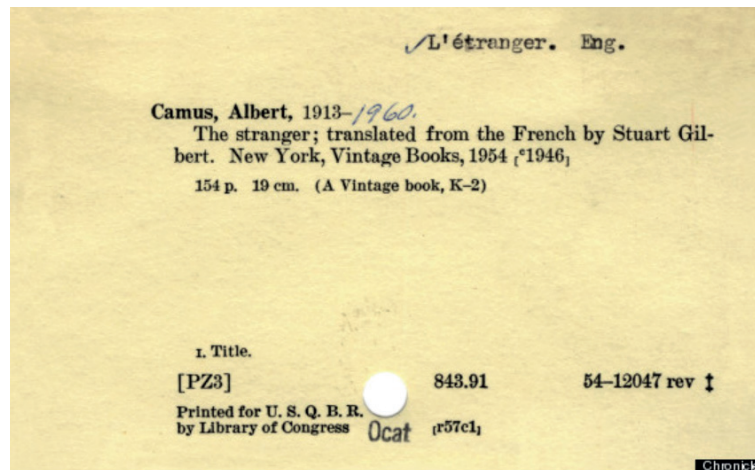


Figure 1. Albert Camus catalog card.

The principle is clear, we review the contents of a resource, in this case a book, and reduce it to a set of required metadata elements. The metadata standards in its creation are very exacting, from the name of the author to the metadata that is captured. This collection of metadata elements, the catalog record, becomes a stand-in, or surrogate, for the physical item. And because the metadata standards that are applied are consistent, we can file them with other similarly created cards to allow for discovery of all the resources in our collection.

But you can already see the downside to this technology. The death date of Albert Camus was added in pen directly to the catalog card. And the Uniform Title for this work was added by typewriter to the top of the card.

In the 1960s, we had the brilliant innovation of the MARC formats.

▼ Metadata

LEADER 00936cam a2200301 i 4500	
001	a319327
003	SIRSI
005	20240311180212.5
008	840606t19541946nyu 000 1 eng d
010	a 72008033
020	a 0394700023
020	a 9780394700021
035	a (Sirsi) ABQ3401
035	a (CStRLIN)CSUG84-B39072
035	a (OCoLC-M)1453514
035	a (OCoLC-I)272297366
040	a NvU c NvU d IaU d OrLoB d CSt
041	1 a eng h fre
100	1 a Camus, Albert, d 1913-1960.
245	1 4 a The stranger / c Albert Camus ; translated from the French by Stuart Gilbert.
260	a New York ; b Vintage Books, c 1954, c1946
300	a 154 p. ; c 18 cm.
500	a Translation of L'étranger.
596	a 1 20 31
700	1 a Gilbert, Stuart.
999	f f i a796a5f7-9044-544e-ac3f-436288606ebe s 139a8c05-eacf-514b-8b07-b5785130ae21

Figure 2. Albert Camus MARC.

Although this was an innovation in technology, it allowed us both to update our metadata in a breathtakingly simpler manner and to share our metadata locally, nationally, and internationally. But for all its advantages in communication, we still only used the MARC formats to represent the catalog card on a computer screen.

And in May of 2011, we had another great shift in technology with the implementation of linked data in the form of BIBFRAME.

```
<https://api.stage.sinopia.io/resource/64aeb7b7-5e9d-4d77-b5c0-172d78ef74fd>
  a bf:Instance, bf:Print;
  bf:instanceOf <https://api.stage.sinopia.io/resource/d64f2339-2bba-44b4-9eb6-7399c071bbe2>;
  bf:title a bf>Title ;
    bf:mainTitle "The stranger" ;
    bflc:nonSortNum "4" .
  bf:responsibilityStatement "Albert Camus ; translated from the French by Stuart Gilbert"@en;
  bf:provisionActivity a bf:Publication ;
    bf:date "1954";
    bf:place "New York (State)";
    bflc:simplePlace "New York"@en;
    bflc:simpleAgent "Vintage Books"@en;
    bflc:simpleDate "1954".
  bf:copyrightDate "©1946";
  bf:identifiedBy a bf:Isbn;
    rdf:value "9780394700021", rdf:value "0394700023" .
  bf:extent a bf:Extent ;
    dfs:label "154 pages"
  bf:dimensions "18 cm";
  bf:issuance a bf:Issuance ;
    rdfs:label "single unit" .
  bf:media a bf:Media ;
    rdfs:label "unmediated" .
  bf:carrier a bf:Carrier ;
    rdfs:label "volume" .
  bf:adminMetadata a bf:AdminMetadata;
    bflc:catalogerId "NancyL";
    bf:creationDate "2025-01-06";
    bf:assigner a bf:Agent ;
      rdfs:label "Stanford University" .
    bflc:encodingLevel "full" ;
    bf:descriptionConventions a bf:DescriptionConventions;
      rdfs:label "Resource description and access"@en.
  bf:descriptionLanguage "English".
```

Figure 3. Albert Camus BIBFRAME.

