

Scholarly Communication Research in LIS

Lecture at Linné University, Växjö, 2BO330 LIS: Current Research Problems

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Outline

1. Scholarly Communication & its History

- 1.1 A Starting Point
- 1.2 17th to mid-18th c.
- 1.3 Mid-18th to 19th c.
- 1.4 Current Functions
- 1.5 Problems
- 1.6 Models
- 1.7 The Academic Publication

2. Scholarly Communication as a Research Field in LIS

- 2.1 Ethnographies
- 2.2 Technologies
- 2.3 Scientometrics
- 2.4 Evaluations
- 2.5 Publishing Studies



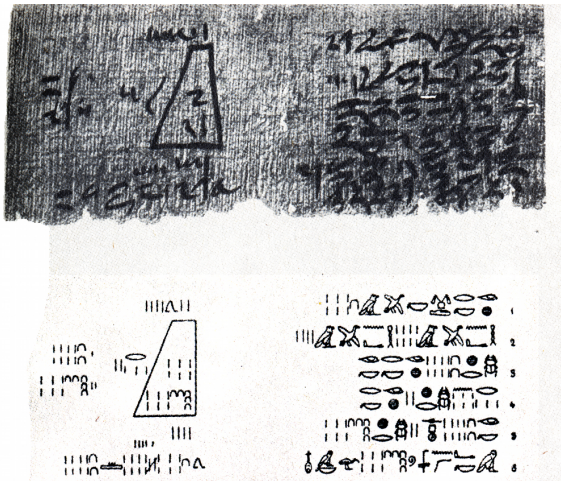
Part I: Scholarly Communication & its History

Christine de Pisan lectures, Paris, 1413.

The Ancient History of Scholarly Communication

Oldest known scholarly manuscript:
mathematical papyrus,
Egypt, circa 1850 BCE
(Papyrus Moscow 4676,
problem 14, part 1)

Jeremy Norman's
HistoryofInformation.com,
2018.



The Ancient History of Scholarly Communication

Earliest documented ...

- compilations of scholarly manuscripts: China, 8th c. BCE
- medical trial: Nebuchadnezzar, 6th c. BCE, Dan.
- experimental method: Jabir, Persia, 8th c. CE
- “clinical” peer review: Arab physician Al-Rohawi, 9th century
- bronze movable type printing: Korea, 1377



Huff, Toby E. The Rise of Early Modern Science: Islam, China, and the West. 3rd ed., Cambridge University Press, 2017; Collier, Roger. ‘Legumes, Lemons and Streptomycin: A Short History of the Clinical Trial’. CMAJ 180:1, 2009

17th to mid-18th c.: The Academic Journal Emerges

- by then, scholarly discussion mostly oral & per letter
- 1665 “Philosophical Transactions”, privately edited by the Royal Society’s secretary
- very few other journals existed; mostly book reviews
- 1752 official take-over, subscription model, editorial board
- acceptance based on abstracts

Philosophical Transactions: 350 years of publishing at the Royal Society (1665–2015).

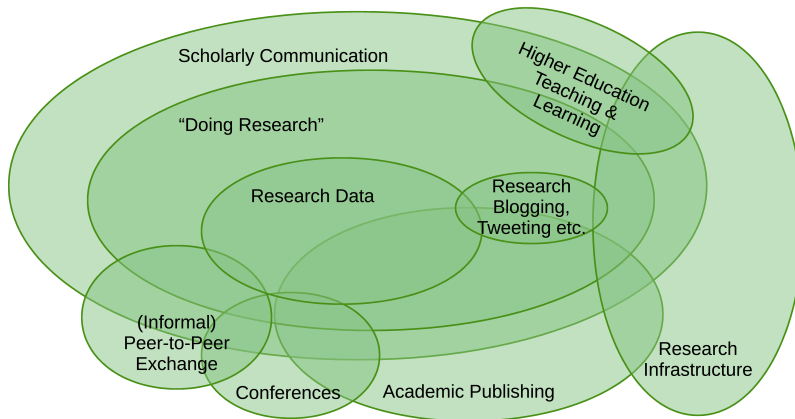
Exhibition Catalogue. The Royal Society, 2014. Also see: Hahn, Roger. The Anatomy of a Scientific Institution: The Paris Academy of Sciences, 1666-1803. University of California Press, 1971.

