

Exploring Linked Open Data capabilities at the European Parliament Library

Frédéric Kerloch
European Parliament
Digital Library Unit
frederic.kerloch@europarl.europa.eu



About the European Parliament Library



European Parliament Library



Европейски парламент
Parlamento Europeo
Evropský parlament
Europa-Parlamentet
Europäisches Parlament
Euroopa Parlament
Ευρωπαϊκό Κοινοβούλιο
European Parliament
Parlement européen
Parlaimint na hEorpa
Evropski parlament
Parlamento europeo
Eiropas Parlaments
Europos Parlamentas
Európai Parlament
Parlament Ewropew
Europees Parlement
Parlament Europejski
Parlamento Europeu
Parlamentul European
Európsky parlament
Evropski parlament
Euroopan parlamentti
Europaparlamentet

Secretariat General

European Parliament
Research Service

European Parliament
Library



The European Parliament

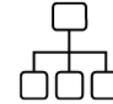


Европейски парламент
Parlamento Europeo
Evropský parlament
Europa-Parlamentet
Europäisches Parlament
Euroopa Parlament
Ευρωπαϊκό Κοινοβούλιο
European Parliament
Parlement européen
Parlaimint na hEorpa
Europski parlament
Parlamento europeu

Eiropas Parlaments
Europos Parlamentas
Európai Parlament
Parlament Ewropew
Europees Parlement
Parlament Europejski
Parlamento Europeu
Parlamentul European
Európsky parlament
Evropski parlament
Euroopan parlamentti
Europaparlamentet



Legislative powers



Budgetary powers



Supervisory powers

The European Parliament is an important forum for political debate and decision-making at the EU level. The Members of the European Parliament are directly elected by voters in all Member States to represent people's interests with regard to EU law-making and to make sure other EU institutions are working democratically.

<https://www.europarl.europa.eu/about-parliament/en/home>



European Parliament

The European Parliament



Европейски парламент
Parlamento Europeo
Evropský parlament
Europa-Parlamentet
Europäisches Parlament
Euroopa Parlament
Ευρωπαϊκό Κοινοβούλιο
European Parliament
Parlement européen
Parlaimint na hEorpa
Europski parlament
Parlamento europeo
Eiropas Parlaments
Europos Parlamentas
Európai Parlament
Parlament Ewropew
Europees Parlement
Parlament Europejski
Parlamento Europeu
Parlamentul European
Európsky parlament
Evropski parlament
Euroopan parlamentti
Europaparlamentet

- 705 members (MEPs)
- Electorate of ~375 million eligible voters from 27 Member States
- 24 official languages



The European Parliament Research Service

Foresight

Anticipating global trends and **analysing gaps** in EU legislation and assessing their real-life impact.

Research and information

Tracking legislation and **providing comprehensive information** on any policy area or legislative dossier before it is proposed, while it is being negotiated and after its adoption.

*Empowering
Through Knowledge*

Scrutiny

Helping to oversee the work of the European Council and **scrutinizing** the European Commission as well as assessing the impact of legislation before and after its adoption.

The European Parliament Research Service Products

3 types of products

- At a glance
- Briefing
- In Depth Analysis

All products are available freely on EPRS Website (EP Think Tank)

<https://epthinktank.eu/>

Will be available as an Alma Open Access Collection in 2024

European Parliament Library Services

- Small Collection
 - 90,000 books
 - 115,000 eBooks
 - 65,000 serials (mostly electronic)
- Access to ~100 specialised databases and news services
- Metadata are coming mostly from Eurovoc, a thesaurus maintained by the Publication Office of the European Union



<https://op.europa.eu/en/web/eu-vocabularies/dataset/-/resource?uri=http://publications.europa.eu/resource/dataset/eurovoc>

Profiles of our patrons



Европейски парламент
Parlamento Europeo
Evropský parlament
Europa-Parlamentet
Europäisches Parlament
Euroopa Parlament
Ευρωπαϊκό Κοινοβούλιο
European Parliament
Parlement européen
Parlaimint na hEorpa
Europski parlament
Parlamento europeo
Eiropas Parlaments
Europos Parlamentas
Európai Parlament
Parlament Ewropew
Europees Parlement
Parlament Europejski
Parlamento Europeu
Parlamentul European
Európsky parlament
Evropski parlament
Euroopan parlamentti
Europaparlamentet

Multilinguism is a very important aspect to be taken into account for the services offered to our patrons

Institutional library

Our patrons are rarely coming from the academic world

Many different profiles

- MEPs / MEPs assistant
- EPRS Desk Officers responsible of many different policy areas
- Trainees of the EP
- Staff members (IT, Security, Human Resources...)



