



SCHOLARLY PUBLISHING 101

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Communications manager, MPDL

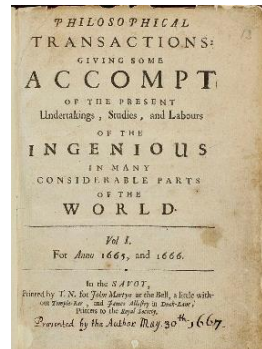
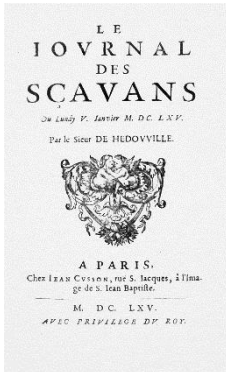
A brief history of scholarly publishing

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1665

the first
scientific
journals



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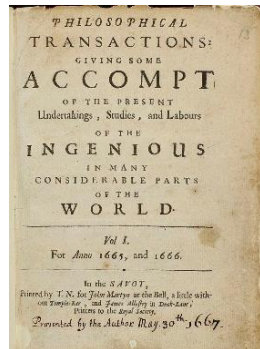
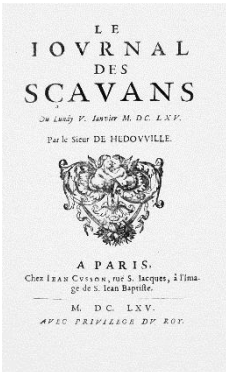
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1731

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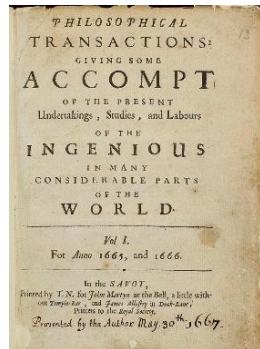
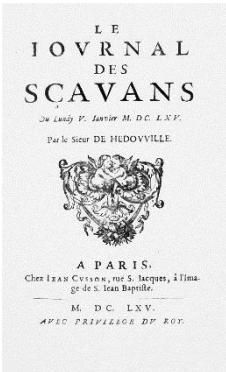


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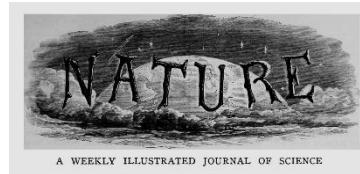
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Late 1800s
Nature and
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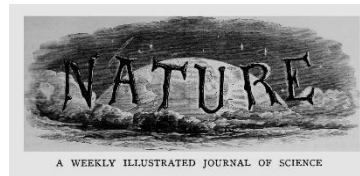
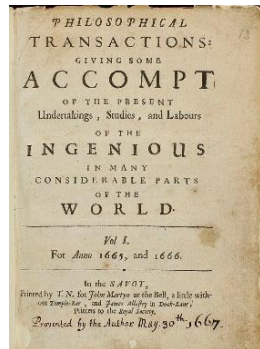
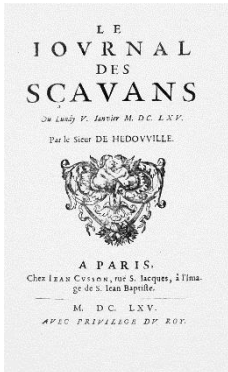
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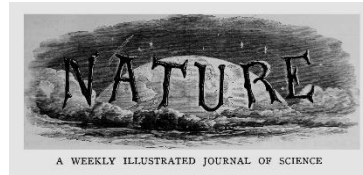
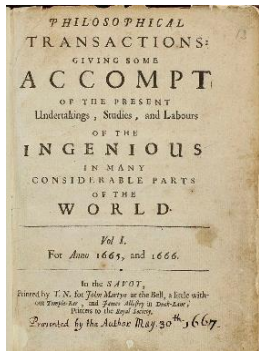
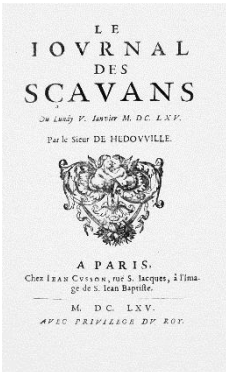
1990s
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1990
Launch of
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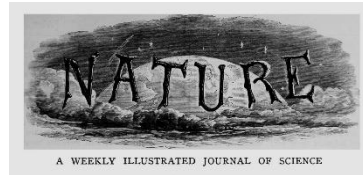
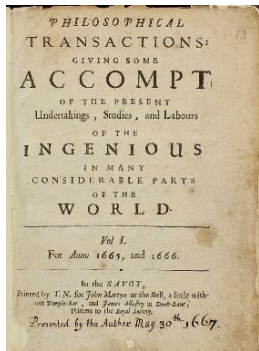
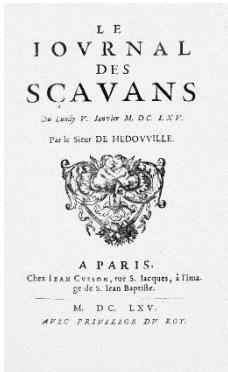
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founding of BioMed Central, first OA publisher



