CWTS
Meaningful metrics

Open metadata of scholarly publications

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Universiteit Leiden
The Netherlands

Outline

- Publications should be FAIR
- Initiative for Open Abstracts (I4OA)
- FAIRness of publications

Publications should be FAIR

Leiden Madtrics

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Publications should be FAIR

October 26, 2020 · 3 min read

Scholarly data sets are increasingly expected to be FAIR (findable, accessible, interoperable, and reusable). To fully realize the benefits of open access to the scholarly literature, Ludo Waltman argues that publications should be FAIR as well.

Budapest Open Access Initiative

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An old tradition and a new technology have converged to make possible an unprecedented public good. The old tradition is the willingness of scientists and scholars to publish the fruits of their research in scholarly journals without payment, for the sake of inquiry and knowledge. The new technology is the internet. The public good they make possible is the world-wide electronic distribution of the peer-reviewed journal literature and completely free and unrestricted access to it by all scientists, scholars, teachers, students, and other curious minds. Removing access barriers to this literature will accelerate research, enrich education, share the learning of the rich with the poor and the poor with the rich, make this literature as useful as it can be, and lay the foundation for uniting humanity in a common intellectual conversation and quest for knowledge.

For various reasons, this kind of free and unrestricted online availability, which we will call **open access**, has so far been limited to small portions of the journal literature. But even in these limited collections, many different initiatives have shown that open access is economically feasible, that it gives readers extraordinary power to find and make use of relevant literature, and that it gives authors and their works vast and measurable new visibility, readership, and impact. To secure these benefits for all, we call on all interested institutions and individuals to help open up access to the rest of this literature and remove the barriers, especially the price barriers, that stand in the way. The more who join the effort to advance this cause, the sooner we will all enjoy the benefits of open access.

The literature that should be freely accessible online is that which scholars give to the world without expectation of payment. Primarily, this category encompasses their peer-reviewed journal articles, but it also includes any unreviewed preprints that they might wish to put online for comment or to alert colleagues to important research findings. There are many degrees and kinds of wider and easier access to this literature. By "open access" to this literature, we mean its free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited.

Open Access | Published: 15 March 2016

The FAIR Guiding Principles for scientific data management and stewardship

Mark D. Wilkinson, Michel Dumontier, [...] Barend Mons

Scientific Data **3**, Article number: 160018 (2016) | Cite this article

151k Accesses | **1918** Citations | **1603** Altmetric | Metrics

An Addendum to this article was published on 19 March 2019

Abstract

There is an urgent need to improve the infrastructure supporting the reuse of scholarly data. A diverse set of stakeholders—representing academia, industry, funding agencies, and scholarly publishers—have come together to design and jointly endorse a concise and measureable set of principles that we refer to as the FAIR Data Principles. The intent is that these may act as a guideline for those wishing to enhance the reusability of their data holdings. Distinct from peer initiatives that focus on the human scholar, the FAIR Principles put specific emphasis on enhancing the ability of machines to automatically find and use the data, in addition to supporting its reuse by individuals. This Comment is the first formal publication of the FAIR Principles, and includes the rationale behind them, and some exemplar implementations in the community.

Box 2 | The FAIR Guiding Principles

To be Findable:
F1. (meta)data are assigned a globally unique and persistent identifier
F2. data are described with rich metadata (defined by R1 below)
F3. metadata clearly and explicitly include the identifier of the data it describes
F4. (meta)data are registered or indexed in a searchable resource

To be Accessible:
A1. (meta)data are retrievable by their identifier using a standardized communications protocol
A1.1 the protocol is open, free, and universally implementable
A1.2 the protocol allows for an authentication and authorization procedure, where necessary
A2. metadata are accessible, even when the data are no longer available

To be Interoperable:
I1. (meta)data use a formal, accessible, shared, and broadly applicable language for knowledge representation.
I2. (meta)data use vocabularies that follow FAIR principles
I3. (meta)data include qualified references to other (meta)data

To be Reusable:
R1. meta(data) are richly described with a plurality of accurate and relevant attributes
R1.1. (meta)data are released with a clear and accessible data usage license
R1.2. (meta)data are associated with detailed provenance
R1.3. (meta)data meet domain-relevant community standards

FAIRness of publications

- Findability
  - Making the text and metadata of publications available in an open infrastructure to make publications easier to find
- Accessibility
  - Making publications freely accessible
- Interoperability
  - Enriching the text and metadata of publications with persistent identifiers to enhance interoperability
- Reusability
  - Allowing publications to be reused

How to make publications findable and interoperable?