Why exploring Linked Open Data Capabilities?



Two assumptions

Our services may not be well known by our patrons

Patrons are searching for information on the Web, using major search engines (mostly Google)



Our catalogue is not an obvious entry point to our services



We want to be more visible on the Web

New borrowing services are emerging

Google
Knowledge
Graph

Trust Exercise

Novel by Susan Choi

Book preview
29/270 pages available

[PREVIEW](#)

3.2/5 · [Goodreads](#)

53% liked this book
Google users

Trust Exercise is a 2019 coming-of-age novel by American Susan Choi, published by Henry Holt and Company. [Wikipedia](#)

Originally published: April 9, 2019

Author: [Susan Choi](#)

Page count: 257

Publisher: [Henry Holt and Company](#)

Awards: [National Book Award for Fiction](#)

Genres: Novel, Coming-of-Age Fiction

Borrow

• Near Dallas, TX

[Edit location](#)

 Dallas Public Library	E-book, Hardcover	Borrow ▾
Central Library, Martin Luther King Branch		
 Northeast Texas Digital Consortium	E-book	
University Park Public Library, Mesquite P		
 Nicholson Memorial Library System	E-book	Borrow
Walnut Creek Branch Library, South Garland Branch ...		
 Richardson Public Library	E-book	Borrow
Richardson Public Library		
 Plano Public Library System	E-book	Borrow
Plano Public Library System		

Borrow Section of a Knowledge Panel for Trust Exercise



European Parliament

12

Linked Open Data Capabilities

Semantic web is becoming a reality (eg Google Knowledge Graph)

Environ 792 000 résultats (0,59 secondes)



Simone Veil

Ancienne présidente du Parlement européen

Aperçu

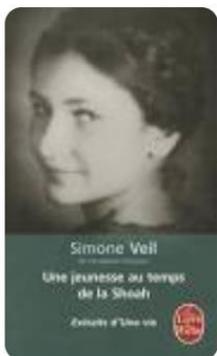
Films

Livres

Livres



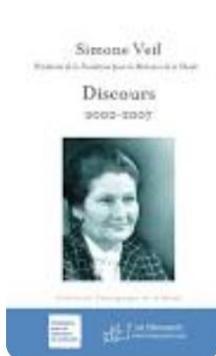
Une vie
2007



Une jeunesse
au temps de l...
2010



La Vie après
Birkenau



Discours
2007



L'Aube à
Birkenau



Mes combats
2016



Seul l'espoir



Simone et ses



Les hommes



Una vida



L'interruption



"Elles sont 300

À propos

Simone Veil, née Simone Jacob le 13 juillet 1927 à Nice et morte le 30 juin 2017 à Paris, est une magistrate et une femme d'État française. Née dans une famille juive aux origines lorraines, elle est déportée à Auschwitz à l'âge de 16 ans, durant la Shoah, où elle perd son père, son frère et sa mère. [Wikipédia](#)

Date/Lieu de naissance : 13 juillet 1927, Nice, France

Date de décès : 30 juin 2017, Place Vauban, Paris, France

Enfants : Claude-Nicolas Veil, Jean Veil, Pierre-François Veil

Frères et sœurs : Denise Vernay, Jean Jacob, Madeleine Jacob

Distinctions : Prix Princesse des Asturies de la coopération internationale, PLUS

Petits-enfants : Lucas Veil, Raphaël Veil, Isabelle Veil, PLUS

Commentaires



ent

Linked Open Data Capabilities

Semantic web is becoming a reality (eg Google Knowledge Graph)

Switch from search based on keywords to discovery based on semantic concepts

Possibility to enrich existing data with information coming from other sources

Because of their specific profiles, our patrons may be interested in those new capabilities, not yet offered in our catalogue

EBSCO Linked Library / Bibliograph service



How to benefit from LOD potential?