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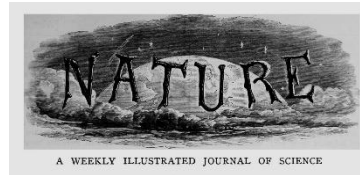
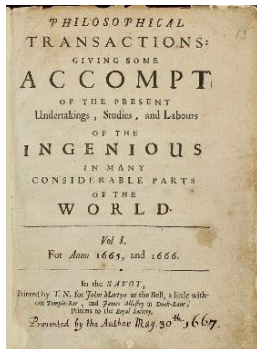
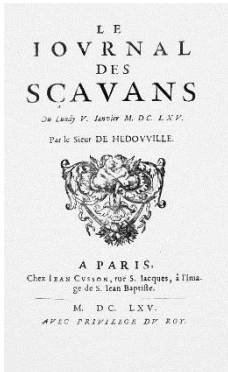
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2014
first offset agreement



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Open access and its effect on the publishing market

Facts and figures

1999/2000



- First for-profit open access publisher
- Introduced article processing charges in 2002
- 250 journals
- Since 2008, owned by Springer Nature

2003



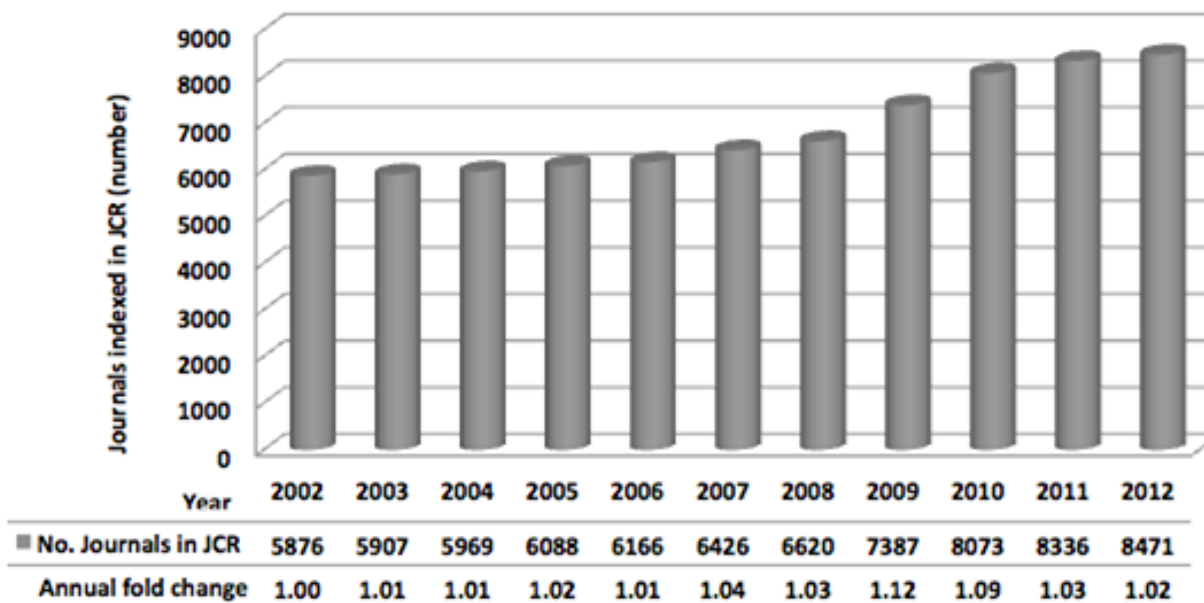
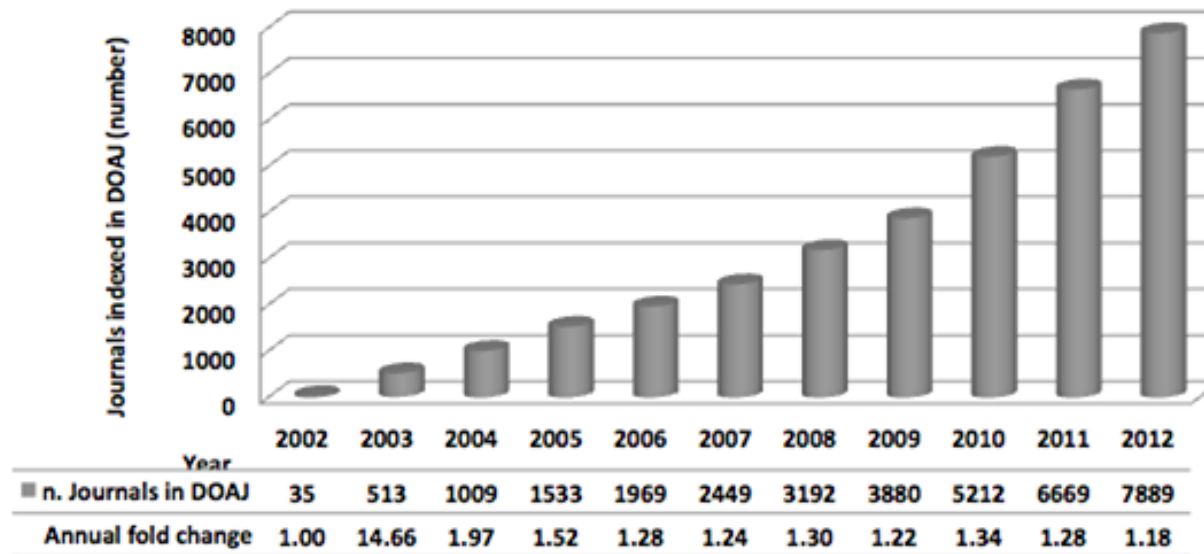
- Started in 2000 with an online petition initiative by Nobel Prize winner Harold Varmus
- 2003 launch of PLOS Biology
- 7 journals
- 2006: PLOS One

