

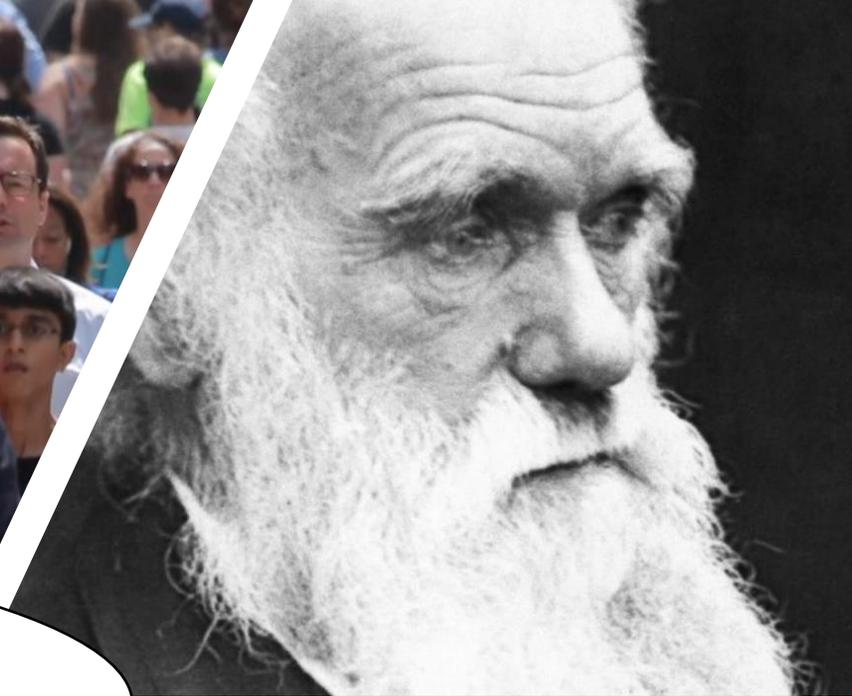


Munin Conference
November 2020

Opening the record of science: making scholarly publishing work for science in the digital era

Geoffrey Boulton

International Science Council
& Edinburgh University



The Record of Science



Budapest Declaration 2002

“An old tradition and a new technology have converged to make possible an unprecedented public good.

The old tradition is the willingness of scientists and scholars to publish the fruits of their research in scholarly journals without payment, for the sake of inquiry and knowledge.

The new technology is the internet.

The public good they make possible is the world-wide electronic distribution of the peer-reviewed journal literature and completely free and unrestricted access to it by all scientists, scholars, teachers, students, and other curious minds.”

Munin Conference 2019

"The journal is dead, and if it is not, it should be. In my opinion journals are unnecessary now with online publishing. Using a journal as a mechanism for restricting access is just outrageous."

”