Linked

Common language to describe bibliographic records (ontology)



Open

No copyrights issue, and easily accessible



Data

Bibliographic Records



EBSCO Linked Library/Bibliograph

Two objectives

- Borrow from Google should become available for our library
- Items from our catalogue should be more visible in search engines like Google



Bibliograph/Linked Library as tool to expose our LOD

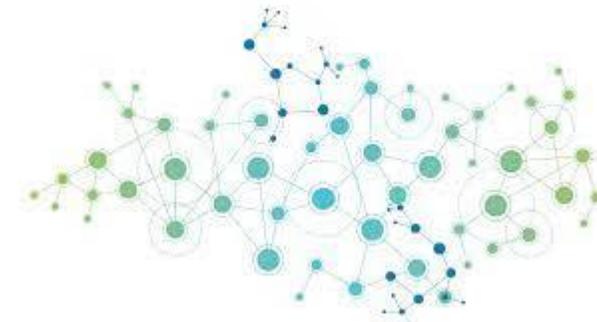
Export our bibliographic records
(MarcXML)



Data are transformed into bibframe
resources



Graph of data generated from bibframe
resources



Outcome of the project



EBSCO Linked Library/Bibliograph

1. List of resources of our catalogue in a public website (<https://link.europarl.europa.eu/>)

Welcome to European Parliament Library's Data Graph

3,811,071 Bibframe resources that anyone can share

Introduction

Collections

Statistics

Help

Library System 1

🏛️ European Parliament Library

Home page  <https://www.europarl.europa.eu/eplibrary/en/library/library.html>

Address BE

Social

Library Branches 3

🏠 EP Library Luxembourg

Bibframe Resources

⬆️ Agent	41251
💬 Annotation	402676
📁 Category	42968
🗑️ Category Set	67
🗃️ Collection	1
⚙️ Concept	236651
📅 CopyrightEvent	314
👥 Family	39

EBSCO Linked Library/Bibliograph

1. List of resources of our catalogue in a public website (<https://link.europarl.europa.eu/>)
2. Basic Search Engine (keyword based, with filtering on resources type)

🔍 Resource Navigator

european parliament

Press **Enter** or click outside the box to search

Filter result type

- | | | |
|--|-------------------------------------|---------------------------------------|
| <input type="checkbox"/> Agent | <input type="checkbox"/> Annotation | <input type="checkbox"/> Category |
| <input type="checkbox"/> Category Set | <input type="checkbox"/> Collection | <input type="checkbox"/> Concept |
| <input type="checkbox"/> Copyright Event | <input type="checkbox"/> Family | <input type="checkbox"/> Form |
| <input type="checkbox"/> Identifier | <input type="checkbox"/> Item | <input type="checkbox"/> Jurisdiction |
| <input type="checkbox"/> List | <input type="checkbox"/> List Item | <input type="checkbox"/> Meeting |
| <input checked="" type="checkbox"/> Organization | <input type="checkbox"/> Person | <input type="checkbox"/> Place |
| <input type="checkbox"/> Provider Event | <input type="checkbox"/> Series | <input type="checkbox"/> Temporal |
| <input type="checkbox"/> Topic | <input type="checkbox"/> Work | <input type="checkbox"/> None |

First Previous 1 2 3 4 5 Next Last

1. 🏠 [European Parliament.](#)
2. 🏠 [European Parliament](#)
3. 🏠 [European Parliament, Secretariat](#)
4. 🏠 [European Parliament, Secretariat.](#)
5. 🏠 [European Parliament, Library.](#)
6. 🏠 [European Parliament, Library](#)
7. 🏠 [European Parliament, Greens / European Free Alliance in the European Parliament.](#)
8. 🏠 [European Parliament, Greens / European Free Alliance in the European Parliament](#)
9. 🏠 [European Parliament, European Democratic Group](#)
10. 🏠 [European Parliament, Communist and Allies Group of the European Parliament](#)

Search results with filtering



EBSCO Linked Library/Bibliograph

1. List of resources of our catalogue in a public website (<https://link.europarl.europa.eu/>)
2. Basic Search Engine (keyword based, with filtering on resources type)
3. Pages on each Bibframe resource, with incoming/outcoming connexions

European Parliament ⓘ

Type  <http://bibfra.me/vocab/lite/Organization>

Label European Parliament

Name European Parliament

Mapped to  531111

Actions

 Embed Resources by the Organization ⓘ

 Embed Resources about the Organization ⓘ

Incoming Resources

Focus of 21

-  European Parliament -- Elections, 2014
-  European Parliament -- Committees
-  European Parliament -- Officials and employees
-  European Parliament -- Elections, 2009
-  European Parliament -- Biography
-  European Parliament -- Elections -- History
-  European Parliament -- Powers and duties
-  European Parliament -- Elections, 2019
-  European Parliament -- Elections, 2016
-  European Parliament -- Presidents -- Biography
-  European Parliament -- Finance
-  European Parliament -- Periodicals
-  European Parliament -- Elections, 1984
-  European Parliament -- Handbooks, manuals, etc
-  European Parliament