This change would allow library metadata to break free of its limitation to library discovery environments and allow it to become integrated with a wide world of information on the Web.

And while we had these shifts in communication technology, we also had major shifts in descriptive practice, from AACR1 to AACR2 to RDA and to Official RDA.

But at heart, there has been no change in how we approach access to library resources, whether the descriptions are created according to AACR2 or Official RDA, or whether we capture the information as MARC or as BIBFRAME. We create an individual metadata surrogate for every individual resource in our collections and we integrate them into similarly created descriptions for discovery.

But is this approach scalable? Given the rise of the internet and digital resources, the potential items to be added to our collections have shattered the idea of a curated collection. There are nearly an infinite number of resources available in every language on earth. Although new techniques such as entity extraction and generative Artificial Intelligence can help us with issues of scale, perhaps there is a better path we should follow.

Libraries, by nature, are conservative institutions. Although they make the shift to new technologies, they use them to recreate models with which they are comfortable:

- They used Machine Readable Cataloging, or MARC, to replace the printed catalog card.
- They used BIBFRAME to replace the MARC record.
- They look to new tools such as entity extraction and generative Artificial Intelligence to help them with issues of scale in their traditional catalog models.

But they fail to question whether the system of creating bibliographic surrogates for every item in their collections is the real problem; whether this conceptual framework itself is what should be replaced. Is it ever possible to achieve *The Brisbane Declaration's* goal of the elimination of information poverty and exclusion by following our current practices?

3. Challenges Posed by Linked Open Data

One alternative approach would be to explore the connections between facts captured in library resources themselves through the use of linked open data and avoid the creation of a catalog record completely. As an example, I'd like to briefly talk about a project at Stanford called Know Systemic Racism, or KSR. The goal of KSR is well defined: to gather and share data that show how the interconnected systems of Racism work against the Black community in the State of California.

In September of 2020, Stanford began its first ambitious project in response to the global Black Lives Matter movement, an exhibit called *Say Their Names – No More Names*. KSR is an outgrowth of this first effort. It is designed to help people discover factual data about interconnected systems that pose threats to people of African descent in the United States.

The data within KSR is derived from Police Manuals, California legislation, and news events. It would be possible for the library to catalog each of the individual resources collected for KSR and create metadata surrogates for them, but the power of the collection lies in the interconnection of the data contained within the resources, not the limited and arbitrary metadata we might assign.

The graph data structure reveals the relationships, or links, between nodes. This linking structure makes it possible to connect different sources and resources that would otherwise be held apart within the library. Stanford Libraries is collecting California legislation records and California law enforcement agency policy manuals. What effect do these laws and policies have on our society? On the lives of individuals? The knowledge graph helps reveal those connections.

