ESSUG User Day 2023

Linköping – 26 April

Richard Burkitt,
Director of Innovation,
EBSCO

Open Data & BIBFRAME

Library collections today

Libraries have rich and diverse collections, but today:

- Library collections are not visible anywhere on the Web
- Library collections are not connected to other data sources on the Web

As a result:

- Users have fewer access points and pathways to information
- Library collections miss out on usage (new visitors from the Web)
- Library collections lack potential enrichments and connections to many topics, places, people, etc. that the Web has to offer

How do we over come these challenges,
accelerate research
and help users gain new insights

Accelerate research

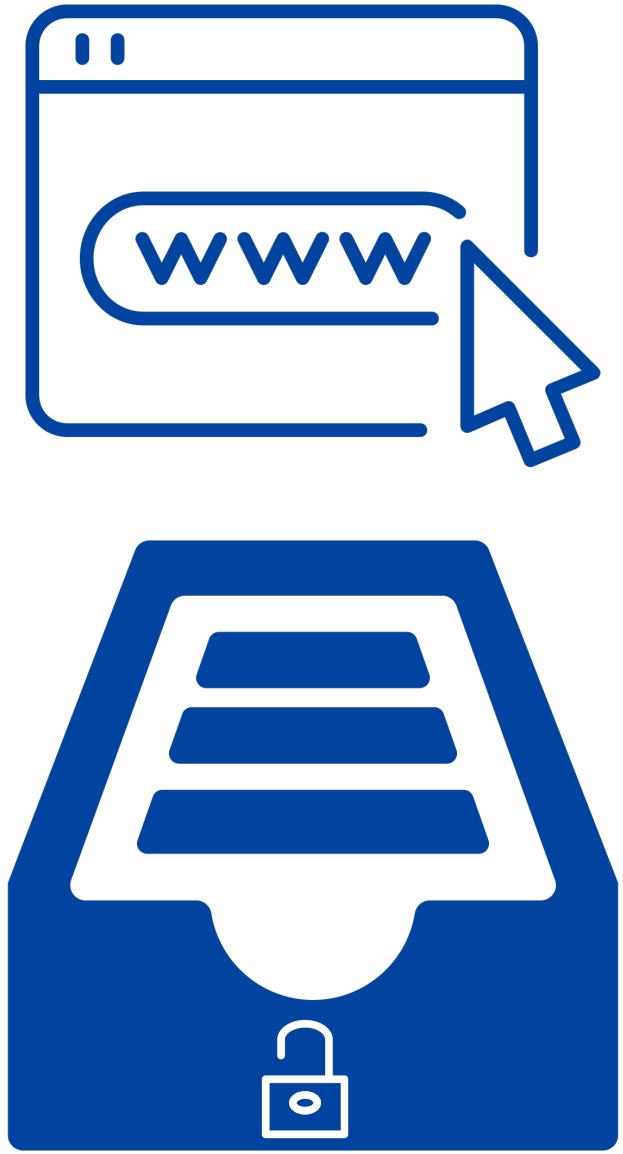
Creating *new pathways* to information by meeting users where they are.

Creating *new insights* by making relationships between people, places, disciplines, etc. more visible.

Library collections today

000		00778cam a2200253u 4500
001		6888761
005		20090112073138.0
008		830721s1934 nyua 000 0 eng
906	__	|a 0 |b cbc |c premunv |d u |e ncip |f 19 |g y-gencatlg
035	__	|9 (DLC) 34027294
010	__	|a 34027294
040	__	|a DLC |c CarP |d DLC
050	00	|a AC35 |b .E52
100	1_	|a Einstein, Albert, |d 1879-1955.
240	10	|a Mein Weltbild. |l English
245	14	|a The world as I see it.
260	__	|a New York, |b Covici, Friede, |c 1934.
300	__	|a xvi p., 1 l., |b 19-290 p. diagrs. |c 21 cm.
650	_0	|a Physics.
650	_0	|a Jews.
650	_0	|a Peace.
700	1_	|a Harris, Allan, [from old catalog] |e tr.
991	__	|b c-GenColl |h AC35 |i .E52 |t Copy 1 |w PREM
991	__	|b c-GenColl |h AC35 |i .E52 |p 00026241947 |t Copy 2 |w CCF

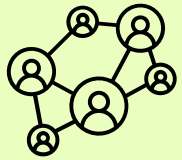
- Catalogues (MARC)
- Repositories (DC)
- Archives (EAD)



transform

Make catalogues portable, visible and connected on the Web

BiblioGraph
Using BIBFRAME to connect, enrich and publish library resources on the Web



Connect

- all works by and about an author / researcher / faculty
- works within a genre,
- works about a place, etc.

Enrich

with information about the author / researcher / faculty: alternative names, date of birth, occupation, areas of study, political affiliations, etc.

Publish

anywhere on the World Wide Web:

- Learning Management System,
- IR,
- department website,
- And many more

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Example: how we use MARC to create BIBFRAME

Let's look at the Einstein example…

MARC

000		00778cam a2200253u 4500
001		6888761
005		20090112073138.0
008		830721s1934 nyua 000 0 eng
906	__	|a 0 |b cbc |c premunv |d u |e ncip |f 19 |g y-gencatlg
035	__	|9 (DLC) 34027294
010	__	|a 34027294
040	__	|a DLC |c CarP |d DLC
050	00	|a AC35 |b .E52
100	1_	|a Einstein, Albert, |d 1879-1955.
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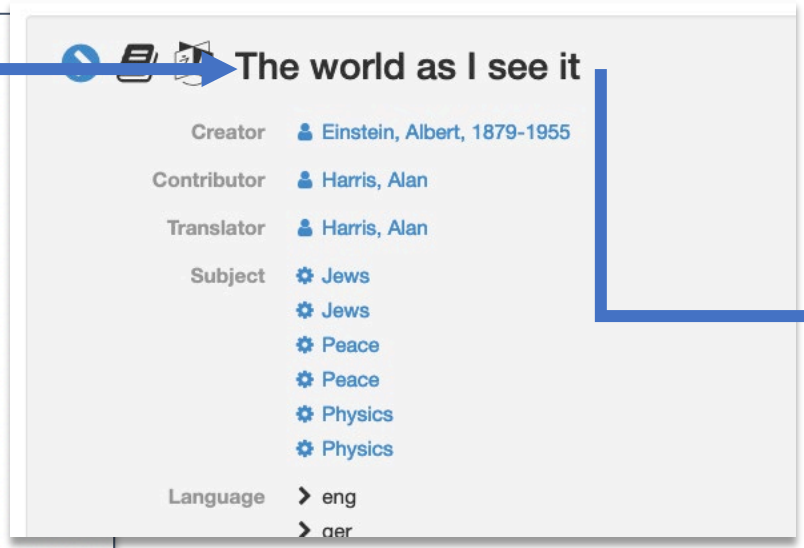
300	__	|a xvi p., 1 l., |b 19-290 p. diagrs. |c 21 cm.
650	_0	|a Physics.
650	_0	|a Jews.