Creator of 10 of 133 

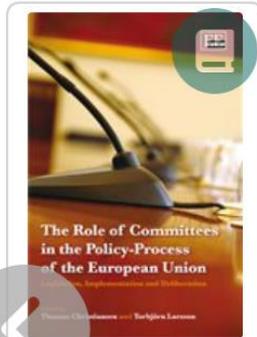
Page on a specific resource, with incoming links



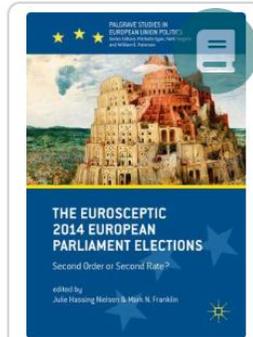
EBSCO Linked Library/Bibliograph

1. List of resources of our catalogue in a public website (<https://link.europarl.europa.eu/>)
2. Basic Search Engine (keyword based, with filtering on resources type)
3. Pages on each Bibframe resource, with incoming/outcoming connexions
4. Widgets on any resource linked to books (Author, Person, Subject...), that can be embedded in any webpage.

99 Resources that are about  European Parliament



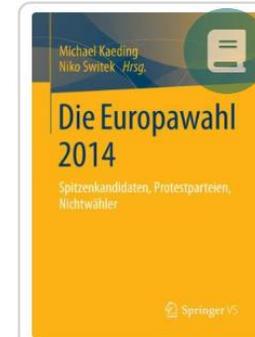
[The role of committees in the policy-process of the](#)



[The Eurosceptic 2014 European Parliament Elections, Second](#)



[Europees Parlement : nieuws](#)



[Die Europawahl 2014, Spitzenkandidate n,](#)

Carousels on specific concept (European Parliament)

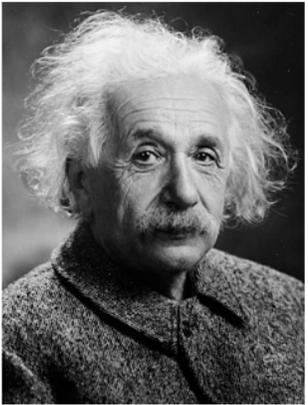
Links are redirecting to our catalogue.

Other types of widget are also available (list, grids, cards)

Additional goal

Library Knowledge Graph - DC Public Library System

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 14, 1879 in Ulm
Died: April 18, 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

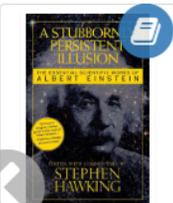
[Wikipedia](#)

[Open Library](#)

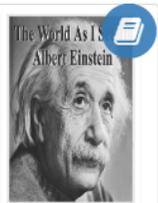
[IMDb](#)

[Encyclopædia Britannica](#)

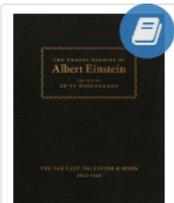
14 Items by Albert Einstein at the DC Public Library



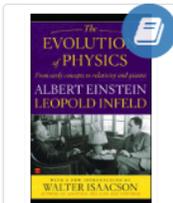
A stubbornly persistent illusion : the essential physics of Stephen Hawking



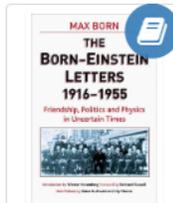
The world as I see it



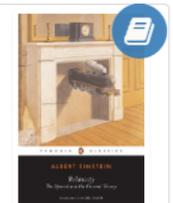
The travel diaries of Albert Einstein : the essential physics of Albert Einstein



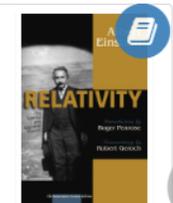
The evolution of physics : from early concepts to relativity and quantum mechanics



The Born-Einstein letters : friendship, politics and the making of a scientific revolution