Open access publishers in the “Top 20”

Ranking according to global article output shares

Elsevier	<i>[fully OA journals]</i>
Springer Nature	<i>[BioMed Central] [Springer Open]</i>
Wiley	<i>[Wiley Open Access]</i>
Taylor & Francis	<i>[Cogent]</i>
American Chemical Society	
Royal Society of Chemistry	
IEEE	
Oxford University Press	
Lippincott/ Wolters Kluwer	
PLOS	
Sage	
American Institute of Physics	
Institute of Physics Publishing	
American Physical Society	<i>[New Journal of Physics]</i>
MDPI	
Cambridge University Press	
Hindawi	
Frontiers	

Growth of # of OA journals compared to # journals indexed by the Journal Citation Report 2002-2012



Source: Poltronieri, E., Bravo, E., Curti, M., Ferri, M. & Mancini, C. (2016). Open access publishing trend analysis: statistics beyond the perception. *Information Research*, 21(2), paper 712. Retrieved from <http://InformationR.net/ir/21-2/paper712.html>

Relevance of oa journals- Top 20 journals worldwide: 8 gold OA

Publisher	Journal	#Papers 2016
PLOS	PLOS ONE	22091
NPG	Scientific Reports	20546
RSC	RSC Advances	13274
Impact	OncoTarget	6625
APS	Physical Review B: Condensed Matter and Materials Physics	5345
ACS	ACS Applied Materials and Interfaces	4057
NPG	Nature Communications	3537
RSC	Physical Chemistry, Chemical Physics	3503
APS	Physical Review D: Particles, Fields, Gravitation, and Cosmology	3390
Elsevier	Medicine	3275
Elsevier	Journal of Alloys and Compounds	3243
ACS	The Journal of Physical Chemistry C: Nanomaterials and Interfaces	3241
OUP	Monthly Notices of the Royal Astronomical Society	3208
NAS	Proceedings of the National Academy of Sciences of the USA	3183
AIP	Applied Physics Letters	3047
e-Century	International Journal of Clinical and Experimental Medicine	3005
RSC	Chemical Communications	2967
OSA	Optics Express	2903
AAS	The Astrophysical Journal	2812
Desalination	Desalination and Water Treatment	2762