**Robert Terry,
World Health Organization**

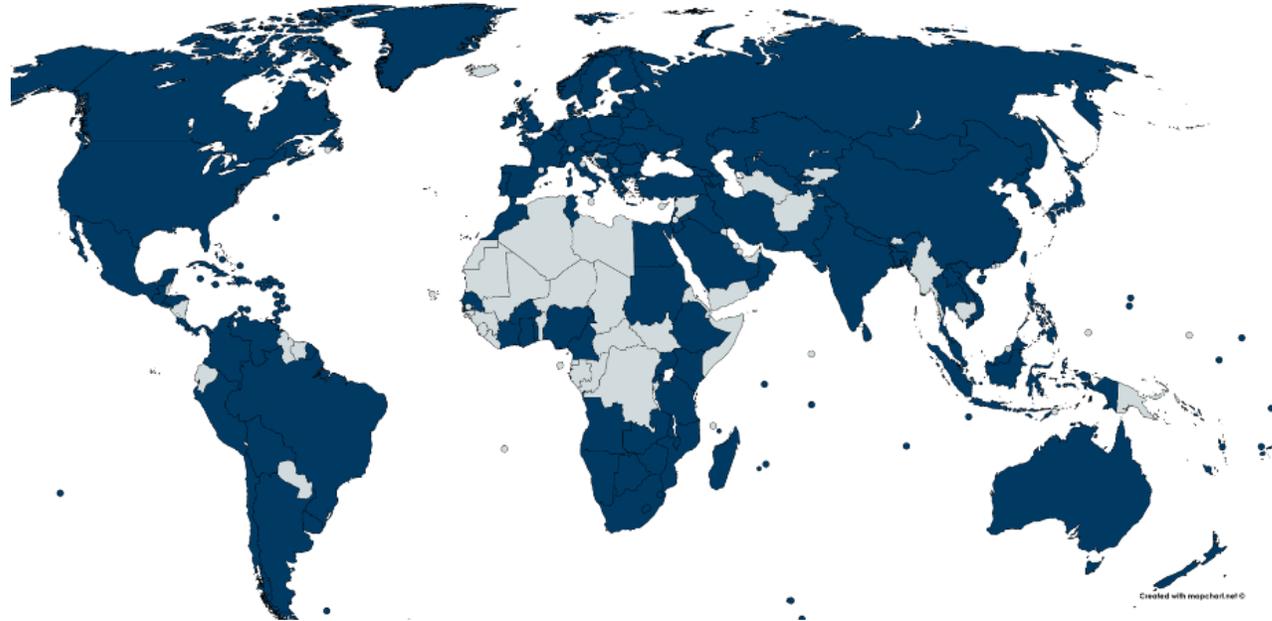




The International Science Council (ISC)

The global voice for science

- 144 + National Academies and Regional Scientific Bodies
- 40 + International Scientific Unions and Associations



- Regional Offices in Africa, Asia and the Pacific, Latin America and the Caribbean
- Regional Social Science Councils in Africa, Latin America, Asia and the Arab World



Patrons



Mary Robinson



Ismail Serageldin



Vint Cerf

Members

Regional Structures

Global scientific networks

ISC Science Support Bodies

- Committee on Data for Science and Technology (CODATA)
- World Data System (WDS)
- International Network for Government Science Advice (INGSA)

International Scientific Committees

- Antarctic Research (SCAR)
- Frequencies for Radio Astronomy and Space Science (IUCAF)
- Oceanic Research (SCOR)
- Space Research (COSPAR)
- Solar Terrestrial Physics (SCOSTEP)

International Research Programmes

- Comparative Research on Poverty Programme (CROP)
- Future Earth
- Integrated Research on Disaster Risk Programme (IRDR)
- Urban Health and Wellbeing Programme (UHWB)
- Climate Research Programme (WCRP)

Global Observing Systems

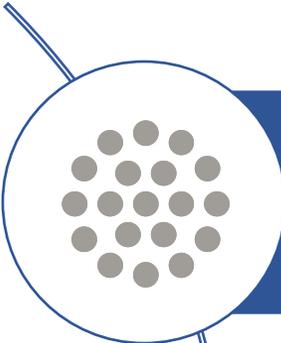
- Global Climate Observing System (GCOS)
- Global Ocean Observing System (GOOS)

Funding Programmes

- Transformations to Sustainability (Sida, Belmont Forum, Norface)
- Leading Integrated Research for Agenda 2030 in Africa (Sida, Bosch Foundation)



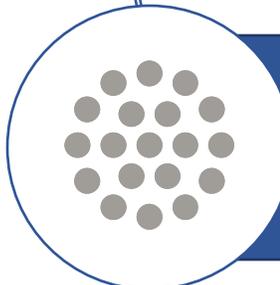
ISC Project: The future of scientific and scholarly publishing



Preliminary

Prioritized by members
Action Plan
Project plan confirmed by CSP

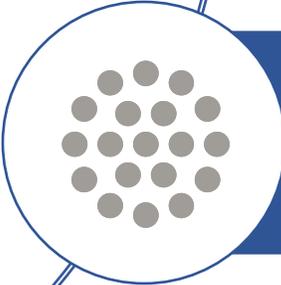
Q2:2019
Q3:2019
Q1 2020



Project Phase 1 – Science Community Consensus

Discussion paper prepared
Member consultations
Report published

May-July 2020
July-Sept 2020
December 2020



Project Phase 2 – Coalition for Reform & Action

Position paper & action plan
Action with key stakeholders

December 2020
Thro' 2020/2021



Key Issues for the Project

Phase 1: Community Consensus

1. What do we need from scientific publishing and what should be its essential principles?
2. How does the current system work?
3. To what extent does it serve essential principles?
4. Is reform needed, if so, for what priorities?