Relativity : the special and general theory, Albert Einstein



Relativity : the special and general theory, Albert Einstein

Enrich the data



European Parliament

Practical shortcoming of the approach

A real world entity can be described in different authorities

- We can't fully automate Widgets generation

Navigation in the platform is not good enough for our patrons

🔍 Resource Navigator

Alcide De Gasperi

Press **Enter** or click outside the box to search

Filter result type

- | | | |
|--|--|---------------------------------------|
| <input type="checkbox"/> Agent | <input type="checkbox"/> Annotation | <input type="checkbox"/> Category |
| <input type="checkbox"/> Category Set | <input type="checkbox"/> Collection | <input type="checkbox"/> Concept |
| <input type="checkbox"/> Copyright Event | <input type="checkbox"/> Family | <input type="checkbox"/> Form |
| <input type="checkbox"/> Identifier | <input type="checkbox"/> Item | <input type="checkbox"/> Jurisdiction |
| <input type="checkbox"/> List | <input type="checkbox"/> List Item | <input type="checkbox"/> Meeting |
| <input type="checkbox"/> Organization | <input checked="" type="checkbox"/> Person | <input type="checkbox"/> Place |
| <input type="checkbox"/> Provider Event | <input type="checkbox"/> Series | <input type="checkbox"/> Temporal |
| <input type="checkbox"/> Topic | <input type="checkbox"/> Work | <input type="checkbox"/> None |

First

Previous

1

2

3

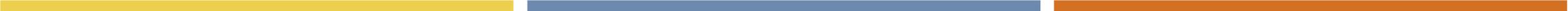
4

5

Next

Last

1. 👤 [De Gasperi, Alcide](#)
2. 👤 [De Gasperi, Alcide, 1881-1954](#)
3. 👤 [De Gasperi, Alcide, 1883-1954](#)
4. 👤 [De Gasperi, Alcide, 1881-1954.](#)



Project status



Project status

~120 Widgets created for our libguides (based on lists of ISBN)



Selected Online Reading on EU-NATO Cooperation

Search this Guide

Se

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 EU-NATO Cooperation

Overview

Access to sources

Books

E-books

E-articles

Databases and Newsletters

Online training

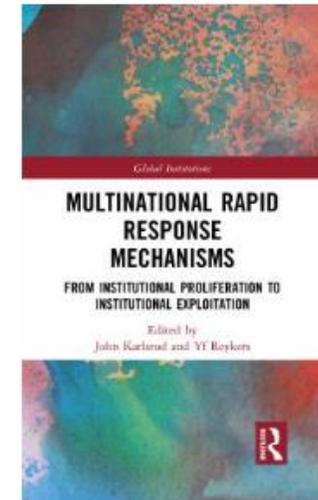
EPRS publications



The End of European Security Institutions?



Defending Eastern Europe



Multinational Rapid Response Mechanisms



NATO's democratic retrenchment

<https://eplibrary.libguides.com/XPOL/SR/EU-NATO-cooperation>



Selected Online Reading on Housing in the EU

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](#)

[Access to sources](#)