Analysis based on Web of Science | Number of papers published in 2016

Top 20 journals for Max Planck Society: 7 gold OA

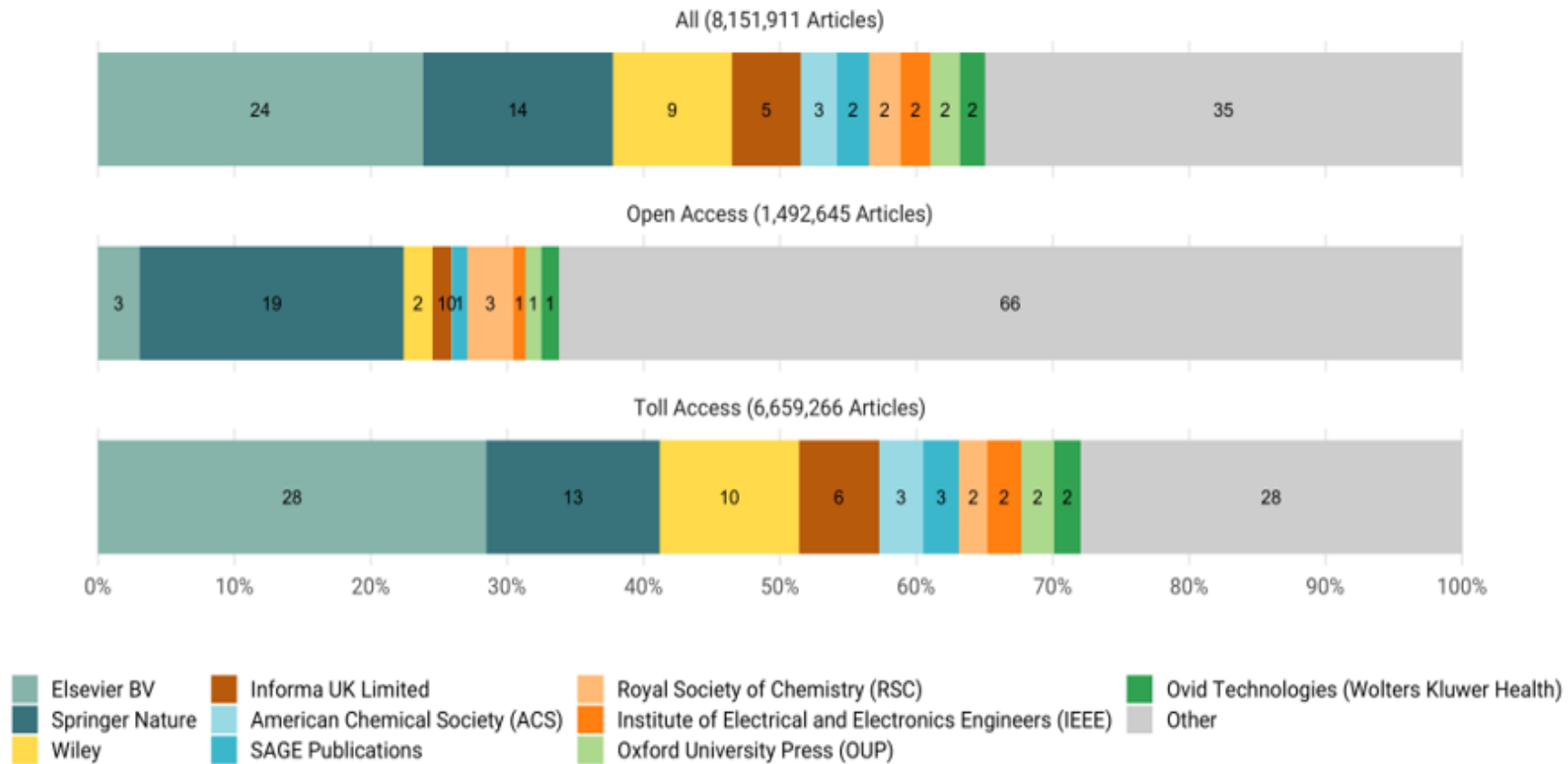
Publisher	Journal	#Papers 2016
EDP	Astronomy and Astrophysics	486
OUP	Monthly Notices of the Royal Astronomical Society	420
AAS	The Astrophysical Journal	293
APS	Physical Review B: Condensed Matter and Materials Physics	274
NPG	Scientific Reports	272
NPG	Nature Communications	194
APS	Physical Review Letters	182
APS	Physical Review D: Particles, Fields, Gravitation, and Cosmology	177
PLOS	PLOS ONE	164
NAS	Proceedings of the National Academy of Sciences of the USA	126
SCOAP3	Journal of High Energy Physics	123
Wiley	Angewandte Chemie International Edition	92
APS	Physical Review A: Atomic, Molecular, and Optical Physics	90
NPG	Nature	84
Copernicus	Atmospheric Chemistry and Physics	82
AAS	The Astrophysical Journal Letters	81
AAAS	Science	75
IOP	New Journal of Physics	74
eLife	eLife	74
Elsevier	NeuroImage	72

Analysis based on Web of Science | Number of papers published in 2016

But: still today, over 80% of new research is published behind subscription paywalls

Global Publisher Market Shares 2014 - 2018

Original Articles and Reviews indexed in the Web of Science



Data Source: Web of Science / Competence Centre for Bibliometrics for German Science.
Publisher names were disambiguated using Crossref metadata. OA journals identified using the Bielefeld Gold OA list.
Funding: Federal Ministry of Education and Research of Germany (BMBF)

