



Title	学術論文発表と研究評価を取り巻く環境の大変貌— オープンアクセス誌がもたらすパラダイムシフト
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The University of Osaka Institutional Knowledge Archive : OUKA

<https://ir.library.osaka-u.ac.jp/>

The University of Osaka

The Great Change in Article Publishing and Research Assessment —Paradigm Shift induced by Open Access

Osaka University Seminar

January 24, 2020

Miho Funamori
National Institute of Informatics

Today's Talk

1. Importance of ScholCom
2. Issues related to scientific journals and OA movements
3. Approach to full OA through Publish & Read agreements (?!)
4. Full OA puts researchers at risk—APCs, a heavy burden on researchers
5. Need for non-commercial Publishing Platforms
6. Negative effects of Quantitative Research Assessment Indicators in an Digital Era
7. Various attempts to change research assessments
8. Co-creating the Open Science Era with Societies and Academia

1. Importance of ScholCom

Research outputs are based on preceding research outputs

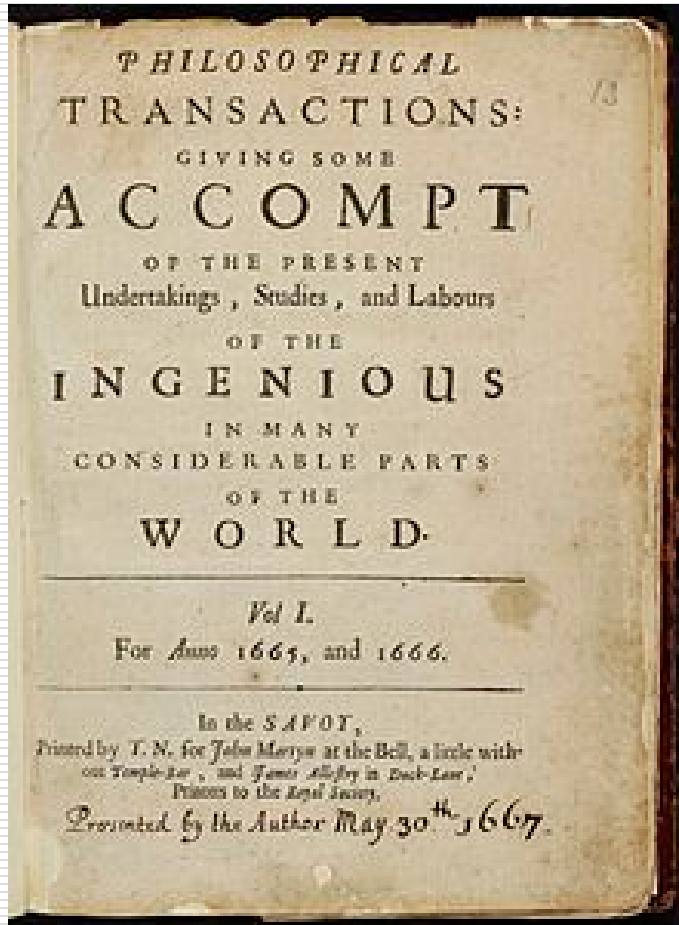
*“If I have seen further
it is by standing on the
shoulders of Giants.”*

—Sir Isaac Newton (1675)




Royal Society's Philosophical Transactions

...The start of "open" scholarship tradition



- ❑ Founded in 1665
- ❑ Basic functionality of academic journals invented.
 - Registration (date stamping, provenance)
 - Certification (peer review)
 - Dissemination and Archiving
- ❑ Removing the impediments of research communication through letters and secret codes.
 - Able to judge who was faster with new findings
 - Able to build on preceding research

The meaning of research article for researcher

- 
- ✓ Learn preceding research
 - ✓ Disseminating own research
 - ✓ Being evaluated from the research output

Meaning of scholarship to humankind

Reasons why scholarship and higher education are regarded social capitals and funded by tax-payer's money.

- ❑ Make people's life richer
- ❑ Understand the roots of human being and earth
- ❑ Frees life from illness and disasters
- ❑ Makes life convenient and efficient
- ❑ Enables to live wisely
- ❑ Leading to peace and happiness



Research articles are the core embodiment of research outputs



The meaning of “research articles” for researchers are the same as “vegetables” for farmers.

The relation of the academies and publishers

- ❑ Publishers print and disseminate research.
 - ❑ In print age, publishers were essential to disseminate and preserve research outputs.
- ⇒ Academy and publishers as mutually beneficial existence and co-prospering!

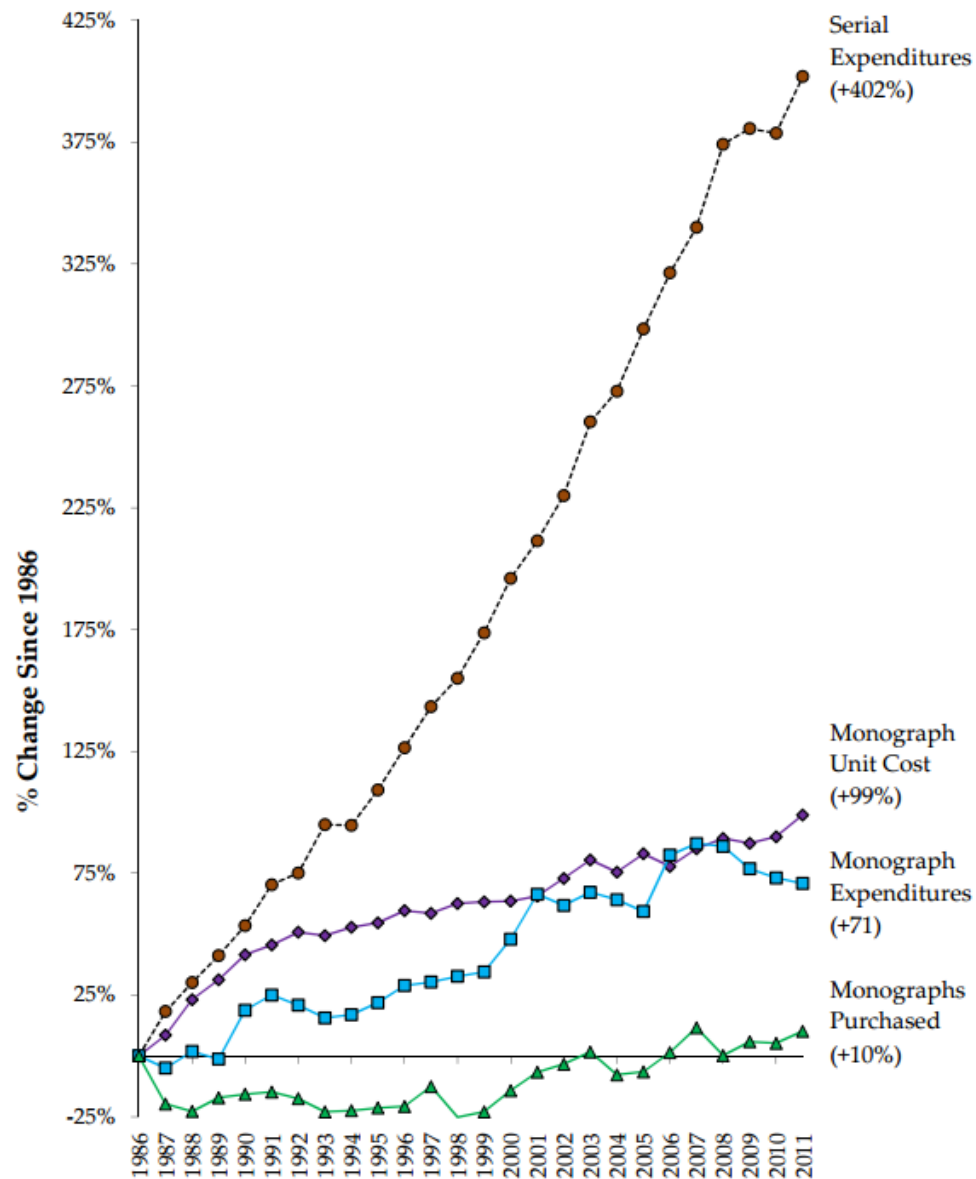


2. Issues related to scientific journals and OA movements

How it started: "Serials Crisis"

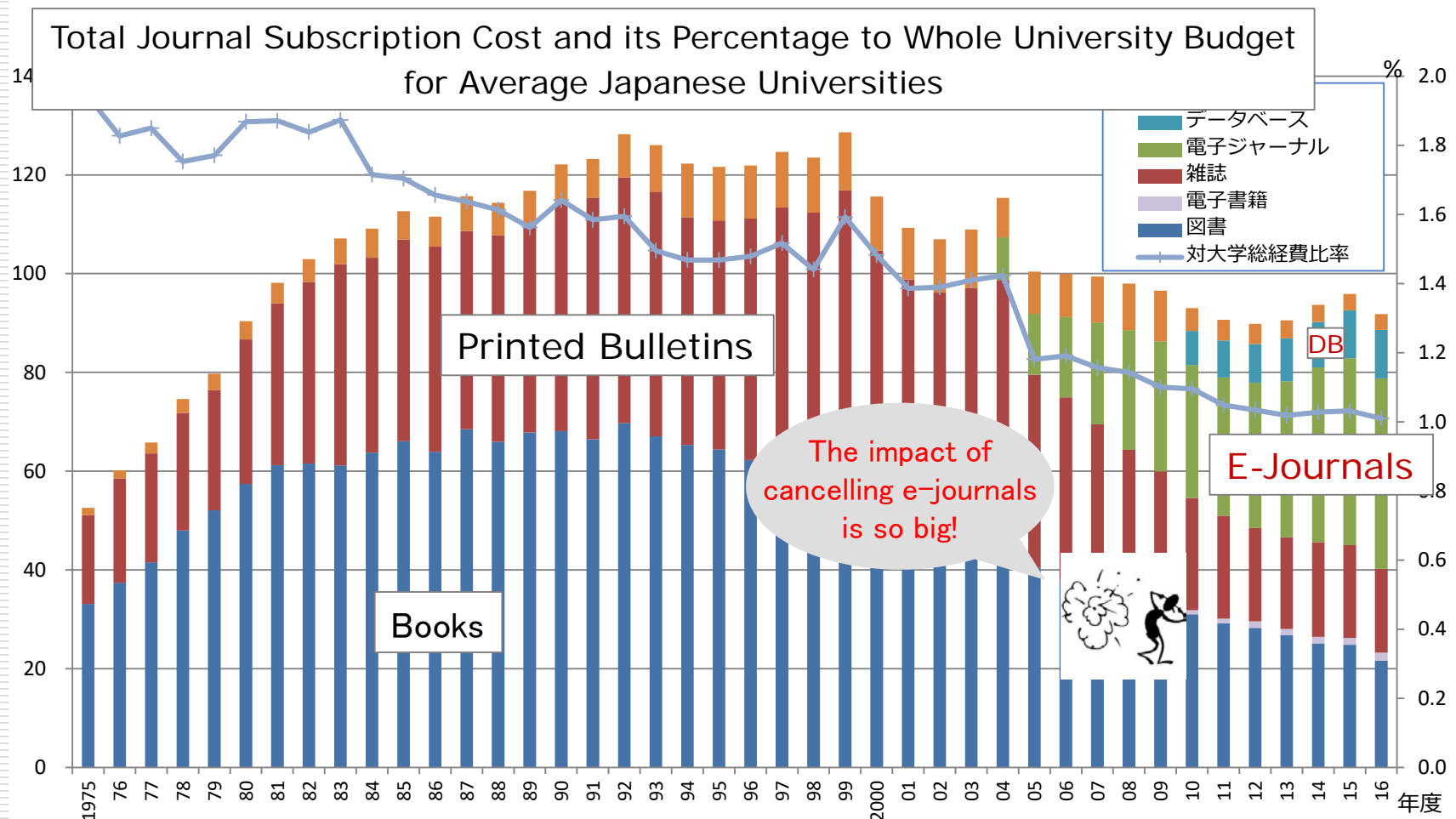
- Journal subscription cost rising faster than the inflation speed
- Four times higher in 2011 than 1986

Monograph & Serial Costs in ARL Libraries, 1986-2011*



NOTE: Data for monograph and serials expenditures was not collected in 2011-12.

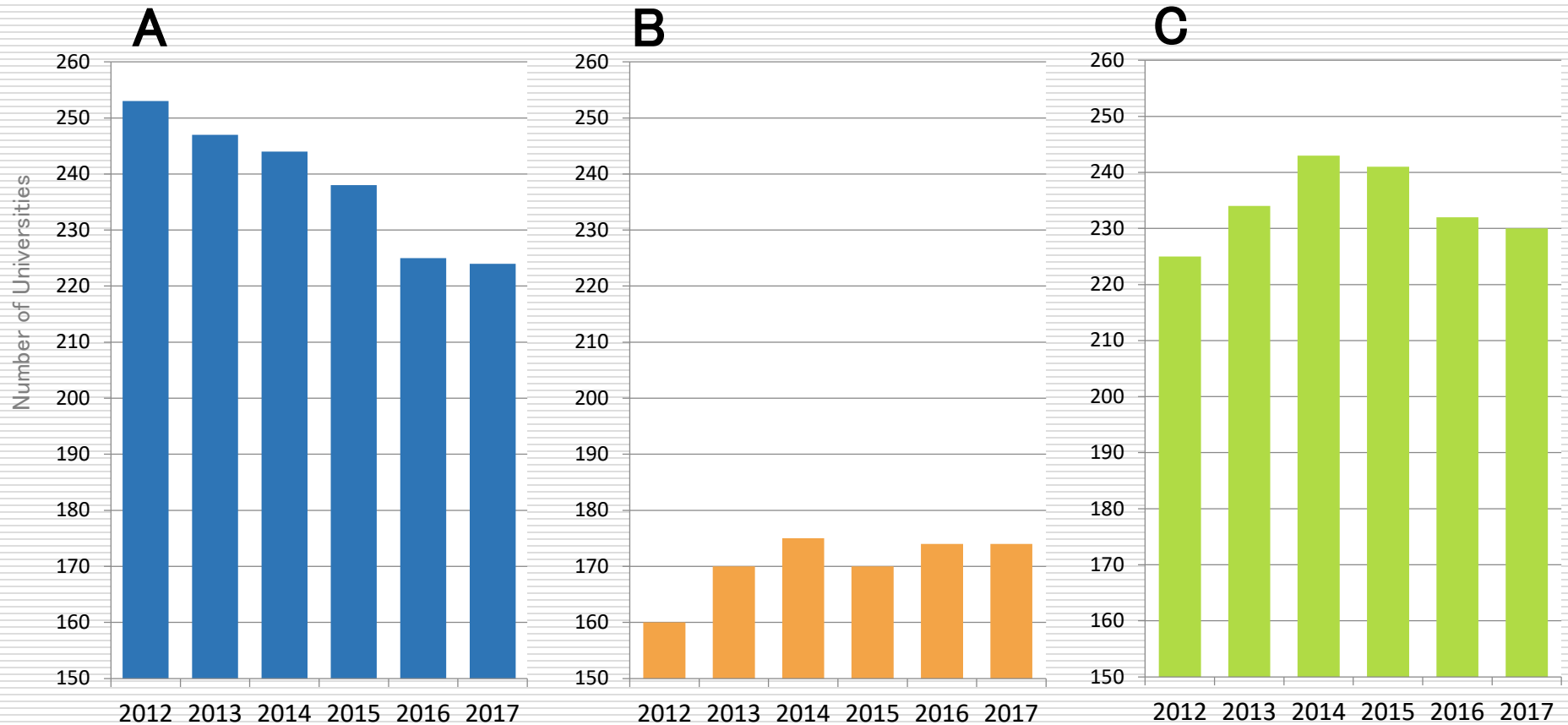
E-Journals squeezing the books and printed matters



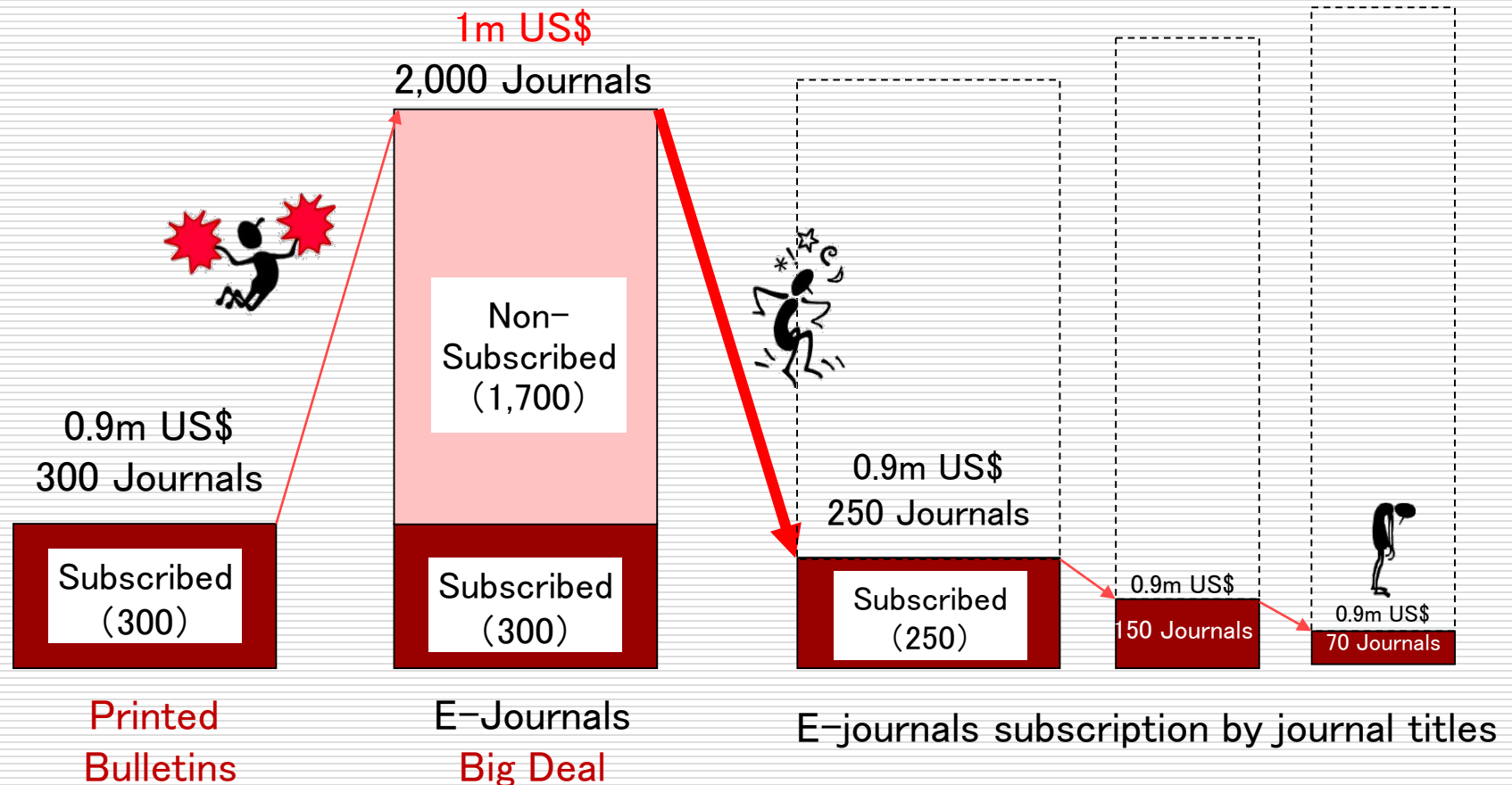
(出典)文部科学省(旧文部省)の「学術情報基盤実態調査結果報告」(旧「大学図書館実態調査結果報告」)による〔JUSTICE事務局作成〕

<https://www.nii.ac.jp/content/justice/documents/>

Japanese universities giving up on package subscription



When cancelling the Big Deal



Comparing journals contracts by e-journals vs printed bulletins

E-journals
are so easy
to use!



	<u>E-Journals</u>	<u>Printed Bulletins</u>
Purchase Item	Access Right	Printed Matters
Purchase Unit	Bundled Package or by Periodicals	By Periodicals
Durability	<u>Not granted</u>	Almost forever!
Available Titles	Many! As much as offered by package	Purchased titles only
Usability	Instant Use, anytime, everywhere	Burdensome
Manageability	Easy to manage! Statistics also available	Burdensome

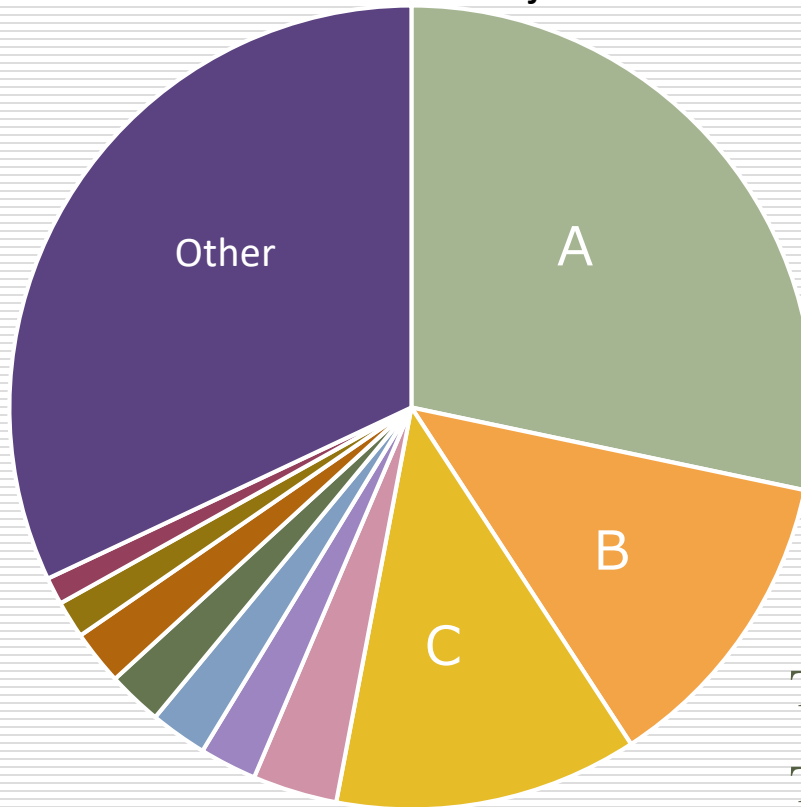
The world's largest full-text database of Elsevier: Science Direct

Science Direct is the world's largest full-text database of Elsevier and contains more than 2,500 electronic journals Elsevier publishes in the scientific, technologic, medical and socioscientific fields and more than 35,000 electronic books. The number of full-texts exceeds 1.4 million.



Top three publishers make more than half of subscription cost

Subscription cost of Japanese universities
to international academic journals F.Y. 2017



Top 3 publishers constitutes 50%

Top 10 publishers constitutes 60%

Why does e-journal subscription cost rise?

❑ Market failure

- ✓ Journal A cannot be replaced by Journal A'
- ✓ Monopoly by few publishers



❑ Increase in publications and users

- ✓ Publishers arguing on this point which is not acceptable to academics.
- ✓ Researchers are peer-reviewing and editing on voluntary basis.
- ✓ E-platforms should enable handling of massive contents at almost same cost as small amounts of contentse.

❑ Developing new functionalities for journal platform

- ✓ Discovery and analytics (publication no, citations, IF, etc)
- ✓ Publishers claim they develop because there are needs. However, do we really need these?

Elsevier's Profit Margin at around 40%



We are not writing articles for publishers to make money!

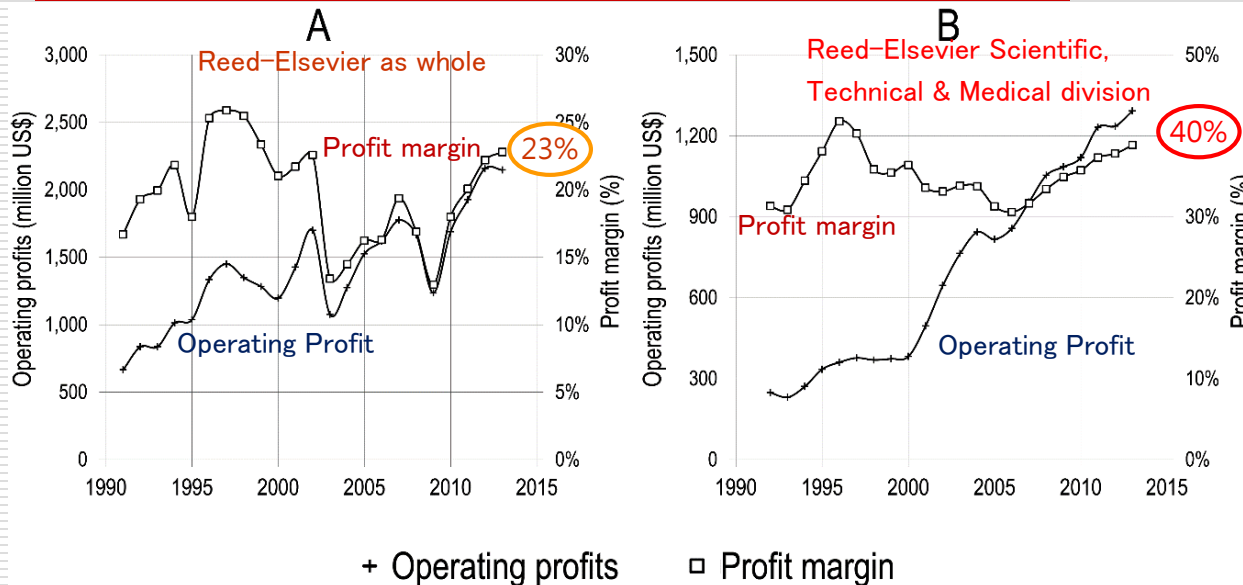
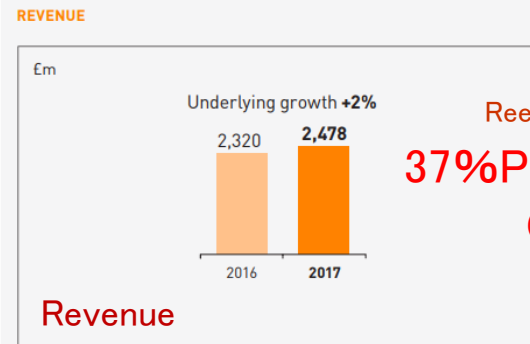


Fig 7. Operating profits (million USD) and profit margin of Reed-Elsevier as a whole (A) and of its Scientific, Technical & Medical division (B), 1991-2013.

- Springer Science+Business Media (2012): **35%**
- John Wiley & Sons' Scientific, Technical, Medical and Scholarly division (2013) : **28.3%**
- Taylor and Francis (2013): **35.7%**

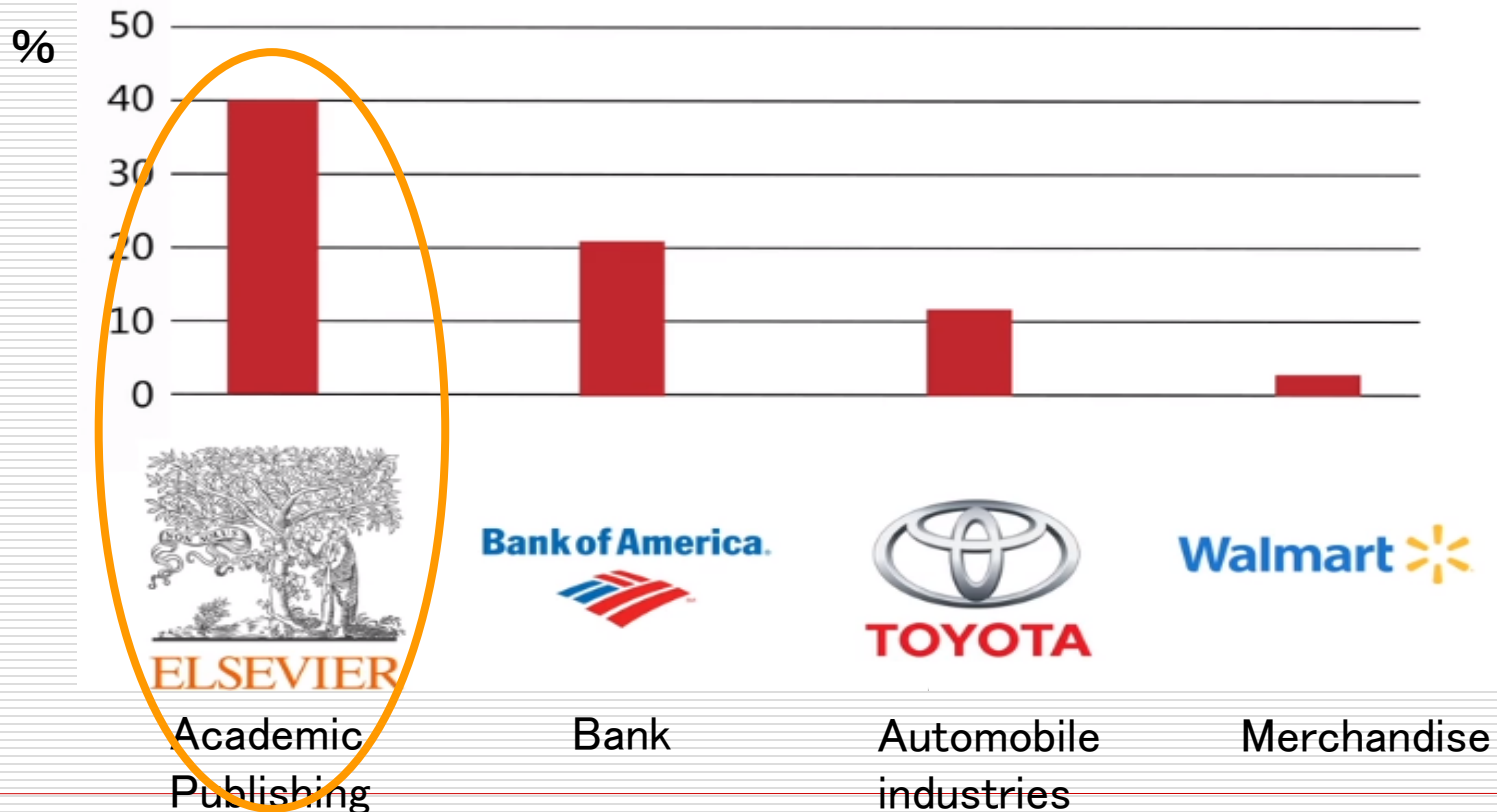


Reed-Elsevier
37% Profit Margin !
(FY 2017)



Differing Profit Margins by business type

CORPORATE PROFIT MARGINS



Protest from Academia (1)

We are
writing the
articles!

