Open science and open scholarship
Will Europe – and its learned societies - lead the change...?

Driving the change together
ALPSP meeting
(Association of Learned and Professional Society Publishers)
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Today … Open Access to publications is de facto becoming mainstream

Pinowar, Priem & Orr study (2019)
(based on a global analysis of 70 million scientific articles published between 1950-2019)

2019: 31% available in OA
52% of all article views are OA articles

2025: 44% available
78% viewed

“If we would have to reinvent the publication system today starting from scratch: most likely every one would go for immediate open access” (D. Rogers, former CEO SN, Summer 2019)
The state of open data - main findings
(Digital Science/Figshare, 2019)

- 79% of 2019 respondents (>8500 researchers) were supportive overall of a national mandate for making primary research openly available
- 67% of respondents think that funders should withhold funding from, or penalise in other ways, researchers who do not share their data if the funder has mandated that they do so
- 69% of respondents think that funders should make the sharing of research data part of their requirements for awarding grants
- 36% of respondents expressed the concern that their data may be misused if it was shared
- 42% of researchers would be encouraged to share their data if it resulted in a co-authorship

1000ds of specialists and policy makers globally are working on open data (EOSC, RDA, CODATA, GOFAIR, G7, UN DATA COMMONS....)
The evolution of the EU funding programmes for R&I (and all its beneficiaries)

EU policies were ahead or on top of the curve.
1. Possible alignment of Horizon Europe with main Plan S principles

Immediate open access
- Embargoes not accepted any longer
- Open access via repositories kept
- Already in Horizon Europe’s impact assessment

Publication in hybrid journals allowed yet not funded (i.e. costs not eligible)
- Already in Horizon Europe’s impact assessment

Copyright retention and open license
- Copyright retention already in the HE Regulation
- Open license to be required (in line with new standard licence adopted by the EC for its own information production)

2. Making EOSC an operational reality
“The Open Science issue is [...] an issue that is dear to my heart”

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“Today, more than ever, we need researchers to share the results of their projects [...] and to capitalize on the research of others”

“I will insist on having data that are [...] reusable, accessible, of quality”
“We are creating a European Open Science Cloud now”
“It is a trusted space for researchers to store their data and to access data from researchers from all other disciplines”
“We will create a pool of interlinked information, a web of research data”

World Economic Forum, Davos, Jan. 22nd, 2020
Open Science is a **system change** allowing **for better science** through **open and collaborative ways of producing and sharing knowledge and data**, as early as possible in the research process, and for communicating and sharing results.

This new approach affects research institutions and science practices by bringing about **new ways of funding**, **evaluating and rewarding researchers**.

Open Science **increases the quality and impact of science** by fostering reproducibility and interdisciplinarity.

It makes science **more efficient** through better sharing of resources, more reliable through better verification and more responsive to society’s needs.

Today… OS and OA/OD is a global topic in policy and practices

- 3 billion hits in Google search (6/1/2020)
- 3.9 billion this morning…14-1
- Discussed globally
- Deployed globally
- Europe’s main Coll/petitors waking up (China, US)
Fact: Science is today one of Europe’s most successful (global) “industries”.

Key question:

Will we keep the lead in OS and capitalise our early adoptor/innovator position?
Yes…. change is the name of the game

Europe has:

- Top players advocating and implementing new OS practices (LERU)
- Strong support from funders (Coalition S)
- Early and successful innovators of OS science dynamics (Mendeley, Figshare,…)
- Early and successful innovators of new practices and publishing business models (F1000, Frontiers, Hindawi …)
- (parts of) Some big players starting to follow (Transformative Journals, Dutch deal)
- Huge data communities working for open data (GO Fair)
- Proactive OS policy makers: emerging council of national OS coordinators, EOSC communities, EC…..
No...as Europe’s position remains ambiguous

- On the one hand: plan S gets top level governmental support (EC, Norway, The Netherlands, Austria, Flemish Government...),
  **but** too many European funders are still not on board;

- On the one hand: some of the big publishers announce real U turns (last year) and some of the European greenfield players are globally amongst the most successful in innovating publishing models,
  **but** de facto the majority of our incumbent publishers are still old model and only bad news (like canceling the deals) seems to induce change

- On the one hand: we have some of the most vocal OA advocates in the researchers world with several of the top associations fully supporting OS,
  **but** at the same time our researchers community seems to be locked in a kind of “Stockholm” syndrome with the impact factor (we need a coalition R here)
A rational debate?

- What is spent on scientific publications is a fraction of the science/educational budget (no hard figures)
- The % of journals (not measured in JIF importance) that is too expensive to flip is very small (on the basis of projected APC, no hard figures)
- The % of scientists that publish in these journals and thus need to pay high APC if they would go full OA, is very small too (Science & Nature e.g. publish 2200+ articles a year – there are more +/- 7 million active scientists)
- Science is part of this (economic) planet: there are no free services, as there is a cost for everything
- The obsession of a unique price.
  - Why would any service be globally priced the same? It is detrimental to the economic laggards.
  - Why should there only be one APC price for articles? Isn't it more fair that “rich” players (researchers or universities) pay more?
- “avoiding cross subsidization” is a nice theoretical principle, but lacks a reality check. Most companies in the real world use it as a basis to finance innovation; it allows to offer reductions, etc.
A debate with common sense?

