

Introduction to Open-Knowledge Research



PM-A8

proposal

Who we are?

We are Ricardo Hartley and
Martin Perez Comisso

We love learning and curiosity. You can find
us as **@ametodico** and **@mapc** in twitter,
respectively



Course Topics

- Open Knowledge as an interdisciplinary field
- What does it mean to design Open-Knowledge research?
- Popular Open-Knowledge topics and methods
- Best practices and strategies for understanding Open Knowledge

https://etherpad.net/p/fsci_beta



Course Schedule

Day 1

1. Introduction to Open Knowledge as a research field (Perez Comisso), 20 minutes
2. Approaches and topics to research in Open Knowledge (Perez Comisso), 40 minutes

BREAK

1. Research design overview (Hartley), 30 minutes
2. Hands-on: Drafting and evaluating research questions using Research Canvas, 60 minutes

Day 2

1. Hands-on: Exposition and discussions of selected papers, 75 minutes

BREAK

1. Some research strategies used within Open Knowledge (Perez Comisso), 20 minutes
2. Conferences and journals for presenting research results (Hartley), 20 minutes
3. Opportunities and challenges to research in Open Knowledge (Everyone), 30 minutes

Our Code

FORCE11 is a community-run membership organization focused on the advancement of research and scholarship. Our events are community-organized and intended for networking, collaboration, dissemination of new ideas, and learning. Our community consists of developers, publishers, researchers, librarians, and more, across a wide variety of disciplines and geographic locations.

Accordingly, the FORCE11 Board, event organizers, and community members are dedicated to providing a harassment-free experience for everyone, regardless of gender identity and expression, age, sexual orientation, disability, physical appearance, body size, race, ethnicity, religion (or lack thereof), technology choices, or other group status. We value the participation of every member of the community and want all participants in FORCE11 activities to have an enjoyable and fulfilling experience.

Our Code

Everyone taking part in FORCE11 activities—whether in person or online—are expected to show respect and courtesy to others throughout their participation. In addition, we ask all attendees to adhere to the following standards of conduct:

All communication should be appropriate for a professional audience consisting of people of many different backgrounds. Sexual language and imagery is never appropriate in such a context, nor is language referring to personal qualities or characteristics or group membership.

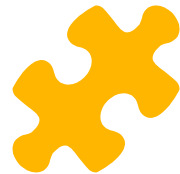
Our Code

Be kind to others. Engage respectfully with ideas and never with person or identity. Insulting, degrading, or disrespectful behaviour is never appropriate at FORCE11 activities.

Be mindful of jargon, slang, and cultural references that can exclude others from engaging in the discussion.

Feel free to join new groups of people in conversation. When you are in a group, try leaving space for one more person to join you (the PAC-Man rule) as a way of encouraging others.

We expect participants to follow these rules at all conference venues, conference-related social events, community gatherings, and online.



Day 1

Concepts

We will explore and define concepts. The discussion will help us to understand important distinctions and categories in OK

Research Design

In addition, we will giving a short review of research design and methodologies. In this course this section will be used to analyze literature and have some pathways to explore and compare.

Open Knowledge as a research field

First, definitions and common terms



Prajnaparamita (meaning 'Perfection of Wisdom') Sutras

“Reverently [caused to be] made for universal free distribution by Wang Jie on behalf of his two parents on the 13th of the 4th moon of the 9th year of Xiantong [i.e. 11th May, AD 868].”



*Communism in material production,
anarchy in the intellectual that is the
type of a Socialist mode of production,
as it will develop from the rule of the
proletariat—in other words, from the
Social Revolution through the logic of
economic facts, whatever might be: the
wishes, intentions, and theories of the
proletariat.*

[Karl Kautsky](#)



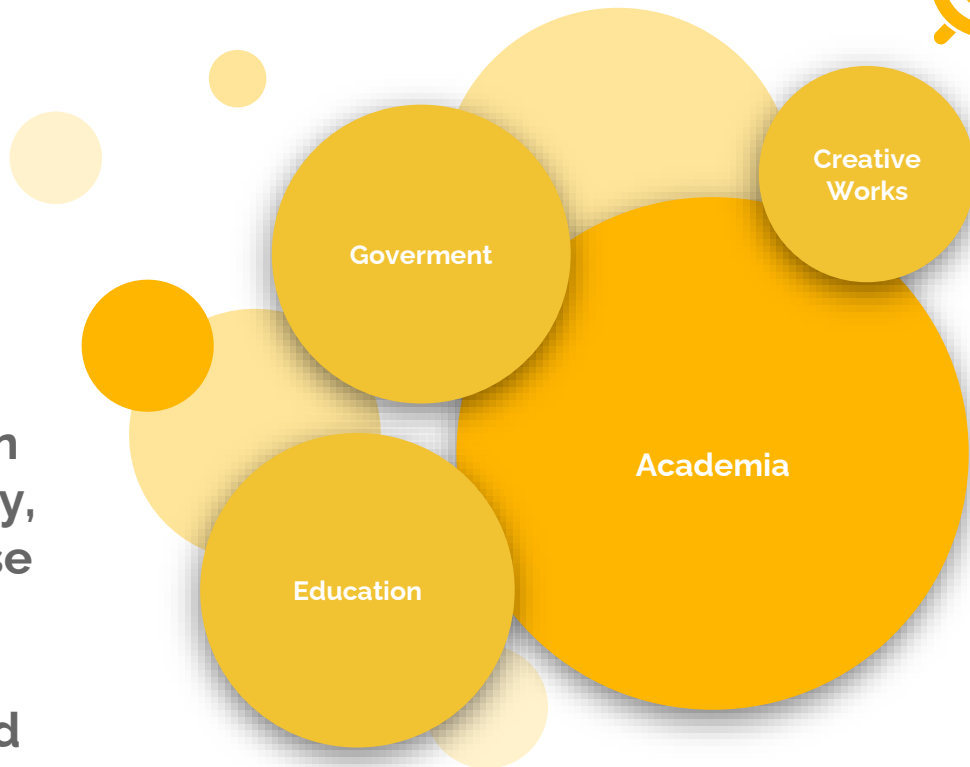
What means to be
open?



Openness

A social value

“Open means **anyone** can freely access, use, modify, and share for any purpose (subject, at most, to requirements that preserve provenance and openness).”