Isn't it unfair
that the publishers are making profit,
and many academics cannot even afford
to read the articles?!

The journal
subscription is
too expensive!



Paywall

Protest from Academia (2)

□ “Subversive Proposal”

- Steve Harnad (1994)
- Called for scholarly articles to be freely available on the Internet, instead of published in print for the sake of royalties.

□ “An Open Letter to Scientific Publishers”

- 34,000 scholars worldwide (2001)
- Called for the establishment of an online public library and pledging to refrain from publishing in traditional non-open-access journals.

Petition for Boycotting Elsevier — Cost of Knowledge



17091 Researchers Taking a Stand. [See the list](#)

Academics have protested against Elsevier's business practices for years with little effect. These are some of their objections:

1. They charge exorbitantly high prices for subscriptions to individual journals.
2. In the light of these high prices, the only realistic option for many libraries is to agree to buy very large "bundles", which will include many journals that those libraries do not actually want. Elsevier thus makes huge profits by exploiting the fact that some of their journals are essential.
3. They support measures such as SOPA, PIPA and the Research Works Act, that aim to restrict the free exchange of information.

The key to all these issues is the right of authors to achieve easily-accessible distribution of their work. If you would like to declare publicly that you will not support any Elsevier journal unless they radically change how they operate, then you can do so by filling in your details on this page.

More information:

- [Statement of Purpose](#)
- [PolyMath journal publishing reform page](#)

[Read our blog](#), and follow the boycott on Twitter [here](#).

Add your name to the list.

First and Last Name

Affiliation

Email

Subject

Mathematics

Comments (optional)

Link (optional)

such as a link to a blog post of yours explaining your reasons

I plan to refrain from:

- ☐ publishing ☐ refereeing ☐ editorial work

Add My Name

Like 6.9K Tweet G+

Please [email me](#) if you have any questions about this page, or if you would like to remove your name from the list.

[about us](#)

17091 people from have signed.

□ Cambridge mathematician Timothy Gowers calling for Elsevier Boycott (2012.1.21)

□ Asking not to publish, peer-review, edit at Elsevier journals.

➤ 34 eminent mathematicians signing the "Cost of Knowledge" (2012.2.8)

➤ More than 17 thousand people signing (2018.7)。

Protest from Academia (3)



□ “Budapest Open Access Initiative (BOAI)”, (2002)

- Provided definition of OA
- Two ways to achieve OA:

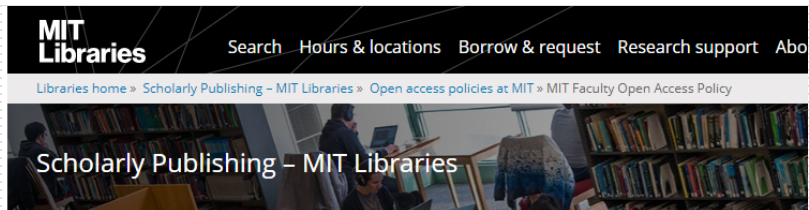
1. Self-Archiving (green OA)

- Author’s final manuscript or the publisher’s version after a certain embargo period is archived on a website accessible worldwide.

2. Open-access Journals (gold OA)

- Subscription fees are omitted instead of a fee charged to the author, usually called the article processing charge (APC).

OA policy for enabling universities to publish author's final manuscript



OA policy, voted unanimously by MIT faculty

Policy adopted by unanimous vote of the faculty on 3/18/2009

The Faculty of the Massachusetts Institute of Technology is committed to disseminating the fruits of its research and scholarship as widely as possible. In keeping with that commitment, the Faculty adopts the following policy: Each Faculty member grants to the Massachusetts Institute of Technology nonexclusive permission to make available his or her scholarly articles and to exercise the copyright in those articles for the purpose of open dissemination. In legal terms, each Faculty member grants to MIT a nonexclusive, irrevocable, paid-up, worldwide license to exercise any and all rights under copyright relating to each of his or her scholarly articles, in any medium, provided that the articles are not sold for a profit, and to authorize others to do the same. The policy will apply to all scholarly articles written while the person is a member of the Faculty except for any articles completed before the adoption of this policy and any articles for which the Faculty member entered into an incompatible licensing or assignment agreement before the adoption of this policy. The Provost or Provost's designate will waive application of the policy for a particular article upon written notification by the author, who informs MIT of the reason.

To assist the Institute in distributing the scholarly articles, as of the date of publication, each Faculty member will make available an electronic copy of his or her final version of the article at no charge to a designated representative of the Provost's Office in appropriate formats (such as PDF) specified by the Provost's Office.

The Provost's Office will make the scholarly article available to the public in an open-access repository. The Office of the Provost, in consultation with the Faculty Committee on the Library System, will be responsible for interpreting this policy, resolving disputes concerning its interpretation and application, and recommending changes to the Faculty. The policy is to take effect immediately; it will be reviewed after five years by the Faculty Policy Committee, with a report presented to the Faculty.

The faculty calls upon the Faculty Committee on the Library System to develop and monitor a plan for a service or mechanism that would render compliance with the policy as convenient for the faculty as possible.

Source: MIT Faculty Open Access Policy

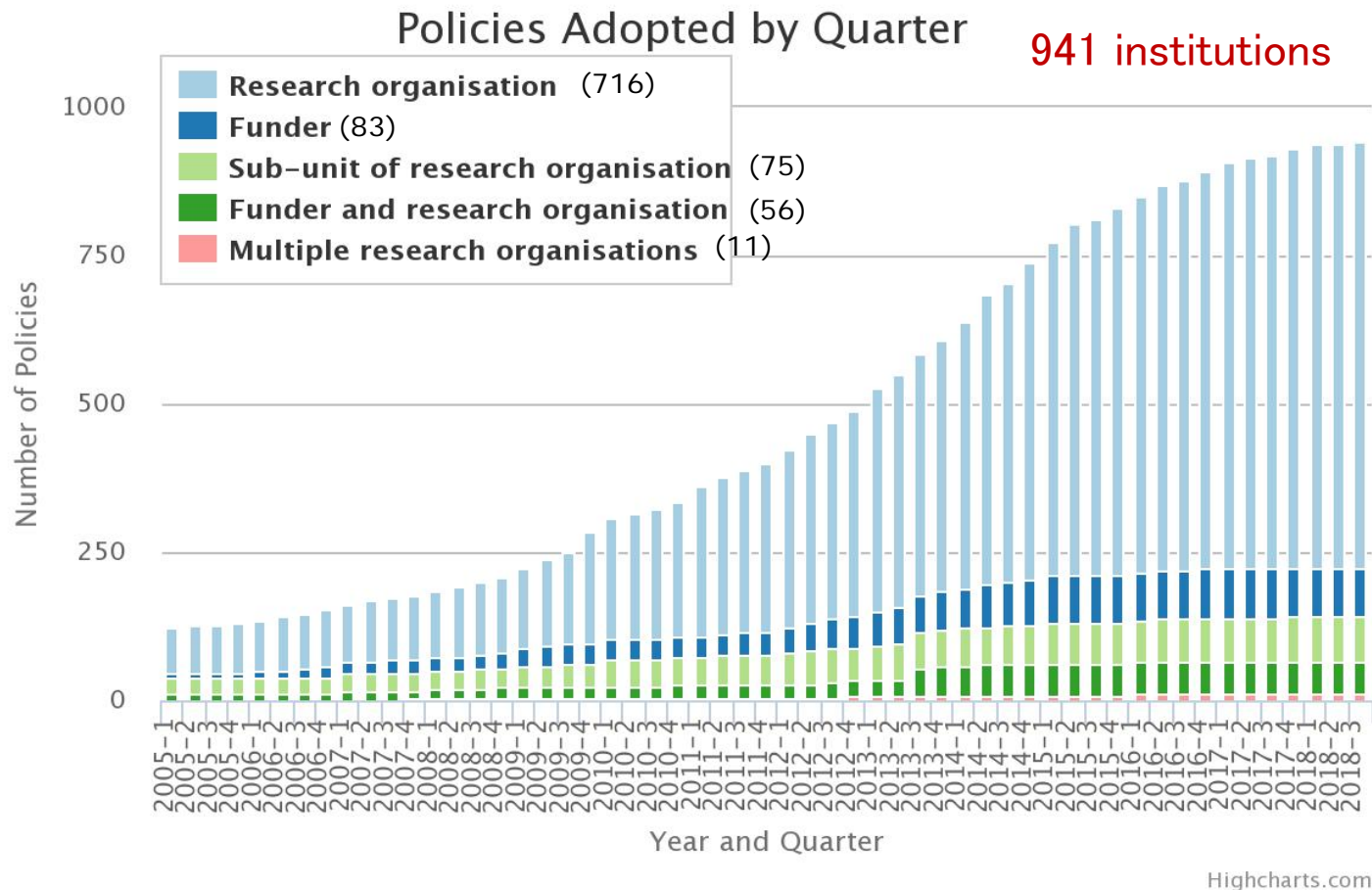
<https://libraries.mit.edu/scholarly/mit-open-access/open-access-policy/>

- ❑ Faculty of Arts and Sciences at Harvard to adopt the first OA policy to enable green OA.
- ❑ Hereinafter, other universities following.
- ❑ MIT to become the first university to adopt university-wide OA policy. (2009.3.18)

【OA Policy】

1. Faculty grants university right to disseminate the author's final manuscript.
2. Author has the right to decide by each article.
3. Faculty deposits e-copy to institutional repository.
4. University makes article OA through institutional repository

Number of OA policies adopted



24 organizations adopting OA policies in Japan

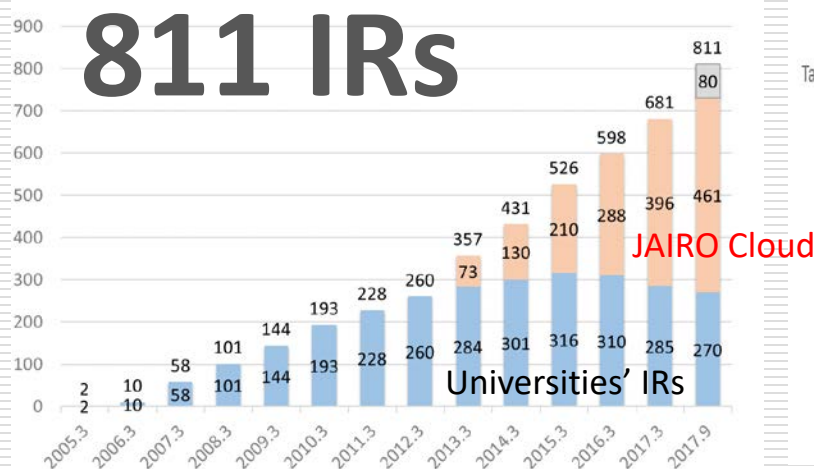
- ✓ Hokkaido University
- ✓ The Japan Advanced Institute of Science and Technology
- ✓ Tohoku University
- ✓ The University of Tsukuba
- ✓ The Tokyo University of Foreign Studies
- ✓ Tokyo Dental College
- ✓ Hitotsubashi University
- ✓ Yokohama National University
- ✓ Chiba University
- ✓ The Nagoya Institute of Technology
- ✓ Nagoya University
- ✓ Kanazawa University
- ✓ Kyoto University
- ✓ Osaka City University
- ✓ Osaka Prefecture University
- ✓ Kobe University
- ✓ The University of Tokushima
- ✓ Okayama University
- ✓ Hiroshima University
- ✓ Shimane University
- ✓ Kyushu University
- ✓ The Okinawa Institute of Science and Technology
- ✓ The National Institute of Polar Research
- ✓ International Research Center for Japanese Studies

Japan, the No.1 country by the number of institutional repositories (IRs)!

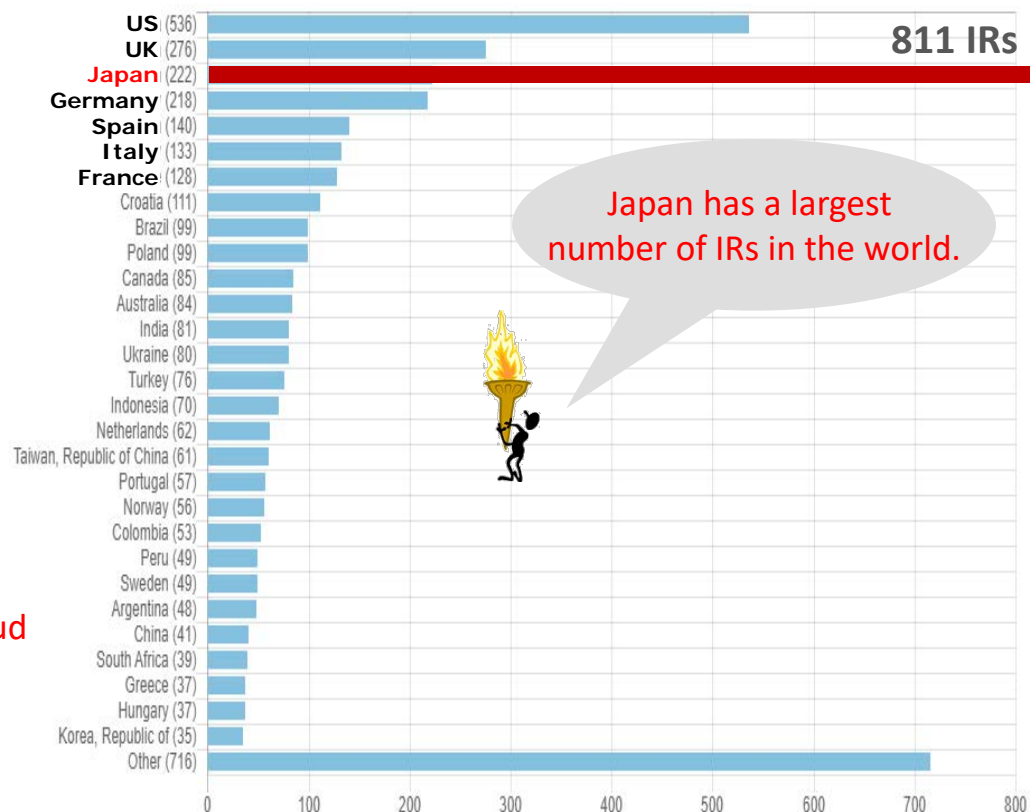
IR cloud service — JAIRO Cloud



- ❑ The IR hosting services for universities (started in FY2012)
 - It looks like as if the universities have their own IRs.
- ❑ Large universities having their own IRs recently started using the JAIRO Cloud.



Repositories by Country



Japanese researchers
publish their
articles mainly in Japanese
OA journals.

Open access (OA) Journals



Top 10 Japanese OA journals in which
Japanese researchers publish their articles

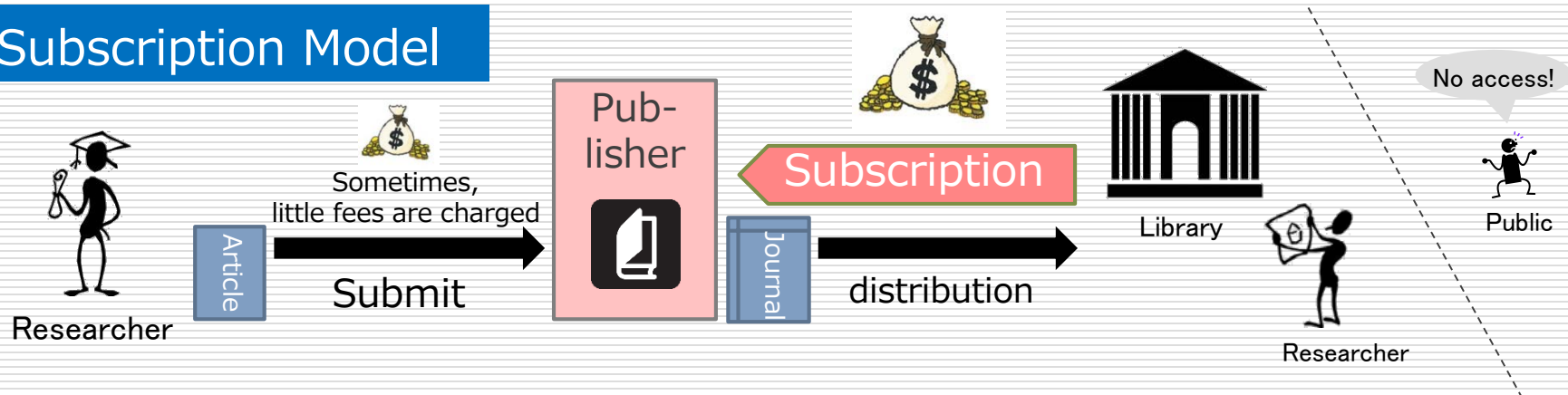
During the past 3 years (2016-2018)	
1	SCIENTIFIC REPORTS (5,506)
2	PLOS ONE (3,604)
3	CANCER SCIENCE (2,483)
4	JOURNAL OF PHARMACOLOGICAL SCIENCES (2,052)
5	INTERNAL MEDICINE (1,809)
6	JOURNAL OF PHYSICS CONFERENCE SERIES (1,233)
7	JAPANESE JOURNAL OF APPLIED PHYSICS (1,199)
8	NATURE COMMUNICATIONS (1,163)
9	CIRCULATION JOURNAL (765)
10	ONCOTARGET (657)

Since 1971 (1971-2018)	
1	BULLETIN OF THE CHEMICAL SOCIETY OF JAPAN (12,903)
2	PLOS ONE (11,788)
3	JOURNAL OF BIOLOGICAL CHEMISTRY (10,139)
4	INTERNAL MEDICINE (9,708)
5	PROGRESS OF THEORETICAL PHYSICS (8,878)
6	BIOSCIENCE BIOTECHNOLOGY AND BIOCHEMISTRY (8,477)
7	NIPPON KAGAKU KAISHI (7,998)
8	SCIENTIFIC REPORTS (7,641)
9	AGRICULTURAL AND BIOLOGICAL CHEMISTRY (7,526)
10	CHEMISTRY LETTERS (7,381)

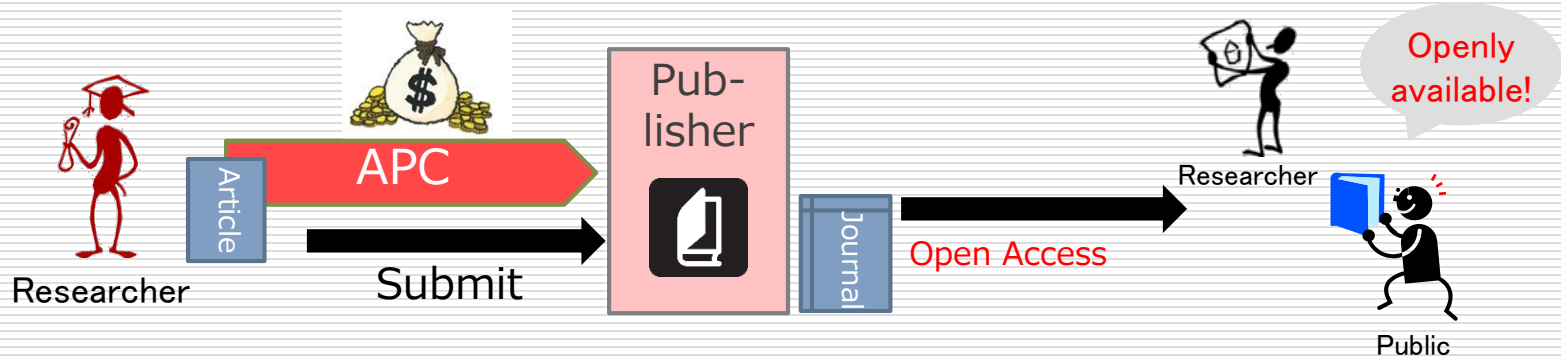
*The results of searching using the Web of Science on November 12, 2018
according to gold OA journals, bronze OA journals and others

OA Journals ask researchers, not the readers and universities, to cover the publishing cost.

Subscription Model



Open Access Model



Move at Governmental-level

□ Protest from a medical patient

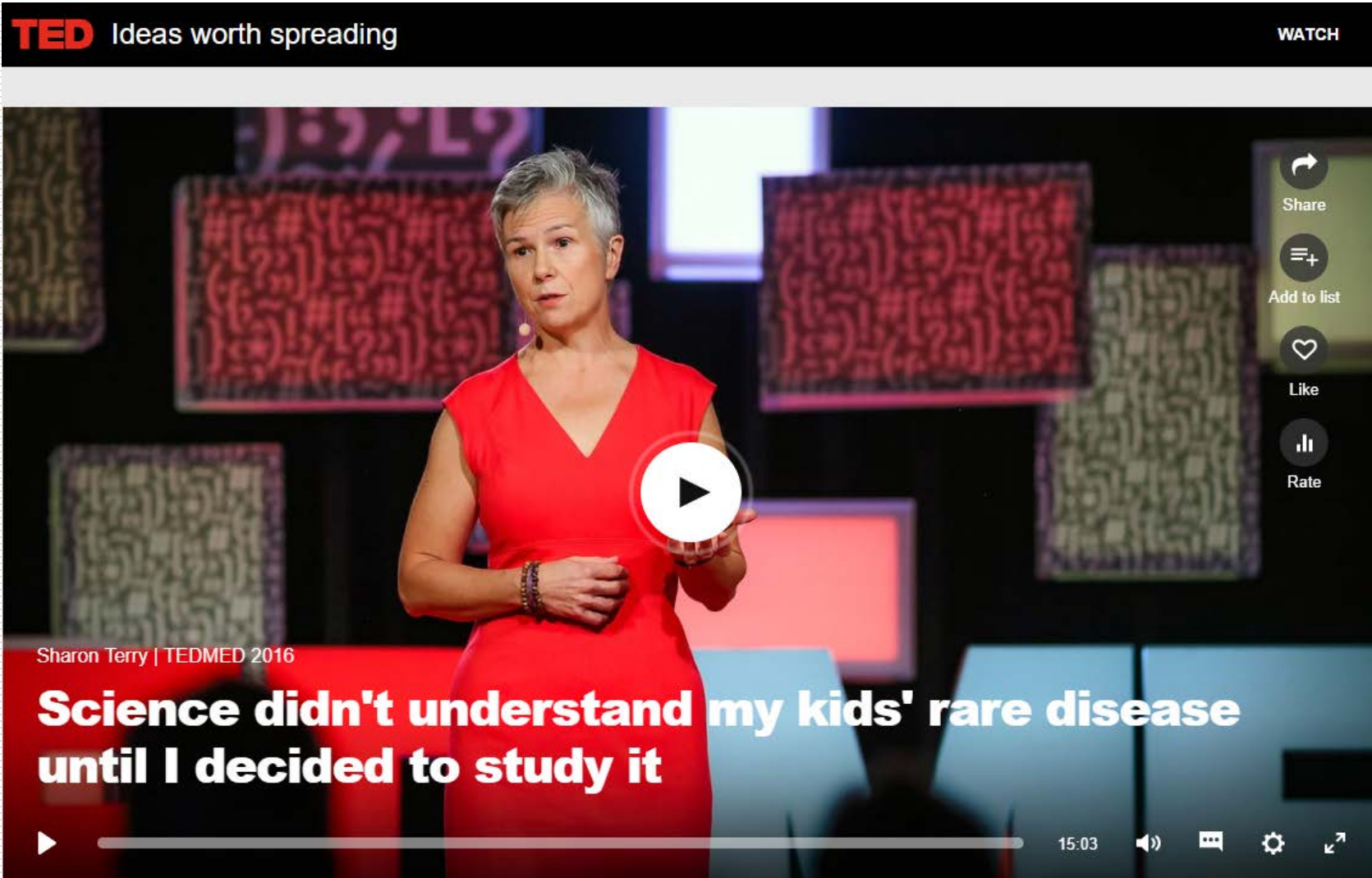
- *"It is unfair that taxpayers do not have access to academic articles and thus cannot study their own medical condition, as the price of academic journals is exorbitant".*

□ Funding agencies start making OA a mandate for scholarly articles funded publicly

- NIH(US)-2008-"NIH Public Access Policy"
- RCUK(UK)-2013-provides grant to universities for APC

The push which triggered US government to adopt OA policy

TED Ideas worth spreading WATCH



Sharon Terry | TEDMED 2016

Science didn't understand my kids' rare disease until I decided to study it

15:03

PubMed Central(PMC)—The first digital repository established by a funder to comply for OA mandate

- ❑ Online research articles archive in biomedical and life sciences established by NIH.
- ❑ As of 2007, NIH made OA a mandate for research outputs funding by NIH.
 - ✓ Researchers must archive their author's final version on PMC.
- ❑ As of July 2018, about 5 million articles available.

(Note) PubMed Central is renamed to PMC in 2012.

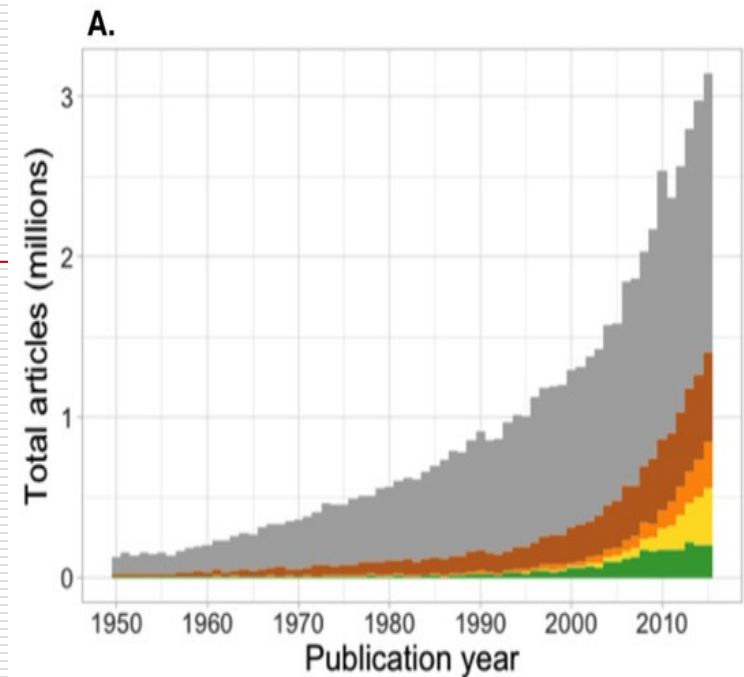
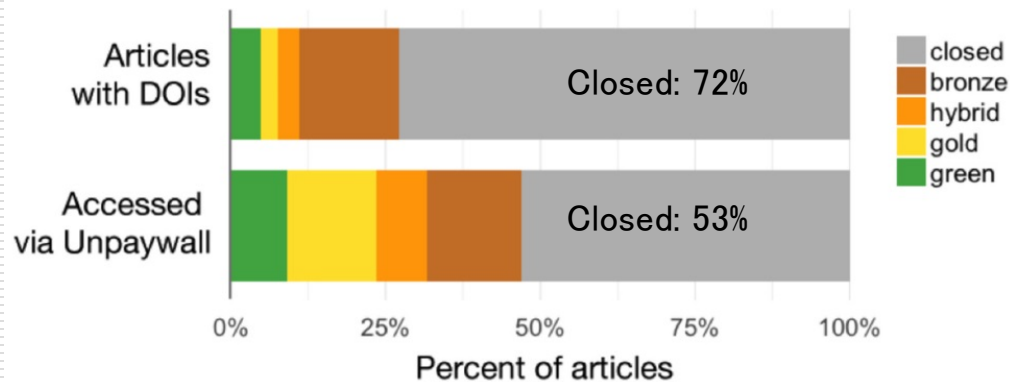
5 MILLION
Articles

are archived in PMC.

Content provided in part by:

2158	332	4723
<u>Full</u>	<u>NIH</u>	<u>Selective</u>
<u>Participation</u>	<u>Portfolio</u>	<u>Deposit</u>
Journals	Journals	Journals

Almost half of the scientific articles are published OA!