Crossref

I4OC

ABSTRACTS

OpenCitations

METADATA 2020

ORCID

ROR

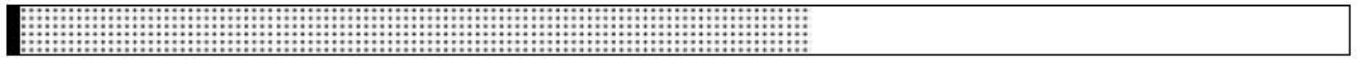
FREYA

Initiative for Open Abstracts (I4OA)

Initiative for Open Citations (I4OC)

I4OC About Goals Publishers Stakeholders Founders FAQ News Press

How many citations are open today?



1% 59% 40%

As of July 2020, the fraction of publications with open references has grown from 1% to 60% out of 51.1 million articles with references deposited with Crossref.

We encourage all other scholarly publishers to follow the example of these trail-blazing publishers by making their reference metadata publicly available. Please contact Crossref Support (support@crossref.org) for more information, or to let them know that you are ready to open up your reference metadata now. See also our list of responses to frequently asked questions.

Initiative for Open Abstracts (I4OA)

- I4OA is a collaboration between scholarly publishers, infrastructure organizations, librarians, researchers and other interested parties to advocate and promote the unrestricted availability of the abstracts of the world's scholarly publications in trusted repositories where they are open and machine-accessible
- **I4OA calls on all scholarly publishers to open the abstracts of their published works, and where possible to submit them to Crossref**

Importance of open abstracts

Aaron Tay
Library Analytics Manager

Bianca Kramer
Information/Collection Specialist

Ludo Waltman
Professor of Quantitative Science Studies and Deputy Director

Why openly available abstracts are important — overview of the current state of affairs

June 30, 2020 · Opinion & Commentary · 9 min read

Openness of the metadata of scientific articles is increasingly being discussed. In this blog post, Aaron Tay (SMU Libraries, Singapore Management University), Bianca Kramer (Utrecht University Library), and Ludo Waltman (CWTS, Leiden University) discuss the value of openly available abstracts.