Mid-18th-19th c.: Authorship & Referencing

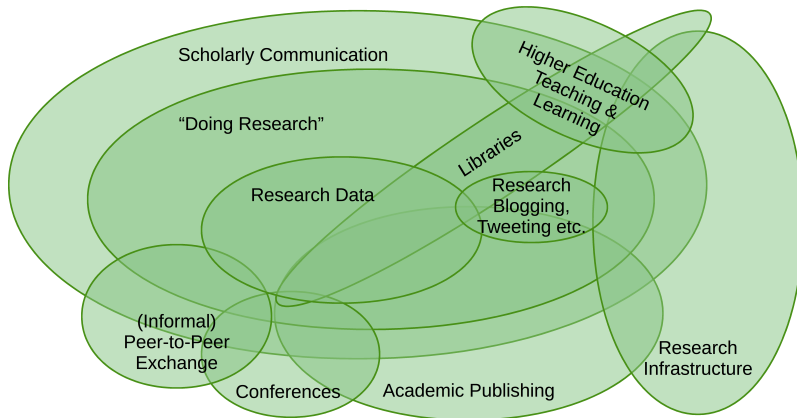
- many societies were founded later in the 18th century
- authorship assertion became prominent
- reputation carrier
- only from the mid-19th c.: referencing and criticism
- main function of the journals by then: protection of intellectual property

Nwagwu, Williams. 'Back to the Beginning – The Journal Is Dead, Long Live Science'. *The Journal of Academic Librarianship* 41:5, 2015; Price, Derek de Solla. *Little Science, Big Science*. Columbia University Press, 1963.

Scholarly Communication Today



Scholarly Communication Today



What does Academic Publishing do Today?

- registration & dissemination of new research findings
- formalised written format
- ... supplemented by presentations, blogs etc.
- supporting/rejecting previous research (canonisation)
- reputation building: individual & institutional

Schmidt, Nora. 'Tackling Complexity in an Interdisciplinary Scholarly Network. Requirements for Semantic Publishing'. First Monday 21:5, 2016.

Some Problems of Academic Publishing Today

- 1 Malfunctioning distribution mechanism:
most contributions are never read nor discussed
 - volume & complexity
 - pre-publication selection
 - closed access
 - not discoverable
- 2 Malfunctioning knowledge production mechanism
 - not reproducible (no supporting data)
 - duplicate research

The Committee on Publication Ethics (COPE), 2018; Vienna Principles. A Vision for Scholarly Communication, 2016.

Some Problems of Academic Publishing Today

3 Malfunctioning reputation mechanism:

- Matthew effect
- citation coercion
- predatory journals
- salami tactics

Merton, Robert K. 'The Matthew Effect in Science: The Reward and Communication Systems of Science are Considered'. *Science* 159:3810, 1968; Berger, Monica. 'Beyond Beall's List: Better Understanding Predatory Publishers'. *College & Research Libraries News* 76:3, 2015.

Part of the Solution

The FAIR Principles for Data Objects should be applicable to all digital academic documents:

- Findable
- Accessible
- Interoperable
- Re-usable

For humans & machines!

FORCE11, Guiding Principles for Findable, Accessible, Interoperable and Re-usable Data Publishing, version b1.0, 2016.; Wilkinson, Mark D. et al. 'The FAIR Guiding Principles for Scientific Data Management and Stewardship'. Scientific Data 3, 2016.

Models of Scholarly Communication

... thought of as lifecycles, despite online tools that foster interaction.

'The Circle'. Innovations in Scholarly Communication. Utrecht University Library, 2015.; also see: Søndergaard, Trine F, et al. 'Documents and the Communication of Scientific and Scholarly Information'. *Journal of Documentation* 59:3, 2013; Björk, Bo-Christer. 'A Model of Scientific Communication as a Global Distributed Information System'. *Information Research* 12:2, 2007.

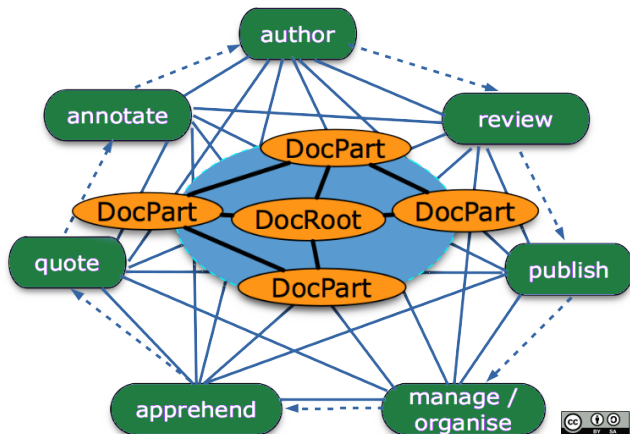


A Hyperlinked Model

Gradmann, Stefan. 'Beyond Books and Journals: Semantic Publishing'. ABEC Conference Florianapolis, 2012.

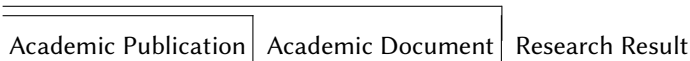
"Web Based Scholarly Working Continuum ... a triple paradigm shift", discarding ...

- 1 traditional cultural techniques
- 2 the linear/circular workflow
- 3 the monolithic document



What is an Academic Publication?