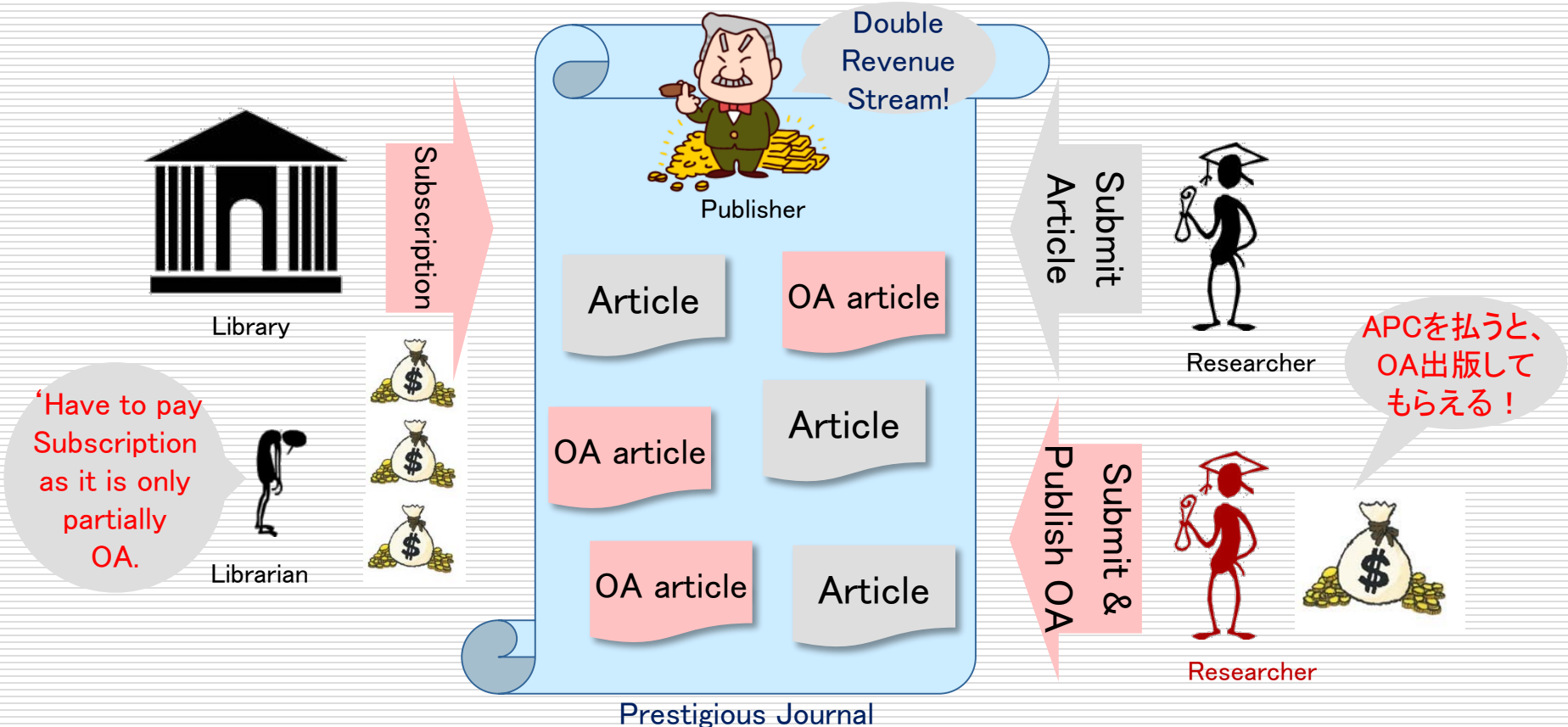
Type of OA journals	Articles with DOIs	Articles	Note
OA journals	28%	47%	
Bronze OA journals	16%	15%	Publication in OA journals not registered in the DOAJ
Hybrid OA journals	4%	8%	APCs for publication of articles in a non-OA journals
Gold OA journals	3%	14%	Publication in OA journals registered in the DOAJ
Green OA journals	5%	9%	Publication of finished articles using IRs
Non-OA journals	72%	53%	

3. Approach to full OA through Publish & Read agreements (?!)

Hybrid journals and double dipping

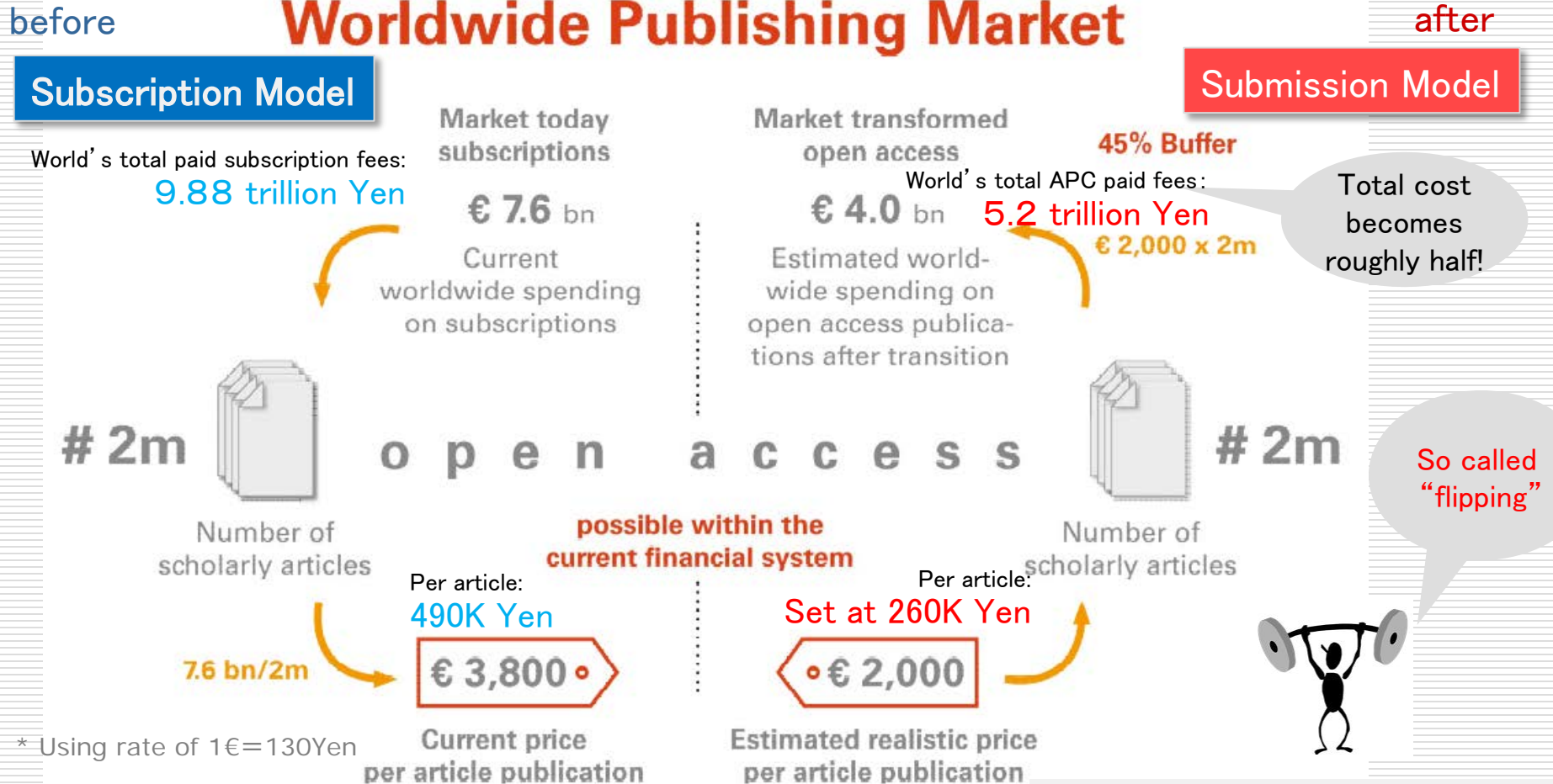
...The smart publishers

Hybrid Journals



Max Planck's Proposal

...Flipping from subscription to APCs—OA2020



* Using rate of 1€=130Yen

Source: MPDL, "What will it take to secure open access to today's scholarly journals?"

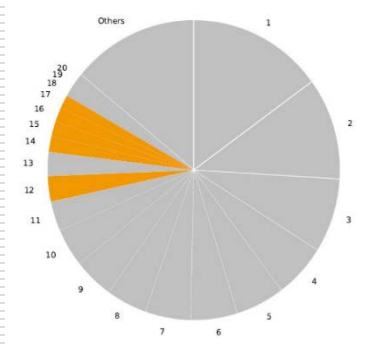
https://www.knowledge.services/app/download/15426878896/9%202017-11-20_Campbell_OA2020_OpenScienceDays_Vienna.pptx.pdf?t=1529915786

- ✓ EOI: 109 institutions from 35 countries
- ✓ Including two Japanese institutions
- JUSTICE, Researchers group of solid state physics in Japan

Max Planck to form transformative OA agreements with top 20 publishers

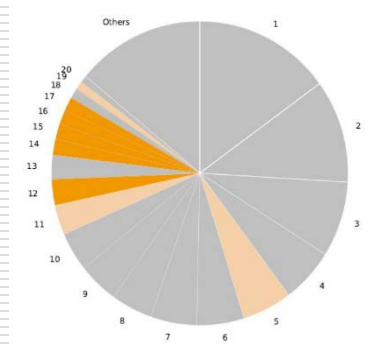
Journal distribution of MPG article submission

2015



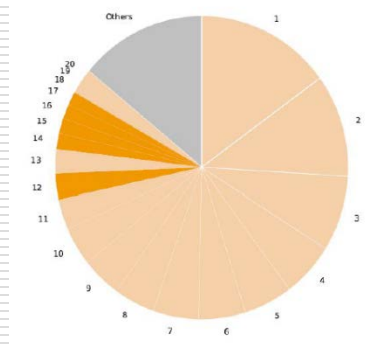
- The top 20 journals where MPG submits articles reaches 80%
- Among the 20, 5 are OA journals

2017



- In 2017, MPG signed transformative OA agreement with three publishers.
- Other journals to follow?

2020

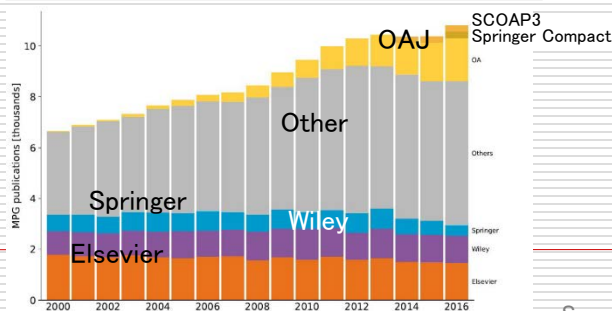


- By 2020, there should be no more subscription payment for the top 20 journals.

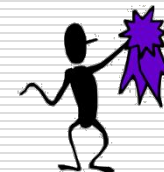
Accumulative OA2020 signee by country

# of institutions	Cumulative
United States	15
China	25
Great Britain	32
Germany	39
Japan	45
South Korea	50
Italy	55
France	60
Canada	65
Australia	70
Spain	75
Brazil	79
Russian Federation	83
Netherlands	86
Poland	89
Switzerland	91
Sweden	93
Belgium	95
Denmark	97
Austria	99

Trend of MPG's article submission



If the leading institutions at leading countries do also the transformative OA agreement, we get to the point of NO RETURN!

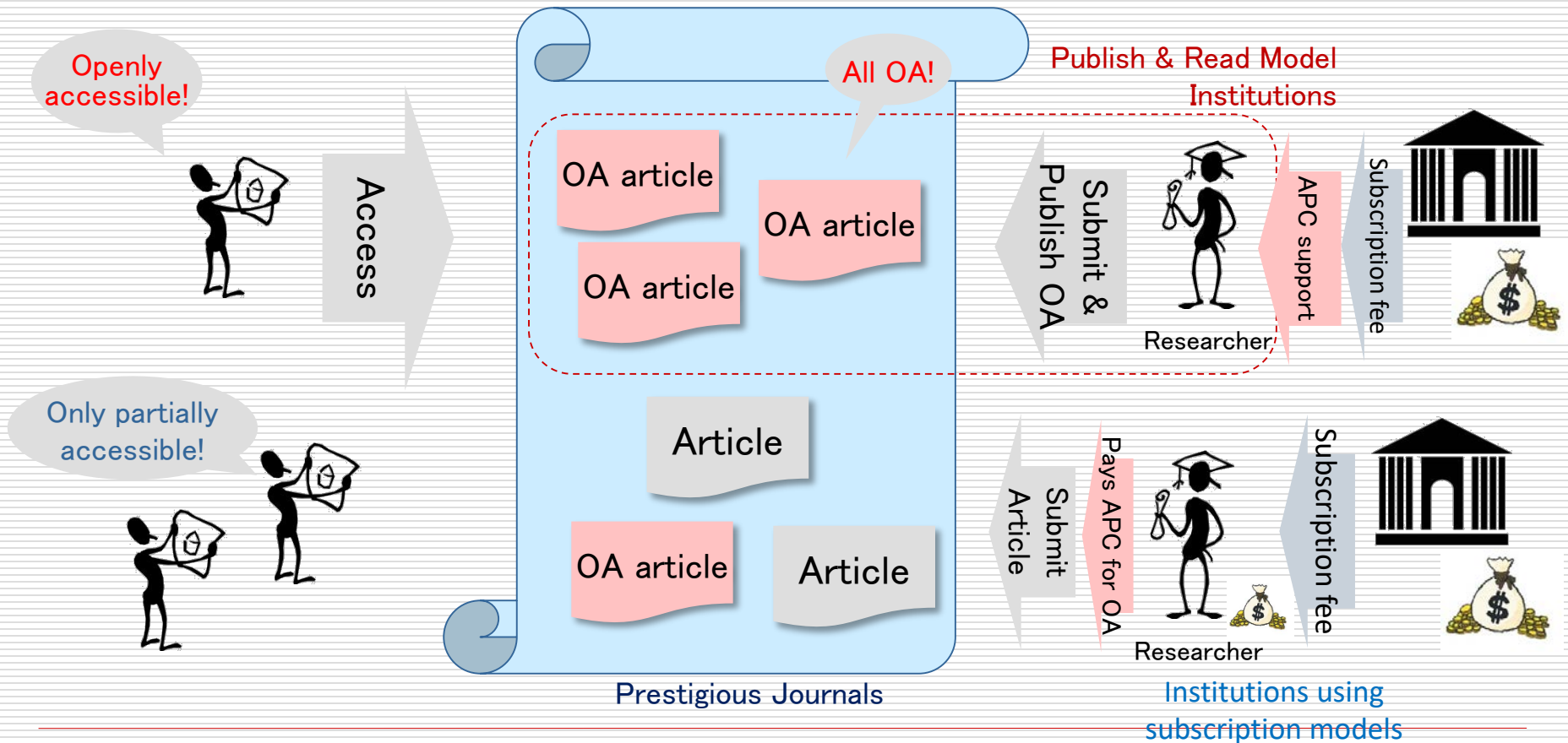


Source: MPDL, "What will it take to secure open access to today's scholarly journals?"

https://www.knowledge.services/app/download/15426878896/9%202017-11-20_Campbell_OA2020_OpenScienceDays_Vienna.pptx.pdf?t=1529915786

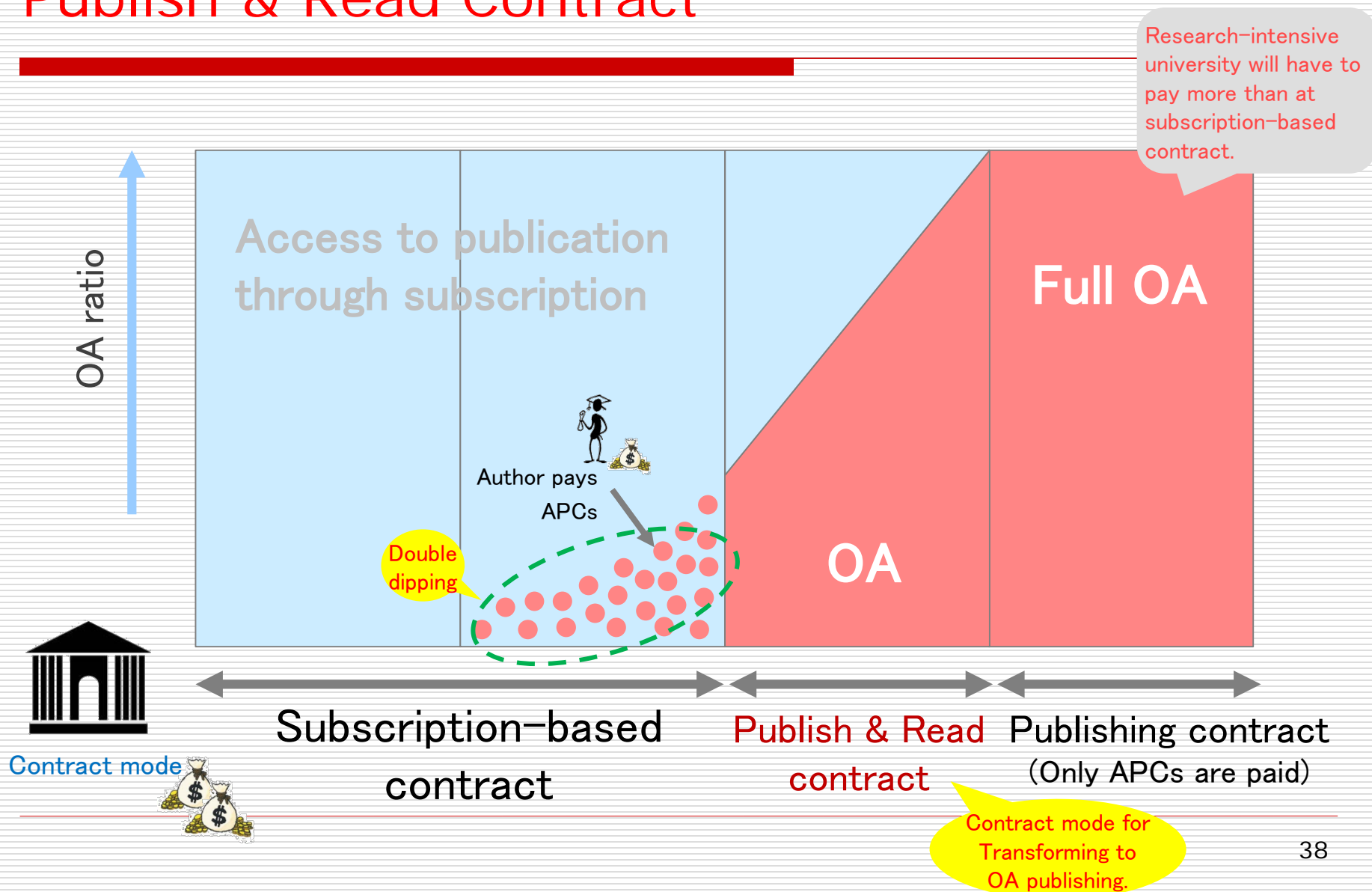
Transformative OA agreement for realizing OA2020...Publish & Read Model

Hybrid Journals



Transformative agreement to full OA

Publish & Read Contract



The negotiation with Elsevier in Germany: Projekt-DEAL

- ❑ German Rector's Conference takes the lead to negotiate with Elsevier on a national license under Publish&Read agreement after FY 2017.

- ❑ No agreements made as of Jan 2020.

(Progress)

- Jan, 2017: 60 institutions loose access to Elsevier
- Feb, 2017: Elsevier restores access during negotiations
- Jan, 2018: Another 127 institutions not to update contract
- July, 2018: Germany to declare no more negotiations!
 - Elsevier cuts off access for institutions without contract
- January, 2019: Max Planck advocating for OA2020 also loses access.
- January, 2019: Germany and Wiley signs Publish and Read deal.
- August, 2019: Germany and Springer–Nature signs Publish and Read deal.

Status of other countries with large publishers

□ Netherlands

- ✓ The Netherlands government has set a goal for 60% OA by 2018 and 100% OA by 2020. Based on this goal, the Netherlands formed a Publish&Read agreement with Elsevier for 2016-18.
- ✓ However, as Elsevier retains the right to determine which journals are to be made OA, the agreement is not as desirable as the Netherlands wanted it to be.

□ Peru, Taiwan

- ✓ No agreement with Elsevier since January 2017.

□ Sweden

- ✓ No agreement with Elsevier since July 2018.

□ Norway

- ✓ Signed a PAR deal with Elsevier for two years pilot. (April 2019)

□ France

- ✓ Signed quasi PAR deal with Elsevier for four years. (April 2019)

-
- [1] 13.3% price reduction in 4 years between 2019 and 2022, [2] 25% discount for APC, [3] full-text deposit from Elsevier in the national repository HAL (24-month embargo period)

US universities on OA2020

□ No action has been taken by the US. (2019.5.8)

- *It was rumored in December 2019 that the White House would oblige publishers to make articles open access immediately after publication.*
(<https://current.ndl.go.jp/node/39850>)

□ Some highly conscious universities have taken action.

■ MIT

- Signs PAR contract with Royal Society of Chemistry (2018.6)
- Draft Recommendations on Open Access to MIT's Research (2019.3) mentioning to new modes of contract

■ University of California

- Fails PAR contract with Elsevier (2019.3)

■ U Virginia, U North Carolina Chapel Hill, U Minnesota, Duke U, Iowa State, U Washington, U Massachusetts Amherst

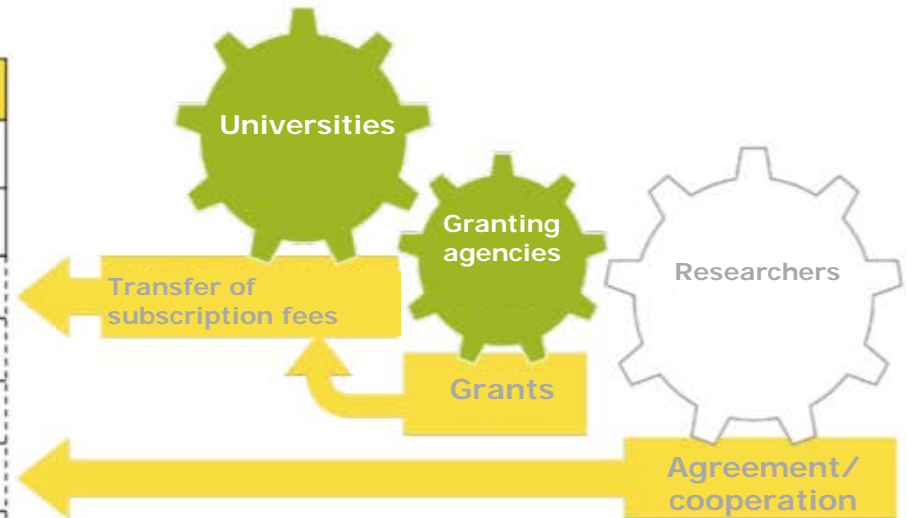
- Declare voice of support to the effort of University of California for a new publishing agreement with Elsevier and its walk away. (2019.5)

■ Carnegie Mellon University

- Strikes PAR deal with Elsevier (2019.11)

JUSTICE OA2020 roadmap

YR	JUSTICE
2015	Data collection/analysis
2019	
~	
2020	Trials for OA article publication model agreements
~	
	Action for OA article publication model agreements



- ☐ Data Analysis (subscription fees, number of articles published, APCs)
- ☐ Pilots towards OA publishing model
- ☐ Expansion toward OA publishing model
- ☐ Flipping the subscription cost & grant
- ☐ Consensus & Cooperation
- ☐ Supplementary Actions

11 European research funders demand immediate OA...the Plan S of cOAlition S

- ❑ Declaring that publicly-funded research outputs from respective funders must be published OA immediately after 2020.
 - Articles can only be published on compliant OA journals or platforms. Hybrid journals are explicitly excluded.
 - Aiming to transform hybrid and subscription journals to OA journals.

- ❑ Supporting funders

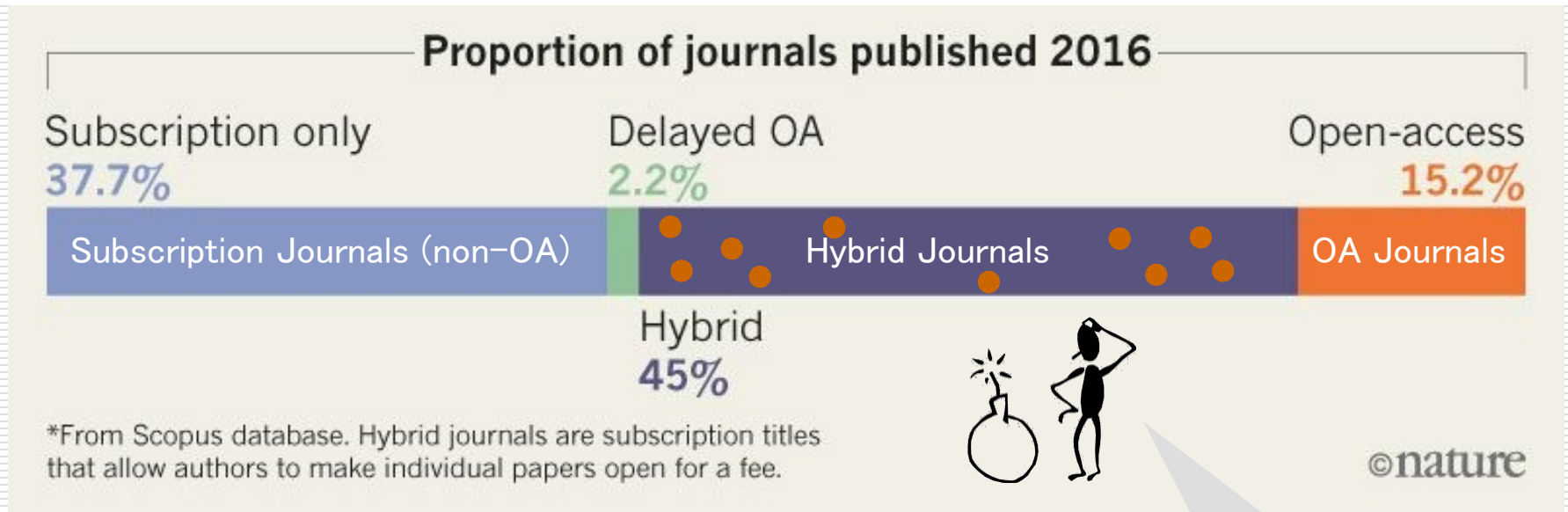
- Austria, France, Ireland, Italy, Luxembourg, Netherland, Norway, Poland, Slovenia, Sweden, UK
- ✓ Remaining 18 European funders also expected to participate



Prestigious
high-quality
journals to be
eliminated?!



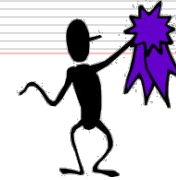
Academic journals by the type of OA



The hybrid journals allow double-dipping through subscription and APC!

Plan S compliant publication roads

OAJ desired



A) OA journal

B) Subscription journal – non OA

- Articles have to be made available OA at repositories without an embargo period

C) Hybrid journal

- The journals must agree on transformative agreement and must become full OA journal within three years

Various reactions to Plan S

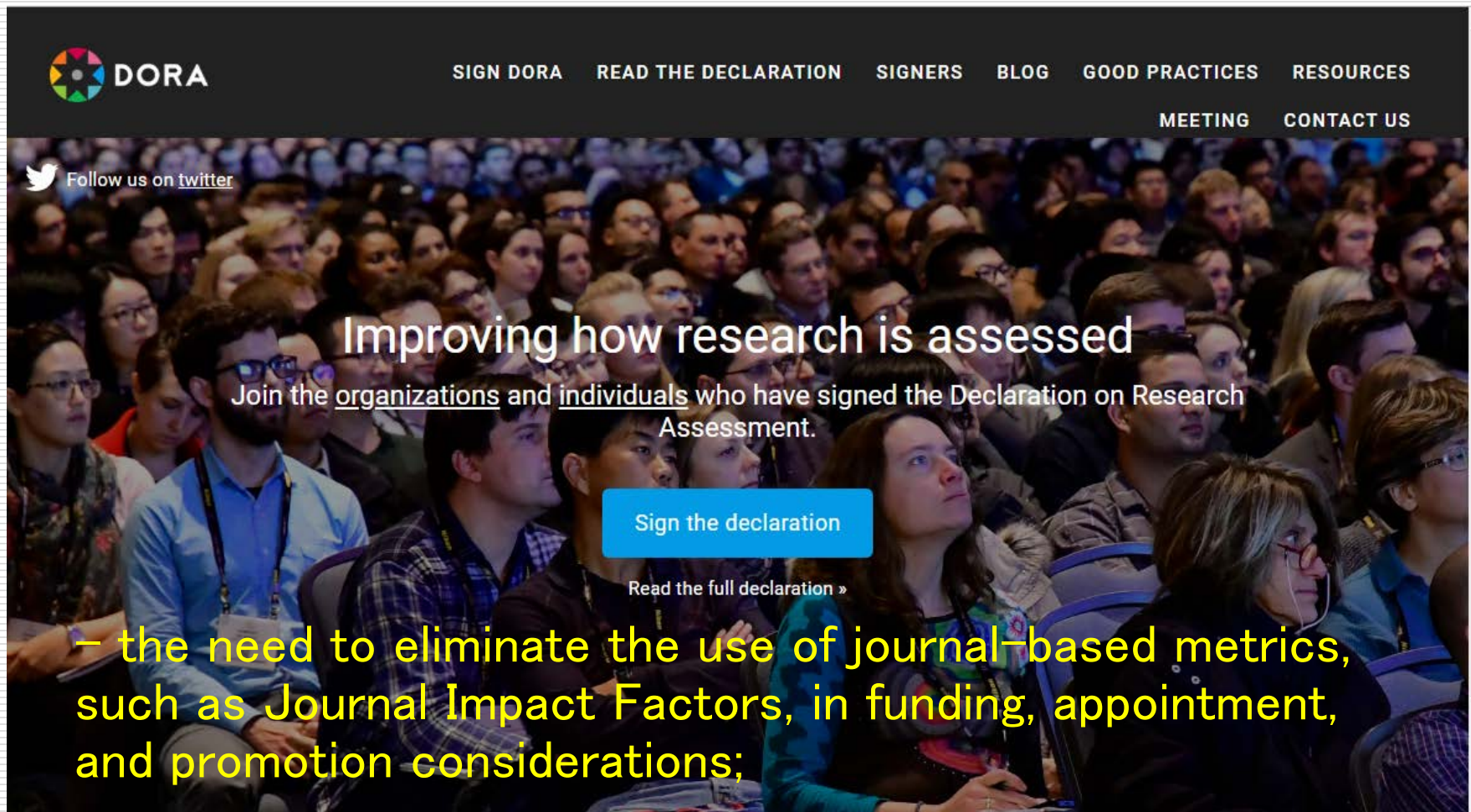
... Researchers

- Agree, as Plan S reduces subscription fees.
- Disagree, as Plan S limits the choice where to publish your articles.
 - Violation of academic freedom!
 - Junior researchers are hindered to publish their research in subscription journals!