Major report  (December 2020)

Phase 2: A Coalition for Change

5. International Steering Group
6. Regional champions
7. Key stakeholders (funders, universities, libraries, open science publishers, advocates, UNESCO, OECD)

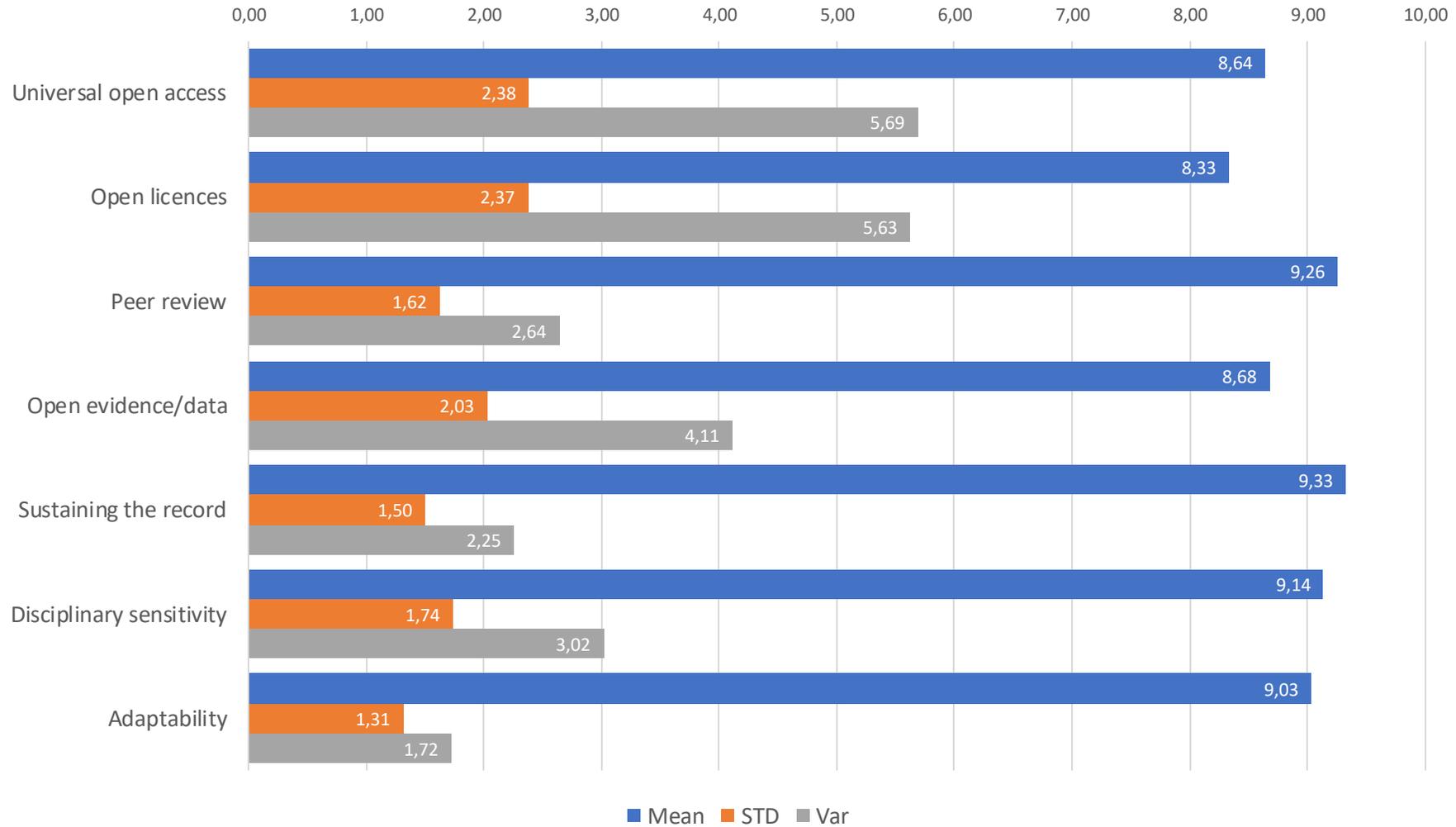




Proposed Principles

- I. Universal open access to the record of science,
- II. Open licensing in ways that support re-use and text and data mining
- III. Rigorous and ongoing peer review
- IV. Data and evidence for a truth claim concurrently accessible
- V. Long-term maintenance of the record of science
- VI. Ways of working of different disciplines to be respected
- VII. Publication systems flexible and adaptable to new opportunities

Science Community Assessment





Business models: does the current system work?

