

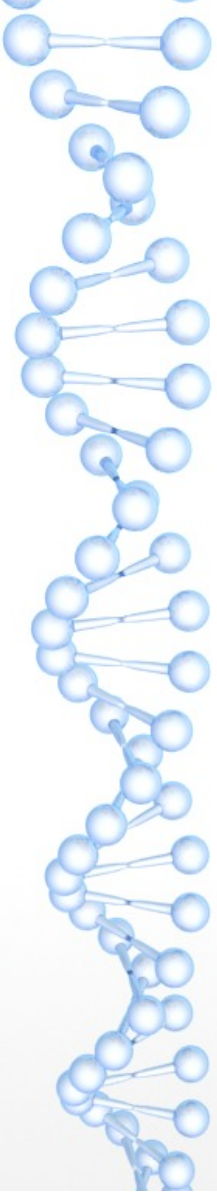
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What distinguishes scientific knowledge?

- No **transcendental** origin
- No **authority external** to humanity
 - No **absolute certainty**
- Only **provisional best efforts**
- **Scientific knowledge** is what remains after applying **rigorous processes** to **select out** most hypotheses, theories, etc.



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Scientific knowledge is produced by a “**Great open Conversation**”

The **Great Conversation** actually includes two distinct phases:

- A **communication phase** (\approx context of discovery)
- A **publication phase** (\approx context of justification)*

* The distinction between context of discovery and context of justification was introduced in the philosophy of science by H. Reichenbach.

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Knowledge claims are either **accepted** or **selected out**
in the publication phase

Selecting out a knowledge claim is based on :

- **Unrepeatable** observations or measurements
 - Incorrect **predictions**
 - Reasoning errors*

• *Michael Strevens, *The Knowledge Machine: How Irrationality Created Modern Science*(New York: Liveright Publishing Corporation, 2020).

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The **publication phase** is **essential**
for **knowledge claims**

Publishing processes
affect the **gatekeeping operations**
needed to distinguish between
validated and **rejected** knowledge

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Is the present system of scientific publishing
best suited for the production of knowledge?

A recent response given by the International Science Council is:

NO! NOT QUITE!

“Opening the Record of Science. Making Scholarly Publishing Work for Science in the Digital Era” <https://council.science/publications/sci-pub-report1/>

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The ISC underscore some essential criteria, for example:

- Universal open access to **both authors and readers** is essential
 - **Data and observations** should also be systematically published
 - Licenses should allow for **re-use, text and data mining**
- I would add:
- The **record of science** (because science is a **process**, not a **product**) should rely on an **(open) record of (open) versions**, not a **version of record***

• *Thanks to B. Kramer & J. Boesman for this important insight.

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The **pushback** (often heard from publishers)
is largely based on **financial** considerations:

a

- If neither **readers** nor **authors** (or their proxies) **pay**, who **pays**?
- If **data** and **observations** are also open, easily mined, how can publishing them be **monetized**?
- If there is no **version of record**, only a **record of versions**, how does **ownership** (copyright) work, and how can it be **monetized**?

My profits? My profits?

This is what the “**sustainable**” **business plan** really means...

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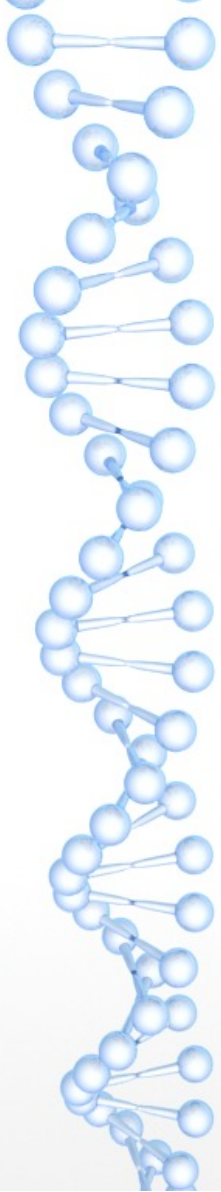
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but the publishing needed to validate scientific knowledge
is a suitable publishing process, not the publishers

And finding ways financially to support the publishing process
is quite distinct from the economic success of publishers.

Alas, discussions about Open Access or Open Science
often get stuck at the level of protecting the role of publishers,
rather than ensuring the health of the Great Conversation of science



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**Are publishers supposed to support
the Great Conversation of Science?**

or

**Is the Great Conversation of science
just another way for publishers to make money?**

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Speaking about the “**market**” of scientific publishing
answers the **question** just posed:

Indeed, **publishers**, both commercial and some
non-commercial, have found a way to make scientific
publishing **highly profitable** by designing a suitable

market

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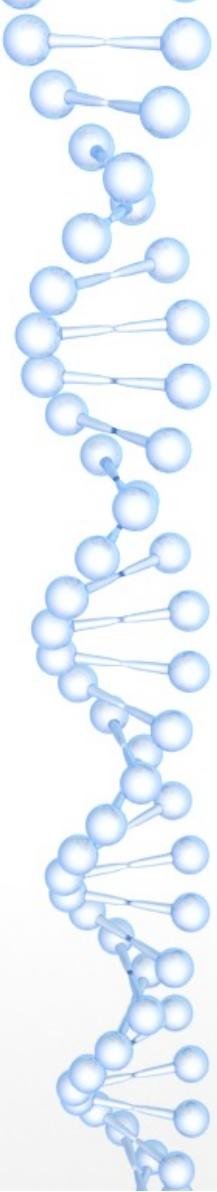
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**A market is little more than a set of transactional rules
applied to a set of well-identified actors**

In scientific publishing, the market is based on
the **competition of journal titles for the money of libraries
and research funding institutions**

The **competition** itself is based on a **flawed** indicator based on citation
counting – the so-called “**impact factor**” (IF)



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Thanks to the IF, **issues of scientific quality**
are mapped onto **issues of economic value**

The IF acts a **switching mechanism**
between **scientific** and **economic** concerns

The IF fuzzily refers to a dizzying number of things (**visibility**, **prestige**,
authority, **value**, **excellence**, etc.)

As a number (with 3 decimals!!!), it also defines ranks

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The **competitive ranking of journals** based on the **IF** claims to address:

- The **quality of journals**
- The **quality of individual researchers**

Journals rely on their **IF** to claim (comparative, competitive)

quality

Researchers, by appearing in such journals, also claim **quality**
(or even “**excellence**”, **whatever the meaning of this word**)

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Thanks to the **IF**,
the **competition** between **journals** now **extends** to **researchers**

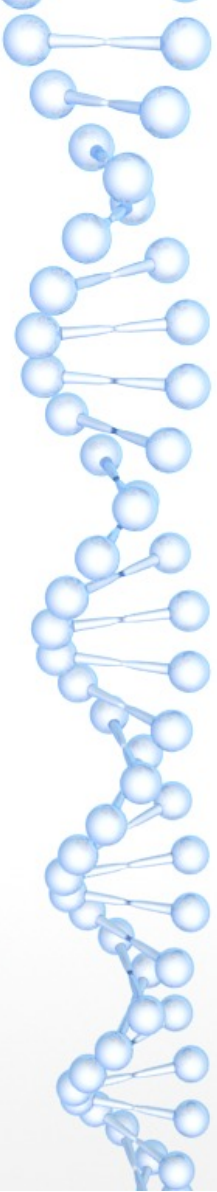
And then the **competition** between journals and researchers **extends** to
research teams, and laboratories

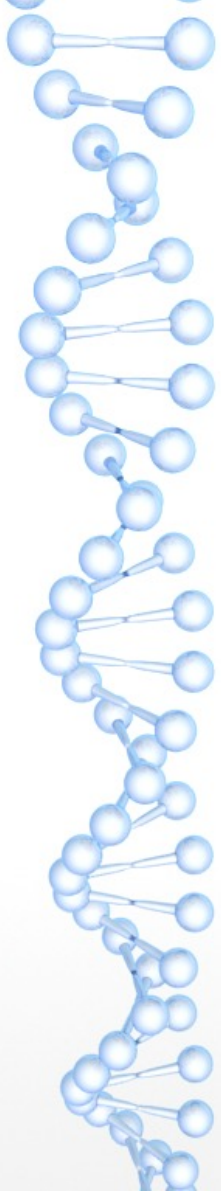
And then **the competition** extends again
to whole institutions, universities in particular

And why stop here? **How about whole countries?**

The Great Conversation has turned into a Great Competition

Or rather a Grand Prix: The F1 of the IF





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Times Higher Education releases its World University Rankings 2020



The United States dominates, but cracks are showing.

12 September 2019

Bec Crew



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The **hyper-competitive regime** imposed to the world system of science by the **present publication system** has several consequences:

- **Incitement** to publish in so-called “high-impact” journals (what does **impact** really mean here?)
- **Incitement** to publish **numerically more** articles
- **Incitement** to join larger problem-based communities in the hope of **garnering more citations**
- **Incitement** to work on problems according to their **visibility** in the right quarters
- Etc.

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Or, more to the point, **it propels the economics of publishing**

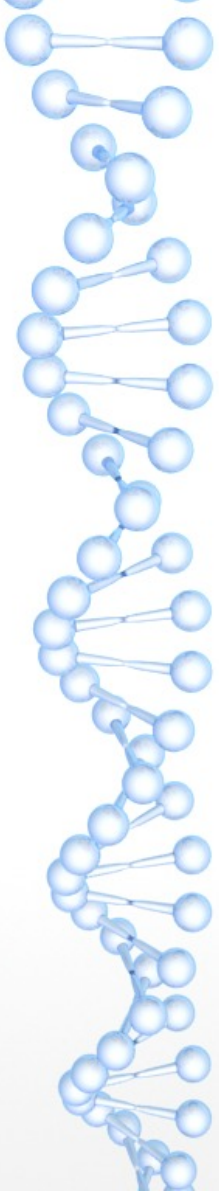


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Cleverly framed,
the **frantic energy** of researchers
is what ensures
an ever-increasing **revenue stream**
for publishing companies



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The solution?