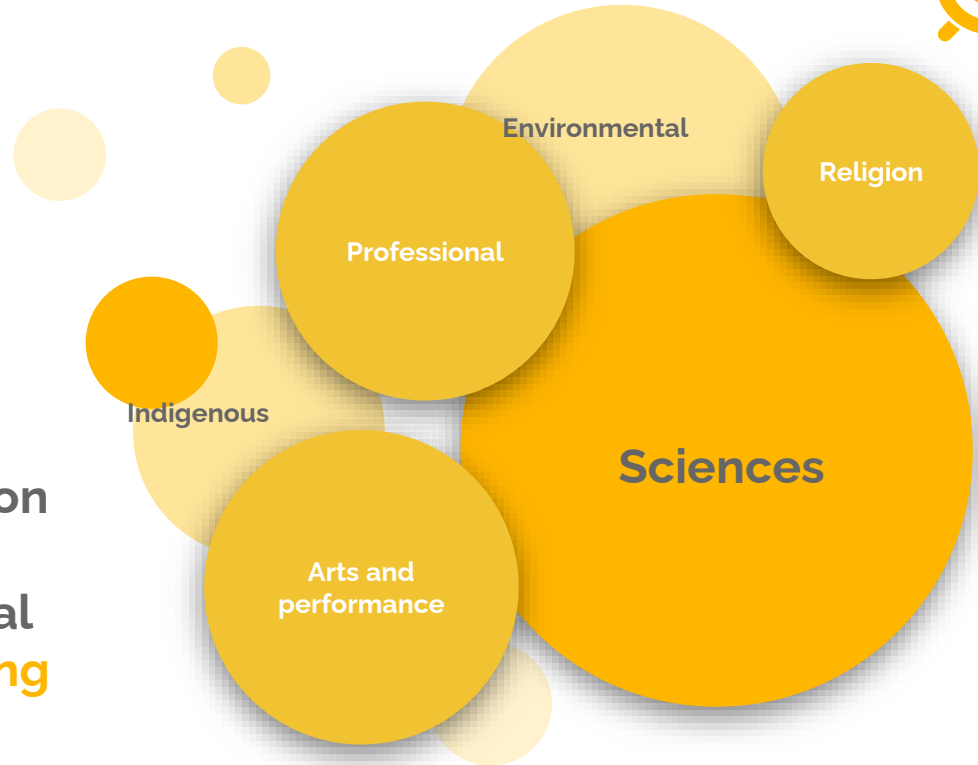


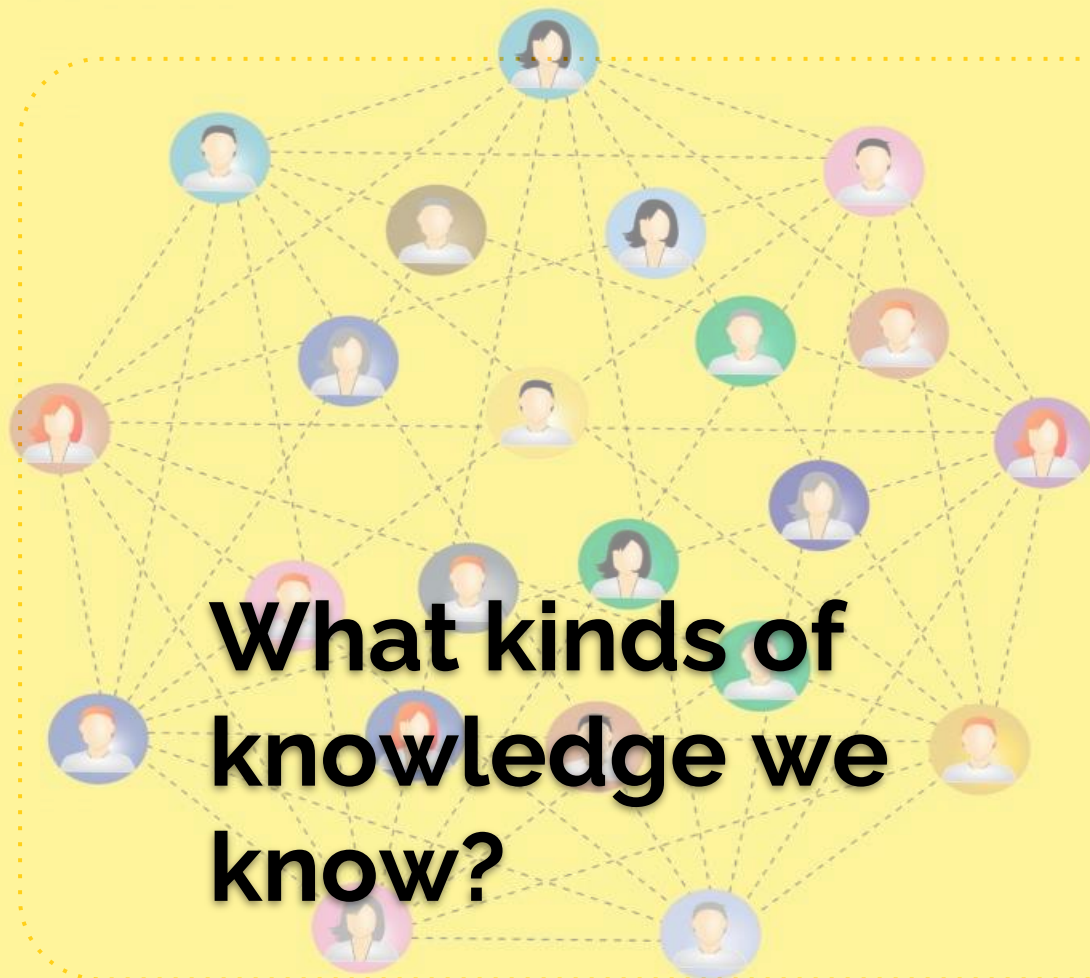


Knowledge

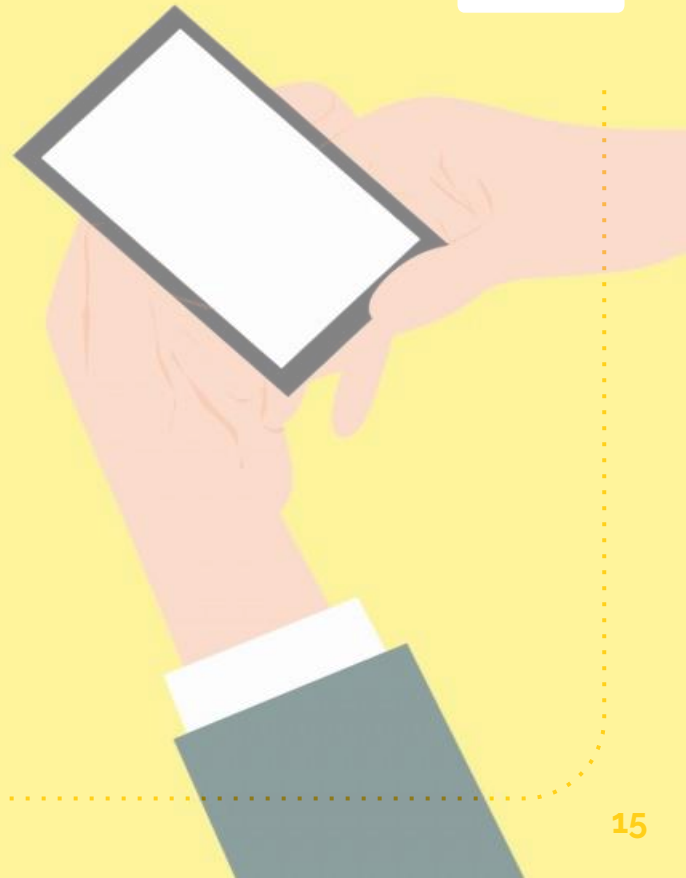
A social value

“facts, information, and skills acquired by a person through experience or education; the theoretical or practical **understanding** of a subject”





**What kinds of
knowledge we
know?**



Science is a type of knowledge

Science is broadly understood as collecting, analyzing, publishing, reanalyzing, critiquing, and reusing data

Knowledge is interpreted broadly to include data, content and general information.