Forbidden to publish in prestigious journals?!

San Francisco Declaration on Research Assessment (DORA)



Various reactions to Plan S

... Publishers



Plan S is not acceptable.
Our business will collapse.

- ❑ Publishers in general (excluding OA journals) – disagree
 - Lack of resources to transform to OA journals.
 - On top, Plan S intends to put a cap on APCs which will limit the revenue flow tremendously.
- ❑ Top journals– definitely unacceptable
 - The selectivity of journals coincides with high in-house cost. To recover the costs, the APCs will become unrealistically high.
 - If APCs are set at reasonable price, the quality of journals will go down.
- ❑ Society journals– may accept green OA without embargo!?
 - Lack of resources to transform to OA journals.
 - If annually published articles are limited, the revenue from the APCs is not enough to sustain the journal.

Publishers positive for transformative agreement (TfA)

- Some publishers are positive for TfA
 - Strategy to lock in authors by transforming to OAJ at early stage?
 - Wiley, Springer-Nature, Cambridge Univ. Press, Oxford Univ. Press, RSC, ACS, SAGE, de Gruyter, Thieme, IWA Publishing, Karger etc.



Please
publish with us!

□ TfA mostly at country-level

- Country: Austria, Germany, Netherland, Norway, Switzerland, Hungary, Greek, Slovenia, Spain
- Institution: Max Planck, Delft University of Technology, California Digital Library, Iowa State University

Registry for transformative agreement

Agreement Registry

Search:

Publisher	Country	Customer	Size (# annual publications)	Start Date	End Date	Details/ ID
Wiley	Germany	Projekt DEAL/ MPDL Services GmbH	9500	01/01/2019	12/31/2021	wiley2019deal
Elsevier	Netherlands	VSNU-UKB	4500	01/01/2016	06/30/2019	els2016vsnu
Wiley	Netherlands	VSNU-UKB	2400	01/01/2016	12/31/2019	wiley2016vsnu
Elsevier	Norway	Unit	2100	01/01/2019	06/30/2020	els2019unit
Springer Nature	Netherlands	VSNU-UKB	2100	01/01/2018	12/31/2020	sc2018vsnu
Taylor & Francis	Sweden	Bibsam consortium	1700	01/01/2018	12/31/2020	tf2018bibsam
Akadémiai Kiadó	Hungary	EISZ	1500	01/01/2019	12/31/2020	kia2019eisz
Taylor & Francis	Netherlands	VSNU-UKB	950	01/01/2018	12/31/2020	tf2018vsnu



Plan S recommended

Various reactions to Plan S

... Funding agencies



Publicly-funded research should be made openly available .

- ❑ Funding agencies participating in Plan S increased from 11 to 21. (as of 2019.6.28)

- 16 national funders, 3 charitable foundations, and 2 European funders
- Austria, Finland, France, Ireland, Italy, Luxembourg, Netherland, Norway, Poland, Slovenia, Sweden, UK, **Zambia and Jordan**

- ❑ Reactions by countries

- European countries likely to accept.
- The US does not accept? China accepts?
- Zambia and Jordan accept. – Plan S is likely to be beneficial for developing countries.

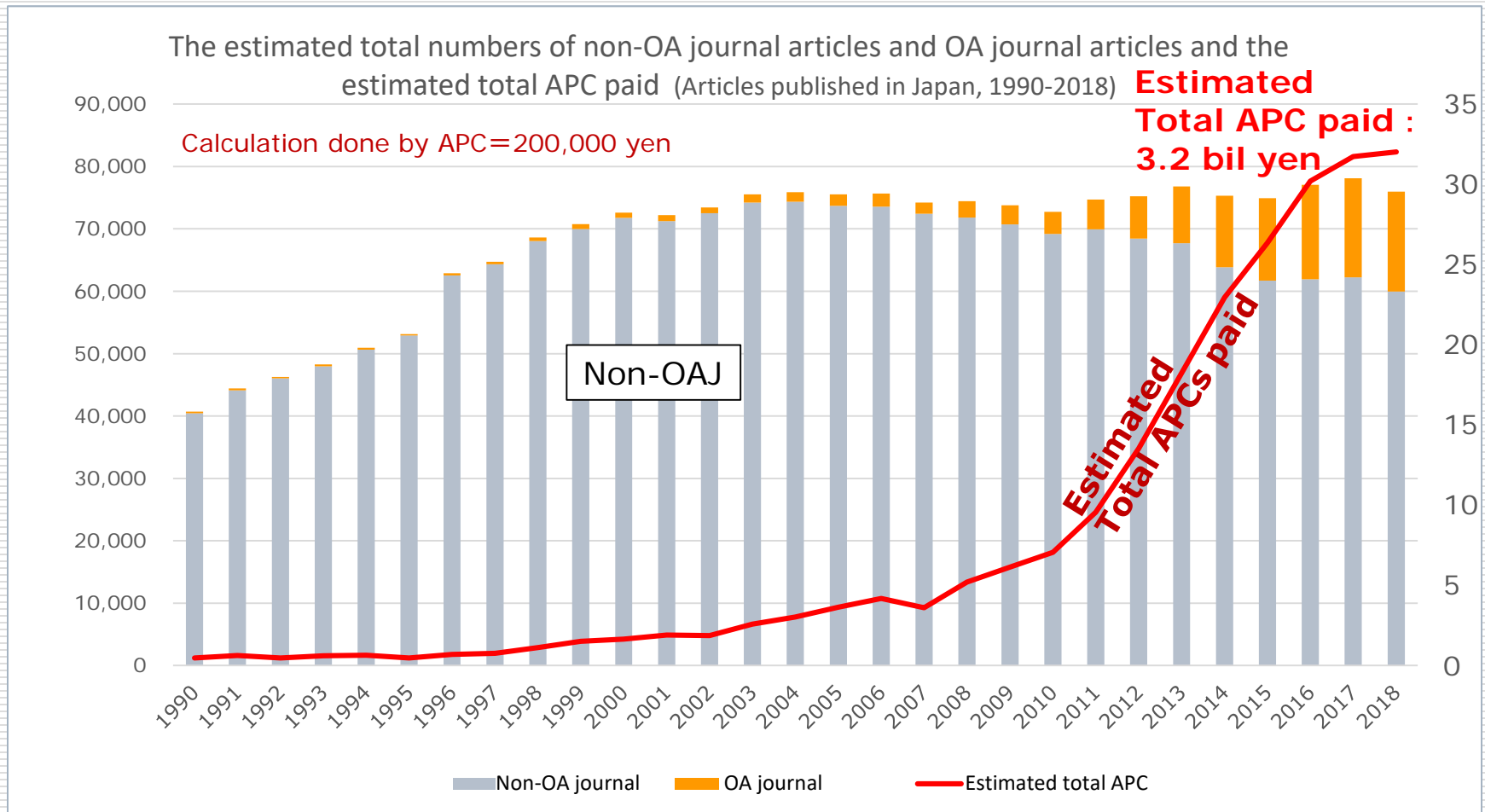


4. Full OA puts researchers at risk—
APCs, a heavy burden on researchers

Plan S, proposed by European funders, might quickly transform scientific journals to OA journals.

Journal issues to change from not being able to read to not being able to write!

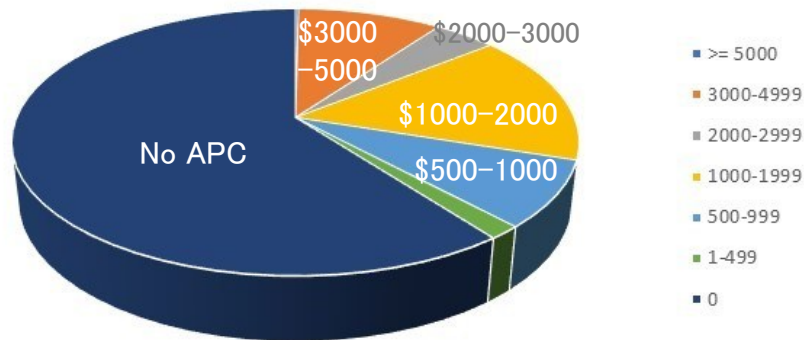
Rising APCs paid in Japan



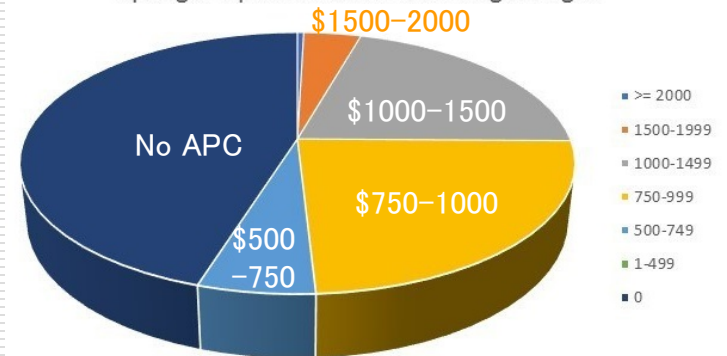
- ✓ Number of Japanese publication extracted from Web of Science by using CU=Japan DocumentType=Article within “DOAJ gold” and “Other gold.”
- ✓ Publication includes also papers with Japanese author as co-author and not first author.

How many articles can you publish with average APC US\$1000-2000?

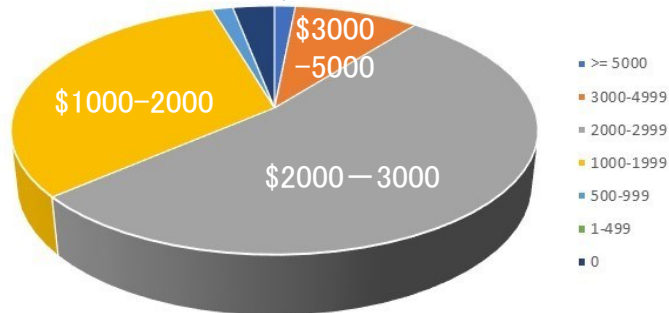
Elsevier's Open Access Article Processing Charges



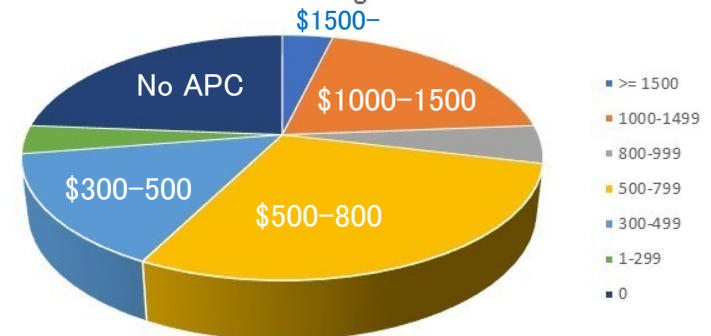
Springer Open's Article Processing Charges



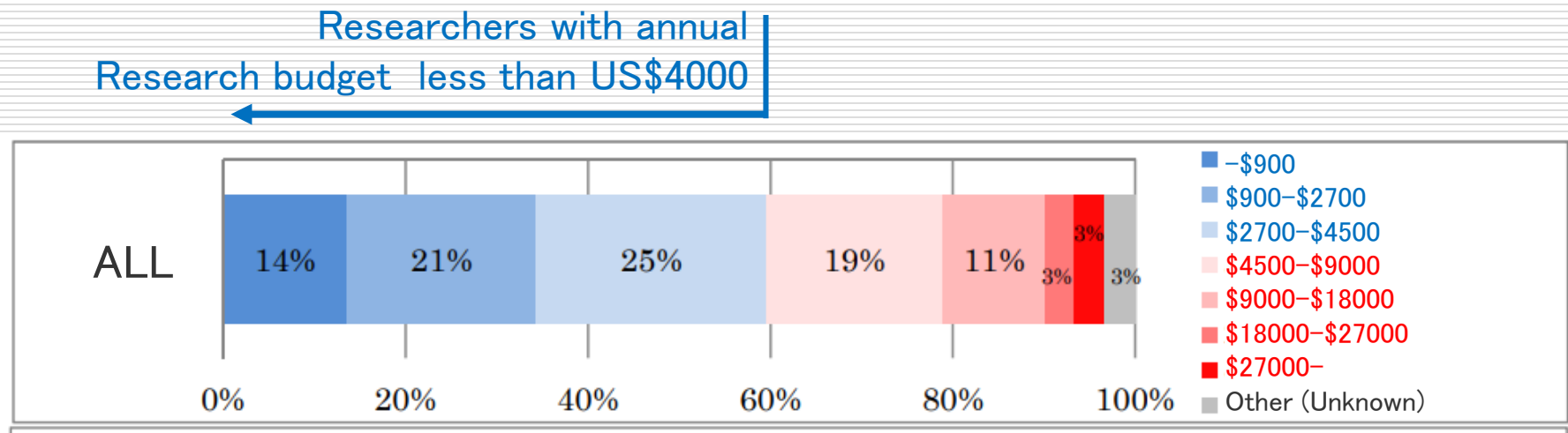
Wiley's Open Access Article Processing Charges



Taylor & Francis' Open Access Article Processing Charges



The annual research budget of a Japanese researcher (FY2015)



- If more than half of Japanese researchers rely on less than \$4000 (50万円) for annual research budget, the strong reliance on APCs \$1000-2000 can be damaging for number of research outputs.

Compact for Open-Access Publishing Equity^(COPE) —University subsidizes APCs

Compact for Open-Access Publishing Equity

THE COMPACT FOR OPEN-ACCESS PUBLISHING EQUITY

We the undersigned universities recognize the crucial value of the services provided by scholarly publishers, the desirability of open access to the scholarly literature, and the need for a stable source of funding for publishers who choose to provide open access to their journals' contents. Those universities and funding agencies receiving the benefits of publisher services should recognize their collective and individual responsibility for that funding, and this recognition should be ongoing and public so that publishers can rely on it as a condition for their continuing operation.

Therefore, each of the undersigned universities commits to the timely establishment of durable mechanisms for underwriting reasonable publication charges for articles written by its faculty and published in fee-based open-access journals and for which other institutions would not be expected to provide funds. We encourage other universities and research funding agencies to join us in this commitment, to provide a sufficient and sustainable funding basis for open-access publication of the scholarly literature.

No signatories
renewed
after 2014

COPE Signatories

Cornell University
Dartmouth College
Harvard University
MIT
UC Berkeley
University of Ottawa
Columbia University
Memorial Sloan-Kettering Cancer Center
Universitat de Barcelona
Duke University
University of Calgary
Simon Fraser University
CERN
Karlsruhe Institute of Technology
University of Utah
University of Pittsburgh
University of Tennessee
Texas A&M University
Emory University
University of Rhode Island

COPE compatible OA funds

Brandeis Univ
Carnegie Mellon Univ
Colorado State Univ
ETH Zurich
George Mason Univ
Indiana Univ-Purdue Univ Indianapolis
Johns Hopkins Univ
Lund Univ
Northern Illinois Univ
Southern Illinois Univ Carbondale
Tufts Univ
Univ of Bielefeld
Univ of California, Davis
Univ of California, Irvine
Univ of California, Merced
Univ of California, San Diego
Univ of California, San Francisco
Univ of California, Santa Barbara
Univ of California, Santa Cruz
Univ of Colorado
Univ of Florida
Univ of Illinois at Chicago
Univ of Iowa
Univ of Kansas
Univ of Manitoba
Univ of Minnesota
Univ of North Carolina at Chapel Hill
Univ of North Carolina at Charlotte
Univ of Oklahoma
Univ of Oregon
Univ of Tromsø
Univ of Wisconsin - Madison

OA block grant by UKRI

- OA block grant provided by UKRI to universities, and redistributed to researchers by university.

OA block grant provided in FY 2016/17

	Total	Full OA	Hybrid
Block grant provided	£14M		
Number of APC-funded articles	10,000	2500	7500
Average APC	£1988	£1654	£2101
Total APCs provided	£18M	£4M *	£16M *

(* Total spent)

Japan publishes ca 16,000 articles annually. So, an estimate of 2.8 billion yen is spent for OA publishing.



Since 30% are OA, Japan will need 9 billion yen for such block grant.

Top 10 UK universities

JUSTICE estimate
F.Y.2016

by OA block grant provided

UCL	2.4B Yen	(£1.63M)
Cambridge U	1.9B Yen	(£1.27M)
Manchester U	1.6B Yen	(£1.08M)
Oxford U	1.3B Yen	(£0.91M)
Edinburgh U	1.3B Yen	(£0.98M)
Sheffield U	0.9B Yen	(£0.62M)
Glasgow U	0.9B Yen	(£0.61M)
Warwick U	0.7B Yen	(£0.50M)
Leeds U	0.7B Yen	(£0.48M)
Bristol U	0.7B Yen	(£0.48M)

“APCs one of reasons of research strength decline in Japan”

The APC rises for scientific journals are a cause of the current decline in research strength.

Research grants are provided to only 20% to 30% of researchers, and the remaining researchers (approximately 70%) cannot pay even the APC.

This is why the number of articles published is declining. The national government or universities should support researchers.

国立大学協会会長
山極寿一氏



やまぎわ・じゅいち 京都大教授を経て、2014年10月に同会長に就任した。日本学術会議会長も務める。憲法第9条の国際的権威。66歳。

2004年に国立大学が法人化して以降、政府は改革を進めようと大学を過度に競争させた。人件費などに充てる基盤経費である国立大運営費交付金を削り、競争的資金を手厚くした。例えば「国際化を進める改革」などの号令の下、新たな研究拠点を整備した大学に様々な補助金を増やしていった。しかし、15年間かけてもうまくいかず、間違っていたことは明らかだ。

大学は、次の世代の人材を育て、日本の研究力の向上に貢献する。企業の経営とは全く異なる役割を担っている。

政府は昨年末、大学が定める独自の経営目標とは別に、国が定めた共通指標で評価し、評価が高い大学に運営費交付金を手厚く配分することも決めた。介入としがちな思い。研究現場は荒れ、大学は優れた研究者を囲い込むようになり、新しい研究ができなくなる。

論文数と、運営費交付金、研究者が応募して資金を獲得する国の「科学研究費助成事業（科研費）」の推移を比較してみた。研究者はこれらの資金で研究に専念でき、3、4年後には論文として成果を世に出していることが明らかになった。

その科研費が、19年度予算案などで大幅に増額されたのは評価できる。一方で、論文数が減少し、研究力がそがれているのも事実だ。これには、科学雑誌の論文投稿料の高騰も影響している。科研費に採択されるのは全体の20、30%程度で、残る70%は論文投稿料を支払えない。

過度な大学間競争 間違い、

How to establish funding schema for APCs

Offset agreement!

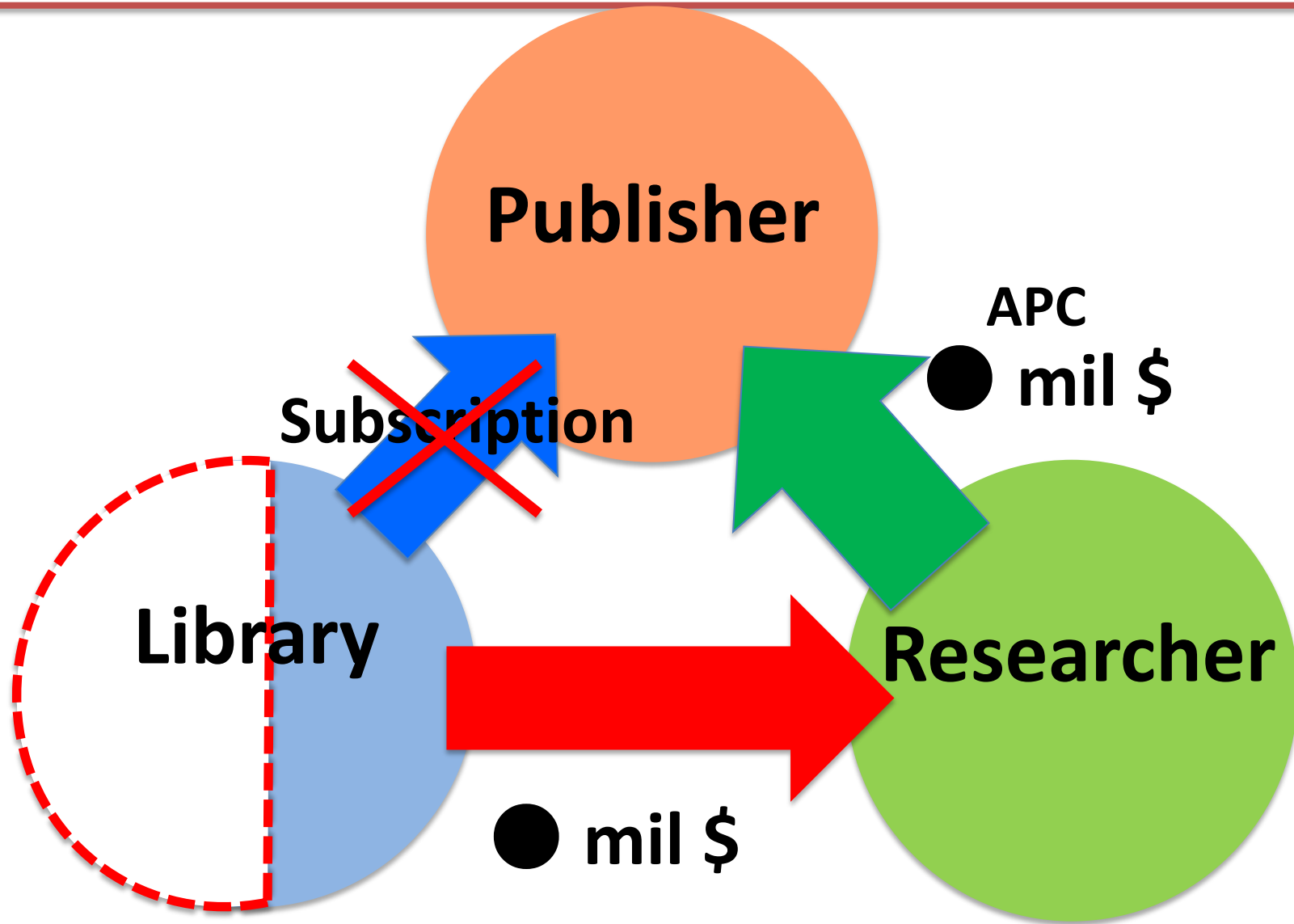
1. Turning subscription budget to APCs

- For many universities, the subscription budget is bigger than the total APCs spent. Thus, this is feasible.
- However, for transitional period, some additional budget for APCs may be needed.
- Also, for big research-intensive universities which produce many articles, turning subscription to APCs is not enough.

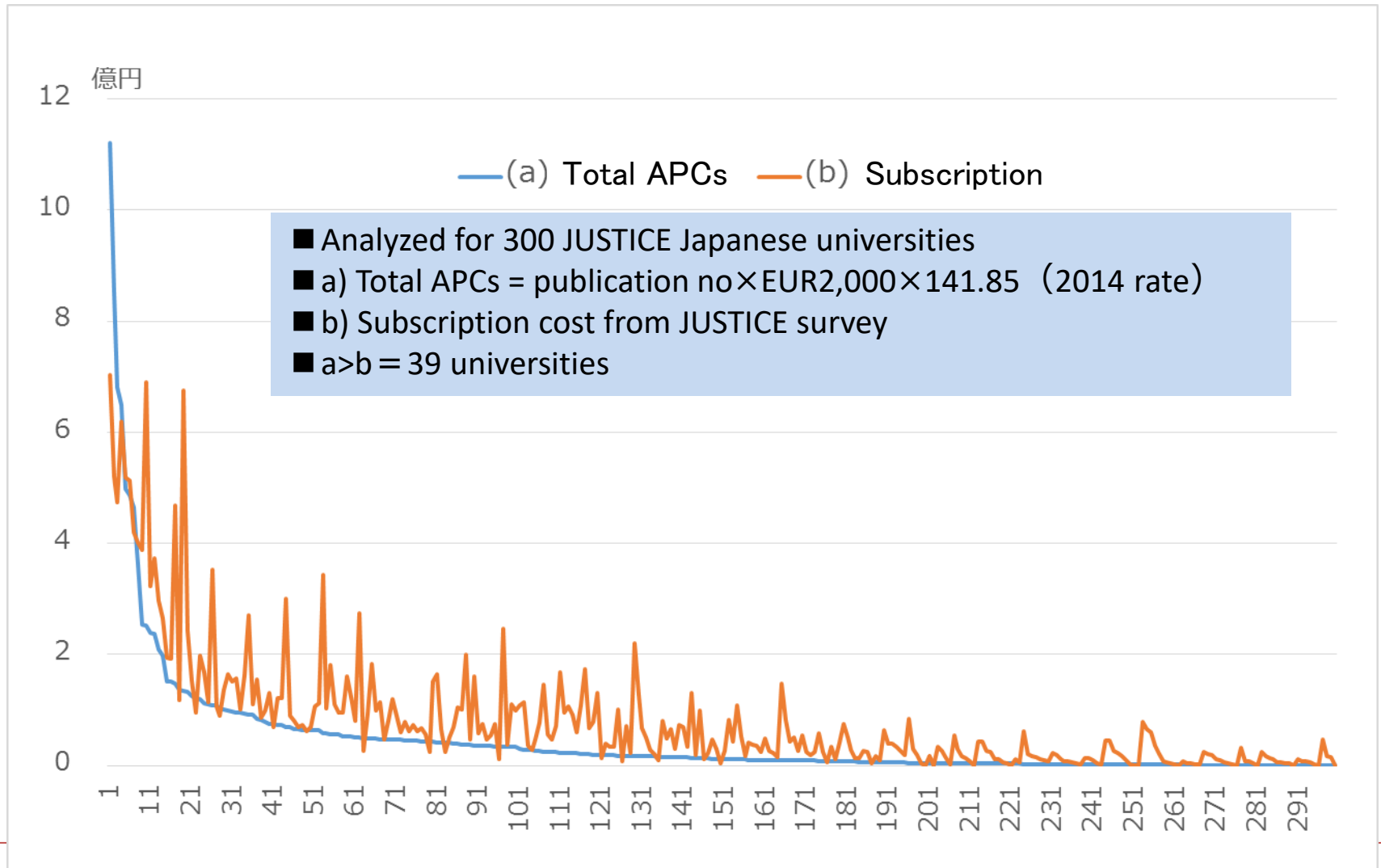
2. Acquiring grants from funding agencies

- Funders could provide grants based on research grants allocated or number of published articles.
- Funders could also support bigger research universities which need excess money for the many research publications.