BIBFRAME




```
"@id": "http://link.dclibrary.org/resource/aJlUtrP9HWg/",
"@type": "CreativeWork",
```

Transforming MARC to BIBFRAME resources.
each resource becomes a link that serves as a unique identifier

Example: how we use MARC to create BIBFRAME

Let's look at the Einstein example…

MARC

000		00778cam a2200253u 4500
001		6888761
005		20090112073138.0
008		830721s1934 nyua 000 0 eng
906	__	|a 0 |b cbc |c premunv |d u |e ncip |f 19 |g y-gencatlg
035	__	|9 (DLC) 34027294
010	__	|a 34027294
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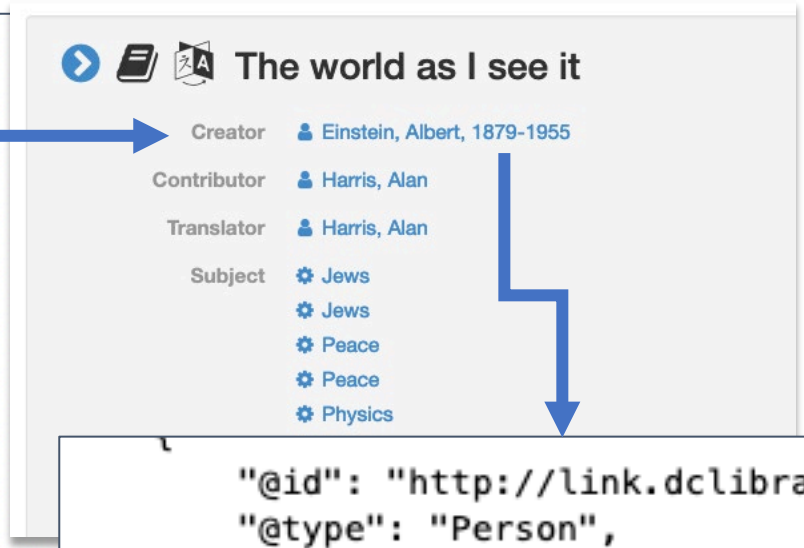
BIBFRAME

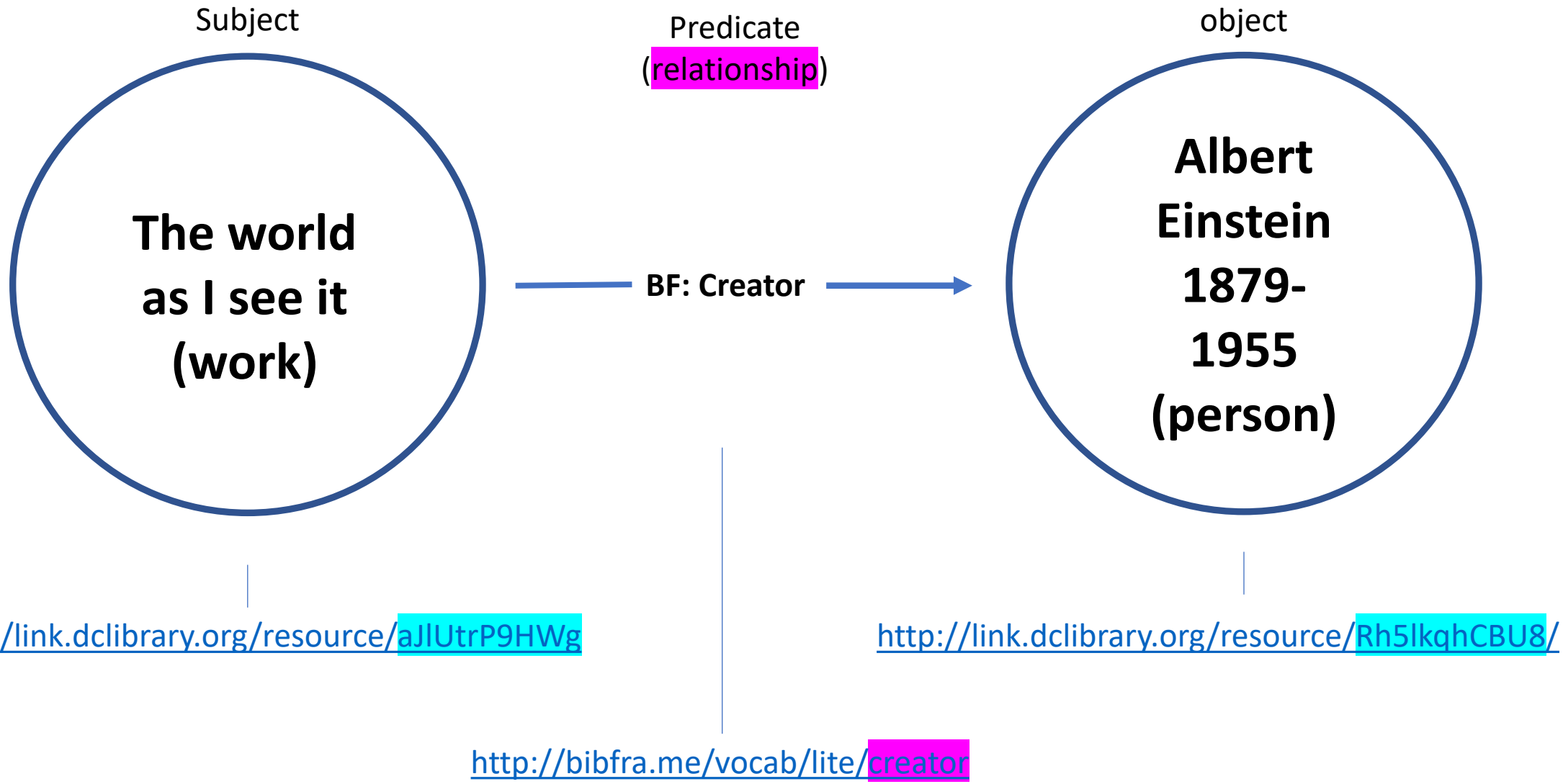



```
{
    "@id": "http://link.dclibrary.org/resource/Rh5lkqhCBU8/",
    "@type": "Person",
    "name": "Einstein, Albert, 1879-1955",
    "url": "http://link.dclibrary.org/resource/Rh5lkqhCBU8/"
}
```

Transforming MARC to BIBFRAME resources.
each resource becomes a link that serves as a unique identifier

Example: using BIBFRAME resources to create relationships

Each resource is a link. The relationship is a link as well.

