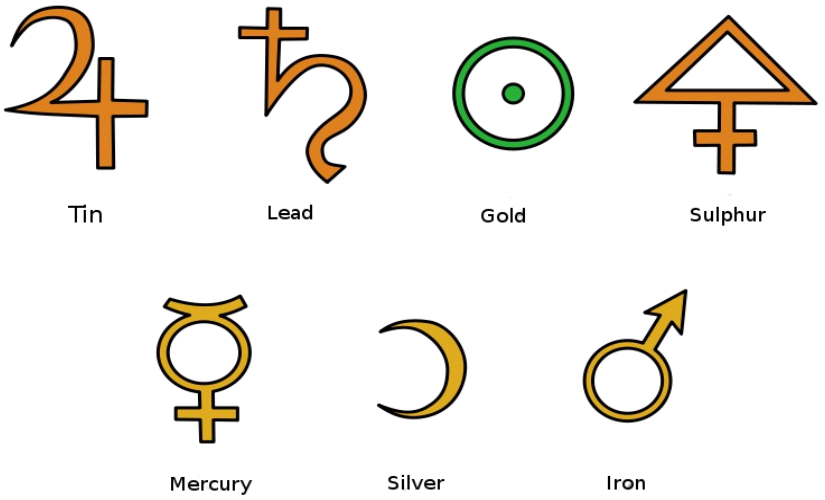
Handcuffs of progress: copyright and scientific publications

Anton S. Lytvynenko,
Kyiv, Ukraine

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 amoung 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 confict 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.
- 2012: «Riot» of 14000+ scientists together with Sir William Timothy Gowers (Fields Medal) calling for boykott of Elsevier (reasons: high prices, tying sales, SOPA and PIPA support). Almost failed. 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

- http://sci-hub.org/ + http://libgen.org/
- 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.

http://theoryandpractice.ru/posts/8440-znaniya-dlya-vsekh

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, dispite 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.