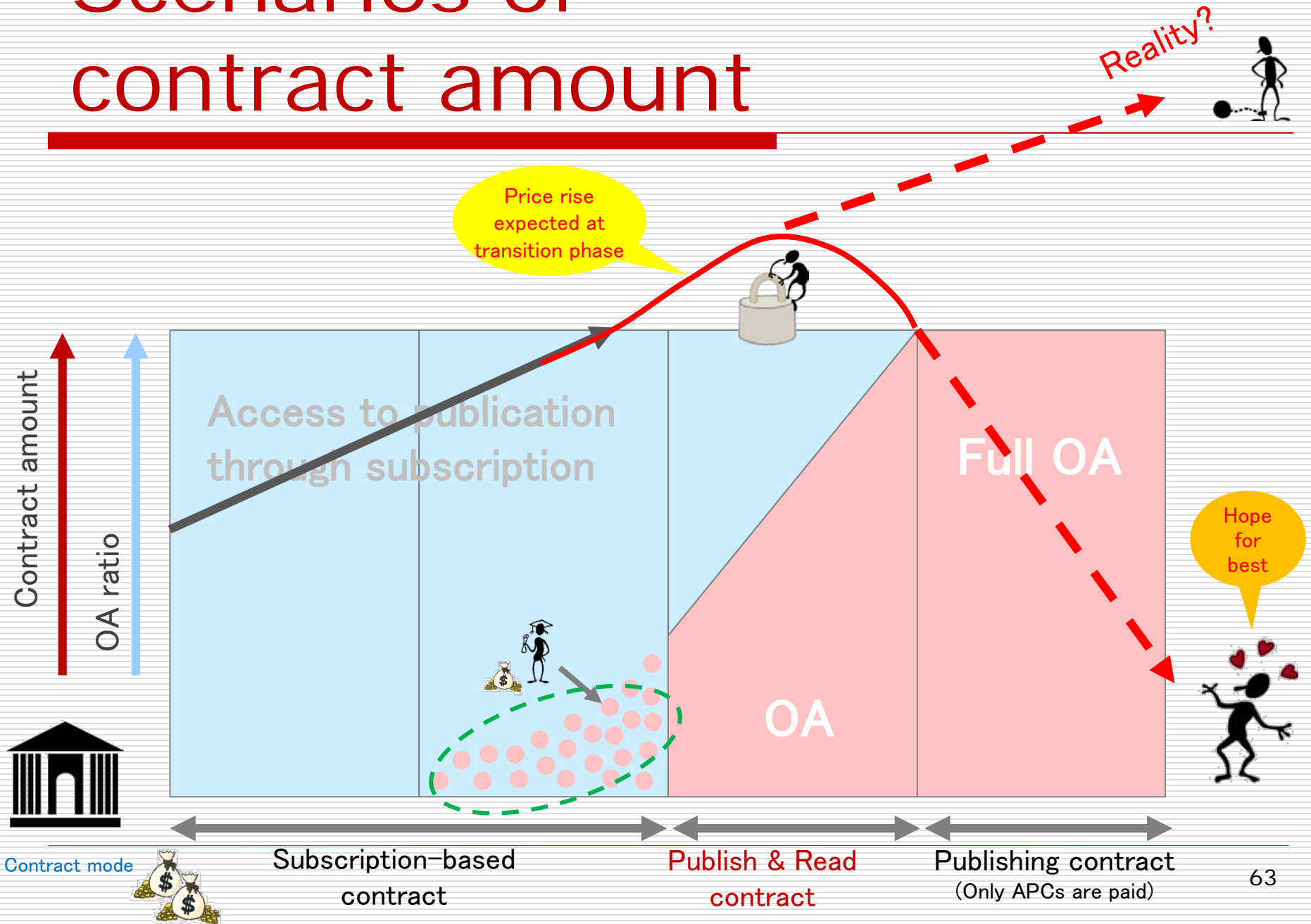
APC flow



Comparing total APCs and subscription for JUSTICE universities

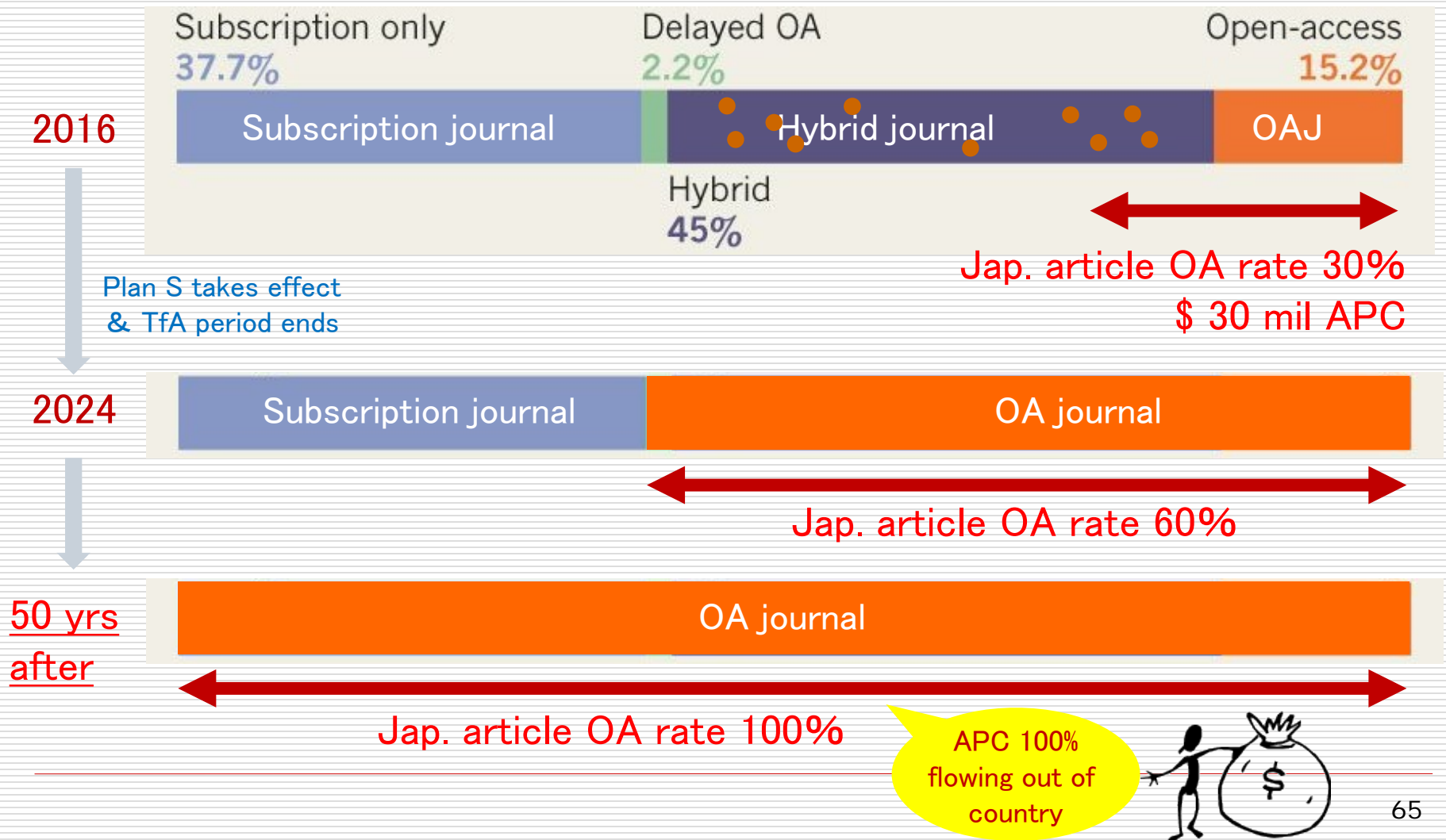


Scenarios of contract amount



5. Need for non-commercial Publishing Platforms

The transformation of acad. journals by state of OA



How many acad. contents, i.e. APCs, can we keep in Japan?

If articles are published
100% in overseas OAJs

OA journals
with APCs



Let's use
Jap. OA
platforms !



APC 100%
flowing out of
country



If certain portion of contents
can be published in Japan

APC-free OA platforms



Repositories,
JAIRO Cloud

OA journals
with APCs

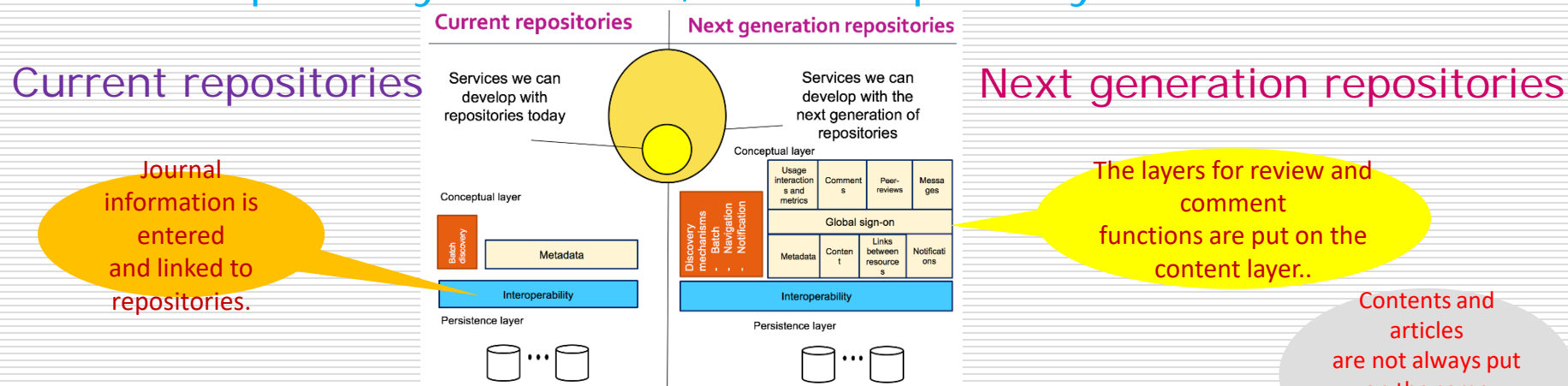


APC-free OA journal publication systems

Separation between contents and assessment (journals)

□ Next Generation Repositories

- Proposal by the COAR, an OA repository association



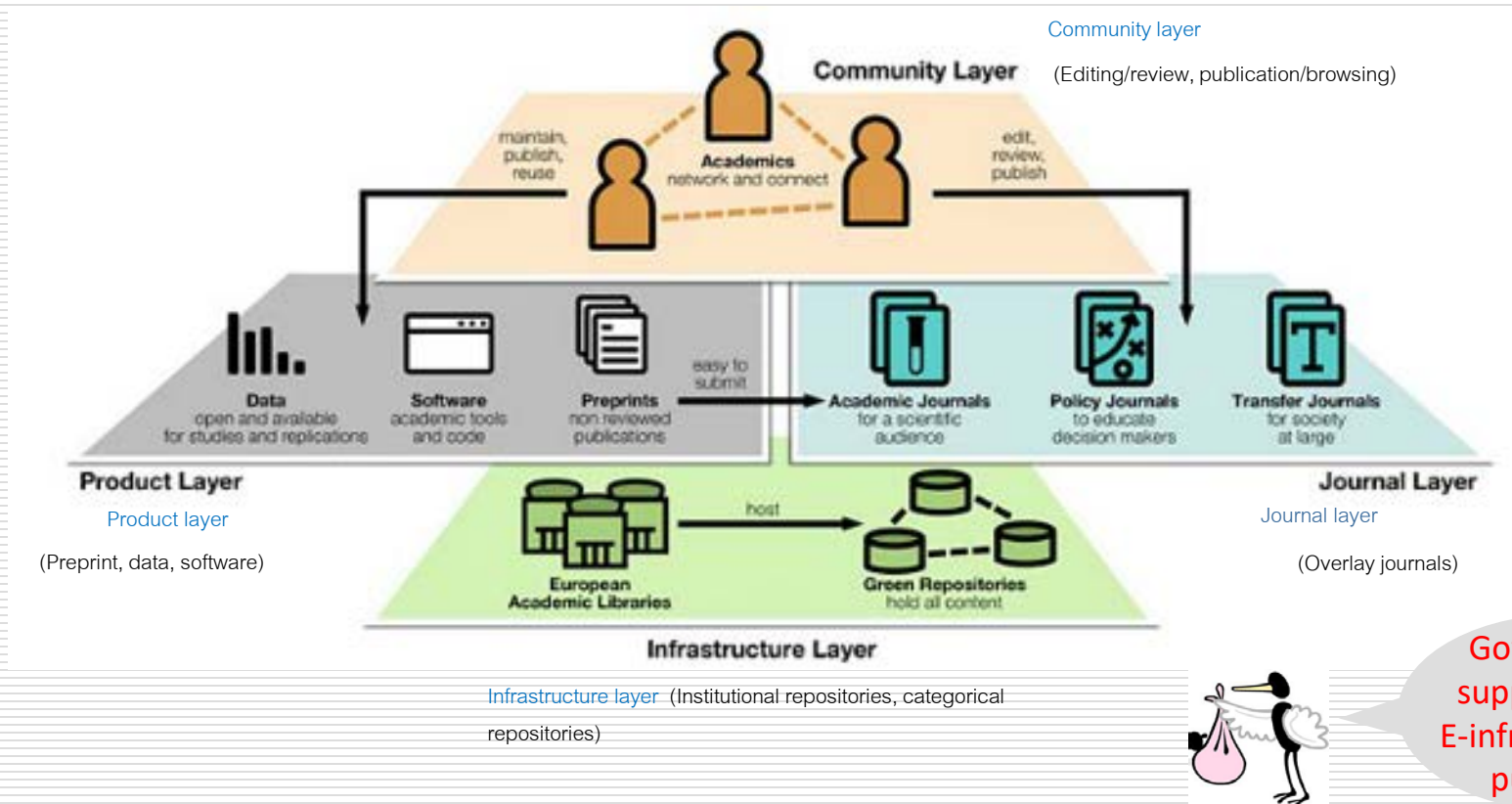
□ APC-free OA journal publication systems

- Preprint servers (including ArXiv and BioRxiv)
- OA platforms (including J-Stage, SciELO and F1000Research)
- Institutional repositories (including PubMed and JAIRO Cloud)



Proposal) EU provides the e-infrastructure where articles can be submitted, peer-reviewed, published, and made available OA.

European Open Access Platform



OA Models without APCs

...Crowd Funding by Libraries

- ❑ Library consortium pools money from member organizations and publish journals and monographs.
- ❑ OA publishing model without authors paying for APCs.

arXiv.org



UNIVERSITY
of CALIFORNIA
PRESS

Luminos

Lever Press

REVEAL DIGITAL



SCOAP³



ung glue.it

OpenBook
Publishers



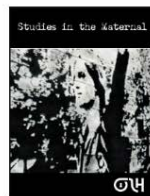
Libraries sustaining OA journals in humanities: Open Library of Humanities



- ❑ Business model: Libraries form a consortium and publishes OA journals through membership fees
- ❑ 20 journals mainly in humanities
- ❑ More than 200 libraries mainly in the North America and UK support the OLH.
- ❑ Average annual contribution of a library is approximately 1,000 dollars.
- ❑ Annual contribution of a library for one journal is approximately 55 dollars.



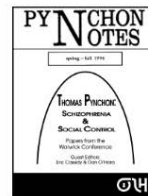
C21 Literature:
Journal of 21st-
Century Writings



Studies in the
Maternal



Architectural
Histories



Pynchon Notes



Theoretical Roman
Archaeology
Journal

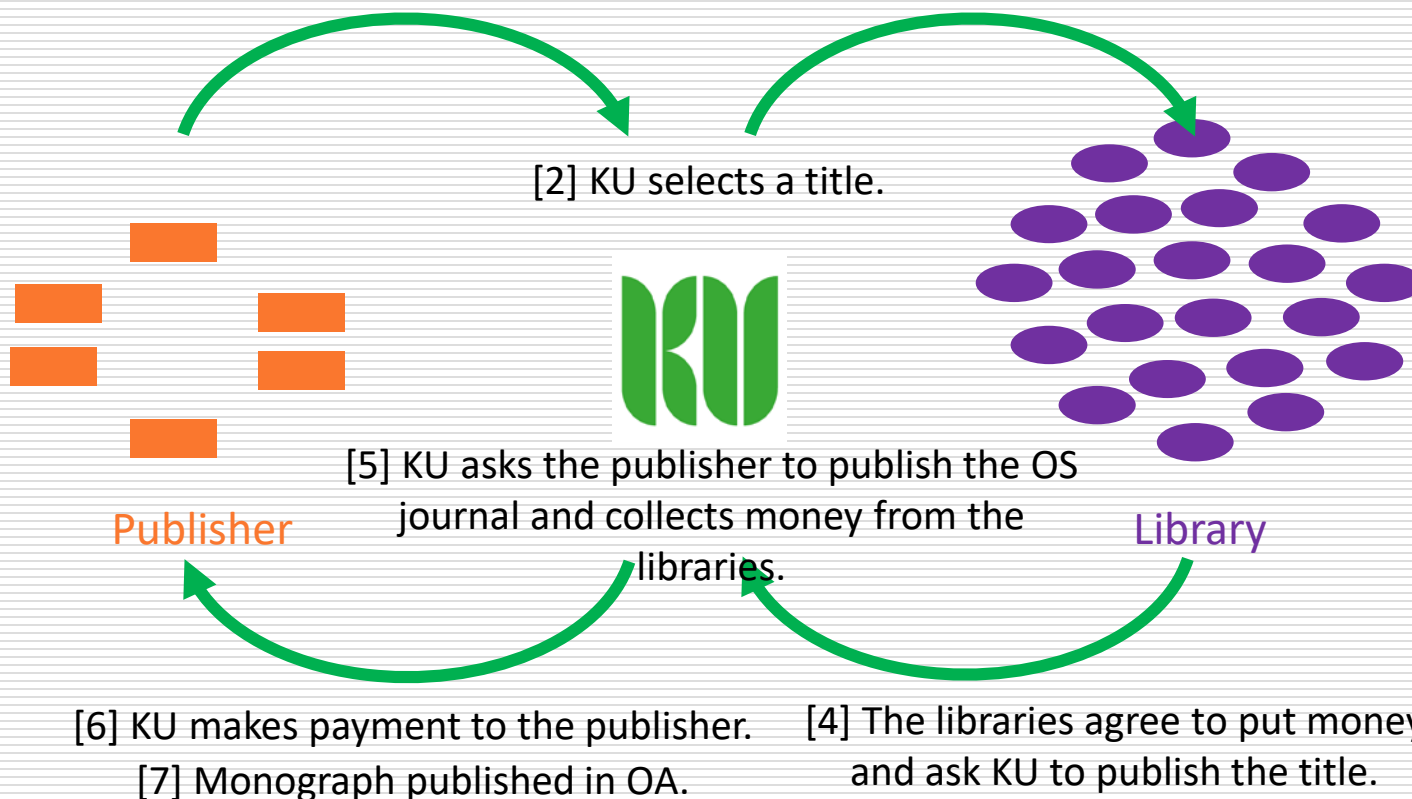


Open Screens

Libraries sustain OA monographs in humanities — Knowledge Unlatched (KU)

[1] Publishers submits title list to KU.

[3] KU lets libraries know the selected title.



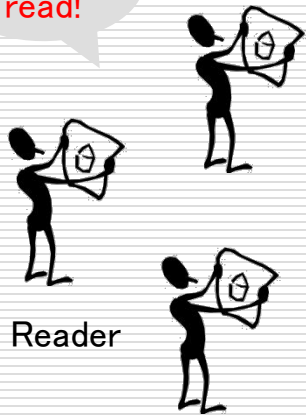
A gold OA framework in High-Energy Physics

...Supporting APCs institutionally and achieve full-OA—SCOAP³

SCOAP³ Journals

- ❑ Acta Physica Polonica B (APPB)
- ❑ Advances in High Energy Physics (AHEP)
- ❑ Chinese Physics C (CPC)
- ❑ The European Physical Journal C (EPJC)
- ❑ The Journal of High Energy Physics (JHEP)
- ❑ Nuclear Physics B (NPB)
- ❑ Physics Letters B (PLB)
- ❑ Physical Review C (PRC)
- ❑ Physical Review D (PRD)
- ❑ Physical Review Letters (PRL)
- ❑ Progress of Theoretical and Experimental Physics (PTEP)

Open to
read!



Reader

Open
Access

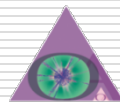
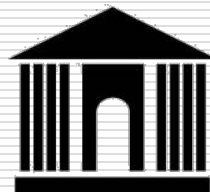
Submit
Article



Researcher

‘Can submit articles
without APC
worries.’

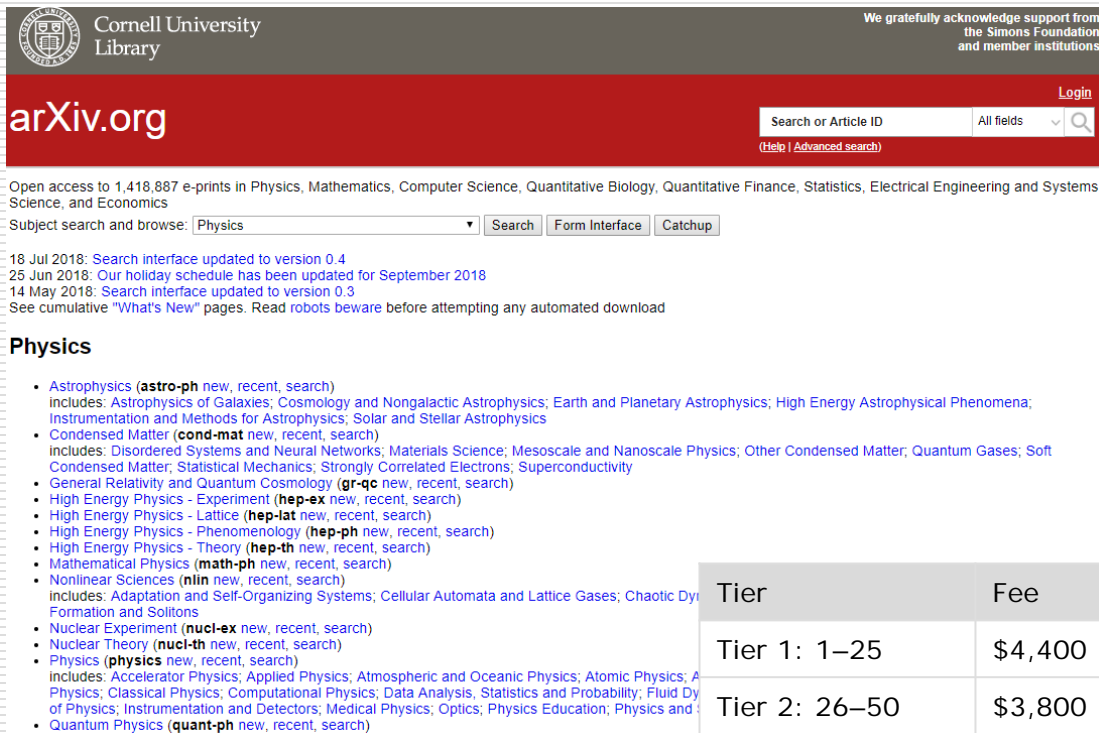
Membership
Fee



SCOAP³ – Sponsoring Consortium for Open Access Publishing in Particle Physics

- ✓ Coordinated by CERN
- ✓ 3000 institutions at 44 countries participating
- ✓ 67 Japanese institutions participating (2018)

Preprint Server ...arXiv.org



Cornell University Library

We gratefully acknowledge support from the Simons Foundation and member institutions

arXiv.org

Search or Article ID All fields

(Help | Advanced search)

Login

Open access to 1,418,887 e-prints in Physics, Mathematics, Computer Science, Quantitative Biology, Quantitative Finance, Statistics, Electrical Engineering and Systems Science, and Economics

Subject search and browse: Search Form Interface Catchup

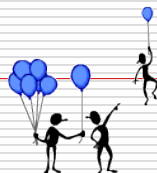
18 Jul 2018: Search interface updated to version 0.4
25 Jun 2018: Our holiday schedule has been updated for September 2018
14 May 2018: Search interface updated to version 0.3
See cumulative "What's New" pages. Read robots beware before attempting any automated download

Physics

- Astrophysics (**astro-ph** new, recent, search)
Includes: Astrophysics of Galaxies; Cosmology and Nongalactic Astrophysics; Earth and Planetary Astrophysics; High Energy Astrophysical Phenomena; Instrumentation and Methods for Astrophysics; Solar and Stellar Astrophysics
- Condensed Matter (**cond-mat** new, recent, search)
Includes: Disordered Systems and Neural Networks; Materials Science; Mesoscale and Nanoscale Physics; Other Condensed Matter; Quantum Gases; Soft Condensed Matter; Statistical Mechanics; Strongly Correlated Electrons; Superconductivity
- General Relativity and Quantum Cosmology (**gr-qc** new, recent, search)
- High Energy Physics - Experiment (**hep-ex** new, recent, search)
- High Energy Physics - Lattice (**hep-lat** new, recent, search)
- High Energy Physics - Phenomenology (**hep-ph** new, recent, search)
- High Energy Physics - Theory (**hep-th** new, recent, search)
- Mathematical Physics (**math-ph** new, recent, search)
- Nonlinear Sciences (**nlin** new, recent, search)
Includes: Adaptation and Self-Organizing Systems; Cellular Automata and Lattice Gases; Chaotic Dynamics; Formation and Solitons
- Nuclear Experiment (**nucl-ex** new, recent, search)
- Nuclear Theory (**nucl-th** new, recent, search)
- Physics (**physics** new, recent, search)
Includes: Accelerator Physics; Applied Physics; Atmospheric and Oceanic Physics; Atomic Physics; Atomic Physics; Classical Physics; Computational Physics; Data Analysis, Statistics and Probability; Fluid Dynamics; Instrumentation and Detectors; Medical Physics; Optics; Physics Education; Physics and Quantum Physics
- Quantum Physics (**quant-ph** new, recent, search)

Originally introduced in
High energy physics;
currently introduced
in multiple areas

However,
there is no
peer-review!



Tier	Fee
Tier 1: 1–25	\$4,400
Tier 2: 26–50	\$3,800
Tier 3: 51–100	\$3,200
Tier 4: 101– 150	\$2,500
Tier 5: 151–200	\$1,800
Tier 6: 201+	\$1,000

- ❑ Cornell U is the host and funds US\$175k annually.
- ❑ Simon Foundation commits US\$100k annually.
- ❑ University libraries across the world contribute membership fees based on their tier.
- ❑ Contributions from Japan
 - The University of Tokyo, Kyoto University, Tohoku University, Nagoya University, Osaka University, High Energy Accelerator Research Organization, Waseda University, National Astronomical Observatory of Japan, Tokyo Institute of Technology, Hokkaido University, Kyushu University, Hiroshima University, Tokyo University of Science and Tsukuba University

Preprint servers on rise!

Speedy
information
exchange!



arXiv.org

RePEc

Cryptography ePrint Archive

PhilSci
ARCHIVE

American Chemical Society

bioRxiv

ChemRxiv™

PeerJ Preprint

SSRN

*Elsevier bought it
in 2016.

AgriXiv

الأرشيف
العلمي
الأرشيف العربي للنشر العلمي على الإنترنت

BITSS

Earth ArXiv

ENGINEERING
engrxiv
ARCHIVE

FoCUS ARCHIVE
FOCUSED ULTRASOUND FOUNDATION

Frenxiv

INA-Rxiv

LawArXiv

LIS
Scholarship
Archive

MarXiv

MindRxiv

NutriXiv

paleo
rxiv

Ψ
A X PsyArXiv

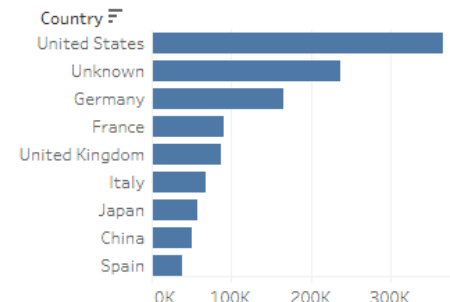
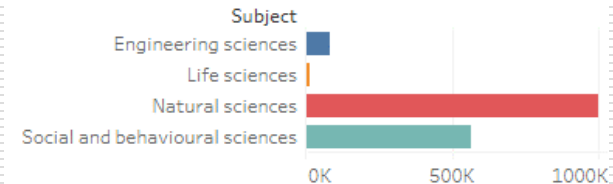
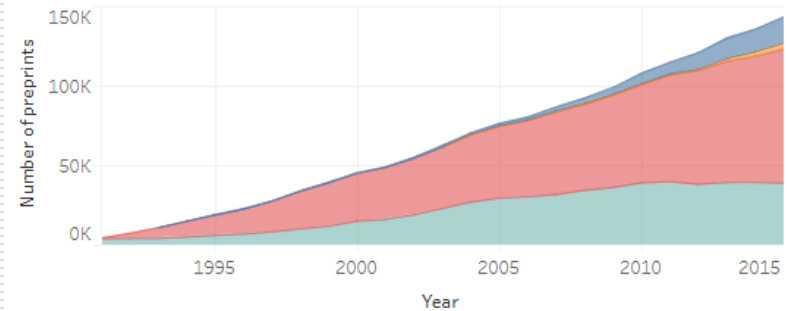
SOC
ARXIV

SportRxiv

THESIS
COMMONS

COSのOSFがホストするサーバ

arXiv.org bioRxiv PeerJ Preprints RePEc



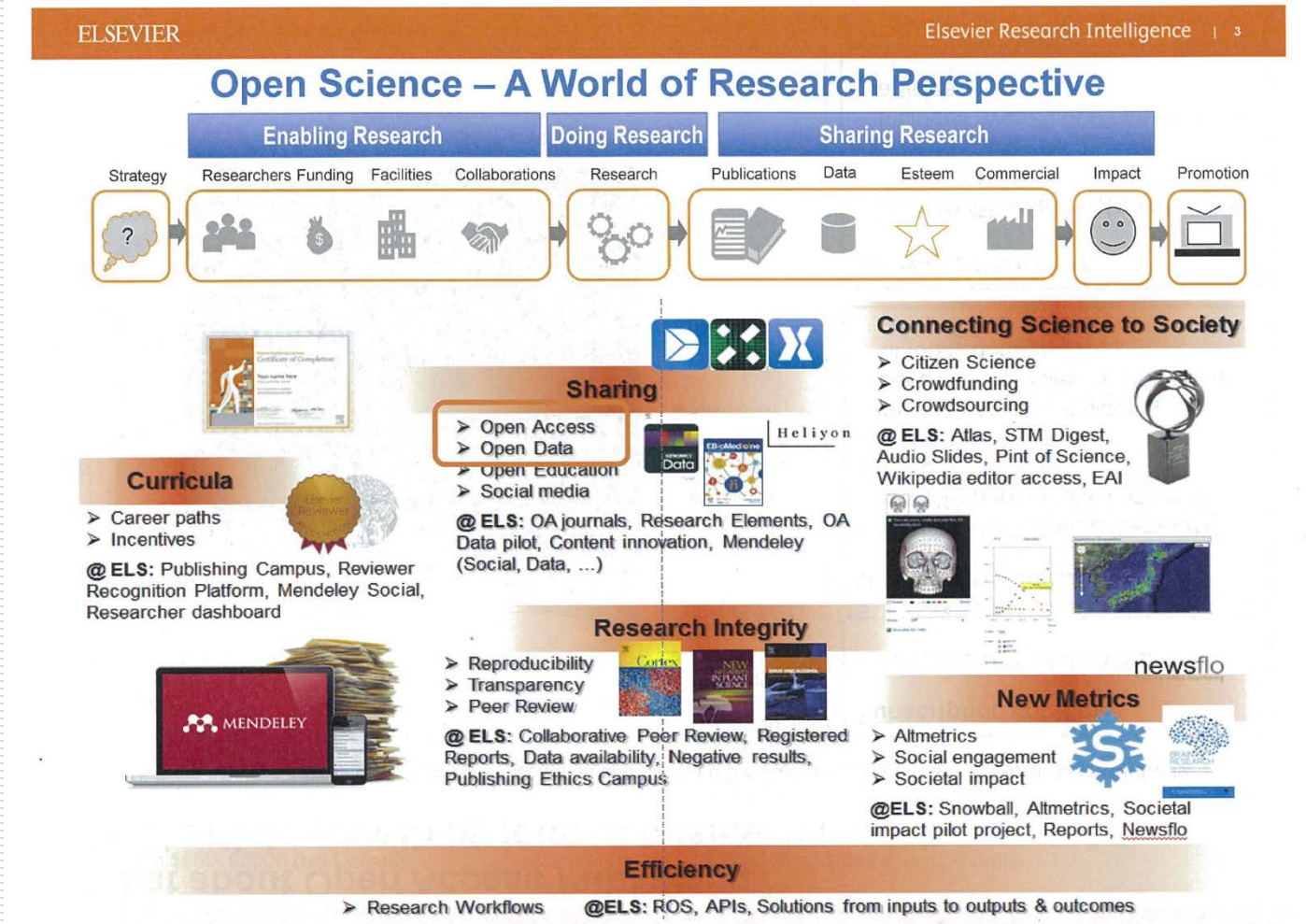
Source: Open Science Monitor, "Number of preprints"

<https://public.tableau.com/profile/sarah.parks#!/vizhome/OApreprints/Dashboard1>

Jussieu Call for Open science and bibliodiversity



Changing business from Publisher to Platform Provider for Research Support!