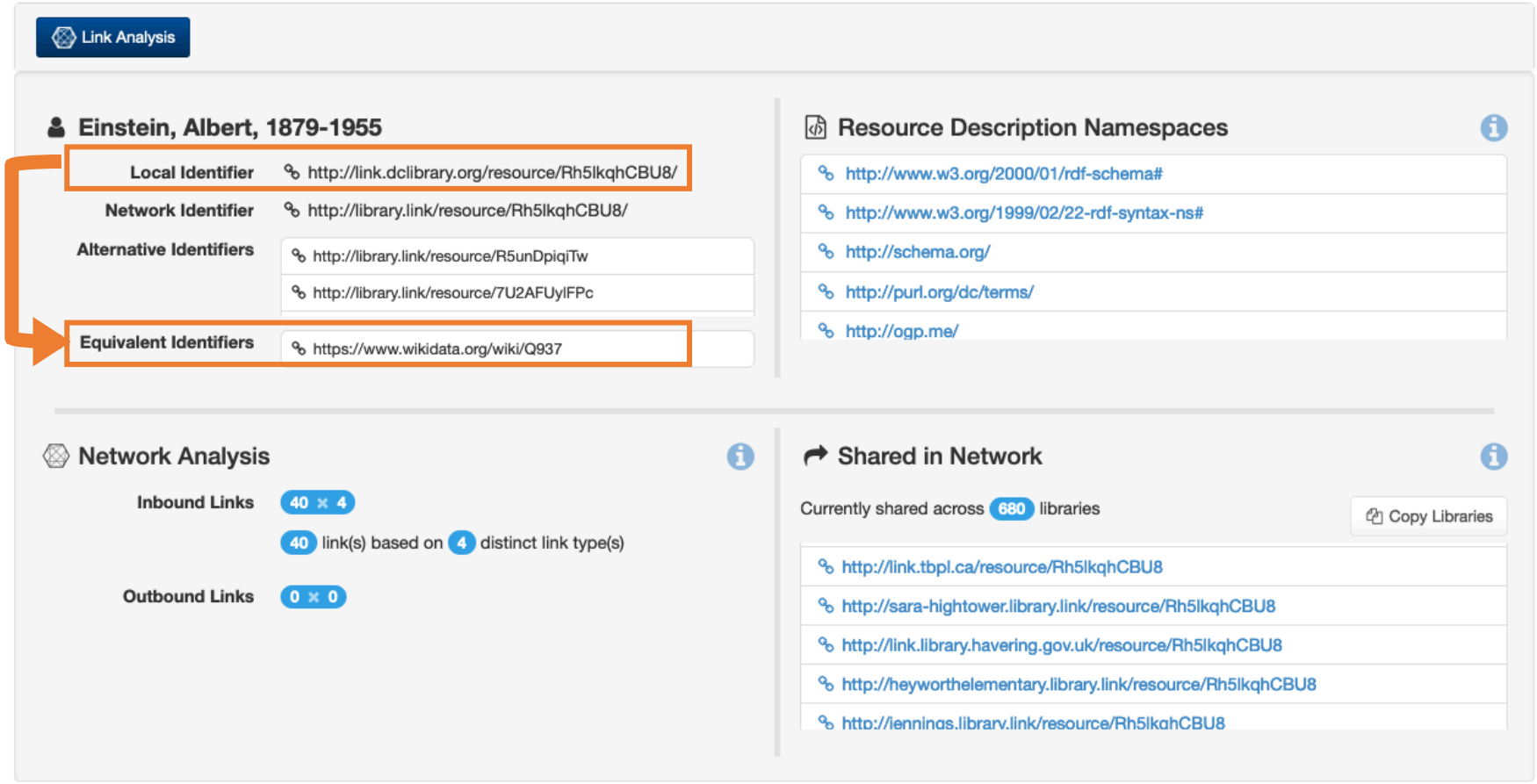


Example: Using BIBFRAME for resource enrichment

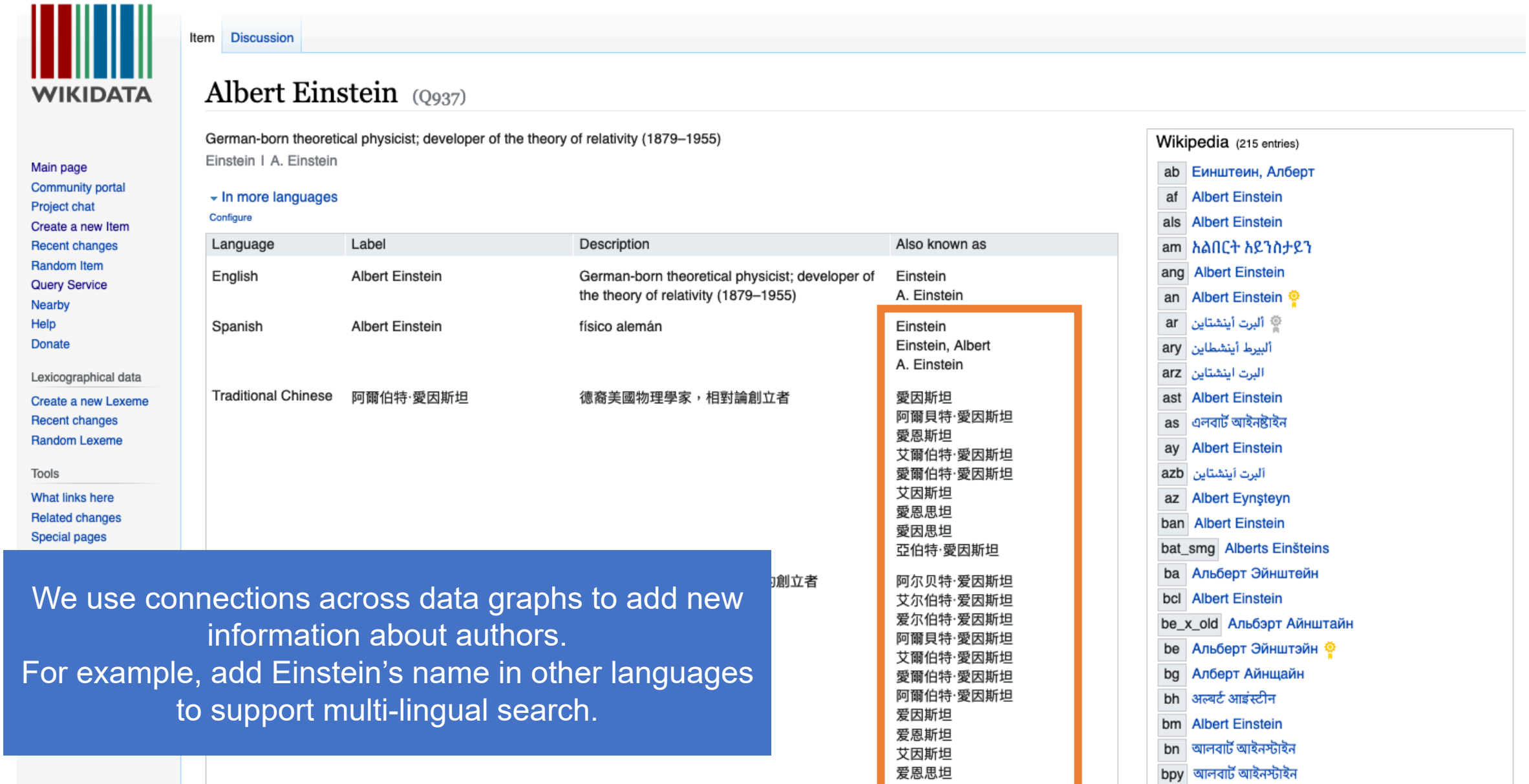
Our service intelligently maps links (local identifiers) to equivalent identifiers in other graphs.

We use these mappings to pull in additional data about the person, item, etc.

Example: enriching the 'person' with **WikiData**.



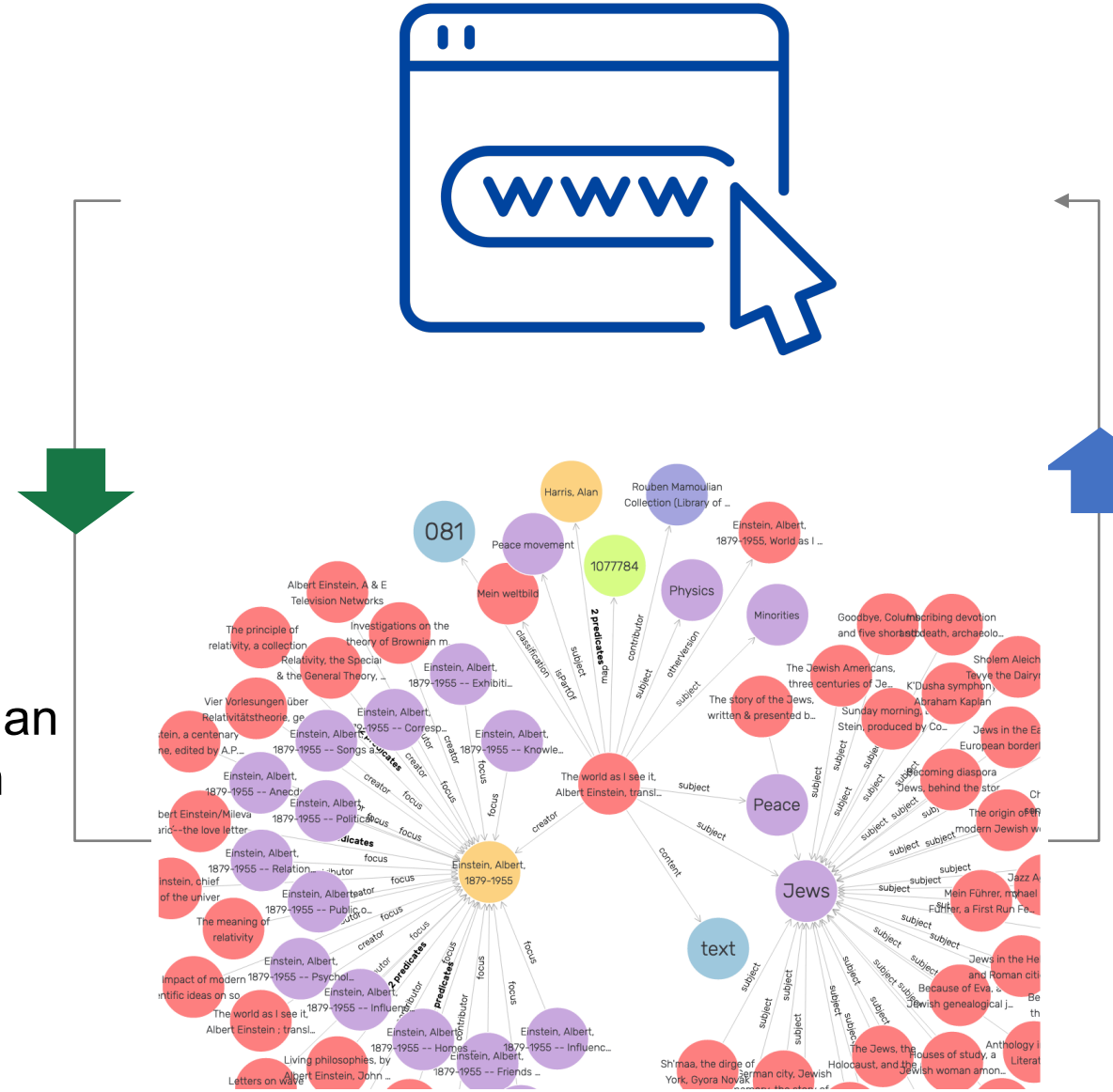
Example: Using BIBFRAME for resource enrichment