Ginny Barbour, Geoffrey Boulton
(and others) had it perfectly **right,**
Wednesday and Thursday!

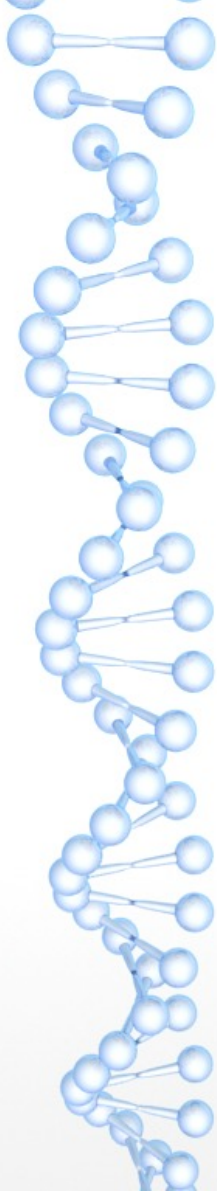
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Move beyond journals!

In other words, move beyond
this **legacy of print**,
lying in **Oldenburg's Long Shadow**.



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Without journals,

No IFs

No Rankings

Thinking out of the print box becomes easier

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Beyond journals, what?

- Several **Latin American** projects (Redalyc, AmeliCA, Clacso, SciELO, La Referencia, etc.) have demonstrated the pre-eminence of **OA portals and databases**;
- **Ironically**, **commercial publishers** (that depend on **journals** and their **IFs**) have strengthened their **publishing platforms**
- Several **foundations** (Wellcome, Gates, etc.) have promoted publishing **platforms**
- The **European Union**, with **ORE**, is gingerly trying to experiment with the **publishing platform** concept

Platforms encompass journals, monographs, data, software, videos, etc., and respond perfectly to the needs of **digital publishing**

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Platforms:

- **Organize documents** (particularly **pre-prints**)
- **Organize** the **relationships** of documents to people and of people to documents
- **Organize** the **relationships** between people

Call this “platform power”!

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Platforms can:

- Work without **owning** content (but can protect content from commercialization with CC licences)
- Harbour various modes of **assessment** and **evaluation** appropriate for various categories of documents and people
- Offer **navigational tools** to make the best possible use of documents
- **Network** in various ways with other suitable platforms

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Platforms can:

- Accommodate various forms of knowledge
- Target various audiences (communication of science to...)
- Respond quickly to urgent matters
- Accommodate various forms of bibliodiversity
- Explore the possibilities of translations into various languages (e.g. to facilitate local education efforts)
- Etc.

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Moving to a world of inter-networked platforms - 1

- **Research funding agencies are the key**: they control a large fraction of the **research money** and they enjoy some elbow room as they are not (directly) ranked
- **Research funding agencies** can design systems of **evaluation** that do not depend on **journals** (IFs), and that allows them to obtain the types of outcomes they are looking for (**their science policy**)
- **Private charities** (Wellcome, Gates, etc.) may enjoy sufficient degrees of **autonomy** to **explore** platform-based scientific publishing further

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Moving to a world of inter-networked platforms - 2

The role of libraries

- **Libraries** have access to **funds** that they can use to support platforms
- **Libraries** can become “**inside-out**” **libraries** by collecting local publications
- **Libraries** have **repository** – i.e. proto-platform – experience – and can move from **portals** to **platforms**
- **Libraries** can **network** to form **trans-institutional platforms**
- **Libraries** and **funding agencies** should be powerful **allies**

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Moving to a world of inter-networked platforms – 3

The role of research managers

- At national levels: keep the **competition** between universities at **moderate** and **reasonable** levels; **too much competition** between institutions **weakens** the **whole system**. Bring back **added value to cooperation**, perhaps by “**competing to cooperate**”.
- At the **institutional level**, emphasize **collaboration** as much as **competition** and identify clearly the moments and situations where one or the other should prevail.
- At the **individual level**, **team work** should be at least as present as **competition**.

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Final conclusion

- The ultimate goal of knowledge creation is knowledge in the service of humanity, not a set of rules designed to create hierarchies and to generate profits for a few.
- The selecting out of invalid knowledge is the essential task of scientific publishing. Any other objective is secondary and potentially counter-productive.
- Oldenburg's long shadow has been distorted beyond recognition, but, in any case, it is revealing itself to be obsolete because it is a legacy of the print age.
- Our main task is to take opportunity of the advent of the digital age to shape scientific publishing anew, this time around suitably designed public platforms