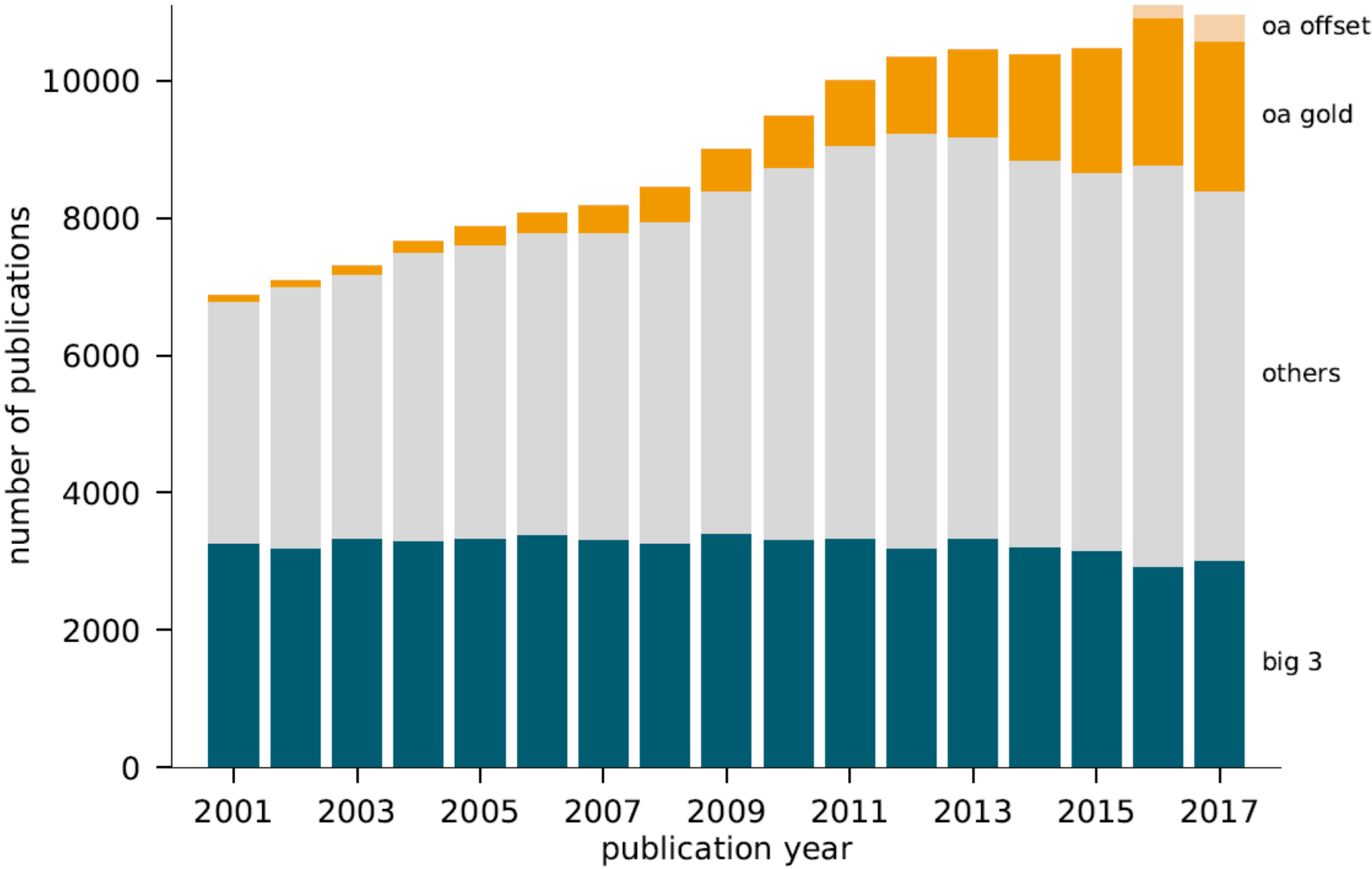
Financing of OA publishing

MPDL's funding strategy

Publication Charges Information	Number of Journals	Percentage of Journals
No charges	6470	67%
Has charges	2567	26%
Conditional charges	520	5%
No information available	145	1%
Total	9702 *	