We use connections across data graphs to add new information about authors.
For example, add Einstein's name in other languages to support multi-lingual search.

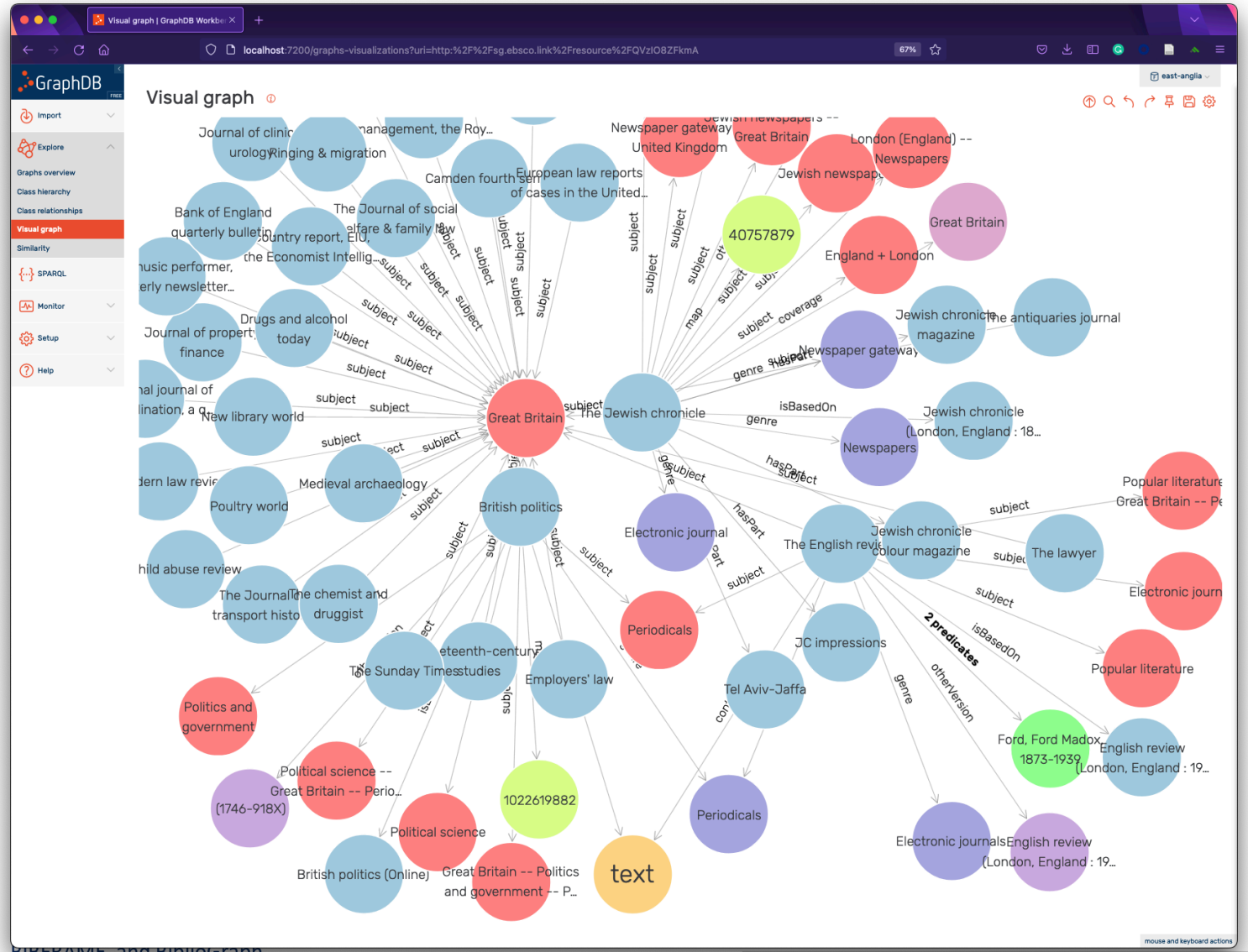
Connect

catalogues to other catalogues
and data sources within an ever-expanding graph



transform

Collection development and visualisation



Test data used with kind permission of UEA

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How can libraries use Linked Data today?

Google Syndication (>50% pop.)

- Problem - MARC is 57 years old. It doesn't speak to the web.
- Sending library catalogue data to Google: a single click from Google, into the library catalogue
- Enable paths to the library's catalogue so users can find and request items:
  - Provide "borrow" action at the right side desktop search results
  - Provide "get the book" option inside Google Books
  - Over time improves regular Google search results

The Meaning of Relativity

By Albert Einstein, Albert Einstein · 2003

Preview | Search inside | + Add to my library

Overview | Get the book | Other editions | Publisher collection | More by author | Similar books

About this edition

ISBN:	9781134449781, 113444978X	Page count:	192
Published:	February 6, 2003	Format:	Ebook
Publisher:	Taylor & Francis	Language:	English
Author:	Albert Einstein		

Create Citation

The world would be a very different place if it were not for Albert Einstein. Like Newton and Galileo before him, this remarkable scientist changed forever mankind's understanding of the universe. In 1921, five years after proclaiming his general theory of relativity, Einstein was awarded the Nobel Prize for Physics in recognition of his remarkable achievements. In the same year he travelled to the United States to give four lectures that consolidated his theory and sought to explain its meaning to a new audience. These lectures were published the following year as The Meaning of Relativity, which he revised with each new edition until his death. It remains a key work for anyone wishing to discover at first hand the workings of one of the most inspiring minds of the twentieth century. T...

Source: Publisher

More about this edition

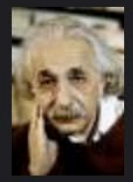
About the work

Originally published: 1922

Subject: Philosophy / General, Science / Philosophy & Social Aspects, Relativity (Physics)

Author

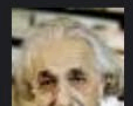
Albert Einstein
Theoretical physicist



Albert Einstein (1879-1955). Described in his obituary in The Times as 'the greatest scientist of modern times.'