I4OA founding organizations

CURTIN OPEN KNOWLEDGE INITIATIVE

Crossref

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Hindawi

ISSI

OpenCitations

Oxford e-Research Centre

RESEARCH CENTRE FOR OPEN SCHOLARLY METADATA

SAGE Publishing

Université de Montréal

INDIANA UNIVERSITY

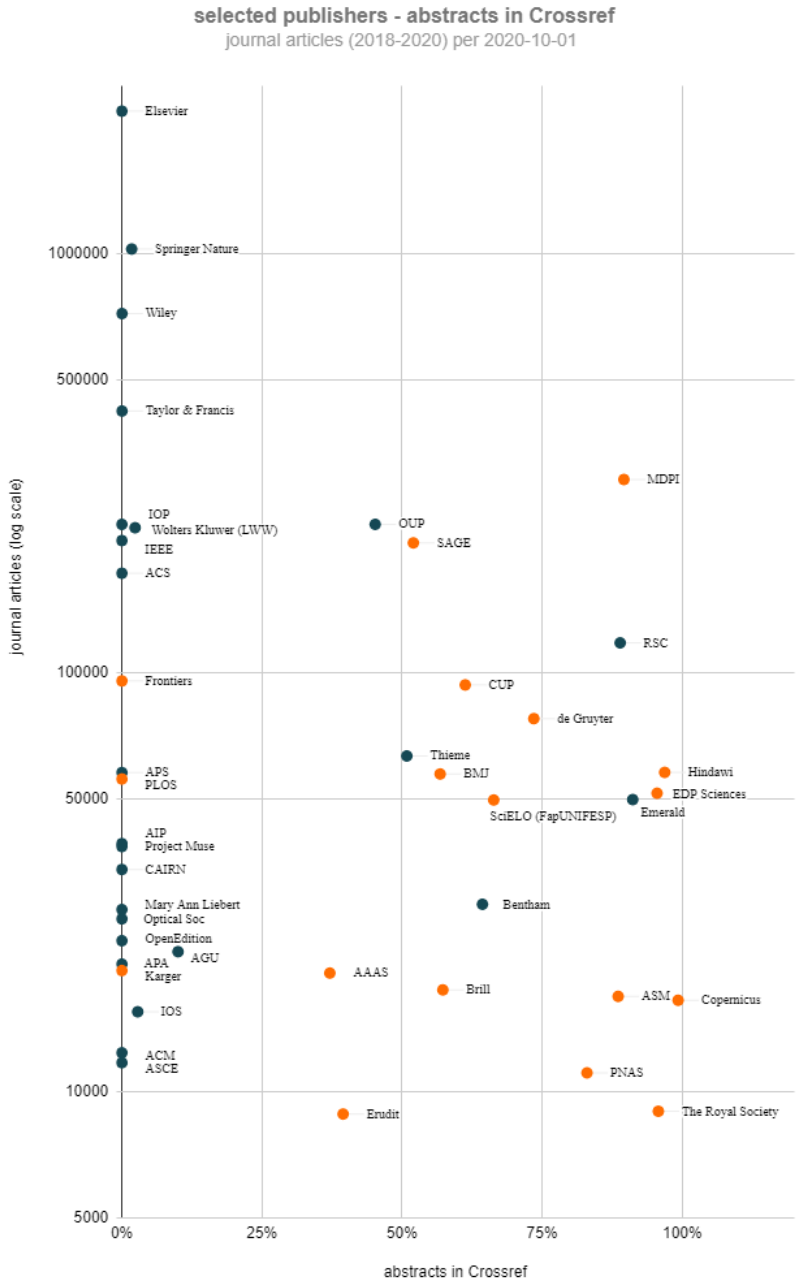
SMU SINGAPORE MANAGEMENT UNIVERSITY

THE ROYAL SOCIETY

Utrecht University

60 publishers supporting I4OA

AfricArXiv
American Association for the Advancement of Science (AAAS)
American Mathematical Society (AMS)
American Society for Microbiology (ASM)
Beilstein-Institut
Berghahn Books
BMJ
Brill
British Academy
British Institute of Radiology
California Digital Library (CDL)
Cambridge University Press (CUP)
Chitkara University Publications
Copernicus
Council for British Archaeology (CBA)
EDP Sciences
eLife
EMBO
EMS Press
European Respiratory Society (ERS)
F1000
Frontiers
Geological Society of London
Hindawi
Institute of Higher Education of the National Academy of Educational Sciences of Ukraine
IntechOpen
International Union of Crystallography (IUCr)
IWA Publishing
John Benjamins Publishing Company
Leibniz-Institute for Psychology Information (ZPID)
MDPI
MIT Press
National Electronic Information Consortium (NEICON)
Open Book Publishers
PeerJ
Poltekkes Kemenkes Kendari
Portland Press (Biochemical Society)
Proceedings of the National Academy of Sciences (PNAS)
protocols.io
Public Library of Science (PLOS)
Rockefeller University Press
Royal College of General Practitioners
Royal College of Psychiatrists
RS Global Sp. z O.O.
RTI Press
S. Karger
SAGE
Schloss Dagstuhl - Leibniz Center for Informatics (LZI)
SciPost
Society for Promotion of Horticulture
The Company of Biologists
The Royal Society
Thomas Telford (Institution of Civil Engineers)
Ubiquity Press
UCL Press
University Library System, University of Pittsburgh
University of Buckingham Press
University of Technology, Sydney (UTS) ePress
Vilnius University Press
Walter de Gruyter



Blog

Home > Blog > **Open Abstracts: Where are we?**

6 minute read.

Open Abstracts: Where are we?

Ludo Waltman, Bianca Kramer, Ginny Hendricks, Bryan Vickery – 2020 September 25
In Metadata, Content Registration, Collaboration, Community

The Initiative for Open Abstracts (I4OA) launched this week. The initiative calls on scholarly publishers to make the abstracts of their publications openly available. More specifically, publishers that work with Crossref to register DOIs for their publications are requested to include abstracts in the metadata they deposit in Crossref. These abstracts will then be made openly available by Crossref. 39 publishers have already agreed to join I4OA and to open their abstracts.