Open Science



```
graph TD; OS[Open Science] --- OD[Open Data]; OS --- OSrc[Open Source]; OS --- OM[Open Methodology]; OS --- OPR[Open Peer Review]; OS --- OA[Open Access]; OS --- OER[Open Educational Resources];
```

Open Data

Open Source

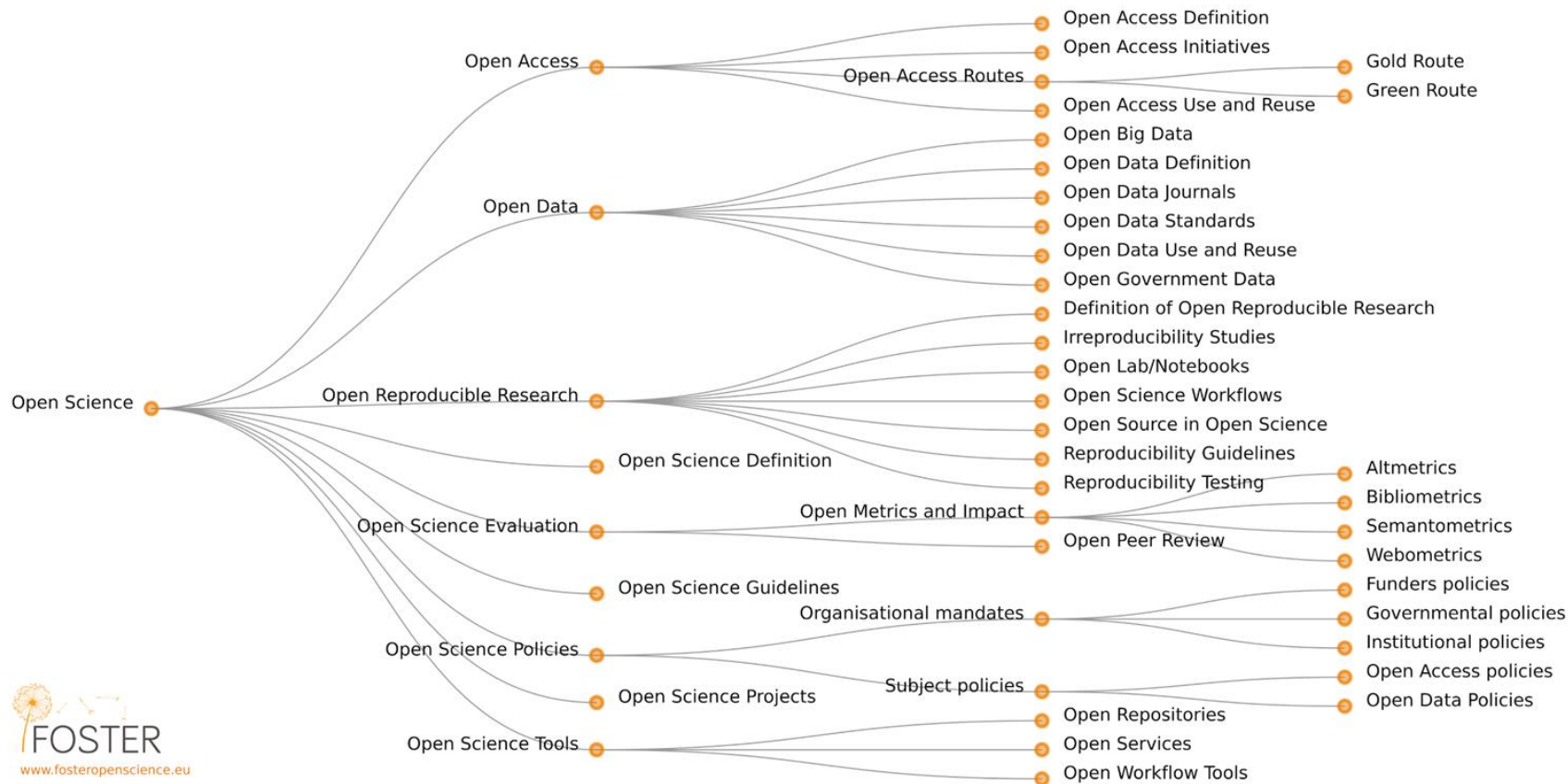
Open Methodology

Open Peer Review

Open Access

Open Educational
Resources

Open Science Taxonomy



Open Knowledge as an interdisciplinary field

Open knowledge is knowledge that one is free to use, reuse, and redistribute without legal, social or technological restriction.

Open knowledge is a set of principles and methodologies related to the production and distribution of how knowledge works in an open manner.

The concept is related to Open Source and the Open Knowledge:

Open knowledge can be seen as being a superset of open data, open content and libre open access with the aim of highlighting the commonalities between these different groups.

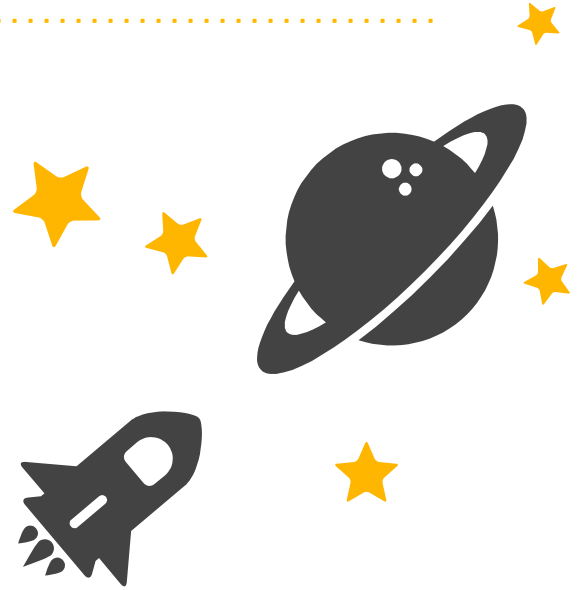


Approaches to research in Open Knowledge

Let's start with the first set of slides

What we can define as an approach?