Search Albert Einstein

Albert Einstein
Theoretical physicist



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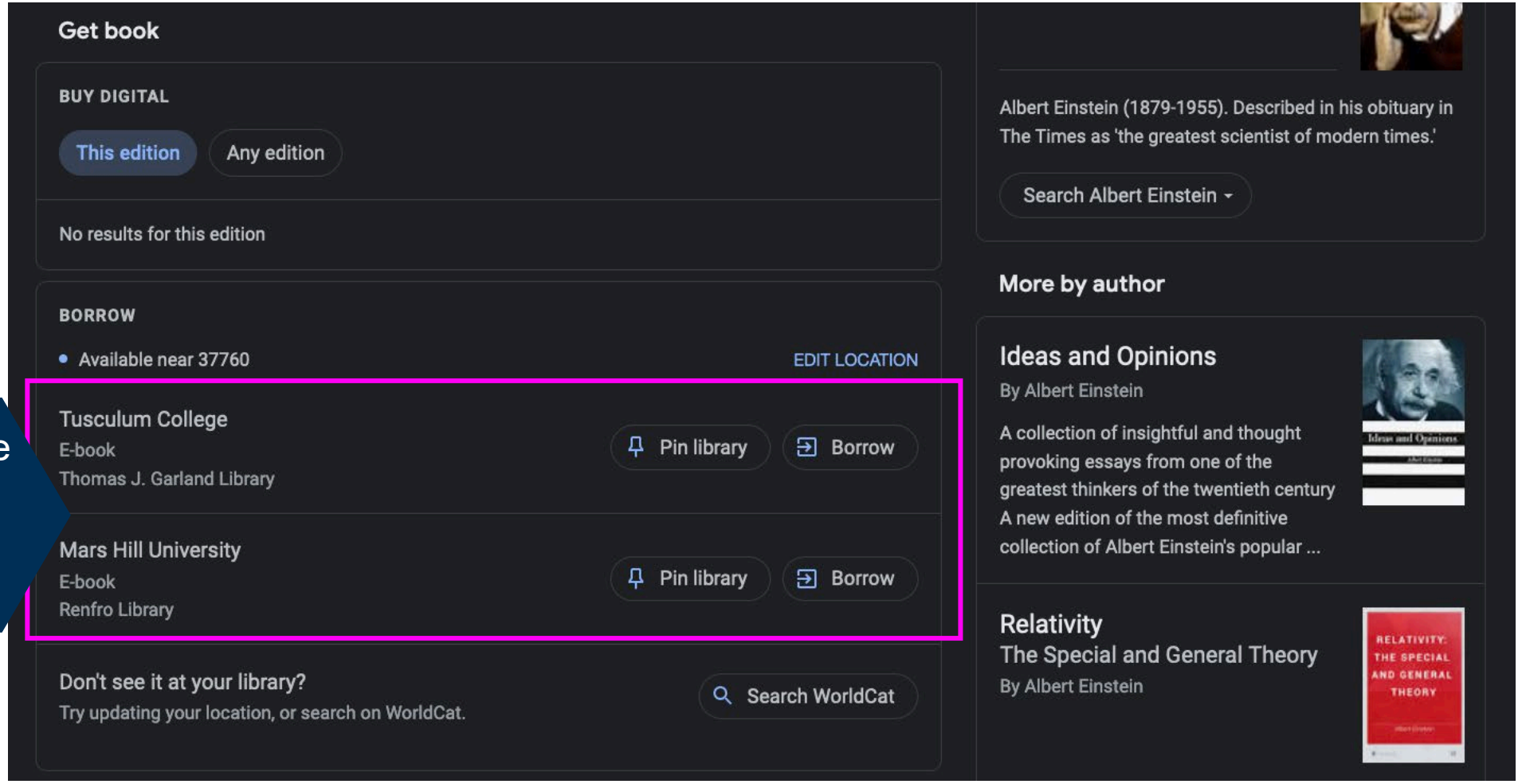
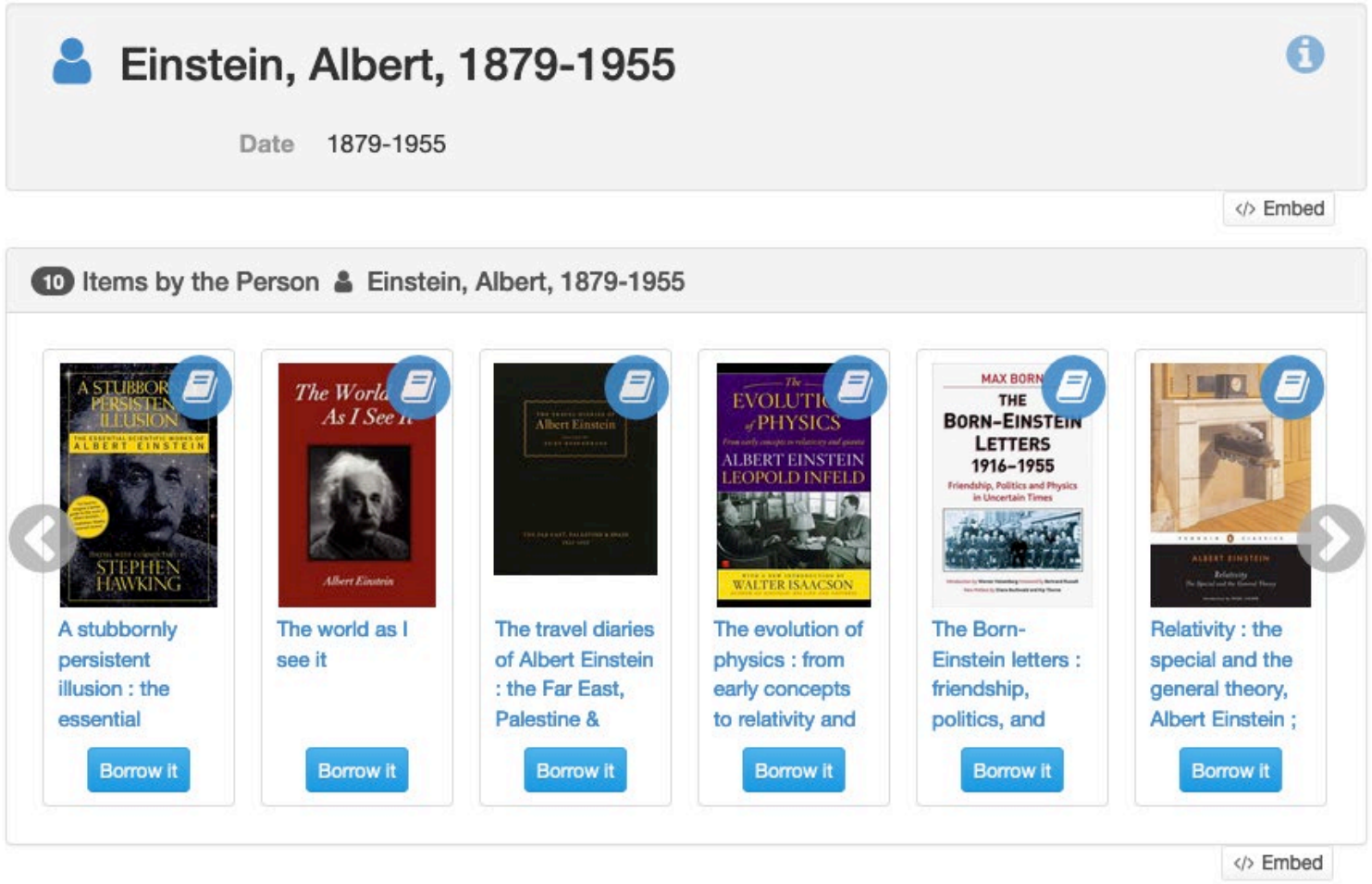
Syndicating data to Google via BiblioGraph provides borrow actions inside Google Books