Where are we at the moment in terms of openness of abstracts? For an individual publisher working with Crossref, the percentage of the publisher's content for which an abstract is available in Crossref can be found in Crossref's Participation Reports. The chart presented below gives the overall picture (as of September 1, 2020) for medium-sized and large publishers working with Crossref. The vertical axis shows the number of journal articles of a publisher in the period 2018-2020. Because of the large differences between publishers in the number of articles they publish, this axis has a logarithmic scale. The horizontal axis shows the percentage of the articles of a publisher for which an abstract is available in Crossref. The orange dots represent publishers that have agreed to join I4OA. The publishers colored in blue have not yet agreed to join the initiative.

We expect some of the larger publishers to join I4OA soon

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60 stakeholders supporting I4OA

Supporting I4OA

Publishers and stakeholders that want to join I4OA are kindly invited to contact us

Watch the recording of our launch event at https://youtu.be/h6QtLyOVJNw

Website: https://i4oa.org

Email: openabstracts@gmail.com

Twitter: @open_abstracts

FAIRness of publications

Who facilitates FAIRness of publications?

	Findability	Accessibility	Interoperability	Reusability
FAIRness facilitated by publishers	Crossref, PubMed, I4OC, I4OA	Gold/hybrid/bronze OA	DOI, ORCID, ROR	Gold/hybrid OA
FAIRness facilitated by others	Google Scholar Microsoft Academic	Green OA	Proprietary IDs and disambiguation algorithms	Green OA

I will focus on FAIRness facilitated by publishers

Dutch research institutions and Elsevier initiate world's first national Open Science partnership

Tuesday 19 May 2020
VSNU, NFU, NWO and Elsevier have agreed publishing, reading and open science services to support Dutch research and innovation ambitions

The Association of Universities in the Netherlands (VSNU), The Netherlands Federation of University Medical Centres (NFU), The Dutch Research Council (NWO) and Elsevier, a global leader in research publishing and information analytics, have formed a novel partnership that includes publishing and reading services as well as the joint development of new open science services for disseminating and evaluating knowledge. The partnership runs until 31 December 2024.

In December 2019, the research institutions and Elsevier signed a framework agreement. During the past four months, both parties carefully developed this into a unique agreement. In parallel the Dutch Research Institutions established an independent expert Taskforce on responsible management of research information and data to determine the conditions and rules under which metadata of public research output can be (re)used and enriched by all public and private organizations. Following the advice of the Taskforce, a set of collaboration principles was agreed, including data ownership (researchers and/or institutions own their own research data), enduring access to data and metadata, vendor neutrality, interoperability, and institutional discretion on the use of the services.

This has led to the agreement that VSNU, NFU, NWO and Elsevier are pleased to announce today, and which comprises:

1. **Open Access Publishing and Reading services.** This is a national deal that covers reading rights to quality, peer-reviewed content across Elsevier's extensive portfolio of journals and supports the aim of 100% open access publishing for all members of the consortium. From today, 95% of Dutch articles published in Elsevier journals can be made immediately open access through this agreement. The vast majority of Elsevier's journals already offer an immediate open access option and, as part of this agreement, the company has committed to work towards immediate open access options across all remaining titles.
2. **Open Science Services for Research Intelligence and Scholarly communication.** Elsevier will work with the Dutch partners to co-develop new services that help disseminate and evaluate knowledge. The parties will undertake a number of pilot projects to refine and adapt these services to meet the needs of the Dutch Research Institutions and to support the broader ambition of public engagement with science. These pilots will be conducted according to the collaboration principles as mentioned above.

Chief-negotiator/President of Delft University of Technology Tim van der Hagen said: "This deal is a breakthrough in our ambition for 100% open access in the Netherlands and a prelude to a public knowledge base for information about scientific output."

NWO President Stan Gielen said: "Enabling Open Access to research results has been a core mission for NWO since 2003. This agreement is a giant step in our collective ambition to provide 100% Open Access for all publicly funded research in the Netherlands. It is fully aligned with the principles of Plan S and a major breakthrough for open science in general."