Changing from Contents to Context!



(Publisher)
Platformer

The M&As of Elsevier



There is no escape from Elsevier!

The publishers are controlling research!



Researcher

We are providing excellent research environment!



(Publisher)
Platformer

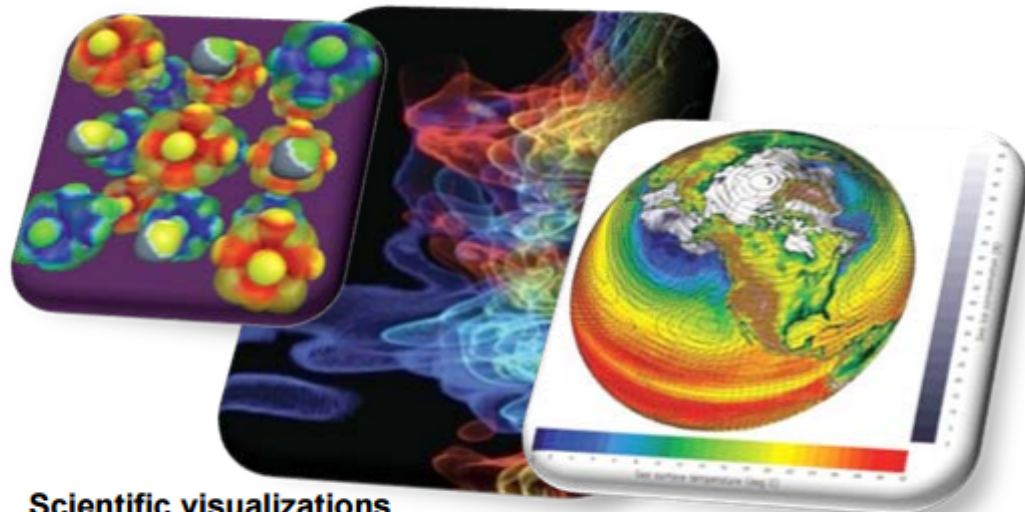
A Digital Data Deluge in Research

- Data collection
 - Sensor networks, satellite surveys, high throughput laboratory instruments, observation devices, supercomputers, LHC ...
- Data processing, analysis, visualization
 - Legacy codes, workflows, data mining, indexing, searching, graphics ...
- Archiving
 - Digital repositories, libraries, preservation, ...



SensorMap

Functionality: Map navigation
Data: sensor-generated temperature, video camera feed, traffic feeds, etc.



Scientific visualizations

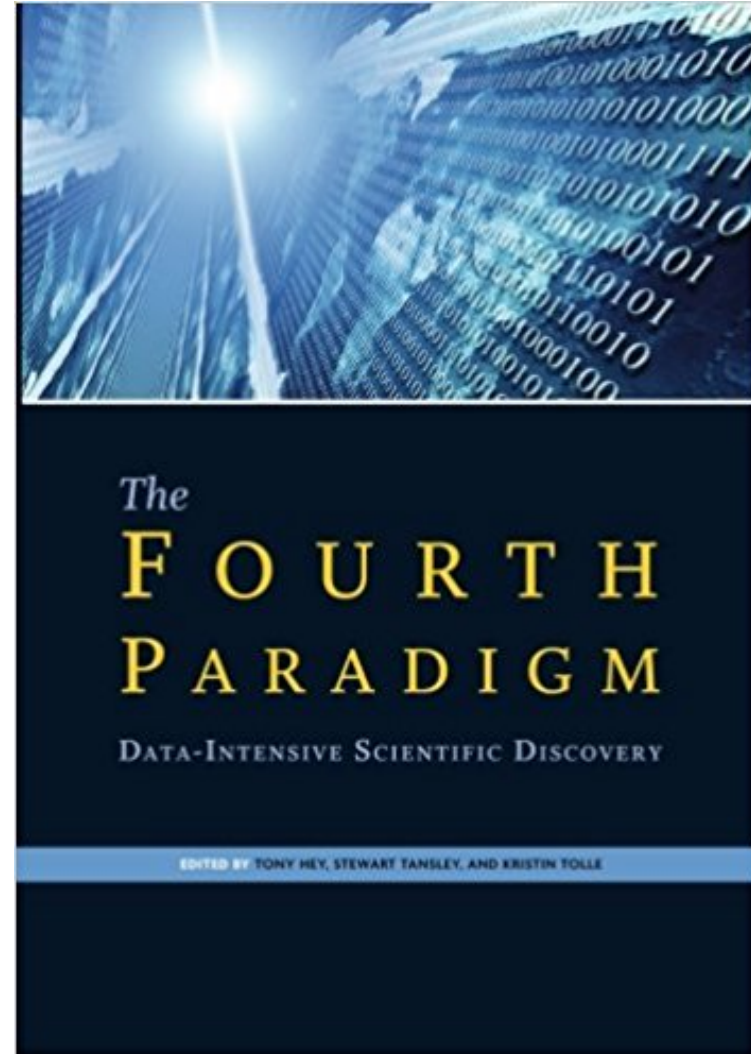
NSF Cyberinfrastructure report, March 2007



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Emergence of a Fourth Research Paradigm

1. Thousand years ago – **Experimental Science**
 - Description of natural phenomena
2. Last few hundred years – **Theoretical Science**
 - Newton's Laws, Maxwell's Equations...
3. Last few decades – **Computational Science**
 - Simulation of complex phenomena
4. Today – **Data-Intensive Science**
 - Scientists overwhelmed with data sets from many different sources
 - Data captured by instruments
 - Data generated by simulations
 - Data generated by sensor networks
 - eScience is the set of tools and technologies to support data federation and collaboration
 - For analysis and data mining
 - For data visualization and exploration
 - For scholarly communication and dissemination



With thanks to Jim Gray



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NII Research Data Cloud

CiNii Research

Discovery Platform

- Linking Func between Article and Data
- Researcher and Research Project Identification and Management Func
- Data Exchange with International Discovery Service

Re-use

Research Data Mng

User Interface

Access Control

Metadata Mng

Research Data Management System

RDM Platform



GakuNin RDM

- High Speed Access using SINET5
- Data Sharing Func using Virtual NW and ID Federation
- Effective Data Storage Switcher

Metadata Management

Discovery Service

Search/Find

Data User



Data Depositor



Exp/Store



Archive



Exp Data



Article



Private

Shared

Public

Hot Storage

Hot Storage

Hot Storage

Cold Storage

Cold Storage

Cold Storage

Storage Area for Long-term Preservation

DOI

Subject Repository

International Metadata Aggregator

Metadata Aggregation

User Flow
Data Flow

Journal Article



Supplemental Data



Institutional Research Data Mng

Research Data Repository

Publication Platform

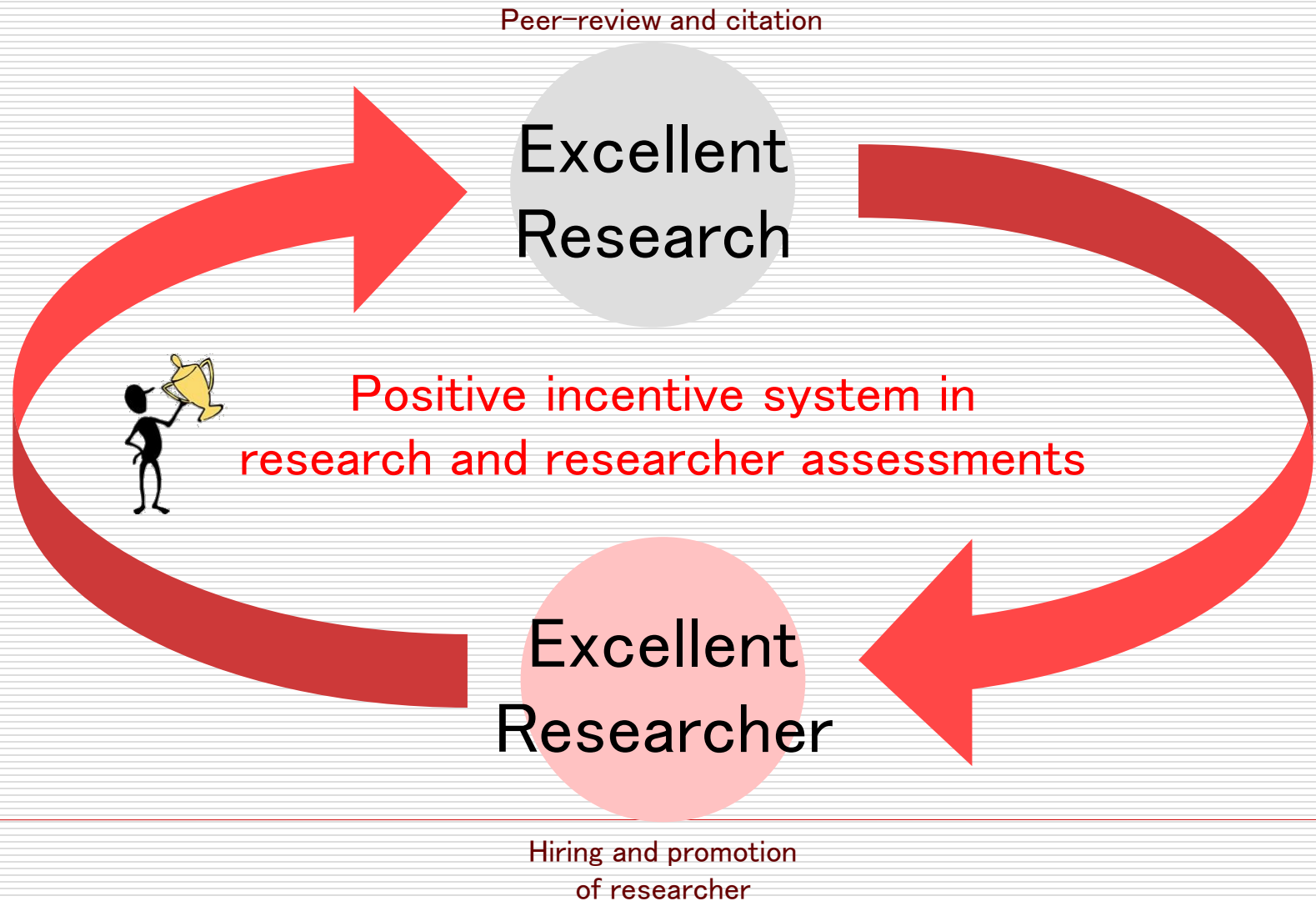


by WEKO3

- Data oriented Self-Archiving Func
- Versioning and auto-Packaging Func
- User Dependent Personal Data Pseudonym Func

6. Negative effects of Quantitative Research Assessment Indicators in An Digital Era

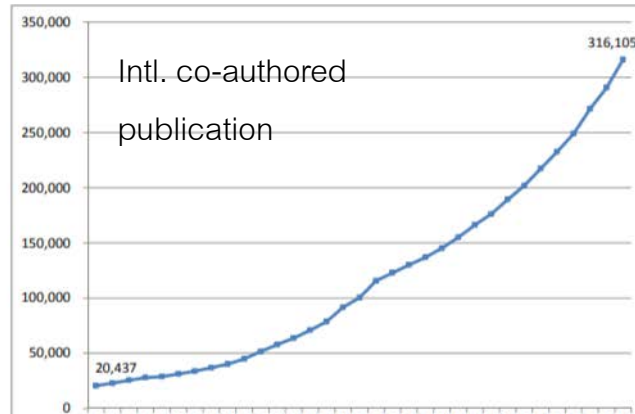
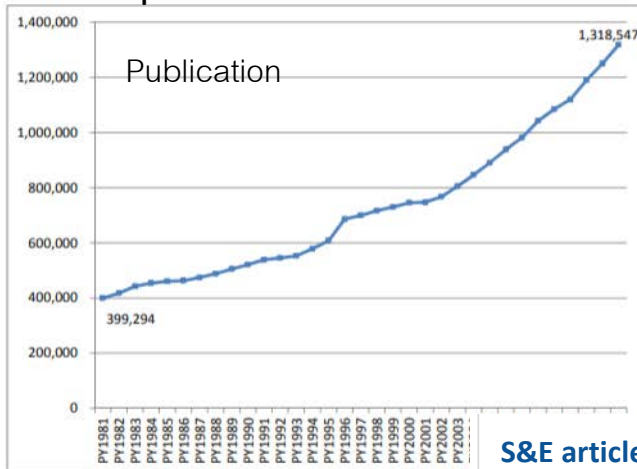
Proper research assessment leading to proper advancement of scholarship



Growth in Publications

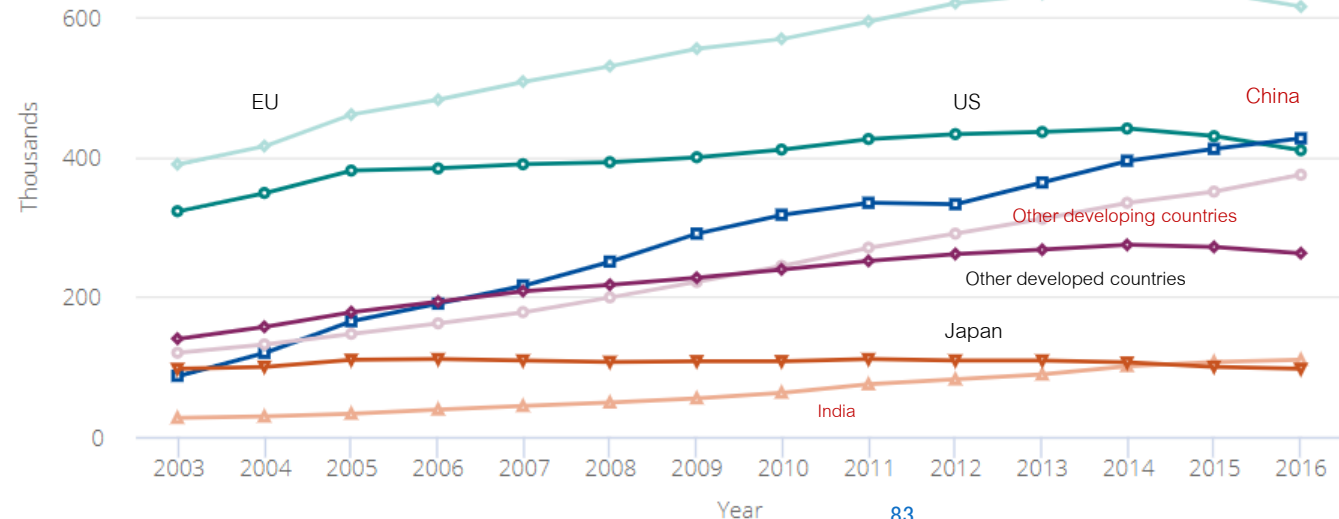
Changes in the number of articles published in the world

Changes in the number of international co-authored articles published in the world



Source: Benchmarking of scientific research in 2015
Research materials of the National Institute of Science and Technology Policy -239, published in 2015

S&E articles, by selected region, country, or economy: 2003–16



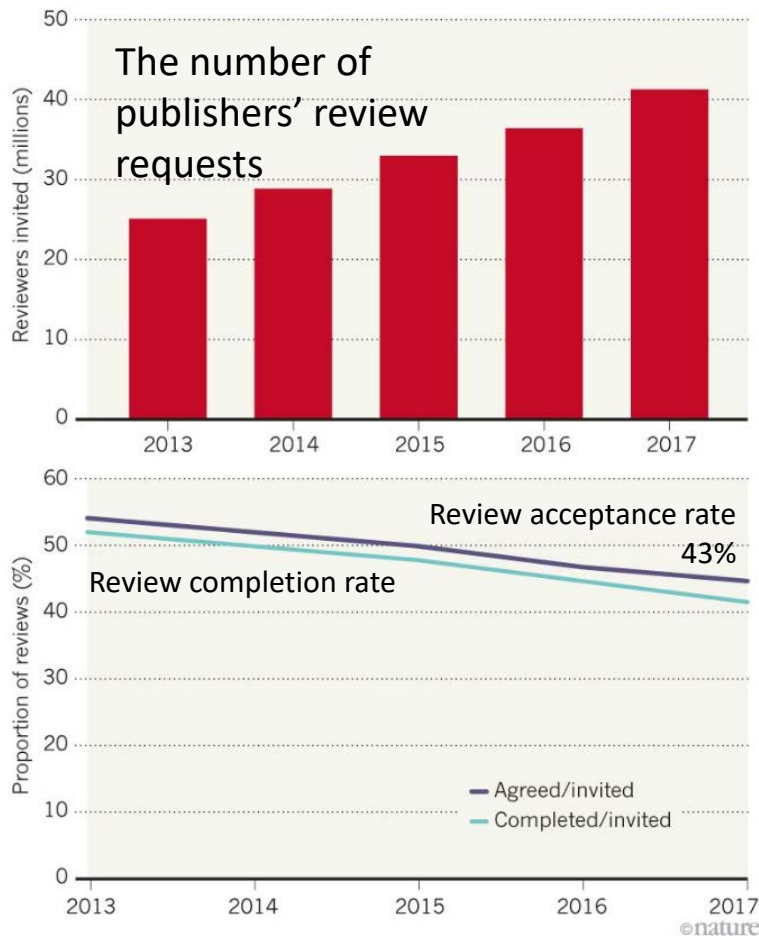
83

Reviewer Fatigue

especially in English-speaking countries

IS REVIEWER FATIGUE SETTING IN?

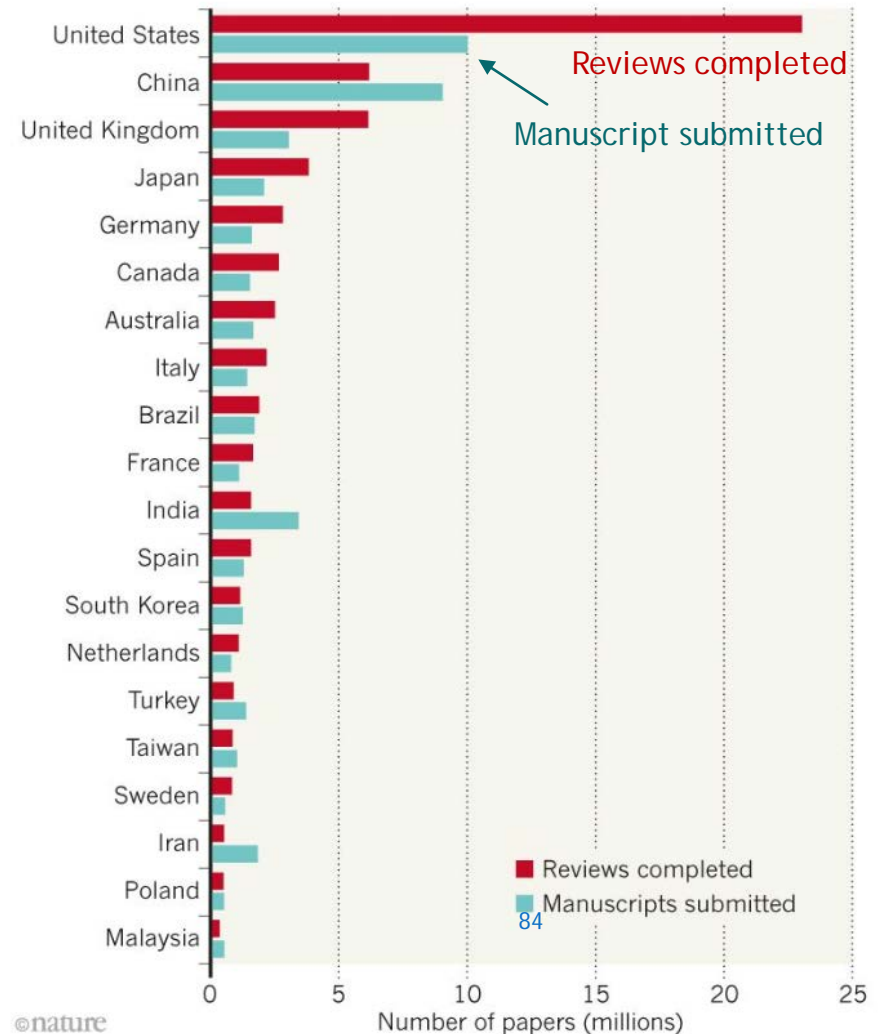
Journal editors are inviting ever more reviewers, but reviewer acceptance and completion rates are on the decline.



Nature, "Peer reviewers unmasked: largest global survey reveals trends" (2018.9.7)

UNEVEN CONTRIBUTIONS

Researchers in the United States and the United Kingdom tend to review more papers than they submit, whereas those in China and India review fewer.

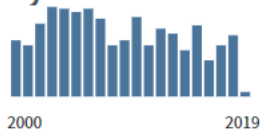


Web of Science calculating citation indices

Total titles

合計出版物数

1,099 分析



h-index

76

Average citation (per article)

平均被引用数 (論文ごと)

28.95

Total citation

被引用数の合計

31,817

自己引用を除く

30,205

Total citation

excluding self citation

Articles cited

引用論文数

22,882 分析

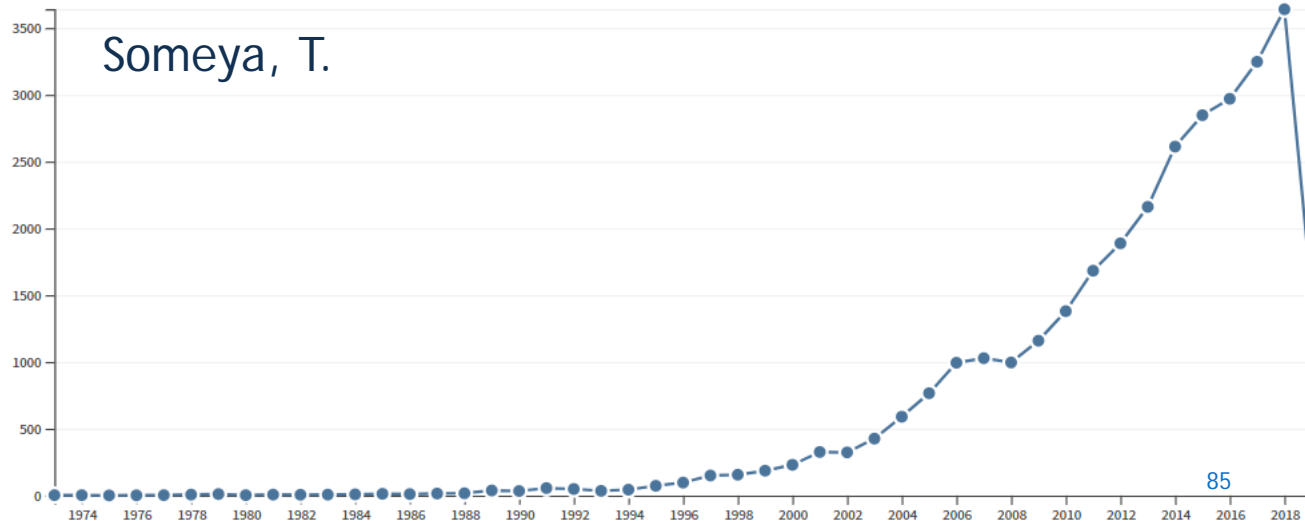
自己引用を除く

22,341 分析

Total number of articles cited

excluding self citation

年別の被引用数



World University Rankings

putting quantitative pressure on universities



PROFESSIONAL JOBS SUMMITS RANKINGS

Click here to help us compare the world's universities - and we'll make a £250 donation to the Scholar Rescue Fund on behalf of a winning participant.

THE World University Rankings 2019: top 10

2019 rank	2018 rank	University	Country
1	1	University of Oxford	United Kingdom
2	2	University of Cambridge	United Kingdom
3	=3	Stanford University	United States
4	5	Massachusetts Institute of Technology	United States
5	=3	California Institute of Technology	United States
6	6	Harvard University	United States
7	7	Princeton University	United States
8	12	Yale University	United States
9	8	Imperial College London	United Kingdom
10	9	University of Chicago	United States

2019年6月20日

「世界大学ランキング2020」、日本の大学は半数以上が順位落とす

ツイート

おすすめ 33

B! Bookmark 0

Quacquarelli Symonds社(QS社、ロンドン)は19日、「第16回QS世界大学ランキング2020」を発表した。それによるとランクインした日本の41大学のうち、半数以上の24校が順位を落とした。

また、研究パフォーマンスにおける上位100位以内に、初めて日本の大学が入らなかった。高等教育セクターの国際化に向けた日本の大学の試みは、同ランキングの結果として、その成果を表すには至っていないことが分かった。

高等教育のグローバルコンサルティング企業QS社が作成する同ランキングは、世界の大学の上位1000位までを網羅したもので、マサチューセッツ工科大学(米国)は8年連続世界1位という新記録を樹立した。

日本の大学を見ると、最上位は東京大学で23位から22位へと過去最高の順位に上げている。東大は4年連続で順位を上げており、31位だった2015年に比べると9ランク上昇。

東大は、QS社のAcademic Reputation(学術評判)指標で100/100の満点を獲得。Academic Reputationで満点を達成した世界の8校のうちのひとつで、アジアでは唯一。引き続き、世界で最も高い評価を得ている学術機関のひとつとして認

QS 世界大学ランキング 2020: 日本の大学(上位 10 位まで)		
2020	2019	機関名
22=	23	東京大学
33=	35	京都大学
58=	58	東京工業大学
71	67	大阪大学
82	77	東北大学
115	111	名古屋大学
132=	128=	北海道大学
132=	126=	九州大学
196	208=	早稲田大学
200=	198	慶應義塾大学
© QS Quacquarelli Symonds 2004-2018 https://www.topuniversities.com/ 無断転載を禁止します。		

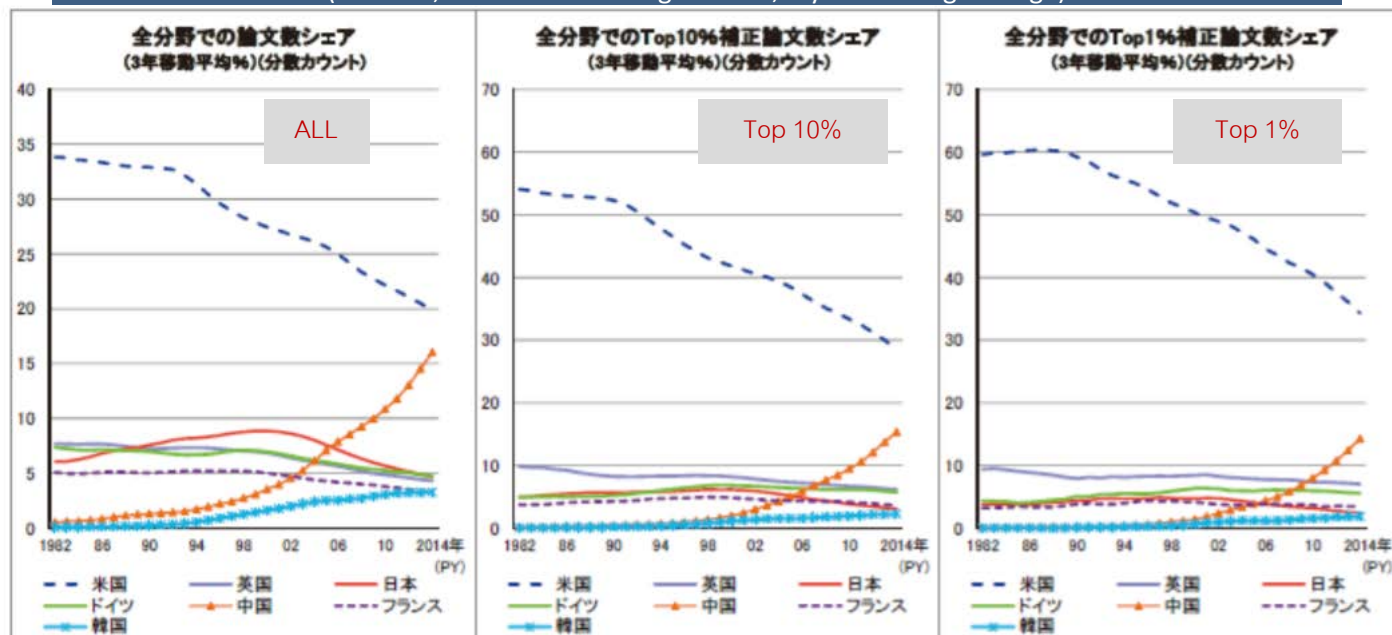
Research Competitiveness measured by publication number

Changes in the percentage of articles frequently referred to in Japan

- The percentages of top 10 articles and top 1% articles in Japan have acutely declined since 2000.

