Introduction to Open Science

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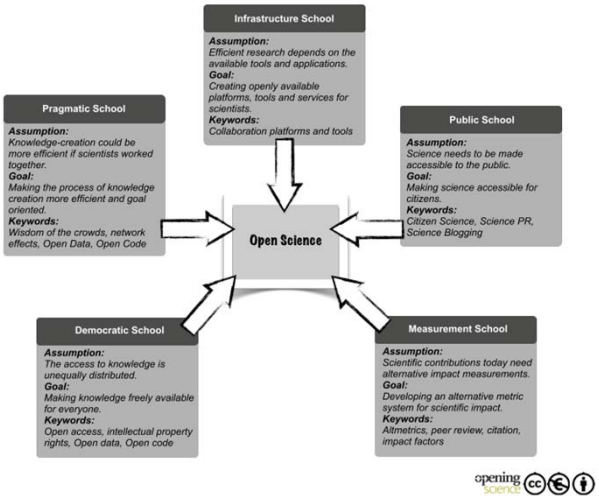
Principle – Movement – Phenomenon

Openness is a Fundamental Principle of Science and Research

The Open Science and Research Initiative (2016): Framework for Open Science and Research [https://openscience.fi/documents/14273/16190/Framework+for+Open+Science+and+Research++Iniative_final.pdf/6f14ada6-243c-4678-b818-d7d3d5330f74]

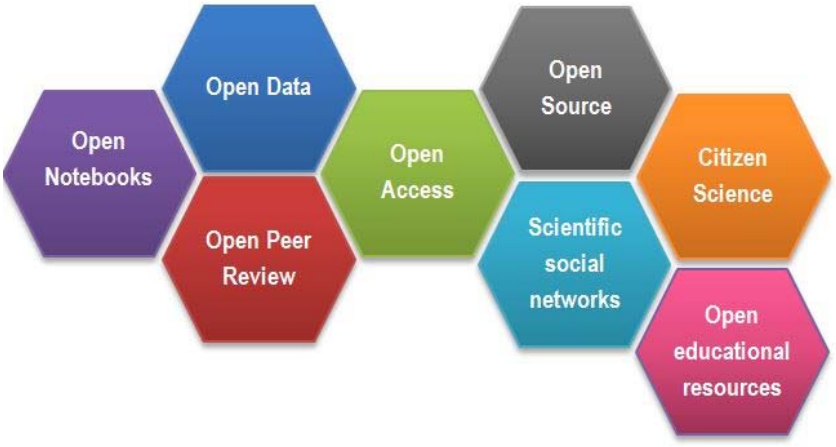
Means, Not Aims or Targets as Such

Five Open Science Schools of Thought



Fecher, B. and Friesike, S. (2013). Open Science: One Term, Five Schools of Thought. In: Bartling, S. and Friesike (Eds.), Opening Science, New York, NY: Springer, pp. 17-47. [https://link.springer.com/chapter/10.1007/978-3-319-00026-8_2]

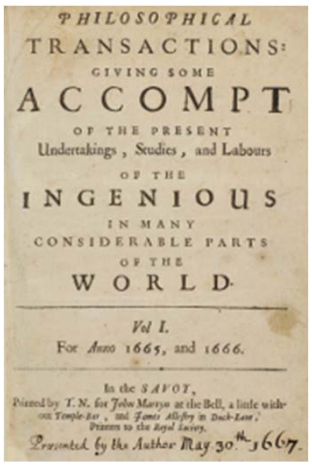
Open Science Spheres



[https://www.fosteropenscience.eu/content/what-open-science-introduction]

Royal Societies and Academies

https://www.metmuseum.org/art/collection/search/386304



http://rstl.royalsocietypublishing.org/

Ruptures of Current Science Practises

- current developments of information and communication technologies
  - New approaches, tasks, tools, pace, collaboration
- academic communities' changing role in societies
  - What are the benefits of research for the society?
- financial benefits of academic publishing
  - How academic community uses its money?
- research as a global endeavour
  - How to define scientific community and offer equal possibilities?
- intense competition on research funding and career opportunities
  - How to achieve head start or how to create a community?

Open science benefits researcher, science and the whole society

Openness strengthens the basic essence of science

Possibilities and Achievements

- "Self-archived/Green OA articles, regardless of format, receive significantly higher citation counts than do non-OA articles from the same editions of the same major political science journals." http://blogs.lse.ac.uk/impactofsocialsciences/2015/02/03/self-archived-green-oa-higher-citations/
- "The results reveal that open access articles in general receive more citations. Moreover, this research finds that articles in high-ranked journals do not have a higher open access rate, and articles in lower-ranked journals have a greater increase rate of citations if they are freely accessible." http://www.emeraldinsight.com/doi/abs/10.1108/14684521211206953?journalCode=oir
- "It is estimated that the value of data in Australia's public research to be at least $1.9 billion and possibly up to $6 billion a year at current levels of expenditure and activity." http://www.ands.org.au/working-with-data/articulating-the-value-of-open-data/open-research-data-report

Challenges and Misuses

- Research published a year ago [2014] in the journal Current Biology found that 80 percent of original scientific data obtained through publicly-funded research is lost within two decades of publication." http://datablog.is.ed.ac.uk/2015/01/22/open-up/
- "Over half of psychology studies fail reproducibility test […] The point […] is not to critique individual papers but to gauge just how much bias drives publication in psychology. http://www.nature.com/news/over-half-of-psychology-studies-fail-reproducibility-test-1.18248
- There currently exists a thriving black-market economy of publishing scams — typically referred to as "predatory journals" — that are designed to look like genuine scholarly publishing programs. In most cases, these scams take the form of offering aspiring authors publication in "journals" that are created not to publish rigorously vetted science and scholarship, but rather to publish whatever the author submits in return for the payment of an article processing charge (APC). https://scholarlykitchen.sspnet.org/2017/07/25/cabells-new-predatory-journal-blacklist-review/

Open Peer Review

How do we organise scientific discussion in order to maintain a fair review process?

What kind of efforts and achievements do we value?

Peers recognize scientific quality, but how do we recognize and demand responsible research that supports the scientific community and society-at-large?