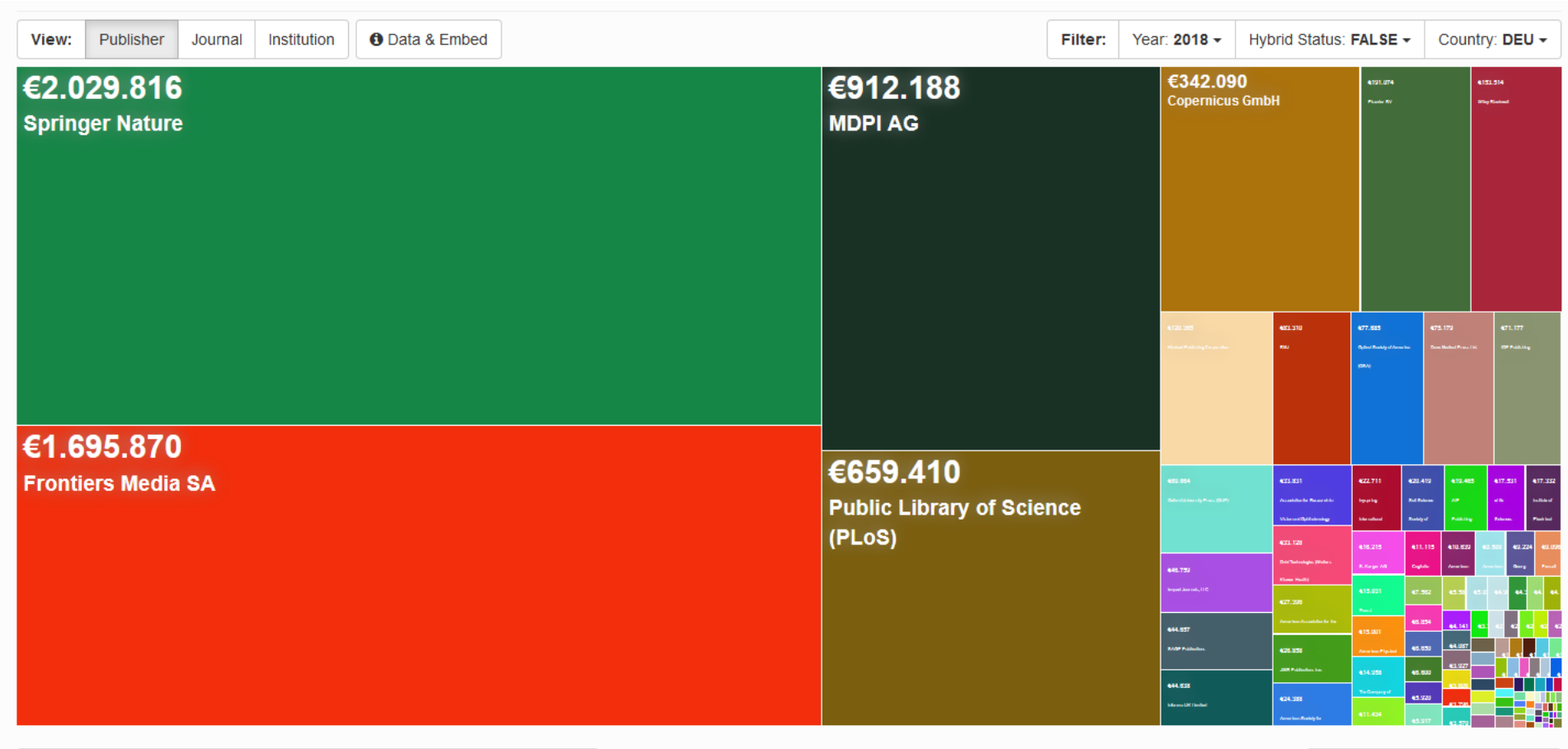
* The total number of journals listed in the DOAJ downloadable metadata file as of this date was 9709.

Development of open access publishing in the Max Planck Society
















Institutional APC expenditures [German institutions 2018]



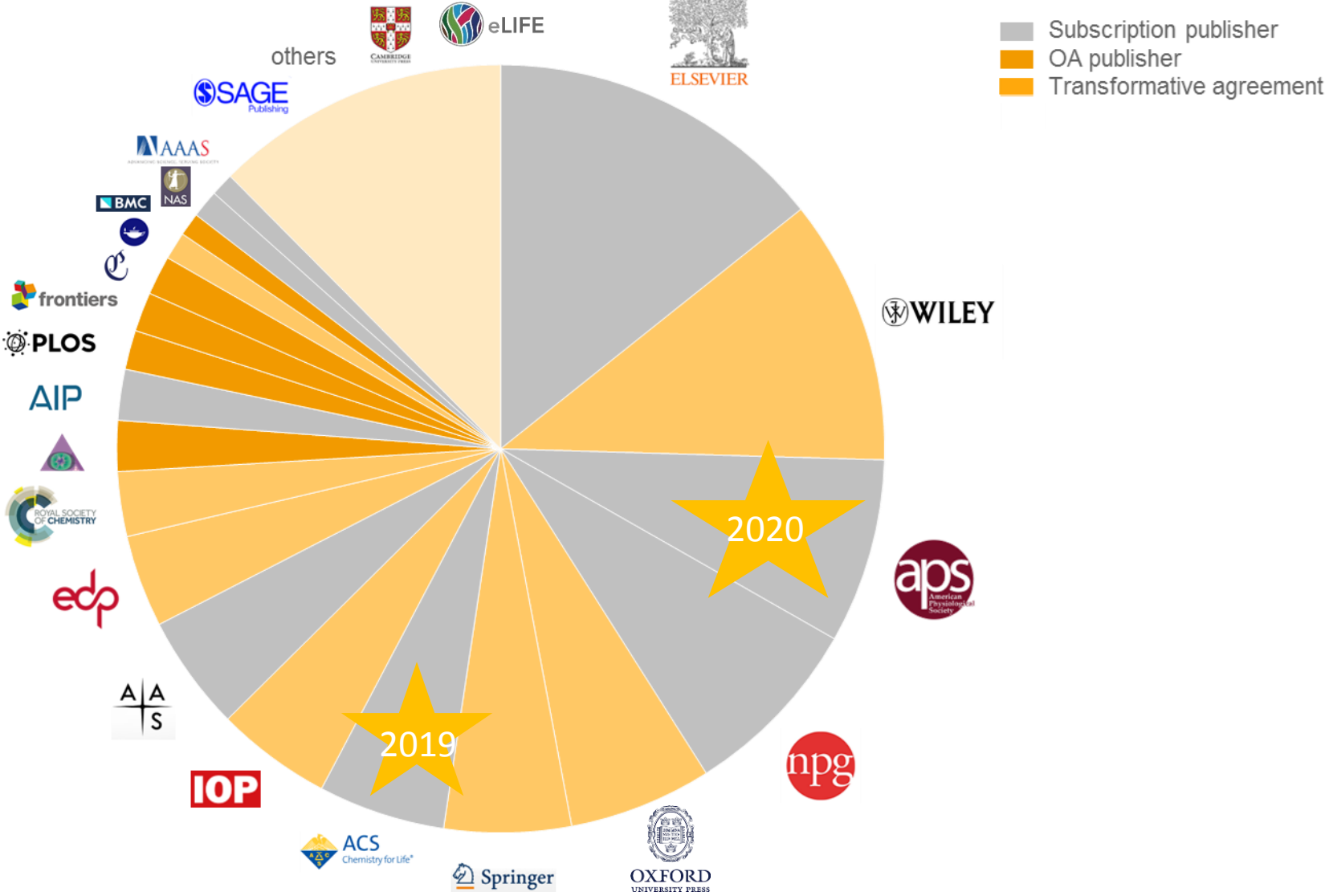
Source: <https://treemaps.intact-project.org>