Changes in the number of articles in major countries, the number of top 10% corrected articles and the number of top 1% corrected articles

(all fields, fractional counting method, 3-year moving average)

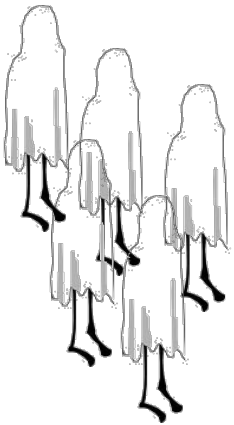


注: 分析対象は、article、review である。年の集計は出版年 (Publication year, PY) を用いた。全分野での論文数シェアの 3 年移動平均 (2014 年であれば PY2013、PY2014、PY2015 年の平均値)。分数カウント法である。被引用数は、2016 年末の値を用いている。

資料: クラリベイト・アナリティクス社 Web of Science XML (SCIE, 2016 年末バージョン) を基に、科学技術・学術政策研究所が集計。

Calculated by National Institute of Science and Technology Policy (NISTEP)
using Web of Science data

Publish or Perish



Break in publication
leads to unemployment!

Factors affecting publication venue in OA age

- ❑ Journal impact factor?
- ❑ Whether journal is OA
- ❑ Amount of APC
- ❑ Swiftiness of publication
- ❑ Swiftiness of user comments

The faster article is OA,
The faster you get
user comments!



*✂ Publishing first on a preprint server
proves to be most effective!*

OA gains more citations!

[PROFESSIONAL](#)[JOBS](#)[SUMMITS](#)[RANKINGS](#)[STUDENT](#)[ABOUT US](#)

Open access papers 'gain more traffic and citations'

Open access science articles are read and cited more often than articles available only to subscribers, a study has suggested.

July 30, 2014

The Research Information Network analysed the web traffic to more than 700 articles published in hybrid science journal *Nature Communications* in the first six months of 2013.

It found that, after 180 days, articles whose authors had paid for them to be made open access had been viewed more than twice as often as those articles accessible only to the journal's subscribers.

A further analysis of more than 2,000 papers published in *Nature Communications* between April 2010 and June 2013 revealed that open access articles were cited a median of 11 times, compared with a median of seven citations for subscription-only articles. The paper concludes that open access papers enjoy a "small" citation advantage in all disciplines except chemistry.

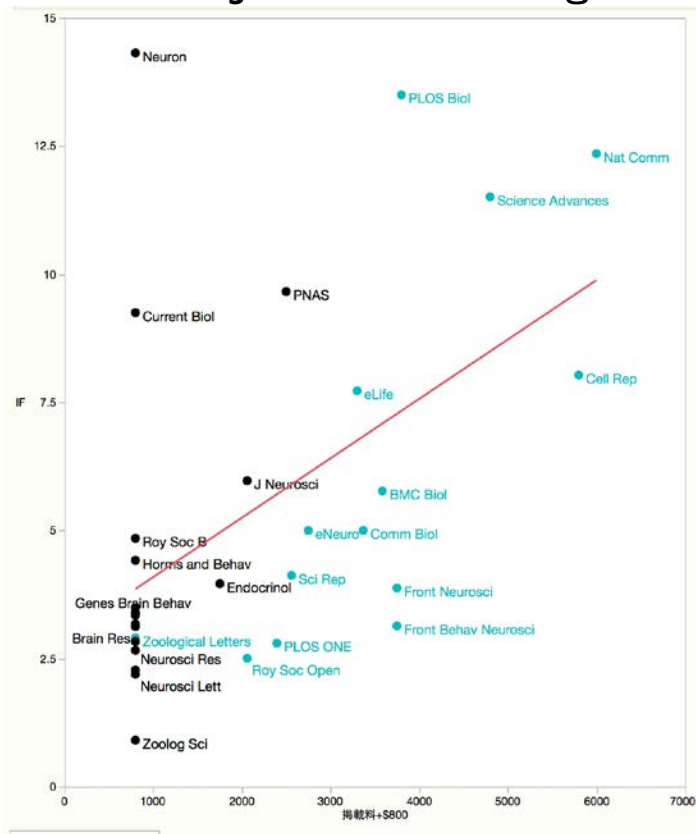
OpCit project carries many related information



APC-IF-OA-research budget considered to determine publication venue in life sciences

インパクト
ファクター
(IF)

Which journal is a bargain?



青字はFull OA誌

Let's invite someone as co-author who has funds for APC



論文掲載料
(APC in \$)

21

91

菅野博士@
鹿児島大 作成

Predatory journals making a great flutter

粗悪学術誌：ネットで急増 査読ずさん、掲載料狙いか	毎日新聞 2018.04.03
粗悪学術誌：日本から5000本 東大や阪大 論文投稿、業績水増しか	毎日新聞 2018.09.03
粗悪学術誌：九大が対策 国内初 投稿巡り注意喚起	毎日新聞 2018.09.03
ナビゲート2018：「ハゲタカジャーナル」＝粥川準二（科学ライター）	毎日新聞 2018.09.05
粗悪学術誌：投稿、教授が圧力 准教授証言 国立大、業績稼ぎ	毎日新聞 2018.09.15
粗悪学術誌：対策に大学本腰 聞き取り、投稿ルール 掲載上位の名大、新潟大	毎日新聞 2018.10.10
粗悪学術誌：削除応じず 掲載続け手数料請求 東京の医療機関被害	毎日新聞 2018.10.15
粗悪学術誌：論文削除応じず 都立病院の投稿、手数料まで請求	毎日新聞 2018.10.15
研究倫理向上ウイーク：「研究不正」どう防ぐ 自由な討論、データ共有を 黒木・東大名誉教授が講演 ／京都	毎日新聞 2018.11.01
粗悪学術誌への投稿禁止、新潟大 信頼失い悪影響と指針作成	共同通信 2018.11.30
粗悪学術誌：新潟大、投稿「禁止」 ハゲタカ対策、明文化	毎日新聞 2018.11.30
粗悪学術誌：掲載で博士号 8大学院、業績として認定	毎日新聞 2018.12.16
クローズアップ2018：粗悪学術誌横行 研究者、手軽に実績 投稿、数日で了承	毎日新聞 2018.12.16
ことば：ハゲタカジャーナル	毎日新聞 2018.12.18
ハゲタカ学術誌：大学に注意喚起 文科相	毎日新聞 2018.12.26
ハゲタカ学会：何でも発表 参加料狙い？ 手軽に「実績」研究者にも需要	毎日新聞 2019.01.19
ハゲタカ学会：多忙、使い勝手良く 異分野、一室で発表 専門外でも座長	毎日新聞 2019.01.19
記者の目：査読ずさんなハゲタカ学術誌 研究者自ら科学の信頼壊す＝鳥井真平（大阪科学環境部）	毎日新聞 2019.02.20
粗悪学術誌：日本医学会が注意喚起 延べ103万人所属	毎日新聞 2019.03.13
「粗悪学術誌」55億円支払い命令 米連邦地裁判決 適切審査なし	毎日新聞 2019.04.05
粗悪学術誌：学会会議、ハゲタカ誌対応 問題点議論、提言へ	毎日新聞 2019.04.17
科学ジャーナリスト賞：毎日新聞・鳥井記者に	毎日新聞 2019.04.26
ハゲタカジャーナル：論文、4割引用 別の論文に 研究に欠陥の恐れ カナダの大学調査	毎日新聞 2019.04.30

Predatory journals using OA journals features

Predatory journals are just a vicious business using the characteristics of OA journals.

OA journals

- ▶ Article submission, peer-review, editing, and publication of articles done on a digital platform
- ▶ APCs collected from article authors.
- ▶ Swift and visible article publication
- ▶ As a mega journal, assures the soundness but not the excellence of research; i.e. "Simple peer review," "post-publication peer review."
- ▶ As a newly setup journals, are not established as the prestigious journals.

Predatory journals

- ▶ Easy to start a business at low costs.
- ▶ Able to recover cost without risk.
- ▶ Able to take advantage of the weakness of researchers who quickly need visible achievements.
- ▶ Able to pretend to have peer-reviewed articles, or claims "post-publication peer review."
- ▶ Able to run business without wide name recognition.



Retraction Watch

Tracking retractions as a window
into the scientific process

PAGES

How you can support Retraction
Watch

Meet the Retraction Watch staff

About Adam Marcus

About Ivan Oransky

Privacy policy

Retraction Watch Database User
Guide

Retraction Watch Database
User Guide Appendix A: Fields

Retraction Watch Database
User Guide Appendix B:
Reasons

Retraction Watch Database
User Guide Appendix C:
Article Types

The Retraction Watch Leaderboard

Who has the most retractions? Here's our unofficial list (see notes on methodology), which we'll update as more information comes to light:

1. [Yoshitaka Fujii](#) (total retractions: 183) See also: [Final report of investigating committee](#), [our reporting](#), [additional coverage](#)
2. [Joachim Boldt](#) (97) See also: [Editors-in-chief statement](#), [our coverage](#)
3. [Yoshihiro Sato](#) (87) See also: [our coverage](#)
4. [Jun Iwamoto](#) (69) See also: [our coverage](#)
5. [Diederik Stapel](#) (58) See also: [our coverage](#)
6. [Yuhji Saitoh](#) (53) See also: [our coverage](#)
7. [Adrian Maxim](#) (48) See also: [our coverage](#)
8. [Chen-Yuan \(Peter\) Chen](#) (43) See also: [SAGE](#), [our coverage](#)
9. [Fazlul Sarkar](#) (41) See also: [our coverage](#)
10. [Hua Zhong](#) (41) See also: [journal notice](#)
11. [Shigeaki Kato](#) (40) See also: [our coverage](#)
12. [James Hunton](#) (37) See also: [our coverage](#)
13. [Hyung-In Moon](#) (35) See also: [our coverage](#)
14. [Naoki Mori](#) (32) See also: [our coverage](#)
15. [Jan Hendrik Schön](#) (32) See also: [our coverage](#)

Reproducibility Crisis

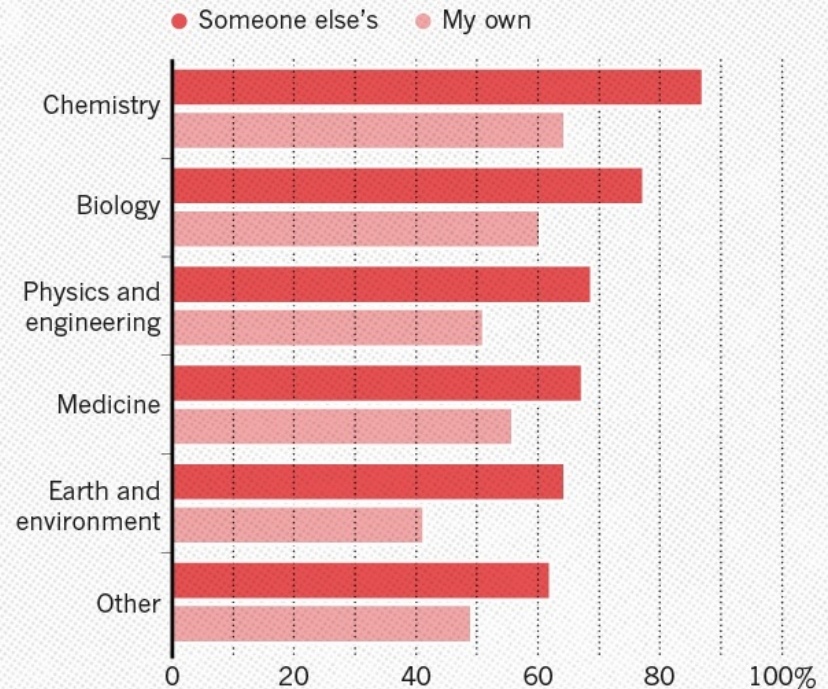
... Questionnaire survey for 1,500 scientists (2016)

IS THERE A REPRODUCIBILITY CRISIS?



HAVE YOU FAILED TO REPRODUCE AN EXPERIMENT?

Most scientists have experienced failure to reproduce results.

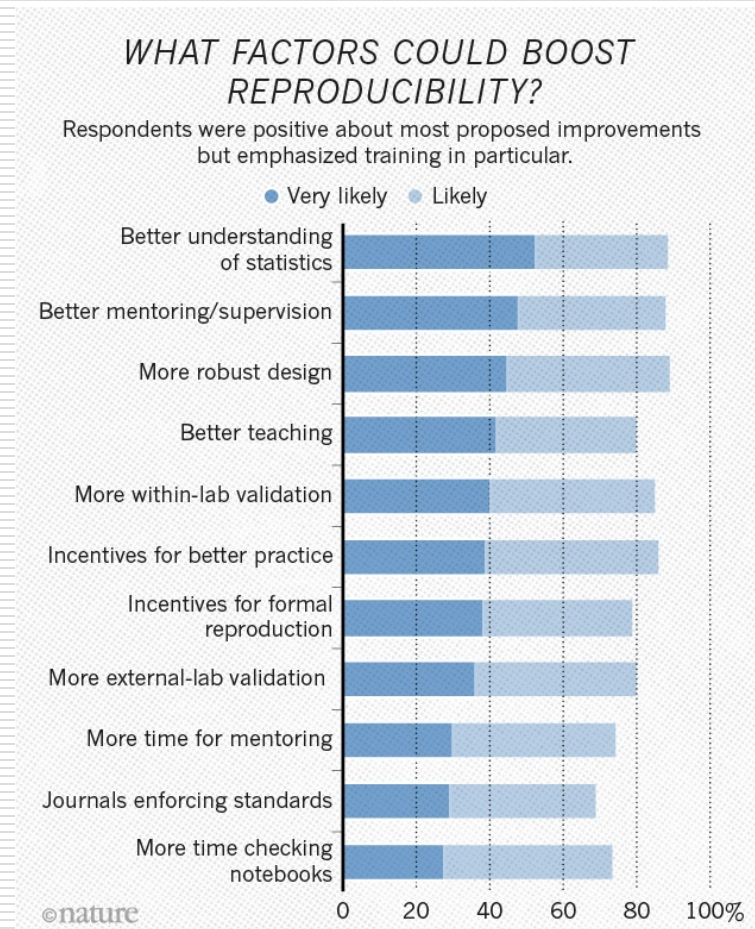
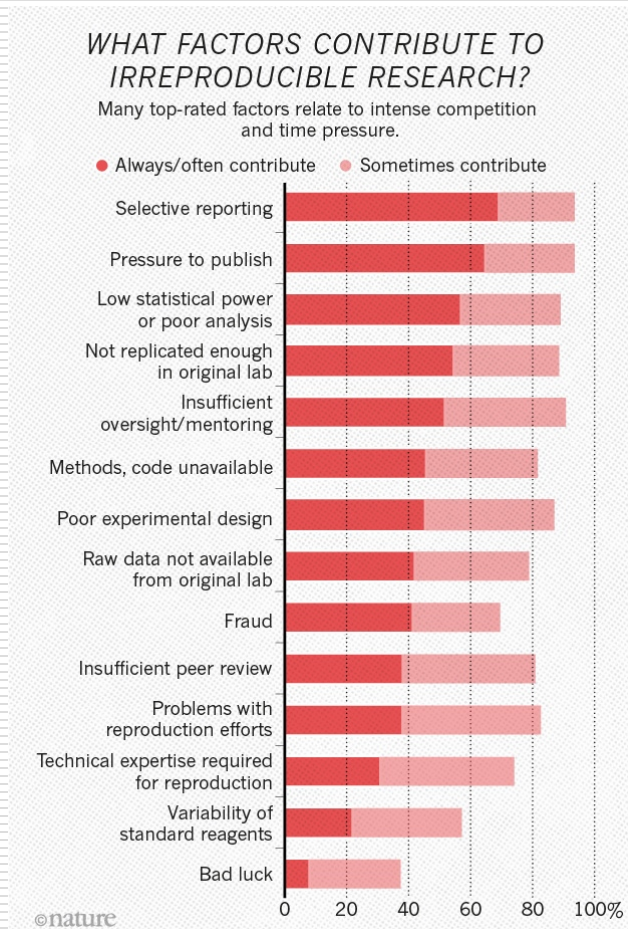


Source: Nature, "1,500 scientists lift the lid on reproducibility" (2016.7.26)

<https://www.nature.com/news/1-500-scientists-lift-the-lid-on-reproducibility-1.19970>

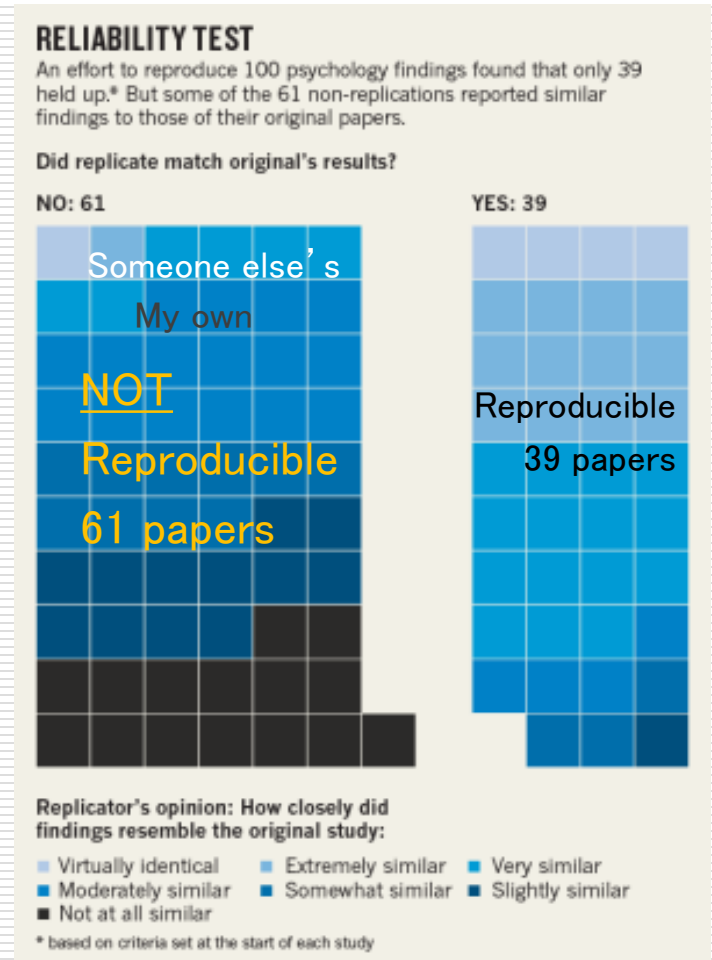
Reproducibility Crisis

...Factors of irreproducible research

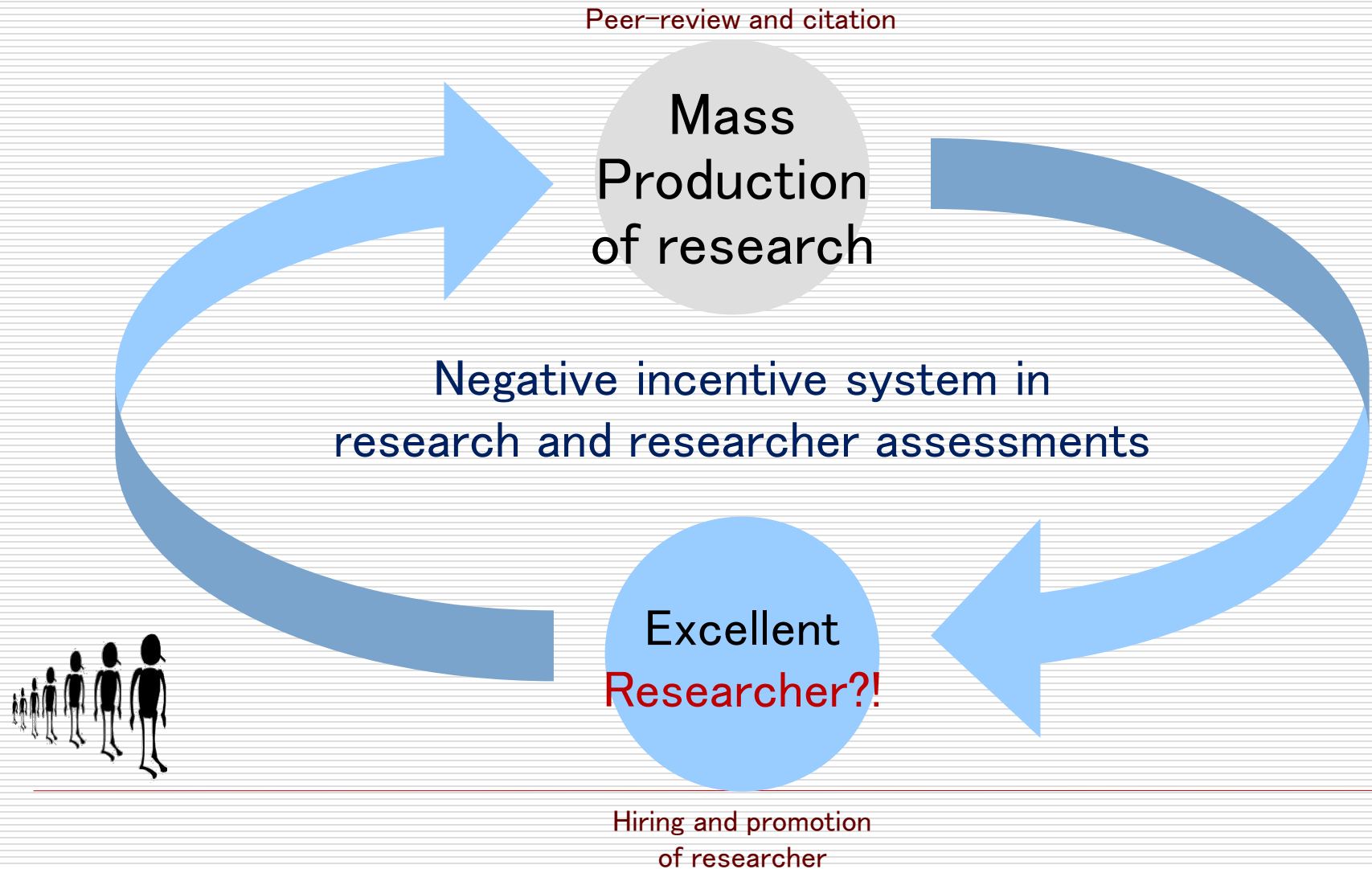


Reproducibility Project: Psychology

- ❑ Verification of the reproducibility of data in 100 psychology articles
- ❑ Reproducibility was attained for 39 articles and **was not sufficiently attained for the remaining 61 articles.**
- ❑ This review was performed because many people pointed out that even data in articles written by well-known psychologists could not be reproduced.
- ❑ Project Leader Brian Nosek has established the Center for Open Science (COS) and is supervising the development of an open science framework (OSF).



Over-reliance on quantitative metrics leading to low quality research



7. Various attempts to change research assessments

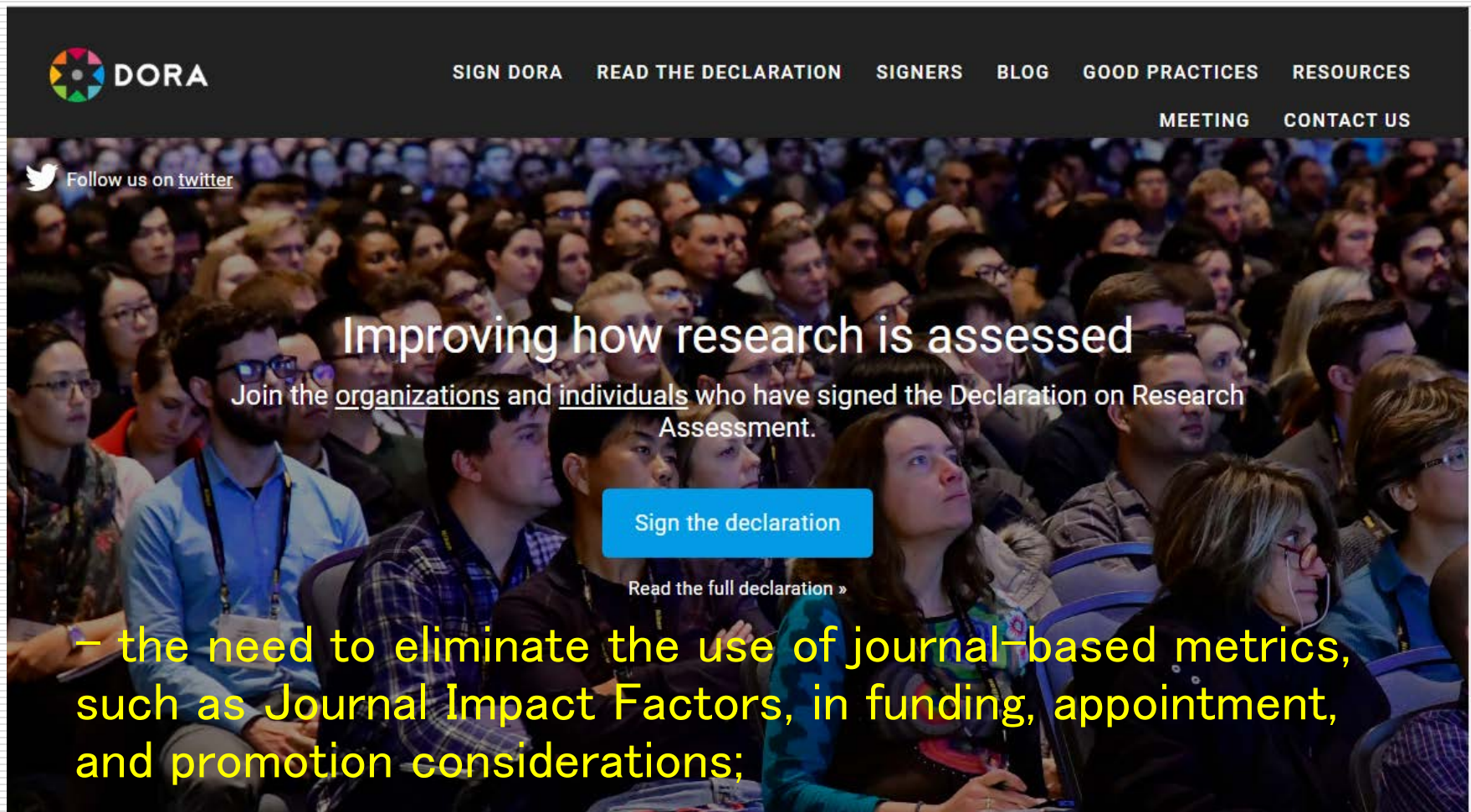
Leiden Manifesto for Research Metrics

As research evaluation has become routine, the procedures that were designed to increase the quality of research are now threatening to damage the scientific system.

The Leiden Manifesto proposes 10 principles for the measurement of research metrics.

1. Quantitative evaluation should support qualitative, expert assessment.
2. Measure performance against the research missions of the institution, group or researcher.
3. Protect excellence in locally relevant research.
4. Keep data collection and analytical processes open, transparent and simple.
5. Allow those evaluated to verify data and analysis.
6. Account for variation by field in publication and citation practices.
7. Base assessment of individual researchers on a qualitative judgement of their portfolio.
8. Avoid misplaced concreteness and false precision.
9. Recognize the systemic effects of assessment and indicators.
10. Scrutinize indicators regularly and update them.