Books

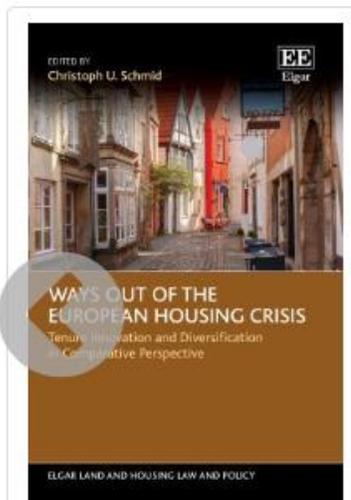
E-books

E-articles

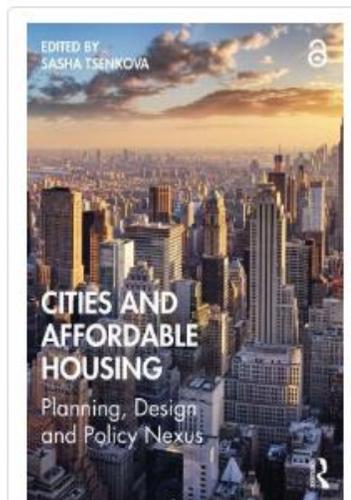
Databases and Newsletters

Online training

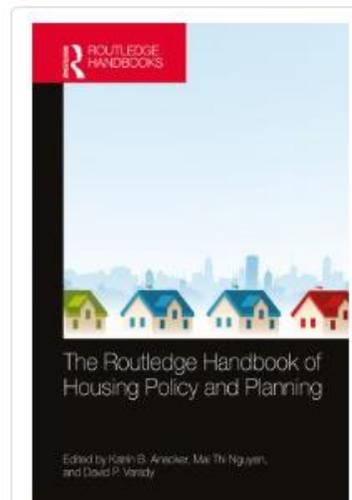
EPRS publications



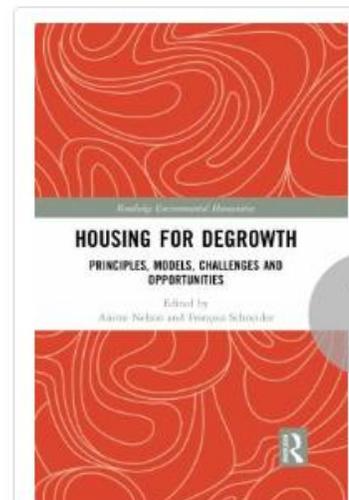
Ways out of the European
Housing Crisis



Cities and Affordable
Housing



The Routledge Handbook
of Housing Policy and
Planning



Housing for Degrowth :
Principles, Models,
Challenges and





Selected Online Reading on Public Procurement

Search this Guide

Search

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

Home

Books on the topic

Overview

Access to sources

Books

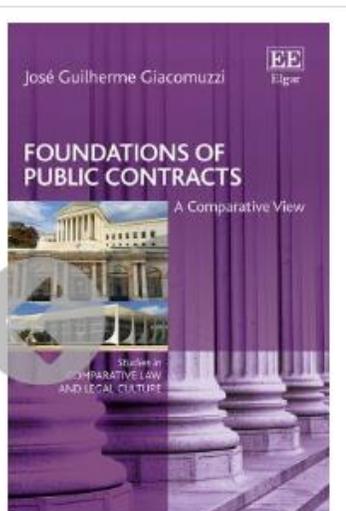
E-books

E-articles

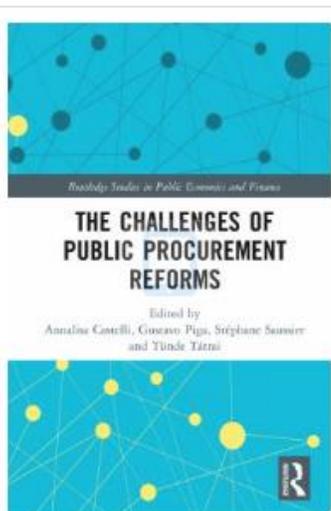
Databases and Newsletters

Online training

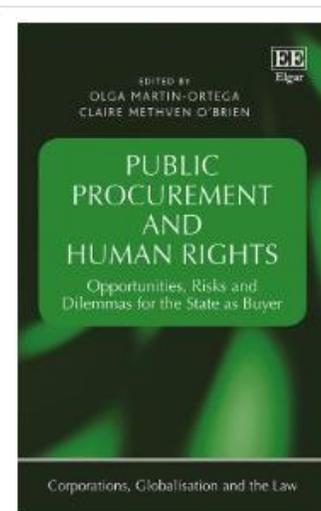
EPRS publications



Foundations of Public
Contracts



The Challenges of Public
Procurement Reforms



Public Procurement and
Human Rights



Green Public
Procurement under WTO
Law



Project status

~120 Widgets created for our libguides (based on lists of ISBN)

No improvement at the level of catalogue visibility in Google

Nombre total de c...

30,9 k



Nombre total d'im...

2,31 M



CTR moyen

1,3 %



Position moyenne

23,6



Clics

180

120

60

0

1

10/09/2022

22/10/2022

03/12/2022

14/01/2023

25/02/2023

08/04/2023

20/05/2023

01/07/2023

12/08/2023

Number of clicks from google to our catalogue (Google Search Console 10/9/2022 -> 10/9/2023)

Project status

~120 Widgets created for our libguides (based on lists of ISBN)