Institutional APC expenditures [German institutions 2018]

Publishers (120 entries)	Sum	Number of Articles	Mean Value	Standard Deviation	Percentage
 Springer Nature	€2.029.816	1199	€1.693	€534	28.40%
 Frontiers Media SA	€1.695.870	919	€1.845	€367	23.73%
 MDPI AG	€912.188	861	€1.059	€414	12.76%
 Public Library of Science (PLoS)	€659.410	430	€1.534	€184	9.23%
 Copernicus GmbH	€342.090	233	€1.468	€531	4.79%
 Elsevier BV	€191.074	122	€1.566	€1.040	2.67%
 Wiley-Blackwell	€153.514	97	€1.583	€554	2.15%
 Hindawi Publishing Corporation	€120.365	79	€1.524	€487	1.68%
 BMJ	€83.310	50	€1.666	€236	1.17%
 Optical Society of America (OSA)	€77.685	45	€1.726	€232	1.09%
 Dove Medical Press Ltd.	€75.179	39	€1.928	€120	1.05%
+ view small values					
Total	€7.146.511	4686	€1.525	€576	100%

Source: <https://treemaps.intact-project.org>

Transformative agreements



OA and the publishing process

The publishing process

**conduct
research**



**write
paper**



**select
journal**



**submit
article**



**article
undergoes
peer review**



revisions

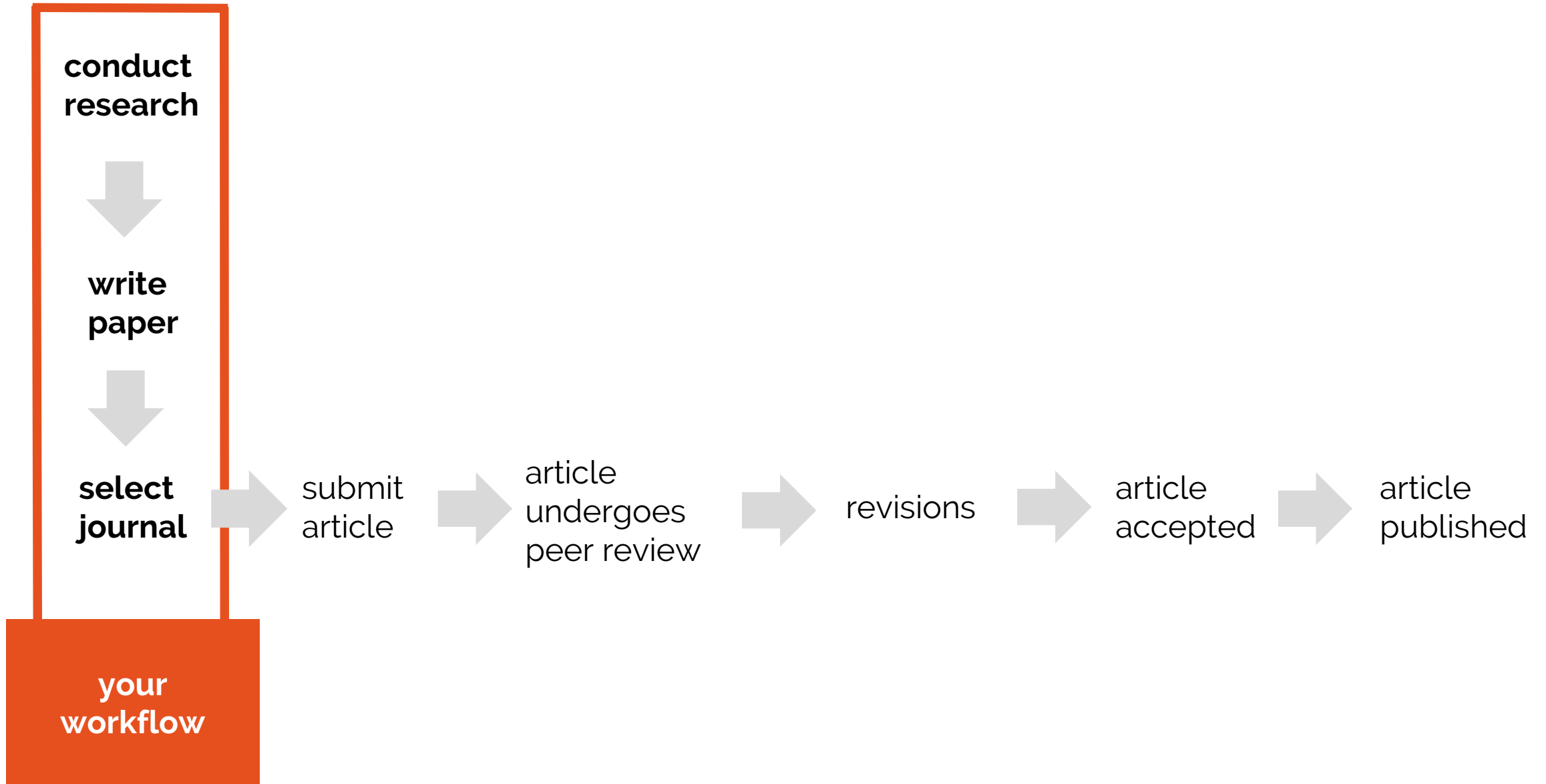


**article
accepted**



**article
published**

The publishing process



Innovation **The rise of pre-prints**

The logo for arXiv, consisting of the text "arXiv" in white lowercase letters on a dark red square background.

arXiv

Innovation **The rise of pre-prints**



The publishing process

**conduct
research**



**write
paper**



**select
journal**



**submit
article**



**article
undergoes
peer review**



revisions



**article
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select
journal



Traditional peer review

Single-blind

- authors do not know the identity of the peer reviewers
- reviewers know the authors' names and affiliations

Double-blind

- authors and reviewers do not know each others' identities