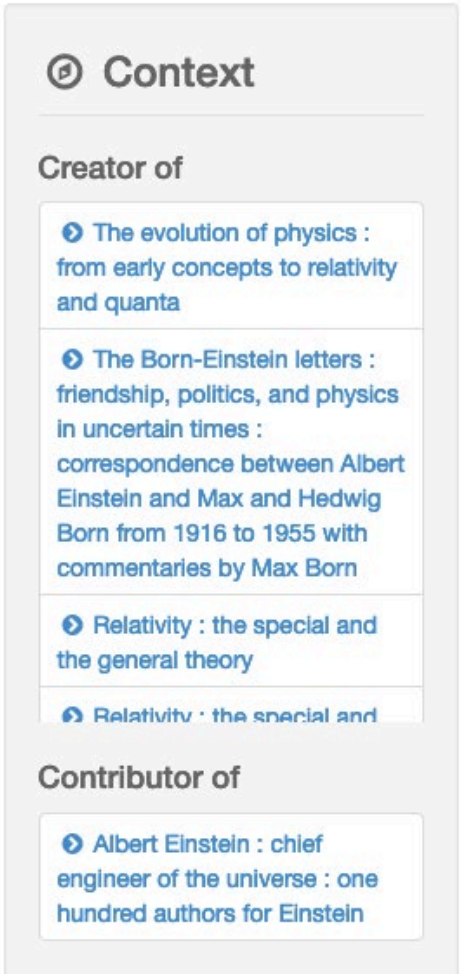


Publishing resources on websites / applications

- Publish micro-collections on specific topics to the Web
- e.g., publish:
  - All books by Albert Einstein
  - All books about Albert Einstein
  - Collections on ‘artificial intelligence and law”
- Publish to LibGuides, news sites, blogs, etc.
- Drive usage back to the library’s catalogue

BiblioGraph shows connected resources in knowledge panels



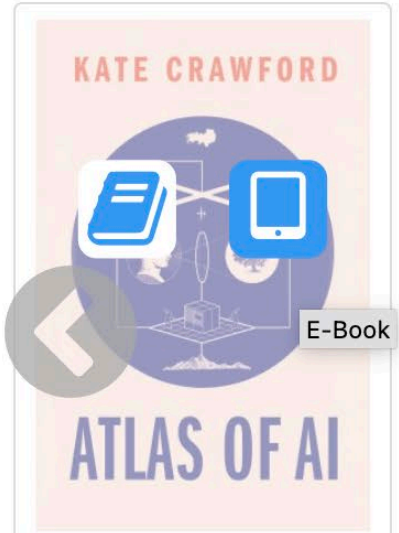


Selected Online Reading on Artificial Intelligence and Law

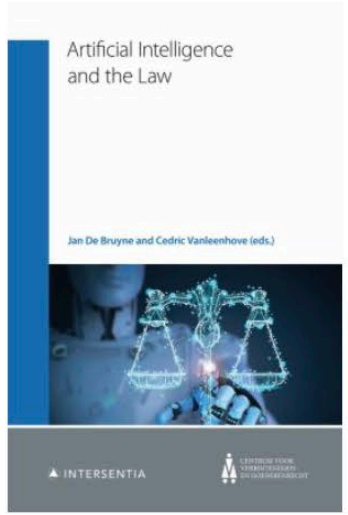
Find a list of selected books, electronic books and articles, online databases, newswires and training sessions to enhance your knowledge from home.

Home
- Books on the topic
- Overview
- Aspects of Artificial Intelligence
- Access to sources

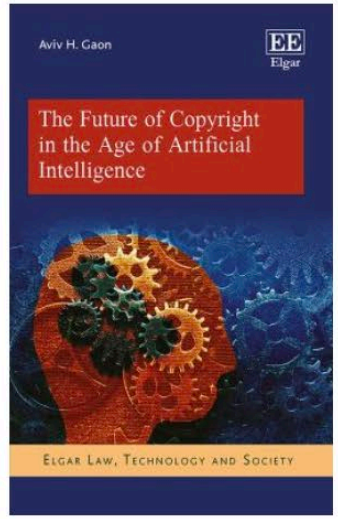
E-books
E-articles
Databases and Newsletters
Online training
EPRS publications
Related guides



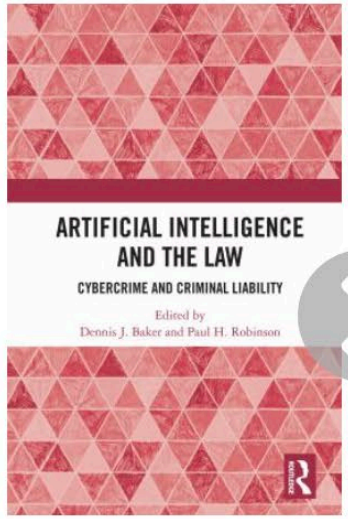
Atlas of AI



Artificial Intelligence and the Law



The Future of Copyright in the Age of Artificial Intelligence



Artificial Intelligence and the Law: Cybercrime and Criminal Liability

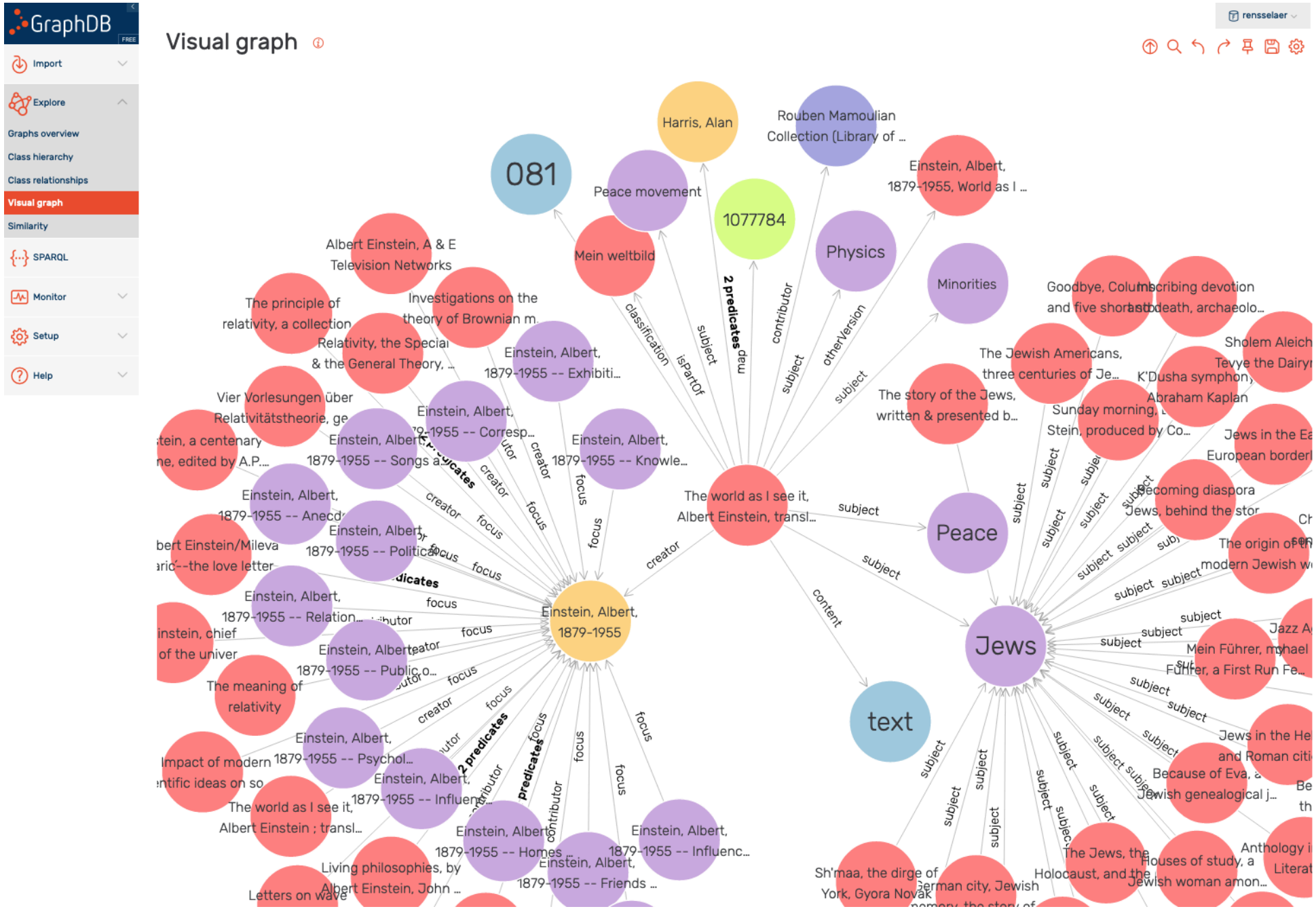
Overview

The Library has prepared compilations of selected reading material and information sources on specific topics. These compilations bring together books, e-books, e-articles, databases, e-journals, newswires and other useful resources selected by Library colleagues