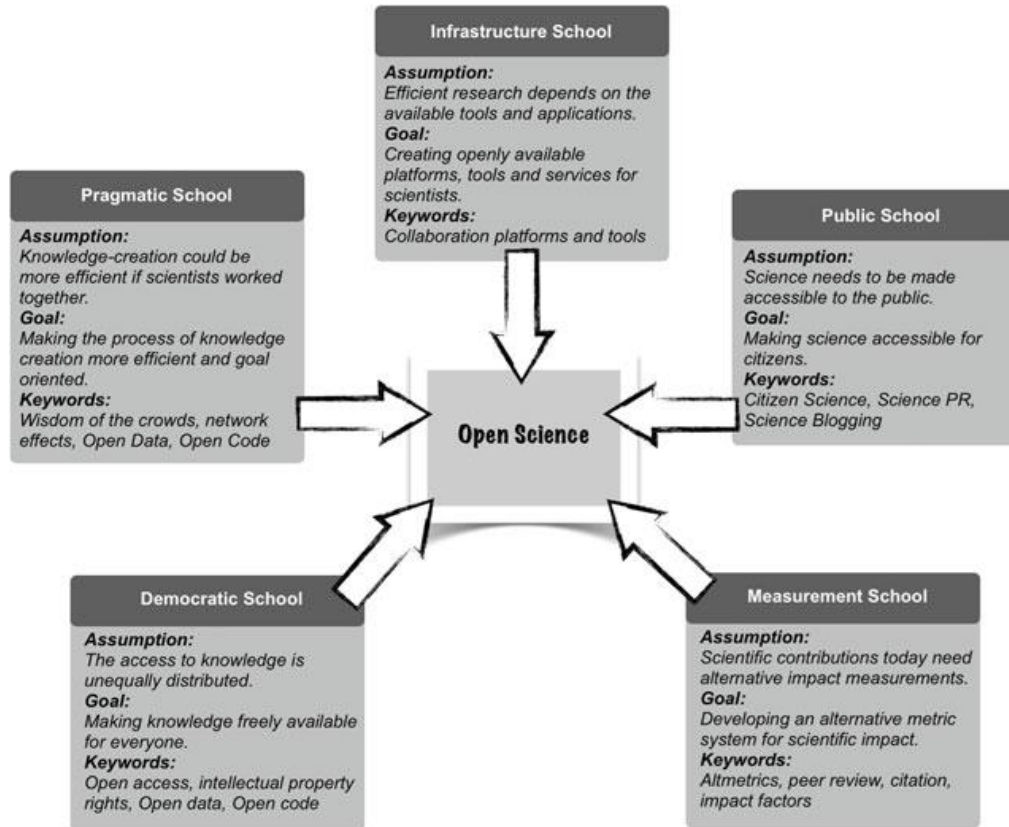
School of thought, paradigms, and research
practices





***'Open science' is one of the buzzwords of the
research community***

Benedict Fecher and Sascha Friesike





Let's **review** some goals

Infrastructure

Creating openly available platforms, tools and services for scientist.

Public

;Making science accessible for citizens

Measurement

Developing an alternative metric system for scientific impact

Democratic

Making knowledge freely available for everyone.

Pragmatic

Making the process of knowledge creation more efficient and goal oriented.

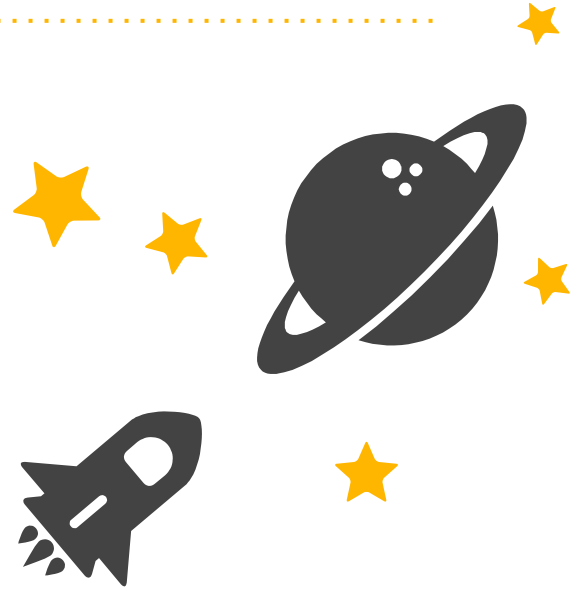


Which values
embodied each
school of thought?

Research design overview

Let's start with the first set of slides

**What does it mean
to design Open
Knowledge
research?**



What does it mean
to design ~~Open~~
Knowledge
research?





12 challenges

- | | |
|---|---|
| 1. Assessment/Evaluation models | 7. OER in Teaching |
| 2. Technologies and Infrastructure needed | 8. Promote and Advocate educational methods |
| 3. Institutional Policies | 9. Quality in OER |
| 4. Use (and Re-Use) of OER | 10. OER Adoption |
| 5. OER Sustainability | 11. Improve the value and impact of OER Research? |
| 6. Copyright and Licensing | 12. Improve Access to OER |



Six Stages of OER

(OpenLearn Model)

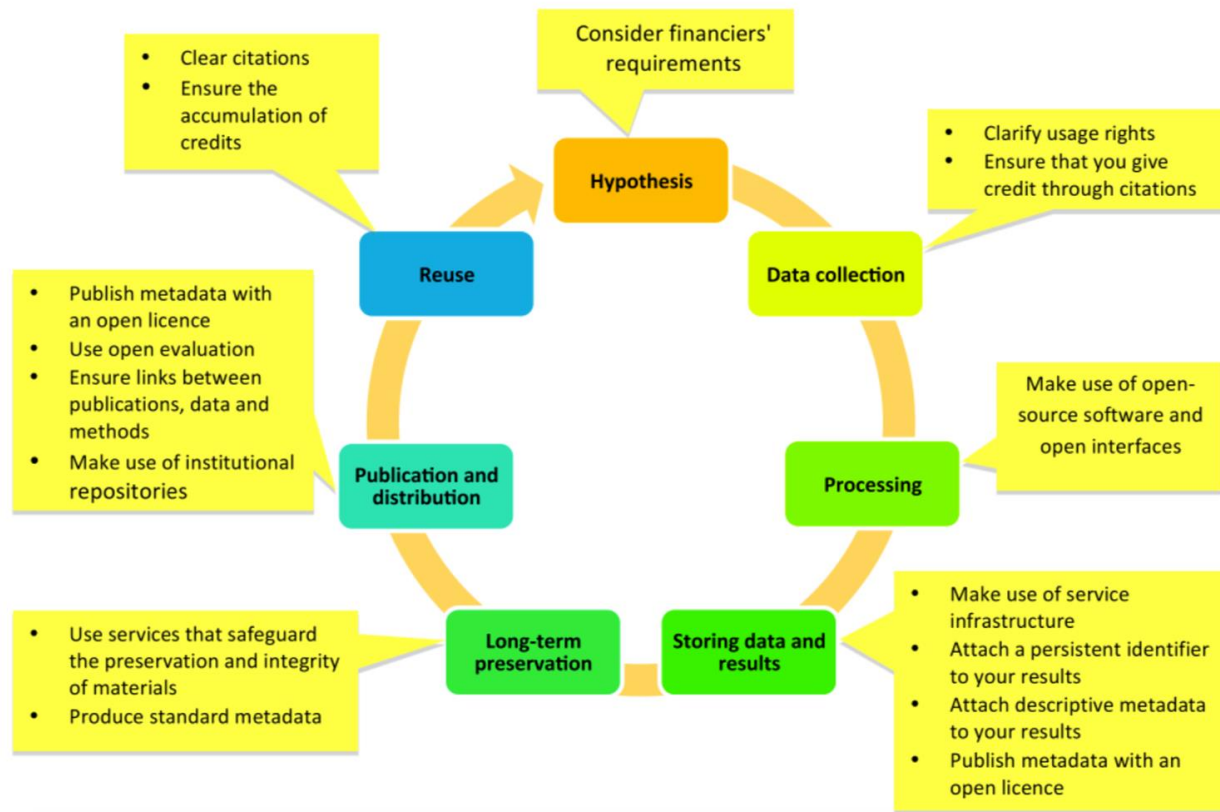
Legal	Release of copyright through Creative Commons
Practical	Provide access to content
Technical	Develop an environment for open access
Pedagogic	Understand the designs that work
Economic	Devise a model for sustainable operation
Transformative	Change ways of working and learning



What?	¿Qué?
Why?	¿Por qué?
How?	¿Cómo?
So what?	¿Para qué?