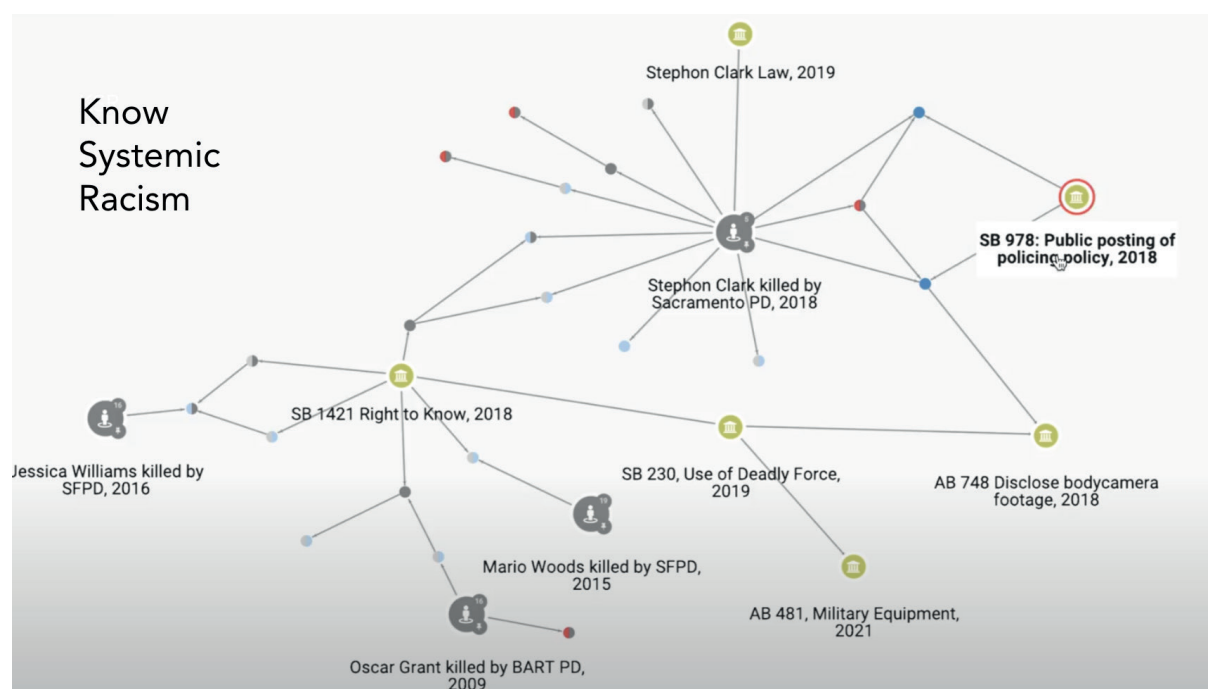


Figure 4. Know Systemic Racism as an example of Linked Open Data

Near the center of the graph, you can see the node representing the murder of Stephon Clark by the Sacramento police in 2018. By following the links in the graph, you can discover statements in police policy manuals that justified the force used in the killing, legislation created in response to the killing, such as the Stephon Clark Law in 2019 or the need to Disclose Body camera Footage in 2018, and other similar killings by Police Officers.

By relying simply on metadata created for each individual resource in this collection, you would never discover how intimately key data points in those resources relate to each other.

4. Challenges Posed by Artificial Intelligence

Another intriguing possibility is created by the combination of data disaggregation combined with the power of generative Artificial Intelligence. By aggregating data from many sources, as is traditional in library catalogs, we may obscure truths about underrepresented groups and perpetuate the myth of the majority. By disaggregating data, however, we can help researchers, community members, and policy makers better understand the needs of marginalized groups.

One experiment we have tried at Stanford is to focus a chatbot on a single repository, in this case, Black @ Stanford. The Black @ Stanford Anthology, a collaboration of Stanford's Black Community Services Center and the Stanford Archives, has the goal of gathering archival documentation and information to showcase the history of Black activism and community at Stanford. By working with an open-source version of a Chatbot, and by focusing it to look exclusively at a source of your choosing, in this case Black@Stanford, you can ensure that the voices of those in that archive are highlighted.

By accessing the search interface, anyone is able to ask questions of the interviews with Black Stanford students and faculty from the University Archives. And so, when you ask a generic question like “What was it like in 1968 at Stanford,” you get an answer derived from those interviews.

Ask the Black@Stanford Exhibit

Enter your question here

What was it like in 1968 at Stanford?

In 1971, Charles James Ogletree Jr. arrived at Stanford as a freshman and interacted primarily with other African American students in Roble Hall. The civil rights movement and the need to implement the rights granted in the Civil Rights Act of '64 and the Voting Rights Act of '65 influenced the university and students, who were absorbed with the need to push forward and solidify what had come through that legislation. The notion of diversity was also in the air, and the idea of affirmative action was very strong in the climate of that particular time.

Sources:

https://stacks.stanford.edu/file/druid:ty043xh1985/ty043xh1985_script.pdf, https://stacks.stanford.edu/file/druid:qm458gt7082/qm458gt7082_script.pdf

Figure 5. Black@Stanford as an example of Generative Artificial Intelligence

By using this technique, we can help researchers, community members, and policy makers better understand the needs of all communities by highlighting the voice of those underrepresented groups. By focusing on open data and data disaggregation, we can help mitigate information privilege and sharpen the focus on social justice and information integrity as highlighted by *The Brisbane Declaration*.

5. Conclusion

We are at a crossroads in the world of traditional metadata standards. New tools such as Artificial Intelligence and linked open data have given us opportunities to turbocharge our traditional metadata practices. Far from taking our jobs, they can make impossible jobs possible once again. But is that the direction in which we should move? The creation of metadata surrogates for every individual resource in our collections is an impossible task given the overwhelming amount of information available to us. Traditional cataloging has reached its limit.

Instead of using new tools to support old models, we should break free from those traditional methods and move into a new world of discovery based on the best opportunities those new tools offer us. Let us not make our repeated mistake of using a new technology to recreate the old world of catalog records as we move into a new world based on Artificial Intelligence and linked open

data. Faced with the power these tools bring to the World of Information Technology, what guidance can be brought from the World of Standards to make sure that they are used in a meaningful, inclusive, and sustainable way.

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