Twentieth century model:

Reader pays

- Perverse market
- Excessive pricing
- Reader inequity



digital
opportunities



open access
movement

The twenty-first century models:

Author pays: commercial publishers' models for open access

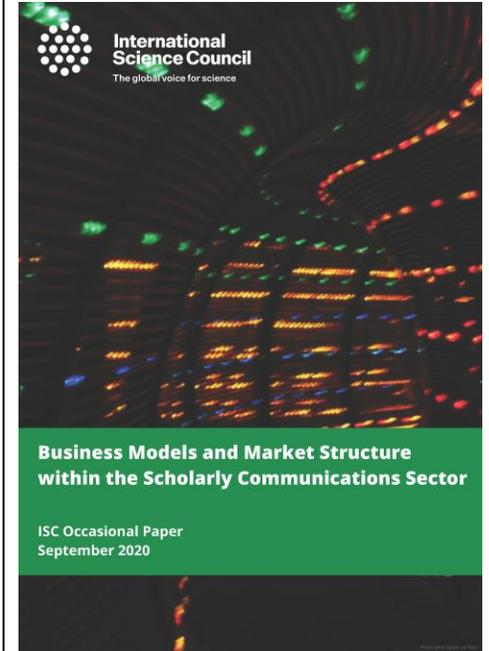
- Inequitable access for authors and institutions

Institutionally supported publishing infrastructures:

- Inequity between institutions

Scholar led, state funded: Latin America – no outsourcing to private providers.

- Public universities publish – no APCs. Peer review of data repositories.
- Supports less privileged scholars, free to read. Data deposition Incentives.



*See:

<https://council.science/publications/business-models//>

Does the current system serve essential principles?