Is our process **easy**?



first

Design



second

Collect



third

Analyze



last

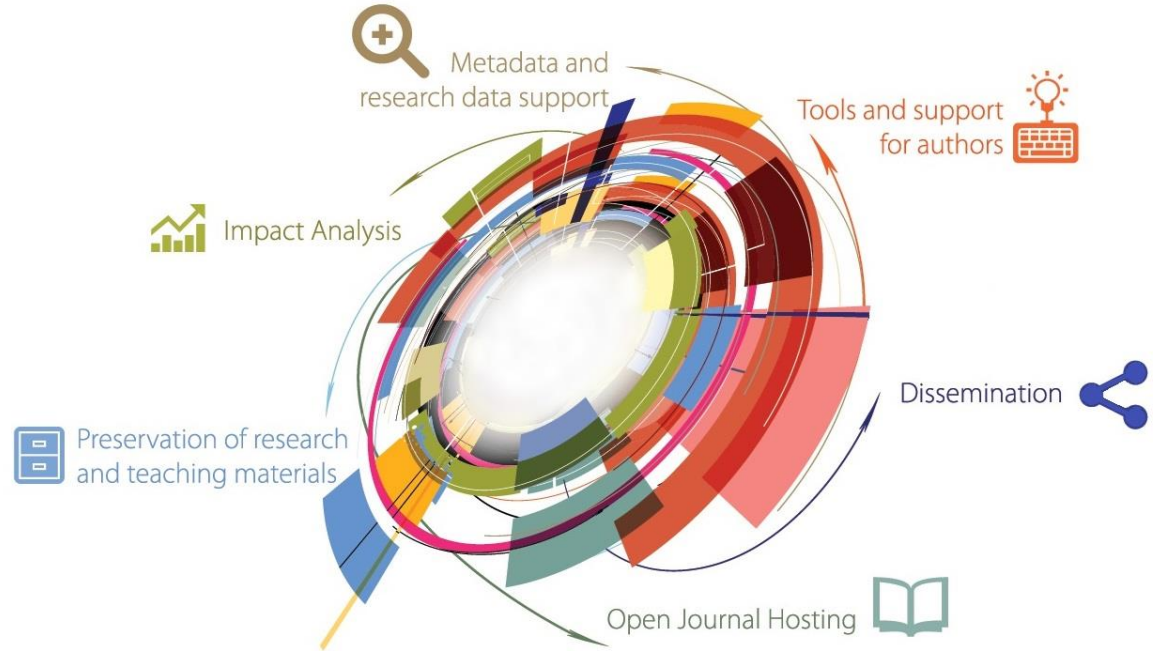
Publish

The main results of the “101 Innovation”



Preparation	Fund research, define priorities, develop collaboration,
Discovery	Get alerts, reference management, annotate, etc.
Analysis	Collect data, mine data, share notebooks, elaborate data, etc.
Writing	Visualize results, process text, cite, translate, etc.
Publication	Archive/share data, archive/share presentation, select target journals, etc.
Outreach	Valorization, dissemination, social networking, etc.
Assessment	Comment publication, measure impact, researcher evaluation, etc.

Is our process easy?



first

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Publish



Canvas...

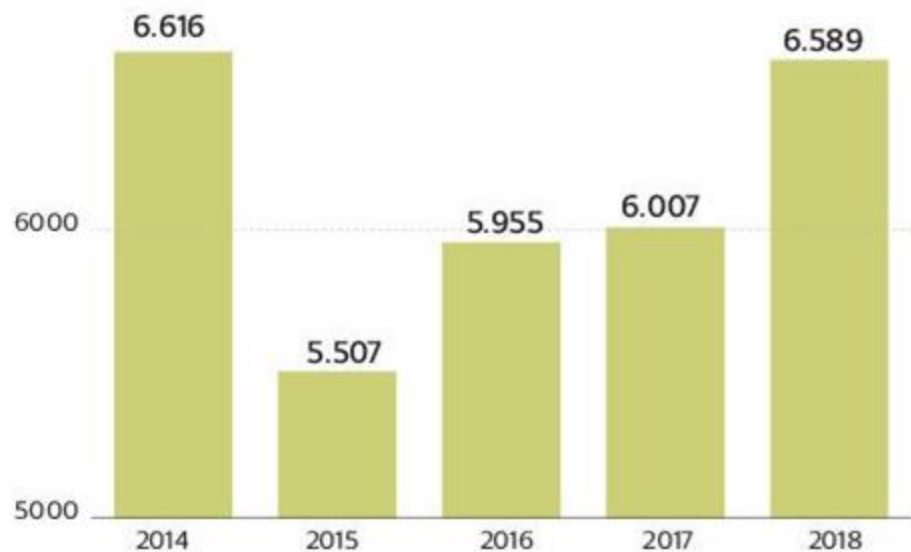


And...
Visualization?



IMPORTACIONES CIF, BIENES DE CAPITAL

En millones de dólares, primer semestre de cada año



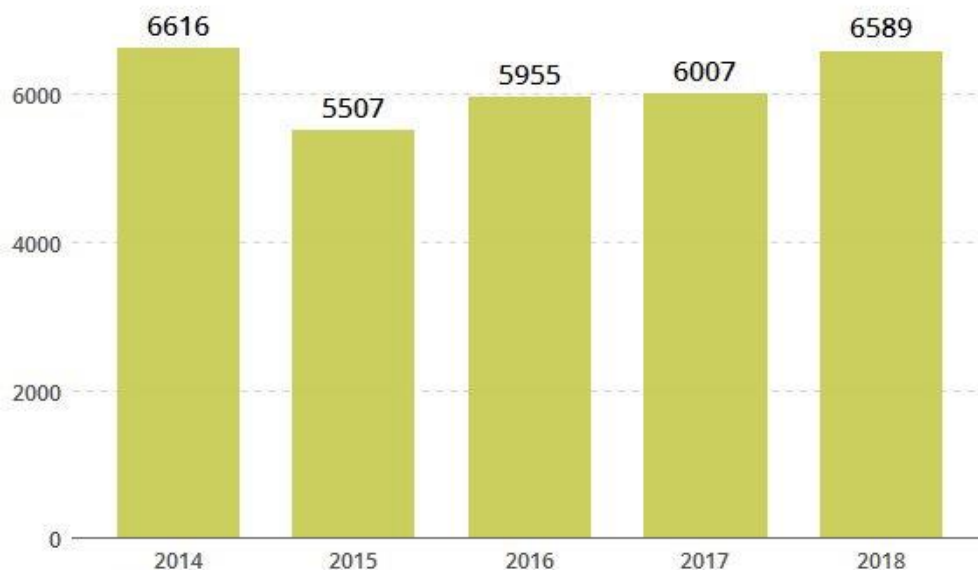
FUENTE: Banco Central

PULSO



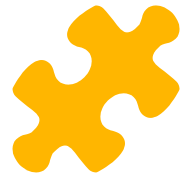
IMPORTACIONES CIF, BIENES DE CAPITAL

En millones de dólares, primer semestre de cada año



FUENTE: Banco Central

Drafting and evaluating research questions



Exercise in **research** questions

What makes a **good question**?