- more common in the social sciences and humanities

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Innovations in peer review

Open

- authors and reviewers know each others' identities
- encourages accountability and civility, generally improving the overall quality of the review and article

Transparent

- open peer review where the article's entire peer review process is published, searchable, and citable



The publishing process

**conduct
research**



**write
paper**



**select
journal**



**submit
article**



**article
undergoes
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revisions



**article
accepted**



**article
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The publishing process

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**article
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**life after
publication**

Innovation **Measuring journal + article impact**

Impact factor Seems to benefit from OA content

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Alternative metrics Social media hits
 News mentions
 Blog mentions, etc.



Innovation **Measuring journal + article impact**

Impact factor Seems to benefit from OA content

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Innovation **Increasing journal transparency**

Downloads/accesses

Peer review times

Alternative metrics



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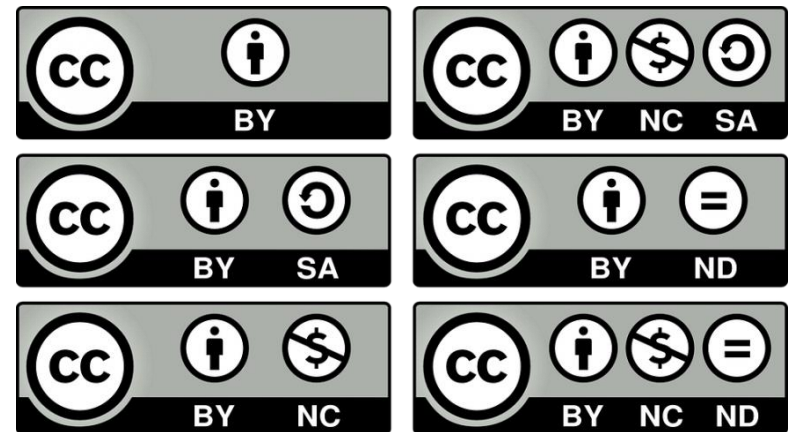
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Copyright



Open access challenges the traditional paradigm of journal publishing

Open access has been a **catalyst for change and innovation** both for

- the development of **sustainable financial frameworks**
- speeding the **dissemination and visibility of research** outcomes



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