San Francisco Declaration on Research Assessment (DORA)

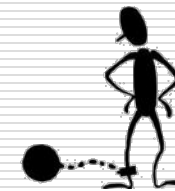


Changing Scholarly Communication

...Peer Review System

❑ Open Peer Review

- Reviewer's comments are open to public with/without the name of reviewer
- Enabling transparent peer review

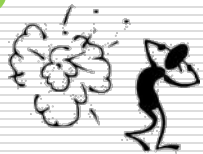


It takes too long until published!

❑ Post Publication Peer Review

- Peer review done after publishing
- Speeding up publishing, and allowing to count impact in peer review

Too many paper to review!



❑ Cascading Peer Review

- Peer review comments transferred to next submission
- Reducing costs and improving efficiencies in peer review



Do the reviewers really understand my work?

Joint Data Archiving Policy (JDAP)

The Joint Data Archiving Policy (JDAP) describes a requirement that data supporting publications be publicly available.

[Journal] requires, as a condition for publication, that data supporting the results in the paper should be archived in an appropriate public archive, such as [list of approved archives here]. Data are important products of the scientific enterprise, and they should be preserved and usable for decades in the future. Authors may elect to have the data publicly available at time of publication, or, if the technology of the archive allows, may opt to embargo access to the data for a period up to a year after publication. Exceptions may be granted at the discretion of the editor, especially for sensitive information such as human subject data or the location of endangered species.

Asking for evidence data for peer-review ...Peer Reviewers' Openness Initiative



“We will not offer comprehensive review for, nor recommend the publication of, any manuscript that does not meet the following minimum requirements.”

1. Data should be made publicly available.
2. Stimuli and materials should be made publicly available.
3. In case some data or materials are not open, clear reasons (e.g., legal, ethical constraints, or severe impracticality) should be given why.
4. Documents containing details for interpreting any files or code, and how to compile and run any software programs should be made available with the above items.
5. The location of all of these files should be advertised in the manuscript, and all files should be hosted by a reliable third party.

Registered Reports

peer reviewing the design of study

- ❑ “Registered Reports eliminates the bias against negative results in publishing because the results are not known at the time of review.”
- ❑ “Because the study is accepted in advance, the incentives for authors change from producing the most beautiful story to the most accurate one.”



Research assessment in the digital age

...Excellent research vs Soundness of science

- ❑ In the print age, only excellent articles could be accepted because of physical constraints.
- ❑ In the digital age, e-journals can include all articles which is soundly performed.

➤ Soundness of science

	E-journal (mega journal)	Print journal
Publication no	infinite	finite
Peer-review method	Able to include "sound science"	excellence
Peer-reviewed materials	Article and supplements (data, code, etc.)	Only text-based article
Advantage	<ul style="list-style-type: none">➤ Include negative results➤ Eliminate research bias➤ Preserve research in detail	<ul style="list-style-type: none">➤ filtering➤ Less articles to read

Private funders demanding immediate OA publication

F1000Research
Open for Science

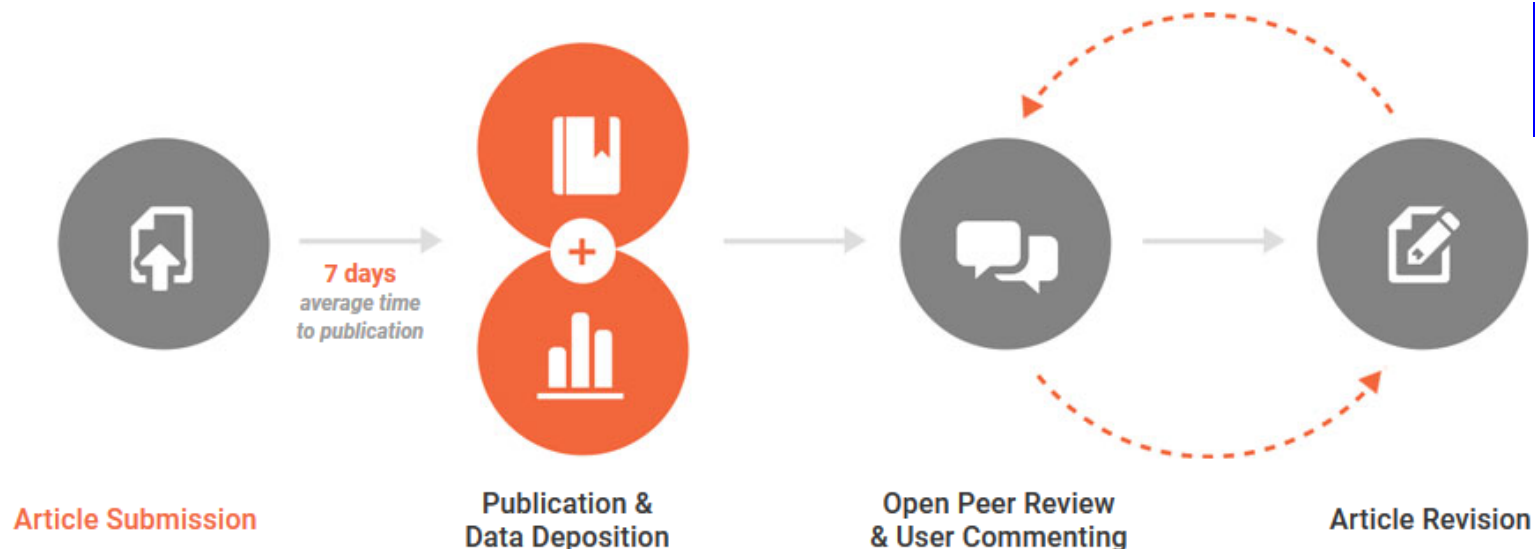
W
wellcome

BILL & MELINDA
GATES foundation

HR^B Health
Research
Board

Our Publishing Processes

For Articles



Data Journals and Supplemental Data

□ Data journals established (2014-)

■ Nature: Scientific Data



- *Scientific Data is an open-access, online-only journal for descriptions of scientifically valuable datasets.*

■ Elsevier: Data in Brief



- *Data in Brief provides a way for researchers to easily share and reuse each other's datasets by publishing data articles.*

□ Supplemental Data

- *Supporting material that cannot be included, and which is not essential for inclusion, in the full text of the manuscript, but would nevertheless benefit the reader.*

Assessing social impact of academic research

□ UK-REF (Research Excellence Framework)

- Research assessment framework for UK universities.
- Compared to its successor RAE, it assesses impact of research outside the academy.

□ Altmetrics

- Alternate bibliographics using impact on social media, views, downloads in contrast to traditional bibliometrics using citations, h-index, and IFs.



8. Co-creating the Open Science Era with Societies and Academia

Stakeholders for open science

Granting agencies

*We have been keeping
a balance
by keeping traditions.*

University
management



Publishers

Governments

Researchers

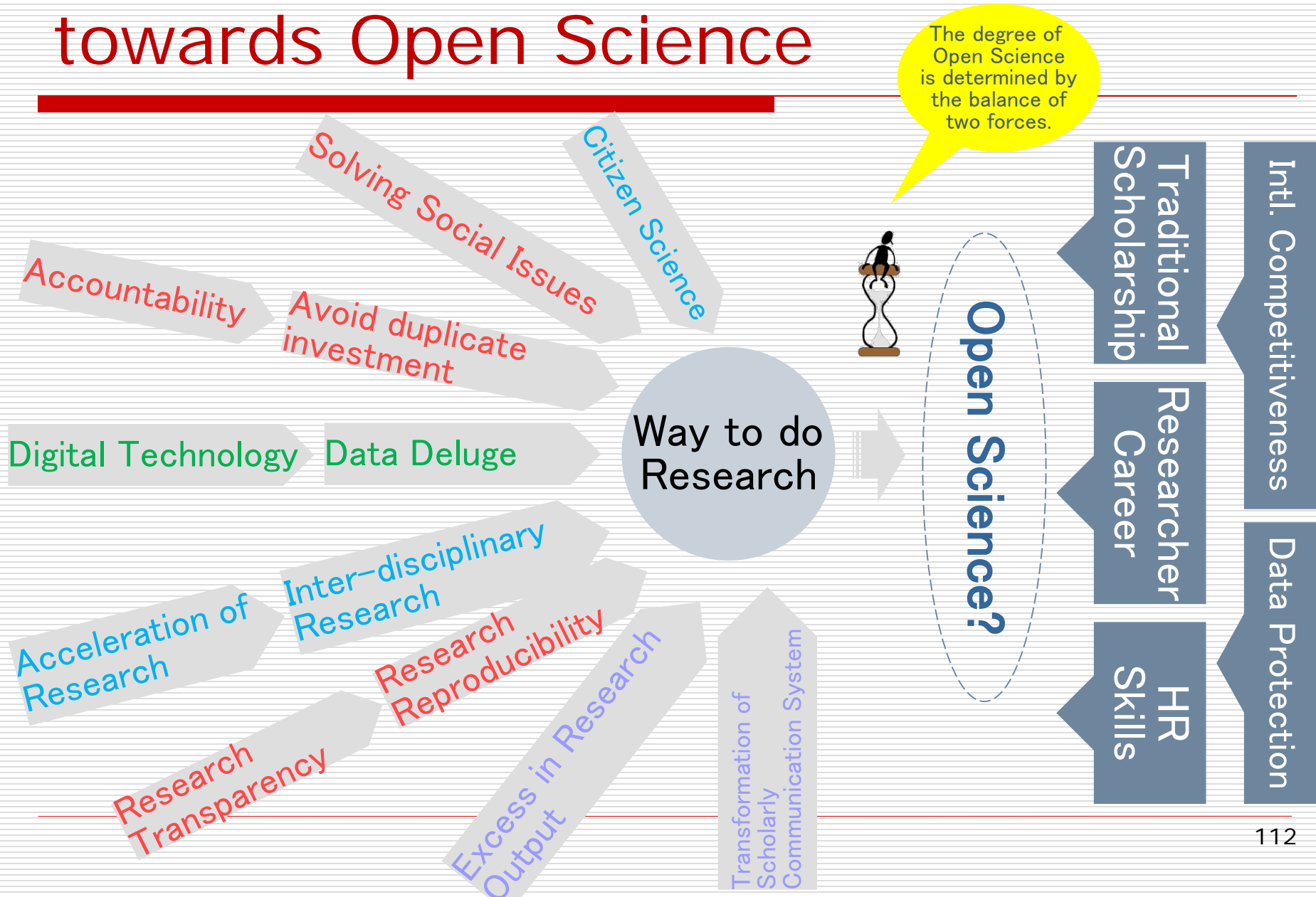
Public

University libraries

ICT centers

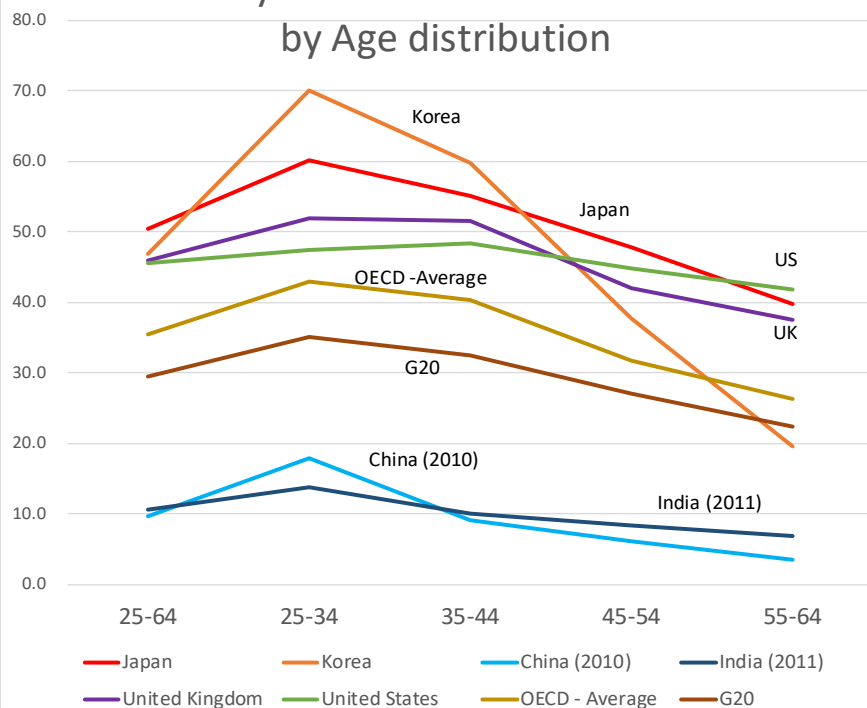
Researchers are not the only persons doing scientific research. 111

The push and resisting force towards Open Science



The shrinking gap between society and the academia

Tertiary Education Attainment Rate
by Age distribution



Source: OECD, "Education at a Glance 2017" (data as for OECD countries: 2016)

- Tertiary education attainment rate is rising, especially for younger generation.
- Thus, citizens literacy and analytical skills are getting comparable to the academia.
- This results in stronger demand for accountability and societal problem-solving.

Elite to Mass to Universal Student Access

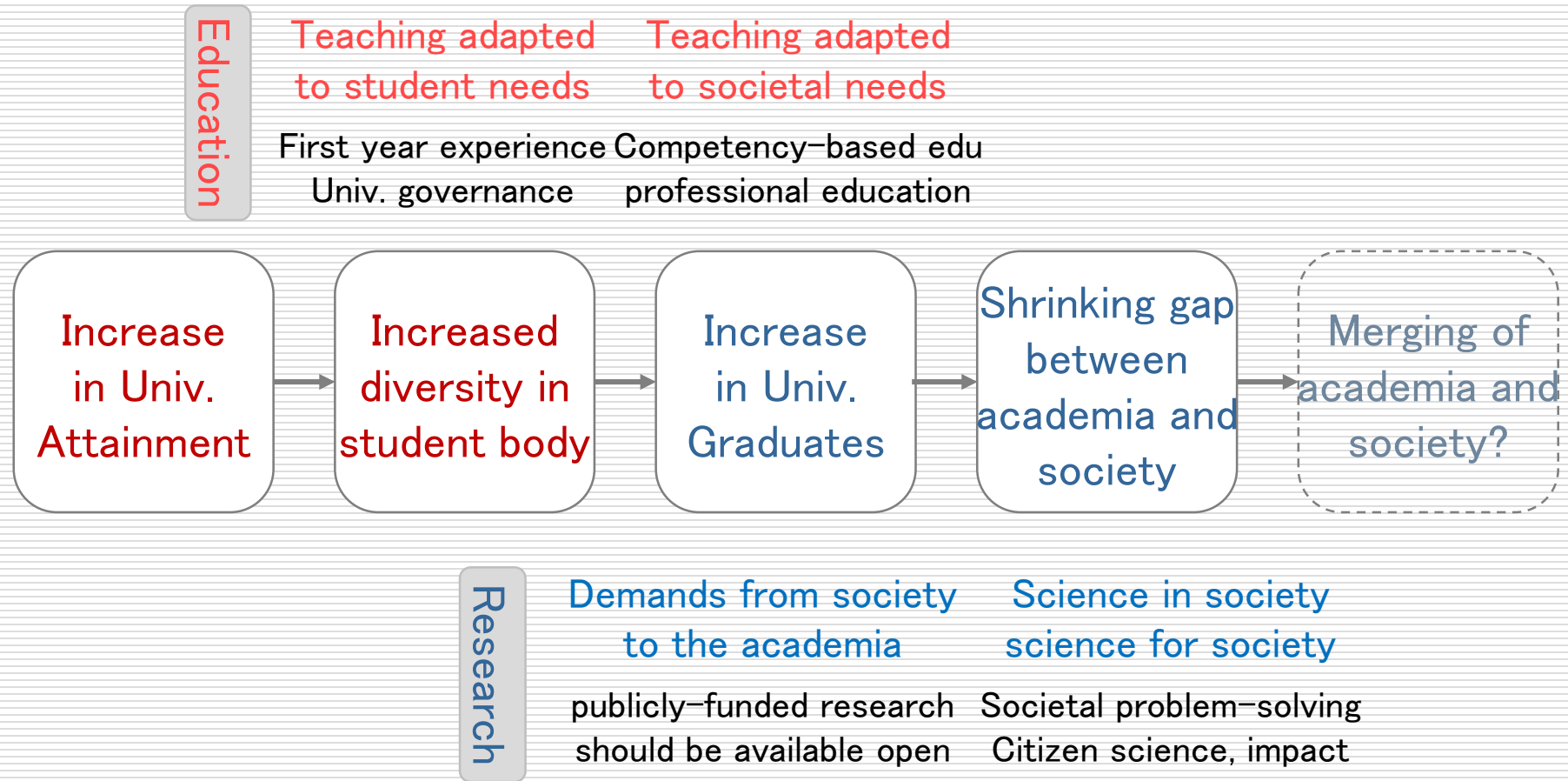
- Proposed by Martin Trow in 1973
- Describing the transition in higher education according to HE Enrollment rate

Stages of Higher Ed	Elite	Mass	Universal
Higher Ed Enrollment	-15%	15% - 50%	50% -
Access	Privilege	Right	Obligation
Student Body	Uniform	Diverse	Extremely Diverse
Governance	Consensus making by academics	Professional Staff & Bureaucracy	Administration

Analogies between Open Science and Mass Higher Education

- Increases of university graduates in societies
 - ⇒ Increasingly, people understand science in societies
 - ⇒ Increased demands from societies to academies
 - ✓ Demand for OA of publicly-funded research outputs, academic-industrial linkage, transparency and reproducibility of research, open communications
 - ⇒ Closing gap between societies and academies
 - ⇒ Cooperation between societies and academies
 - ✓ Citizen science, social problem solving, innovations, etc.

Time lagged effect of mass higher ed between education and research

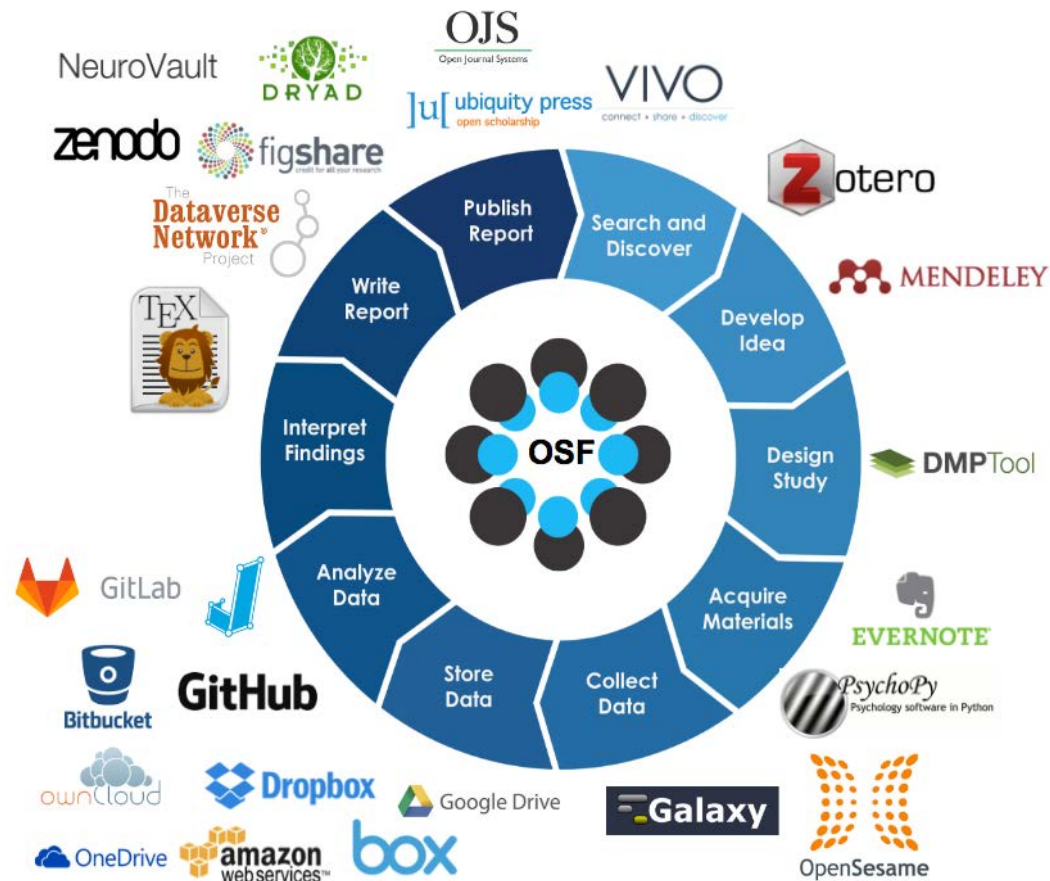


Social Change at the turn of 21st century —Need for active learning

- From industrial society to knowledge-based society
 - Hands-on skills → Information and knowledge managing skills
- Digital technology and e-infrastructures
 - Need to handle big data and information
 - Need to act with speed
- Globalization, borderless and unpredictable age
 - Ability to handle ever-evolving new problem sets (self-learning, problem-solving)
- Increased interdependence and social complexity through internationalization and informatization
 - Communication, collaboration
 - Cross-cultural understanding, international readiness, liberal arts
- Aging society
 - Need for life-long learning

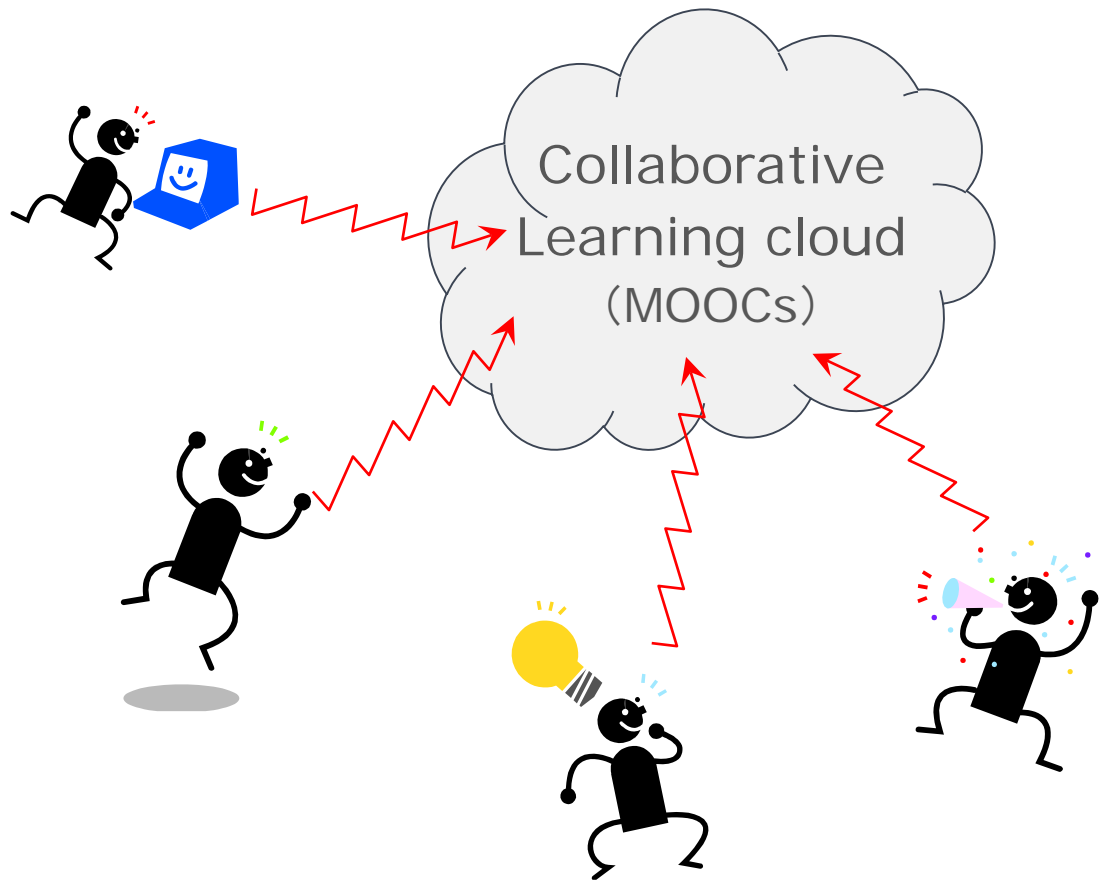
Globalization and cooperation

- More opportunities for international joint research due to the prevalence of the Internet
- Platforms for information sharing and storage
- Platforms for online collaboration



Open Learning Community by Professionals

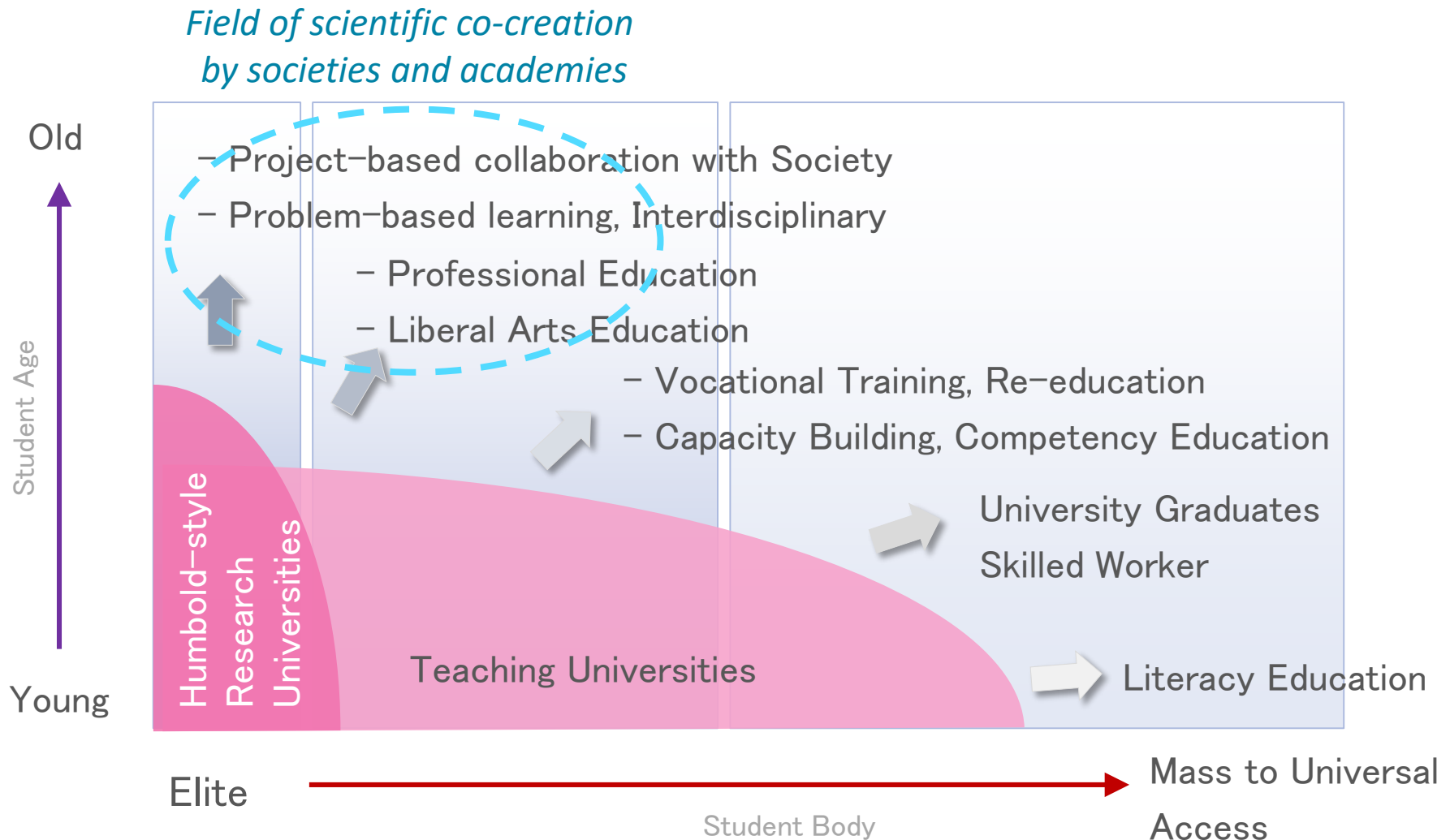
- Professionals across disciplines collaborate and envision new solutions on learning cloud such as MOOCs.



Case Study

- ✓ A MOOC on "Project Management" by École Centrale de Lille
- ✓ The first half is introductory courses on PM in teaching style.
- ✓ In the latter half, participants form groups and conducts projects.
- ✓ One group tackled the "Food distribution system in France."
- ✓ Members of the group were policy-makers, distributors, merchants, farmers.
- ✓ This interdisciplinary team could address the issue well.

The Changing Landscape of HE by the change of student body



The Co-creation of Scholarship and the Digital Platform needed

- ❑ In an era where the majority understands science, the boundary between the society and academia gets blur.
- ❑ The collaboration between the two parties becomes necessary for the development of scholarship and happiness of human kind.
- ❑ Digital platforms become a place where information sharing and collaboration happen. Societies have a say on the digital platform as a user.
- ❑ Societies and academia should co-design the scholarship and digital platform for the sake of human-kind.