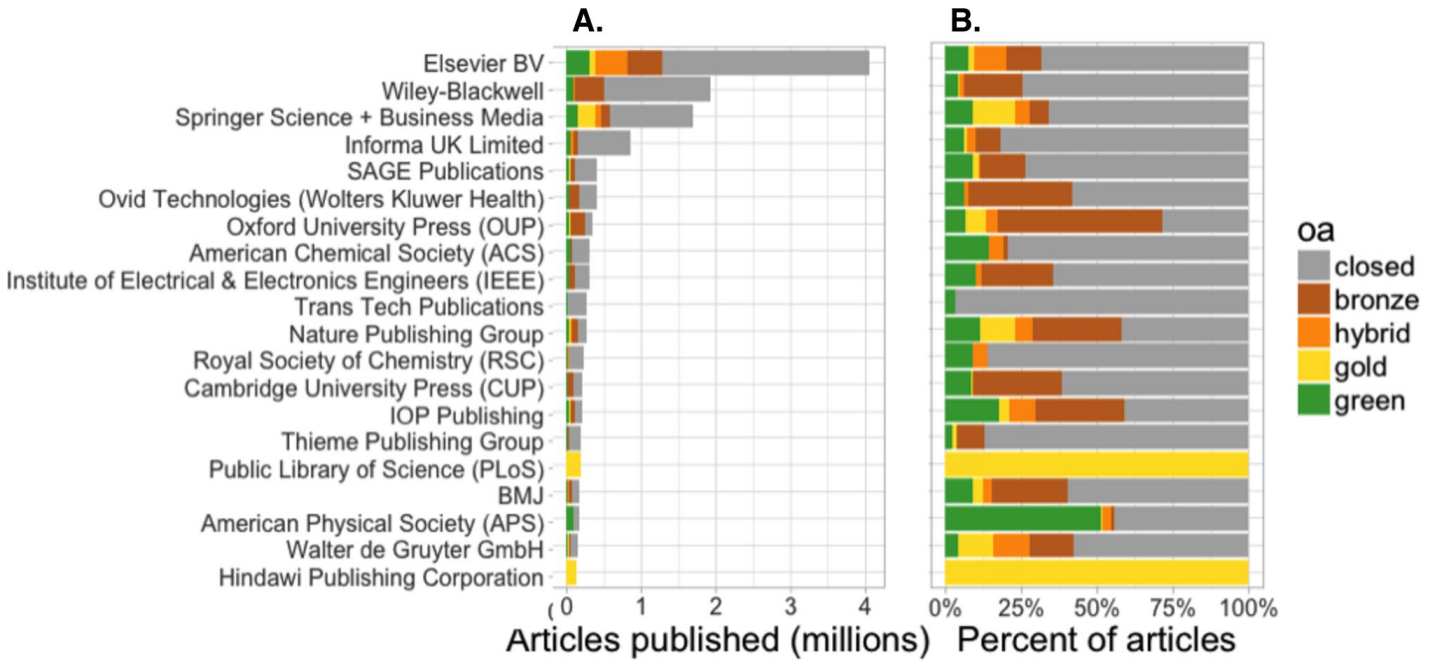
- Most Dutch Elsevier publications will be open access
- These publications will be freely accessible and reusable
- However, since the agreement doesn't cover open metadata, findability and interoperability will be hampered

Wiley Contract

The Wiley agreement, signed on 15 January 2019, is the first such contract concluded by Projekt DEAL.
Wiley is the third largest publisher of German research, in terms of the number of articles published annually by scholars and scientists affiliated with German institutions. Through this agreement, nearly 10,000 research articles by German authors will now be published immediately open access.

- Most German Wiley publications will be open access
- These publications will be freely accessible and reusable
- Findability will be promoted by open citation data, but hampered by lack of open abstracts

OA status vs. FAIRness



Publications per publisher and OA type (2009-2015)

Source: Piwowar et al. (2018)

- Gold/hybrid
  - Accessible and reusable, but not necessarily findable and interoperable (e.g., Elsevier)
- Bronze
  - Accessible, but not necessarily reusable, findable, and interoperable
- Green
  - Accessible and reusable, but not necessarily findable and interoperable
- Closed
  - Not accessible and reusable, but open metadata may promote findability and interoperability (e.g., SAGE)

Conclusions

Conclusions

- Publications should not just be open access (accessible and reusable), they should be FAIR (findable, accessible, interoperable, and reusable)
- This requires publishers and other stakeholders to join open metadata initiatives, such as the Initiative for Open Abstracts (I4OA)
- Current transformative agreements promote accessibility and reusability, but not necessarily findability and interoperability

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