In groups, we will produce a 5 minutes brainstorm of questions about Open Knowledge and related.

Then, we will share with the classmates aloud and provide some feedback



Research Canvas

What it is?

A one-page summary of a research project. Outline main aspects of a research, as well make graphic the main ideas.

Why is useful?

Make a synthetic and visual argument make easier to get the point of a research, as well help to observe the gaps or inconsistencies in a project

Name:		Title of Thesis:		Date / Version:	Research Design Canvas
Problem / Phenomenon Does a real-world problem(s) motivate the project? What are the main phenomenon and specific sub-phenomena being investigated?			Assumptions / Paradigm Is the research based upon particular philosophical assumptions? Does the research operate within a specific paradigm?		
Literatures What literatures, subareas, or constellations will be used? What are the key articles / studies? Will each literature play a supporting or motivating role?		Observations and Arguments What themes and issues are evident in the literatures? What gaps and / or problems are evident in the literatures? What are the costs or risks of the gaps / problems? Which are pre-existing and which are identified by you?		Research Questions What are the research questions? What are the benefits / value of investigating them? Are there any tentative hypotheses?	
Theory What theoretical ideas / model / framework / concepts will be used or developed in the project? What role will theory play in the project?			Contributions What are the potential contributions (empirical, theoretical, practical, methodological) of the research? Who are the key stakeholders and what benefits will the research provide to them?		
Methodology / Design What is the overall design or methodology for the study? What are the key principles or objectives of the methodology?		Methods What methods of data collection and analysis will be utilized? What are the key features or strengths of each method?		Sample / Context What sample and sampling methods will be used? What aspects of the context are likely to be important?	

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www.academic-toolkit.com



Exercise in **research analysis**

2-3 minutes

1 slide

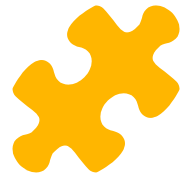
Main ideas and takeaways

Recognize topic, school of thought, methods and main argument

Then, 1 person will make a question about the presentation.

Questions will be randomized, that means, put a lot of attention and prepare a question about the presentation.





Day 2

Analysis of papers

The beginning of the day will be focused on analyze concepts and research design in assigned papers. Each student will present in 2-3 minutes the research canvas

Sources, Communities and events

The second part will review some of the events, journals and communities related to OK. You had done one first step: Force11 is one of them!

Discussion of current literature in OK



Exercise in **research analysis**

2-3 minutes

1 slide

Main ideas and takeaways

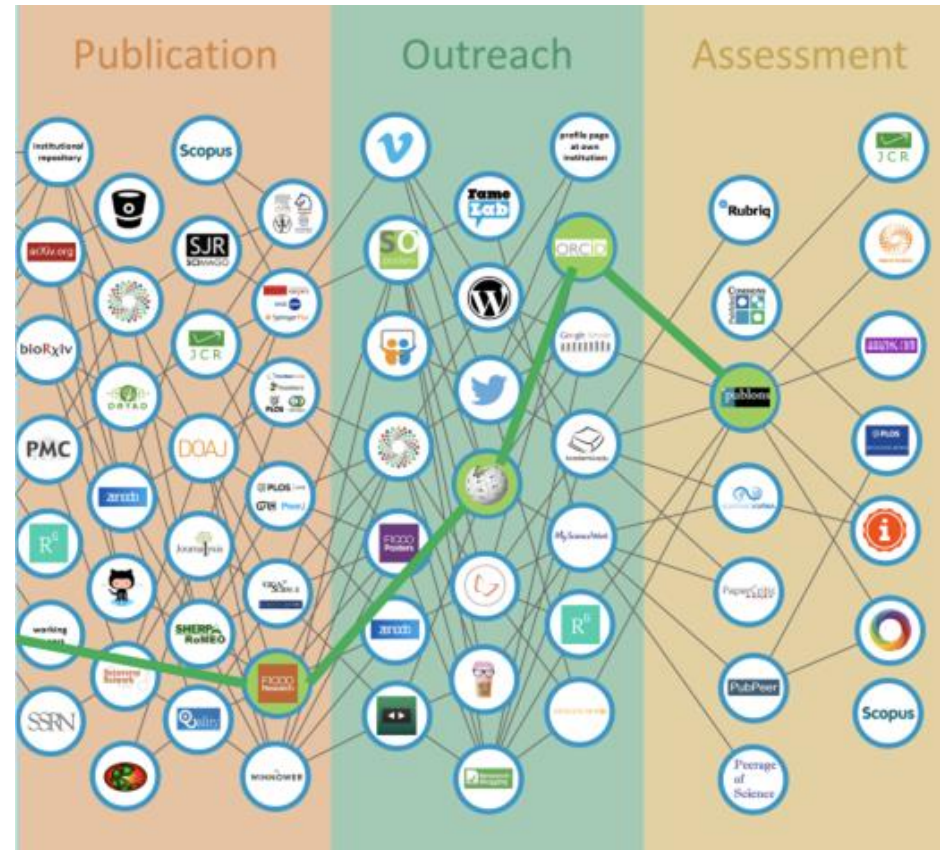
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**Conferences and journals
for presenting OK
research results**

And now...
where?





Public online

- Identity
- Conversations
- Sharing
- Relationships
- Reputations
- Blog
- Social Media
- Website

Communicating Science Online

<https://www.aaas.org/programs/center-public-engagement-science-and-technology/communicating-science-online>

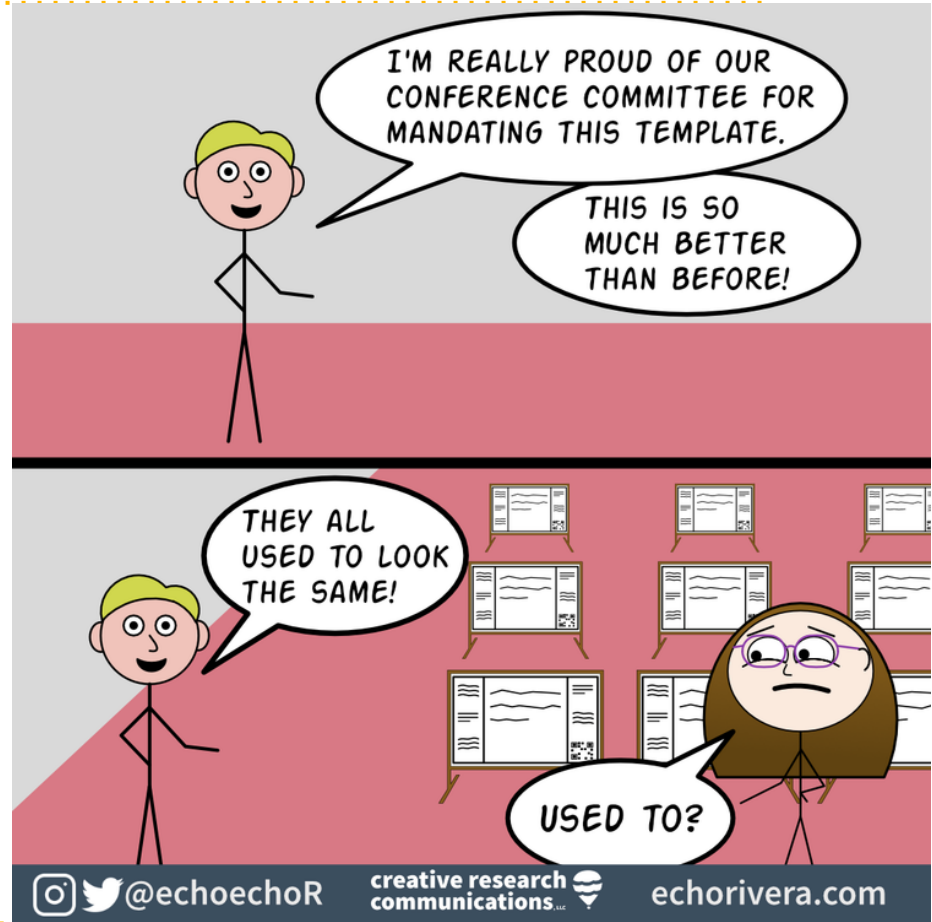
AAAS Center for Public Engagement with Science and Technology's Communicating Science Workshops