Deficits

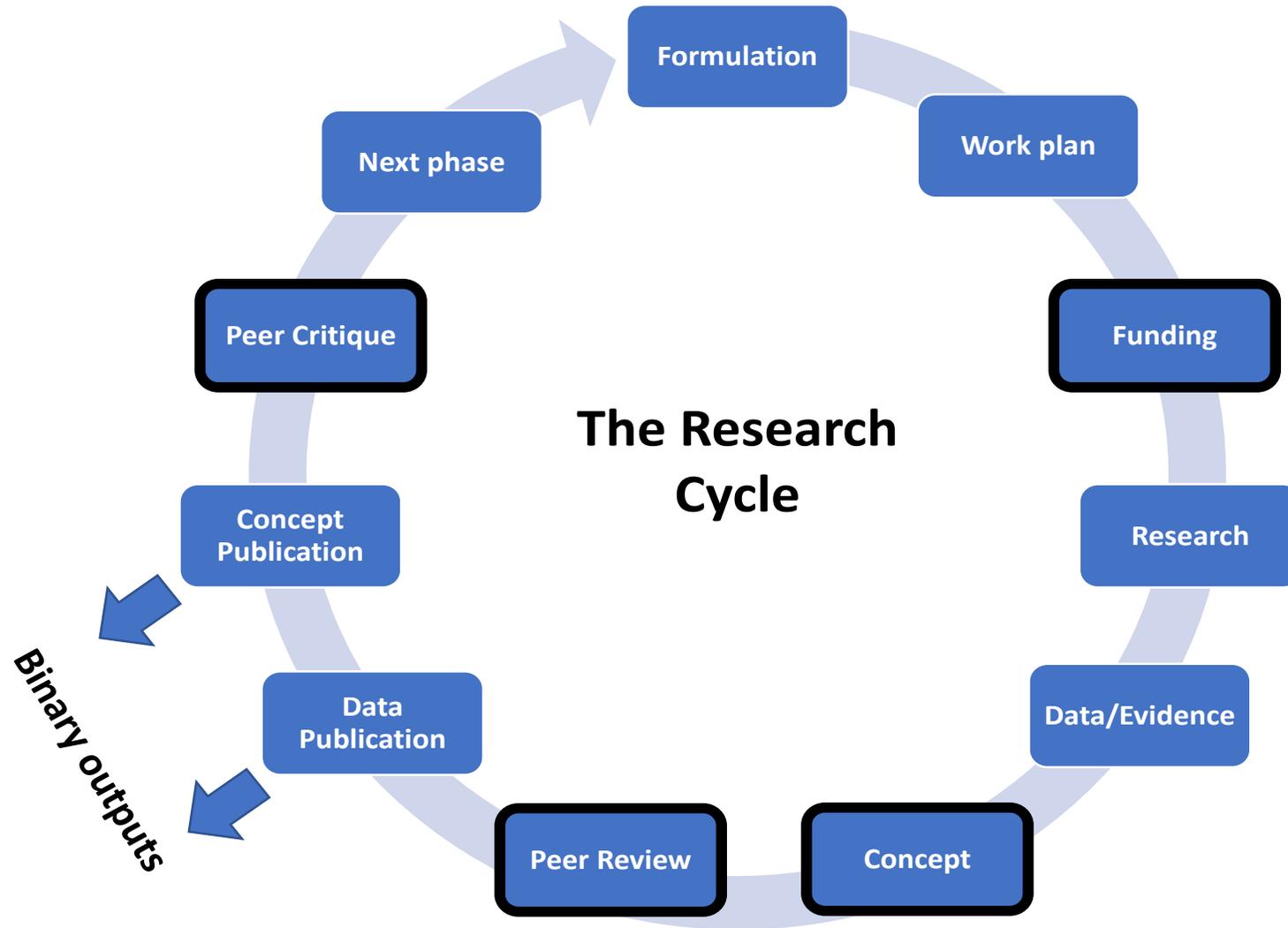
- Limited access for readers
- Limited access for authors
- Magnified in L-M-Cs & less wealthy institutions
- Limited access to the back catalogue
- Peer review: good reviewers & emergency agility
- Biased indexes
- Predatory journals
- Poor optimisation: price/principles/service

Consequences

- Access to the record of science is sub-optimal
- The international scientific community is fractured
- Massive privatization of a publicly-funded resource



Science and scholarship in the digital era





An emerging commercial model: multiple market platforms

The new digital world:

ALL disciplines operate in a digital world with all research elements connectable.

Major publishers are exploiting this to:

Create “Platforms” integrating all elements of the research cycle to dominate digital markets with infrastructural products beyond publishing.

Prospect?

Science/research platforms as quasi monopolies(e.g. Google, Facebook, Uber etc)
(Anti-trust regulations)

Reaction:

A “Digital Markets Unit”?



Phase 2: pathways to solutions: the case to major stakeholders

Recognizing:

- system is diverse and evolving rapidly
- “one size fits all” will not work; but “federation” is crucial

Fundamental issues for reform:

- supply/demand relationships – a dysfunctional market
- perverse incentives
- high cost barriers

Possible solutions:

- publishers compete for our business on principles (values), price and service
- contracting terms to ensure that the community retains adequate control irrespective of service provider
- key purpose: avoid monopolies, stimulate innovation and avoid exclusion

Or

- Disruptive web-based digital development – **“Open publishing”**



Phase 2: Working for Change

Actions

- 1) Technical group: business models consistent with principles-price-service
- 2) High-level steering group, internationally-representative
- 3) Approach to key stakeholders in a coalition for change:
 - Public and private funders
 - University (& library) representative bodies and activist universities
 - Open science and open access activist bodies
 - Researchers
 - Publishers

A major priority in achieving change will be to encourage funders and universities to collaborate in using their latent market power of \$25 billion per year