- 1 an academic document: it refers to previous research results of others, and to the authors' original research results
- 2 its distribution must be induced and approved by its authors and be addressed to a global audience



Schmidt, Nora. 'Tackling Complexity in an Interdisciplinary Scholarly Network. Requirements for Semantic Publishing'. First Monday 21:5, 2016.



Part II: Scholarly Communication as a Research Field in LIS

Example for a social network visualisation. Grandjean, Martin. 'La connaissance est un réseau'. Les Cahiers du Numérique 10:3, 2014. CC BY-SA.

1. Observing & Theorising

- production & use of research results, documents & publications
- audiences; cultural & economic aspects
- closely related to the sociology of science & science and technology studies (STS)
- important: diversity of disciplines

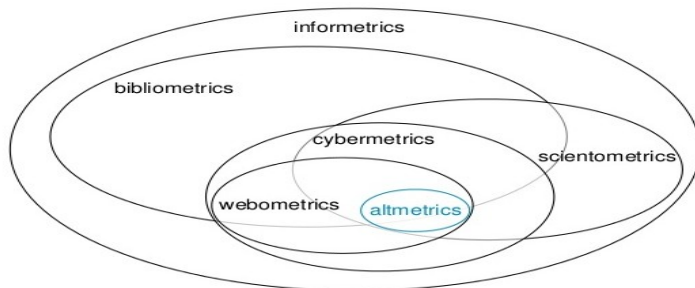
Knorr Cetina, Karin. Epistemic Cultures: How the Sciences Make Knowledge. Harvard University Press, 1999; Kjellberg, Sara. Forskarbloggar: Vetenskaplig Kommunikation och Kunskapsproduktion i Bloggosfären. PhD Thesis. Lunds Universitet, 2010.

2. Technology & Infrastructure Analysis

- description and discussion of technical infrastructures
- requirement analysis
- solution modelling
- exploration of development obstacles
- rather weak subfield in Nordic countries

Borgman, Christine L. *Scholarship in the Digital Age: Information, Infrastructure, and the Internet*. MIT press, 2007.

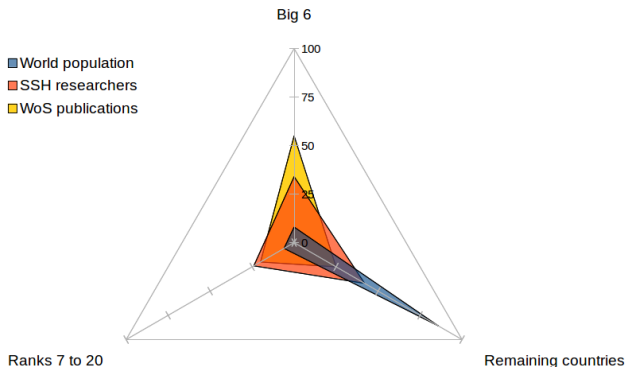
3. Statistics of Academic Knowledge Production



- development of science indicators
- mathematical analysis
- results used for science policy

Figure: Haustein, Stefanie. Scholarly Communication and Evaluation: From Bibliometrics to Altmetrics. COAR-SPARC Conference 2015. Also see: Mingers, John, and Loet Leydesdorff. 'A Review of Theory and Practice in Scientometrics'. European Journal of Operational Research 246:11, 2015.

Example for a Scientometric Research Result



Country groups comparison: Social sciences & humanities basic research publications indexed in *Web of Science*, 2007-16

From my unfinished PhD thesis.

Who are the “Big 6”?

Global ranking of SSH publications in *Web of Science*, relative to number of the country's inhabitants per *one* SSH researcher

#	Country	WoS SSH 2007-2016	$x=1$ researcher to n inhab.	Ratio WoS to x
1	USA	445900	2289	195
2	UK	51461	538	96
3	Germany	70192	988	71
4	Spain	54526	931	59
5	Canada	68209	1266	54
6	Australia	64123	1323	48
7	Switzerland	16613	414	30
8	Sweden	17860	626	29
9	France	42329	1223	26
10	Norway	12255	556	22

From my unfinished PhD thesis.

4. Research Information & Evaluation

Document & data-related aspects of research evaluations, affecting ...

- universities
- funders
- individual researchers

... & evaluation of documentation processes of research results:

- inclusion criteria of databases
- “valuation studies”; “audit culture”

Van Loon, James E., et al. ‘Quality Evaluation of Data Management Plans at a Research University’. IFLA Journal 43:1, 2017; Rumsey, Sally. ‘A Case Analysis of Registering Research Activity for Institutional Benefit’. International Journal of Information Management 30:2, 2010.

5. Publishing Studies

Description, analysis & discussion of the academic publishing industry.

Foci:

- economic aspects
- organisational structures
- the occupation
- law

Bhaskar, Michael. *The Content Machine: Towards a Theory of Publishing from the Printing Press to the Digital Network*. Anthem Press, 2013.

Thank you for your attention!

