Handcuffs of progress: copyright and scientific publications

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Publicity of science: Middle Ages and ancient time

- Low amount of knowledge, scientific method is not created;
- One outstanding person may study and invent a lot of things in different areas of knowledge;
- Knowledge is closed and even encrypted from publicity, spread only among a few persons (apprentices, followers);
- Cardano and del Ferro case (formulae for depressed cubic equation).
Publicity of science: New Ages

- Scientific method is developed and philosophically validated.
- Exponential growth of scientific information amount. Science is not a work of single outstanding scientists anymore. Each researcher group makes a little contribution to the large «tree» of scientific knowledge.
- Science became obligatively public. If the work is not published, it doesn't exist (exception for classified works).
- Lomonosov case.
Information exchange was technically problematic earlier

- Worldwide physical exchange of prints is required;
- Political problems (e.g. Iron Curtain);
- Language barriers;
- Search issues;

Nowadays: English language domination, Internet, digitalization of information, failure of bipolar political system in the world.
Win?

No, guys.

Copyright.
Science and copyright

- Fundamental knowledge is public domain.
- Some yields of scientific work may be protected:
  - Patents for inventions;
  - Database compilations;
  - Articles and books copyright.
- Scientific works are regulated as usual artworks.
Peculiarities of scientific works

- Publishing place matters:
  - Review (peer or community);
  - Impact-factor, supposed quality and reliability of the work;
  - Indexing in scientific search systems;
  - Strict lists of accepted publication places for some situations (e.g. articles for PhD theses).
  - New publishing house or journal creation is difficult.

- Primary works contain a lot of info never reproduced in another publications, so the access to some work may be crucial and can't be substituted.

- Scientific publications rarely give significant profit, spreading of them has more idealistic reasons.

- So, scientific publishing houses have signs of natural oligopolies with significant conflict of interests between the author and the publisher, which is completely neglected in copyright regulation.
Typical current policies of scientific publishing houses

- Printed version subscription and/or online access subscription is sold (all archive, some part of it or single publication).
- Subscription is very expensive (e.g. Angewandte Chemie $11529 per year online+printed, tens of dollars per article), hundreds/thousands of journals are to be subscribed for good library. Library of Harward encouraged scientists for open publications because of extreme prices for subscriptions.
- Journals are sold in groups (tying sale).
- Authors and referees are rarely paid.
Typical current policies of scientific publishing houses

• (Almost) complete copyright transfer to a publisher.
• High price is not a guarantee of high quality of review.
• Nowadays the majority of journals are bought by three large houses: Wiley, Elsevier, Springer.
Results and responses

- General complication of scientific research.
- Science became accessible only for (rich) professional scientists.

http://thecostofknowledge.com/
Methods of fight: foreign help

• Foreign colleagues, university friends and postdocs working abroad may send you articles on request using subscriptions of their organizations.

• Request communities e.g. http://pdf.livejournal.com/

• Exchange between libraries etc.
Methods of fight: regular pirates

- Botnet mirroring in institutes.
- Torrents.
- Local or intranet collections of literature.
- Downloads of articles, temporary opened for promo purposes.
- Putting your own or any other articles/preprints (preprints are mostly banned too) somewhere on your homepage or institution site (Google Scholar founds them).
- Sending «personal author copies» (within limits or ignoring them).
Methods of fight: outstanding pirates


- Sci-hub is a system of proxies that allow automatic download of requested papers through subscriptions of foreign universities (with web-access and appropriate parsers).

- Libgen is a huge collection of scientific literature that tries to collect all scientific works published in the world ever.

- The systems are connected: when somebody downloads paper from Sci-hub, its copy is saved to Libgen and is proposed for future downloads. When somebody searches on Libgen and nothing found, the system proposes download with Sci-hub.
Methods of fight: open access

- Author fee => article is free for everybody.
- Open access journals: all articles distributed freely (e.g. CC-BY for *PLOS Biology*).
- Mostly require author fee, but may be donated.
- Rather new phenomenon.
- Were charged of low review quality, but the studies were not reliable (traditional journals have the same problems)
- The fee may be up to hundreds of dollars. Open access publishing doesn't solve an issue of getting access to another (not open access) publications.

Methods of fight: copyright amendments (imaginary :(

- Copyright amendments should be the most systematic solution of the above mentioned issues.
- Scientific works must be treated as a separate object of copyright.
- Time of transfer to public domain must be severely shortened for these publications (1—3 years?)
- ???
Conclusions

- Scientific research is intrinsically open.
- Fundamental knowledge is public domain, but some yields of science may be copyrighted, among them are scientific publications.
- Scientific publications are treated by copyright laws as regular artworks, despite they have a lot of peculiarities.
- This allow publishing houses to abuse their rights severely, using the situation of natural oligopoly.
- Such situation slows down overall scientific progress, make science accessible only to (rich) specialists.
- Methods used against such publishers are mostly illegal (pirate).
- Copyright law amendments might be ultimate solutions of these issues.