Search in EP Library Catalogue

Visually illustrate the library collection

- Leverage bulk BIBFRAME download (in n-triples format, a common RDF format)
- Use end-point or flat file to combine specific collections e.g., all works tied to an author
  - Visually illustrate the books and articles that the library holds
  - Showcase the new insights libraries can get from using BIBFRAME for catalogue data
  - Demonstrate how the library holds ‘big data’ with rich connections to optimize research for its users


GraphDB
FREE
Import
Explore
Graphs overview
Class hierarchy
Class relationships
Visual graph
Similarity
SPARQL
Monitor
Setup
Help
Visual graph
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Harris, Alan
Rouben Mamoulian Collection (Library of ...
Peace movement
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Einstein, Albert, 1879-1955, World as I ...
Mein weltbild
Physics
Minorities
Albert Einstein, A & E Television Networks
The principle of relativity, a collection
Investigations on the theory of Brownian m...
Relativity, the Special & the General Theory, ...
Einstein, Albert, 1879-1955 -- Exhibiti...
Vier Vorlesungen über Relativitätstheorie, ge...
Einstein, Albert, 1879-1955 -- Corresp...
Einstein, Albert, 1879-1955 -- Songs a...
Einstein, Albert, 1879-1955 -- Knowle...
Einstein, Albert, 1879-1955 -- Anecd...
Einstein, Albert, 1879-1955 -- Political...
Einstein, Albert, 1879-1955 -- Relation...
Einstein, Albert, 1879-1955 -- Public o...
The meaning of relativity
Einstein, Albert, 1879-1955 -- Psychol...
Impact of modern ...ntific ideas on so...
Einstein, Albert, 1879-1955 -- Influenc...
The world as I see it, Albert Einstein ; transl...
Einstein, Albert, 1879-1955 -- Homes ...
Einstein, Albert, 1879-1955 -- Influenc...
Einstein, Albert, 1879-1955 -- Friends ...
Living philosophies, by Albert Einstein, John ...
Letters on wave
The world as I see it, Albert Einstein, transl...
Einstein, Albert, 1879-1955
Peace
Jews
text
The story of the Jews, written & presented b...
The Jewish Americans, three centuries of Je...
Goodbye, Colum... and five shorts...
Inscribing devotion ...death, archaeolo...
Sholem Aleich... Tevye the Dairy...
K'Dusha symphony, Abraham Kaplan
Sunday morning, ... Stein, produced by Co...
Jews in the Ea... European border...
Becoming diaspora Jews, behind the stor...
The origin of th... modern Jewish w...
Jazz A...
Mein Führer, m... Führer, a First Run Fe...
Jews in the He... and Roman citi...
Because of Eva, a Jewish genealogical j...
Anthology i... Literat...
Houses of study, a Jewish woman amon...
The Jews, the Holocaust, and the ...
Sh'maa, the dirge of York, Gyora Novak
German city, Jewish
classification
isPartOf
subject
2 predicates
contributor
otherVersion
creator
focus
content

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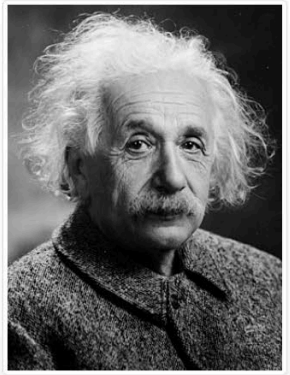
Enrich library resources

- For example, add WikiData to authors (e.g., image, birth date, professional affiliations)
- For example, add ORCID data to authors (e.g., an author's past employment)
- Embed author data, including library resources (books published by and about faculty) and additional data on faculty or university pages

Enrichments can be added to resources in knowledge panels

Library Knowledge Graph - University of Melbourne Library

Einstein, Albert, 1879-1955 *German-born theoretical physicist; developer of the theory of relativity (1879–1955)*



Albert Einstein Head

Albert Einstein

German-born theoretical physicist; developer of the theory of relativity (1879–1955)

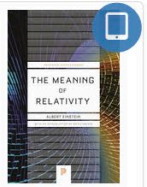
Name:	Albert Einstein
AKA:	Einstein, A. Einstein
Born:	March 13, 1879 in Ulm
Died:	April 17, 1955 in Princeton
Cause of death:	Natural causes (Abdominal aortic aneurysm)
Remains:	National Museum of Health and Medicine
Occupation(s):	Physicist
Citizenship:	German Empire
Gender:	Male
Politics:	German Democratic Party
Religion:	Pantheism

Learn more about Albert Einstein at

- Wikipedia
- Open Library
- IMDB
- Encyclopædia Britannica

88 Items by Albert Einstein at the University of Melbourne Library

Die Grundlagen der Einsteinschen Gravitationstheorie, von Erwin Freundlich : mit



The meaning of relativity : including the relativistic theory of the non-

The genesis of general relativity : the promise of mathematics, Volume 4.

The Meaning of relativity, Albert Einstein, (electronic resource)

Sidelights on Relativity, Albert Einstein, (electronic resource)

Geometrie und Erfahrung : erweiterte Fassung des Festvortrages

Relativity : the special & the general theory; a popular exposition.

192 Items about Albert Einstein at the University of Melbourne Library

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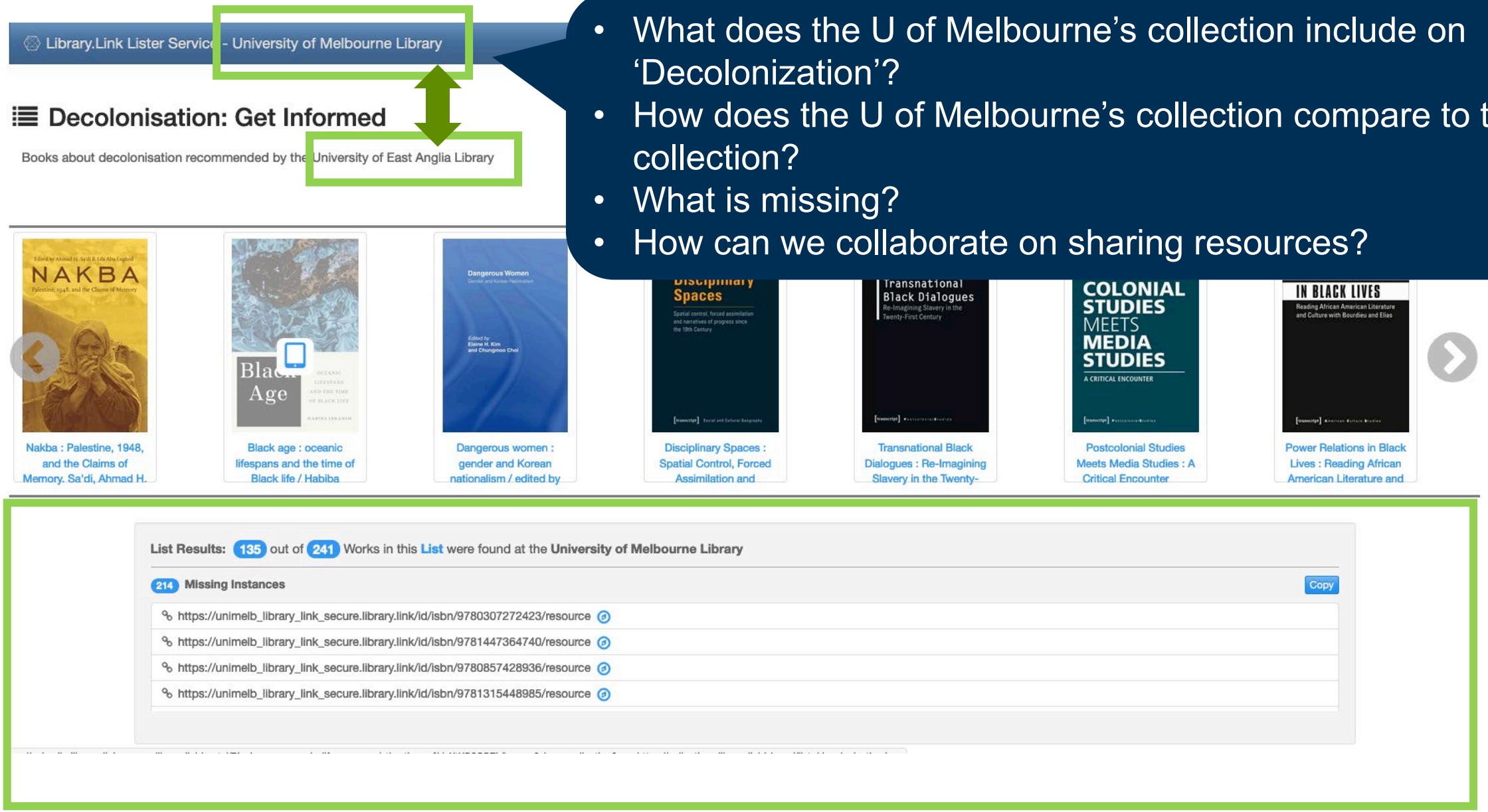
Understanding gaps in library collections