<https://www.aaas.org/pes/mini-workshops>

Conferences

Better poster!

or.....



Conferences Better poster!

Title

Authors

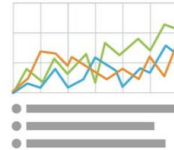
Intro



Methods

- 1.
- 2.
- 3.
- 4.

Results



Discussion

More research is needed, but...

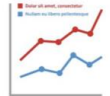


Main finding goes here,
translated into **plain english**.
Emphasize the important
words.



Take a picture to
download the **full paper**

Extra Tables & Figures

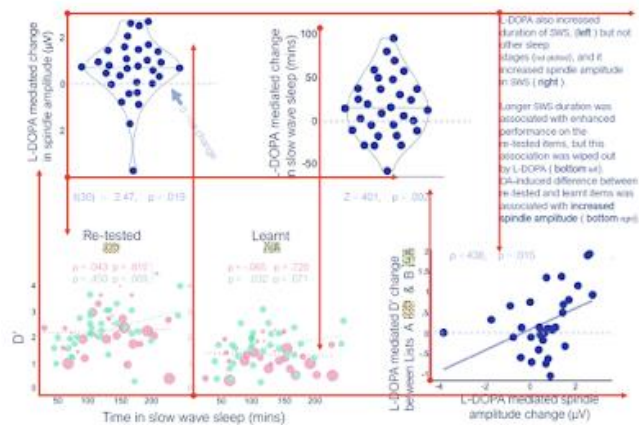




Wendy Nather
@wendynather

And you will read this last

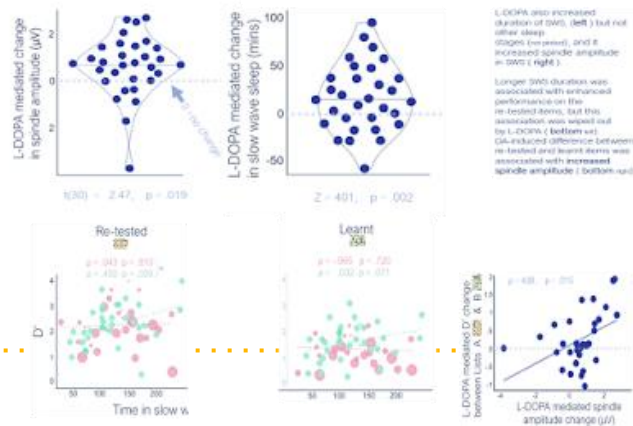
SO...



You will read this first

And then you will read this

Then this one



share

Low Threshold Open Science

Chris H.J. Hartgerink, doi: 10.6084/m9.figshare.928315
Department of Methodology and Statistics

A ready-to-use workflow for opening up your research,
and why you should consider opening up your research.

Github.com – change log of files, online
backup, central place for questions on your
research

How to use Github.com?

1. Make repository online
2. Install desktop application or command line
3. Link folder on your PC with online repository
4. Repeatedly update repository after changes, use log message for clarity
5. Tag important landmarks with versions

Example: research versions
v0.1 - outline of the study,
registering confirmatory
hypotheses

...
v0.5 - raw data file
...
v1.0 - submission of paper
...
v1.5 - resubmit
...
v2.0 - accepted paper

How to version your writing?

1. Author's original (OA)
2. Submitted manuscript under review (SMUR)
3. Revised SMUR (RSMUR)
4. Accepted manuscript (AM)

Are you allowed to upload
preprint, postprint? Check on
SHERPA/ROME0: a central
database outlining copyright
and self-archival policies per
journal

Benefits of opening up your research

For you, as an individual

1. 5-13% *more citations* due to open data (Piwowar & Vision, 2013)
2. Sharing data has been linked to *less statistical errors* (Wicherts, Bakker, & Molenaar, 2011)
3. Always have a *backup* of your research files
4. Decrease time spent following up on data requests
5. Get credit for *all* your research

For science, as a collective

1. *Decrease publication bias*
2. Increase *reproducibility* of research
3. Increase *re-use* of research materials
4. Producing the findings becomes independent of a particular researcher, *preserving* findings for future generations of scientists

Open Science Framework – Replicate
Github files, includes it in central repository
aimed at scientists

Cont

Download poster at



<https://hub.link/yHTuVhL>

Press ESC or right click to drop pen. Ctrl-Z to undo.

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...
v2.0 - accepted paper

How to version your writing?

1. Author's original (OA)
2. Submitted manuscript under review (SMUR)
3. Revised SMUR (RSMUR)
4. Accepted manuscript (AM)

Are you allowed to upload
preprint, postprint? Check on
SHERPA/ROMEO: a central
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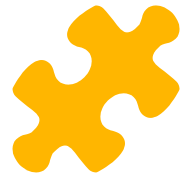
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Cont

Download poster at





Journals

Or... before journals

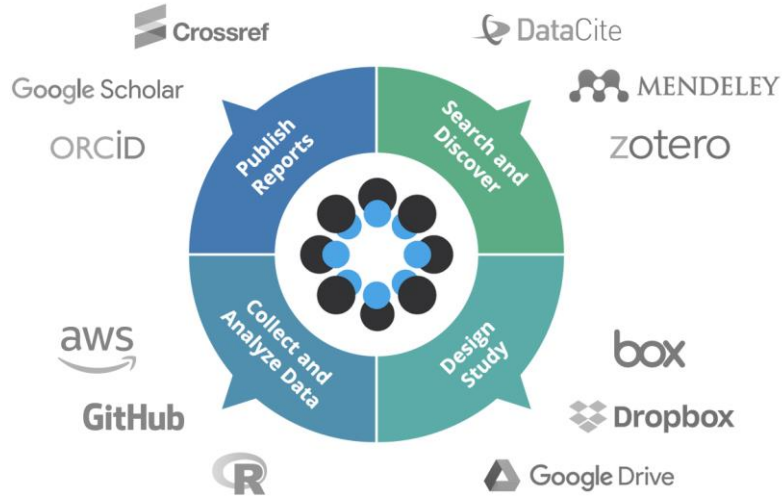
OSF

**OSF's preservation fund is
sufficient for 50+ years of read
access hosting**

**Structured projects
Controlled access
Enhanced workflow
Dependable repository**

Journals...