No improvement at the level of catalogue visibility in Google

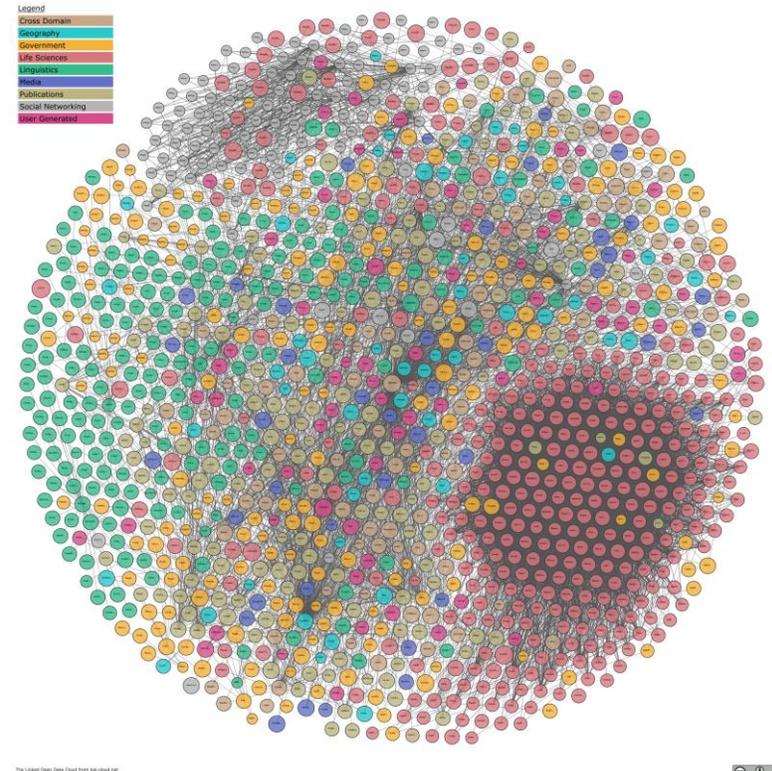
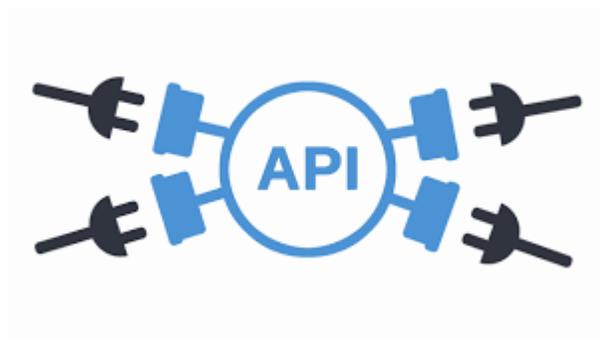
Borrow action still not available in Google: the service will be deployed in countries when a significant amount will adopt approaches similar to Bibliograph...

What's next?



Next steps

- Publish data in wikidata
 - 100 Books on Europe to remember
 - <https://www.europarl.europa.eu/100books/en/index.html>
 - Books written by MEPs
- Look for other sources of data to enrich our graph
- Explore additional features of Bibliograph



Open Data Initiatives in the European Institutions

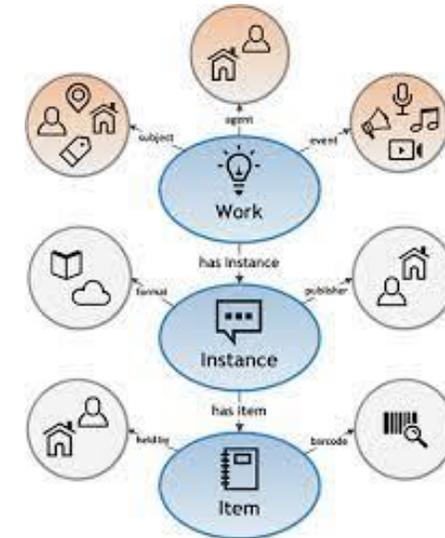
- Publication office of the European Union
 - <https://data.europa.eu> (with SPARQL endpoint)
- European Parliament
 - Open datasets on Parliament activities + APIs to consume the data
 - <https://data.europarl.europa.eu/en/home>

Conclusion



Lessons learnt

- Bibframe is the key for libraries to benefit of the potential of Linked Open Data
- Native Bibframe cataloguing tool is critical
- Using several authorities is a challenge that must be taken into account



Patrons expectations

New emerging technologies must be integrated into libraries' services: AI based services

- Automatic classification
 - Initiative at the European Parliament to provide an automatic indexation tools for Eurovoc
- Natural Language Processing
 - Understand what our patrons are looking for, going beyond basic keywords based approach
- Generative AI
 - ChatGPT