- With BiblioGraph, libraries join the Library.Link Network of connected catalogues
- Libraries can see what they hold and what may be missing from the collection:
  - View in comparison to other libraries
  - Leverage for resource sharing
  - Leverage for resource acquisitions



- What does the U of Melbourne's collection include on 'Decolonization'?
- How does the U of Melbourne's collection compare to the UAE's collection?
- What is missing?
- How can we collaborate on sharing resources?

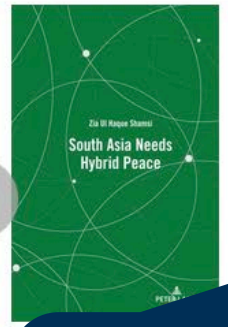
Library.Link Lister Service - University of Melbourne Library

Asian Studies Books Recommended by GOBI (Basic Recommended)

GOBI Library Solutions provides academic print books, e-books and collection development services to scholarly libraries and consortia worldwide

Compare your collections to GOBI recommendations

List Preview



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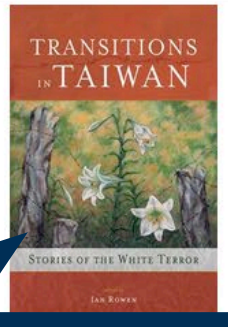
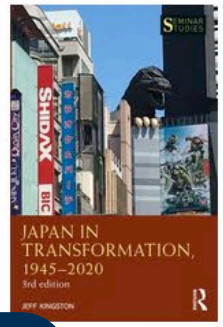
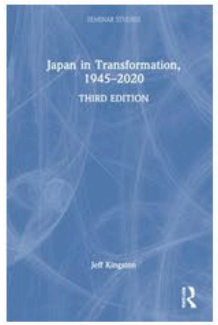
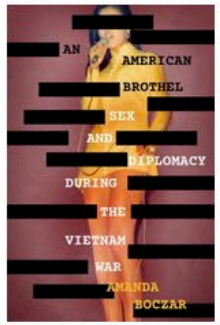




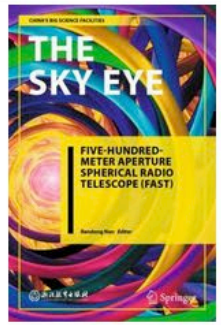
sformation, 1945-2020,



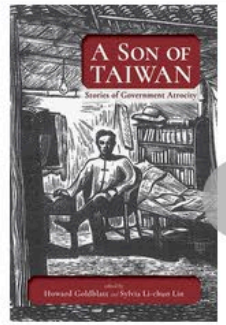
Japan in transformation, 1945-2020, Jeff Kingston



An American brothel : sex and diplomacy during the Vietnam War,



The Sky Eye : Five-hundred-meter Aperture Spherical Radio Telescope



A son of Taiwan : stories of government atrocity, edited by

See what the library currently holds

he University of Melbourne Library

Copy

https://unimelb_library_link_secure.library.link/id/isbn/9780197538890/resource
https://unimelb_library_link_secure.library.link/id/isbn/9788857245614/resource
https://unimelb_library_link_secure.library.link/id/isbn/9788194126041/resource
https://unimelb_library_link_secure.library.link/id/isbn/9781774150412/resource

See what's missing and order items from GOBI

EBSCO

Catalogue improvement

For FOLIO libraries (*coming soon*)

- Improve existing catalogue records in FOLIO
- e.g., author data (alternate names, birth and death dates, etc.)

1 Use MARC to create BIBFRAME

```
<marc:datafield tag="100" ind1="1" ind2=" ">
  <marc:subfield code="a">Allende, Isabel</marc:subfield>
  <marc:subfield code="d">1942-</marc:subfield>
  <marc:subfield code="e">Autora</marc:subfield>
</marc:datafield>
```

Isabel Allende

Fuller Name

- Allende Bussi

Variants

- Allende Bussi, María Isabel
- Bussi, María Isabel Allende
- Allende Bussi, Isabel
- Bussi, Isabel Allende

2 Connect with other catalogues and authority services.

3 Syndicate to the web

Blackboard

LibGuides

Google

4 Add improved MARC records back to your catalogue

folio

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Isabel Allende
from
UdeC's catalogue

Use Data Import to send MARC updates via API (new data in blue)

```
<marc:datafield tag="100" ind1="1" ind2=" ">
  <marc:subfield code="a">Allende, Isabel</marc:subfield>
  <marc:subfield code="d">1942-</marc:subfield>
  <marc:subfield code="e">Author.</marc:subfield>
  <marc:subfield code="0">http://id.loc.gov/authorities/names/n8405351</marc:subfield>
</marc:datafield>
<marc:datafield tag="245" ind1="1" ind2="3">
  <marc:subfield code="a">El cuaderno de Maya /</marc:subfield>
  <marc:subfield code="c">Isabel Allende.</marc:subfield>
</marc:datafield>
<marc:datafield tag="264" ind1=" " ind2="1">
  <marc:subfield code="a">Santiago, Chile :</marc:subfield>
  <marc:subfield code="b">Debolsillo,</marc:subfield>
  <marc:subfield code="c">2013.</marc:subfield>
</marc:datafield>
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</marc:datafield>
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  <marc:subfield code="a">Bussi, María Isabel Allende</marc:subfield>
</marc:datafield>
<marc:datafield tag="400" ind1="1" ind2=" ">
  <marc:subfield code="w">nne</marc:subfield>
  <marc:subfield code="a">Allende Bussi, Isabel</marc:subfield>
</marc:datafield>
<marc:datafield tag="400" ind1="1" ind2=" ">
  <marc:subfield code="a">Bussi, Isabel Allende</marc:subfield>
</marcxml:datafield>
```

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Improve existing catalogue records

After

EBSCO

BiblioGraph

- Syndicate the library's resources to Google
- Publish library resources to websites
- Visually illustrate the depth of the library's collections
- Enrich resources with data from authoritative sources
- Improve existing catalogue records in FOLIO (*coming soon*)
- Understand gaps in library collections; improve collections through resource sharing and / or purchasing

Thank You

Richard Burkitt

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