Consequence: catastrophist positioning

• “top science will fall apart if we go OA”
• “quality publishing will fall flat if OA is the road forward”,
• “immediate open access is the short cut to bad science” (equating OA with no peer review)
• “Open science is free science”
• “Open access will lead to cheating and stealing”

Consequence: short-termism & a European science eco system not getting out of early adopter schemes (and no global leadership)*

*A nice illustration of what Robert Schiller (noble prize winner) calls “Narrative economics” (Princeton Press, 2019): the power of popular narratives (e.g., robots kill jobs) on macroeconomic behaviour...

Disruption and continuity of business don't go together
All agree in the publishing industry that OA is the way forward → this implies disruptive policies/strategies. And all agree the problem is the transition as no one wants to lose revenue (hence business as usual).

As a result: many well intended “change” strategies we see today try to force old and analogue business models into a new digital reality… (a bit like the beginning of e-commerce, where it was mainly seen as a marketing add-on in Europe and not a redesign of the retail logic).

This leads to the H syndrome* in innovation: Hesitating and not going to the level beyond early adoption: leadership.

Some (European) examples the H syndrome effect: Minitel (the internet avant-la-lettre but an “old” Unix architecture hesitating too long to go into a distributed one), Nokia (dominant global mobile player hesitating too long to go app wise), the CD record industry (hesitating too long to go i-tunes wise) etc …

* "H-syndrome” is a non recognized concept in innovation literature….
How to go from an H-syndrome to a Lead position?

How to make sure Europe moves from a globally envied early adopter and innovator of OS to a global market leader and standard setter?

1. Accepting there is no other way forward than rethinking some basic modalities of the practice of science as this is the way science goes (based on a long term view that the epistemic basis of science in the 21st century is not what it used to be)

2. A joining of forces by establishing a pan European approach amongst the key actors of the European science ecosystem

3. Some good advice from JW. Goethe
There is no other way forward: how science will look like by 2030

- “real time” or ’liquid’ scholarship - like in SW development - enabled by open science practices and supported or even co-produced by AI tools and services.
- Full & immediate open access to the whole life cycle of a research process
- Quality assurance and control (peer review) of the whole life cycle
- Multiple ways to measure and reward scientific productivity
- Science as an open source resource “commons” to address the societal challenges

- In fact in this decade science will embody the larger trend of the circular economy (re-use, cradle to crave etc)

This correlates with the observed epistemic shift in the rationale of science: from demonstrating the absolute truth (what is proven forever to be so) - via a unique article or publication; to understanding what at that moment is needed to move forward in the production of knowledge to address problem X (H.W. de Regt, Understanding Scientific Understanding. New York: Oxford University Press, 2017)
Open science in 2030 - we know more or less what it will imply

If it is accepted that science in the 21st century will be “liquid” and thus a continuous flow of knowledge produced and used by (mainly) machines and people, it follows

- That **an article will be the smallest entity and often the least important output** of the knowledge stream and scholarship production;

- That **publishing will have to offer in the first place a platform** where all parts of the knowledge stream will be made available as such – via peer review –

- That **most of future revenue will be made via value added services** (mining, intelligence, networking, etc) for people and machines. Just like in telecom btw.

- And that we have to reinvent our academic institutions and knowledge centres too: where the old knowledge producing model, the Humboldt university, gave Germany and Europe an incredible edge in the late 19th and early 20th, which others imitated after WW2, the changing nature of science should inspire Europe to conceptualise a new model for the 21th OS/modern knowledge/research institutions too.
Way forward: joining forces? a pan European deal for Open science

In view of what goes on (liquid science & coll.petitors awakening), the global scale of science and its key players, a pan European joining of the key forces of the science ecosystem (in scale and scope) might help to get over the H-syndrome;

• It would have to focus on the transition period (cut off data 1.1.2025)
• It should take a zero sum game outcome (the 10 billion in the system has to stay there…)
• It should be agreed amongst the key players (funders, universities, publishers) and in doing so restore trust in the European science system (see the ideology debate)
• It should tackle the Achilles heel of the transition to open science: new metrics and incentives for OS
• It should be initiated by….. the stakeholders

• Exceptional?
No – see green deal, current debate on how European policy thinking is moving away from being the first in the Chicago school to the “how to defend its interests”.

• Perfect? No - a “perfect” solution can only be global.
But it will allows us, as European ecosystem, to set the standard and avoid a web 2 scenario
(UvdL: “we will move on climate change - rest will follow”)
It is fair to say that all European players know what not to do and what most likely needs to be done to scale up Europe’s present lead position in open science.

Knowing is not enough; we must apply.
Willing is not enough; we must do.
JW. Goethe

Thank you