Or... OSF



Journals... Or... ZENODO

The screenshot shows the Zenodo interface for a specific research paper. At the top, the Zenodo logo and navigation links are visible. The main title of the paper is 'Untangling Academic Publishing: A history of the relationship between commercial interests, academic prestige and the circulation of research'. Below the title, there is a summary paragraph and a list of authors. On the right side, there are statistics for views (3,616) and downloads (31). A callout bubble points to these statistics, stating 'Usage statistics with version roll-up'. Below the statistics, there is a section for 'OpenAIRE' and a table showing 'All versions' and 'This version' for views, downloads, data volume, unique views, and unique downloads. A callout bubble points to this table, stating 'Expand for details'. At the bottom, there is a 'Share' section with social media icons and a 'Cite as' section. A callout bubble points to the 'Cite as' section, stating 'Standards compliant COUNTER Making Data Count'.

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May 25, 2017

Untangling Academic Publishing: A history of the relationship between commercial interests, academic prestige and the circulation of research

Fyfe, Aileen; Coats, Kelly; Curry, Stephen; Lawson, Stuart; Moxham, Noah; Rastvick, Camilla Mark

In 2013, the UK Arts and Humanities Research Council funded a 4-year project on the editorial and commercial history of the world's oldest surviving scholarly journal (Publishing the Philosophical Transactions: a social, cultural and economic history of a learned journal, 1665-2015; AH/K001841). The project is led by Dr Aileen Fyfe at the University of St Andrews in partnership with the Royal Society.

The project team convened a workshop at the Royal Society, 22 April 2016, on 'The Politics of Academic Publishing, 1665-2016'. This briefing paper is informed by the contributions of those who attended that day, and we thank them for their insights. The authors of this briefing paper are a sub-group of those who attended the April 2016 workshop.

This report is based upon the primary (historical) research of the Philosophical Transactions project team, combined with a literature review, and the expertise of the other authors (principally in higher education research, and in scholarly communication).

We are grateful for the comments of our critical friends: Rick Anderson, Sue Clegg, Steven Hill, Nick Hillman, John MacColl, Sally Mapstone, Cameron Neylon, and Stuart Taylor.

Preview

Automatic Zoom

Untangling Academic Publishing

A history of the relationship between commercial interests, academic prestige and the circulation of research

3,616 views 31 downloads

Picked up by 2 news outlets
Blogged by 12
Tweeted by 452
On 11 Facebook pages
Mentioned in 8 Google+ posts
18 readers on Mendeley
1 reader on CiteULike

Indexed in OpenAIRE

Publication date: May 25, 2017
DOI: 10.5281/zenodo.1541111
Keyword(s): academic publishing
Communities: Zenodo
License (for files): CC Creative Commons

Share

Cite as

Fyfe, Aileen, Coats, Kelly, Curry, Stephen, Lawson, Stuart, Moxham, Noah, Rastvick, Camilla Mark

More info on how stats

	All versions	This version
Views	3,616	3,616
Downloads	31	31
Data volume	17.9 MB	17.9 MB
Unique views	3,601	
Unique downloads	31	

Usage statistics
with version roll-up

Expand for details

Standards compliant
COUNTER
Making Data Count

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67

RECORD

ABSTRACT

ARTICLE



Evaluation of probiotic *Bacillus aerius* B81e isolated from healthy hybrid catfish on growth, disease resistance and innate immunity of Pla-mong *Pangasius bocourti*.

Authors: Kenji Sakai, Saowanit Tongpim, Ratchanu Meidong ...

Histological alterations and microbial ecology of the intestine in gilthead seabream (*Sparus aurata* L.) fed dietary probiotics and microalgae.

Authors: Ma Esteban, José Meseguer, Miguel Morifigo ...

Effects of probiotic *Bacillus* as a substitute for antibiotics on antioxidant capacity and intestinal autophagy of piglets

Authors: Yang Wang, Yanping Wu, Baikui Wang ...

See all similar ▶

Cited by

5

Insect-based diets high in lauric acid reduce liver lipids in freshwater Atlantic salmon

Authors: Ikram Belghit, Rune Waagbø, Erik-Jan Lock ...

Effect of a specific composition of short and

Sodium salt medium-chain fatty acids and *Bacillus*-based probiotic strategies to improve growth and intestinal health of gilthead sea bream (*Sparus aurata*)

Authors: Paula Simó-Mirabet ¹, M. Carla Piazzon ², Josep Alvar Caldach-Giner ¹, Álvaro Ortiz ³, Mónica Puyalto ⁴, Ariadna Sitjà-Bobadilla ², Jaume Pérez-Sánchez ¹

Publication date (Electronic): 4 December 2017

Journal: PeerJ

Publisher: PeerJ Inc.

Keywords: Medium-chain fatty acid, Teleost, Probiotic, Intestinal health, *Bacillus amyloliquefaciens*, DICOSAN

Read this article at

ScienceOpen

Publisher

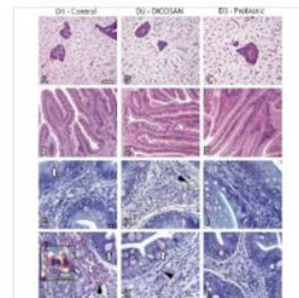
PMC

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Abstract

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 - b. Engaging Science, Technology and Society <https://estsjournal.org/>
 - c. Knowledge-based systems (Elsevier) <https://www.journals.elsevier.com/knowledge-based-systems>
 - d. Public Understanding of Science <https://journals.sagepub.com/home/pus>
 - e. Citizen Science: Theory and Practice <https://theoryandpractice.citizenscienceassociation.org/>
 - f. Tapuya: Latin American Science and Technology <https://www.tandfonline.com/loi/ttap20>
 - g. SAGE Open <https://journals.sagepub.com/home/sgo>
Topic: <https://journals.sagepub.com/topic/sgo-subjects/3029/sgo>
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 - a. Open Knowledge Foundation <https://okfn.org/>
 - b. Directory of Open Access Journals <https://doaj.org/about>
 - c. Open Knowledge Maps <https://openknowledgemaps.org/>
 - d. Public Knowledge Project <https://pkp.sfu.ca/>
 - e. PubPub <https://www.pubpub.org/>
 - f. Open Knowledge Repository - World Bank <https://openknowledge.worldbank.org/handle/10986/221>
- Conference Links
 - a. Open Knowledge Foundation Blog <https://blog.okfn.org/category/events/>
 - b. Open Science Reddit Community https://www.reddit.com/r/Open_Science/
- OpenCERT 2019: 9th International Workshop on Open Community approaches to Education, Research and Technology
 - <https://easychair.org/cfp/opencert-2019>
- Knowledge Dialogues
 - <https://knowledgedialogues.com>

Opportunities and challenges to research in Open Knowledge



Thanks!

Any questions?

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Evaluation