ICT International Doctoral School
DISI UNITN

Copyright and Open Access in the Digital Age

Monday January 27, 2020

Paolo Guarda
University of Trento

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Agenda

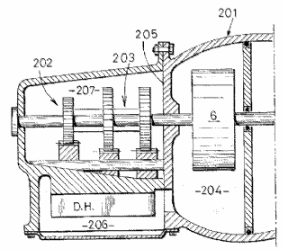
1. IPR and Copyright in a nutshell
2. Copyright in the digital age
3. Open Access to Scientific Publications
4. Open licenses

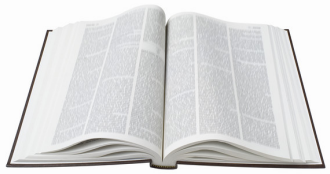
1

Intellectual Property Protection: in a nutshell

Overview of intellectual property

Legal right	What for?	How?
Patents	New inventions	Application and examination
Copyright	Original creative or artistic forms	Exists automatically
Trade marks	Distinctive identification of products or services	Use and/or registration
Registered designs	External appearance	Registration*
Trade secrets	Valuable information not known to the public	Reasonable efforts to keep secret





Google

From EPO, *Patent teaching kit*

Some IP found in a mobile phone

Trade marks:

- **Made by "Nokia"**
- **Product "N95"**
- **Software "Symbian", "Java"**

Patents:

- **Data-processing methods**
- **Semiconductor circuits**
- **Chemical compounds**
- **…**

Copyrights:

- **Software code**
- **Instruction manual**
- **Ringtone**
- **…**

© Nokia

Trade secrets:

?

Designs (some of them registered):

- **Form of overall phone**
- **Arrangement of buttons in oval shape**
- **Three-dimensional wave form of buttons**
- **…**

From EPO, *Patent teaching kit*

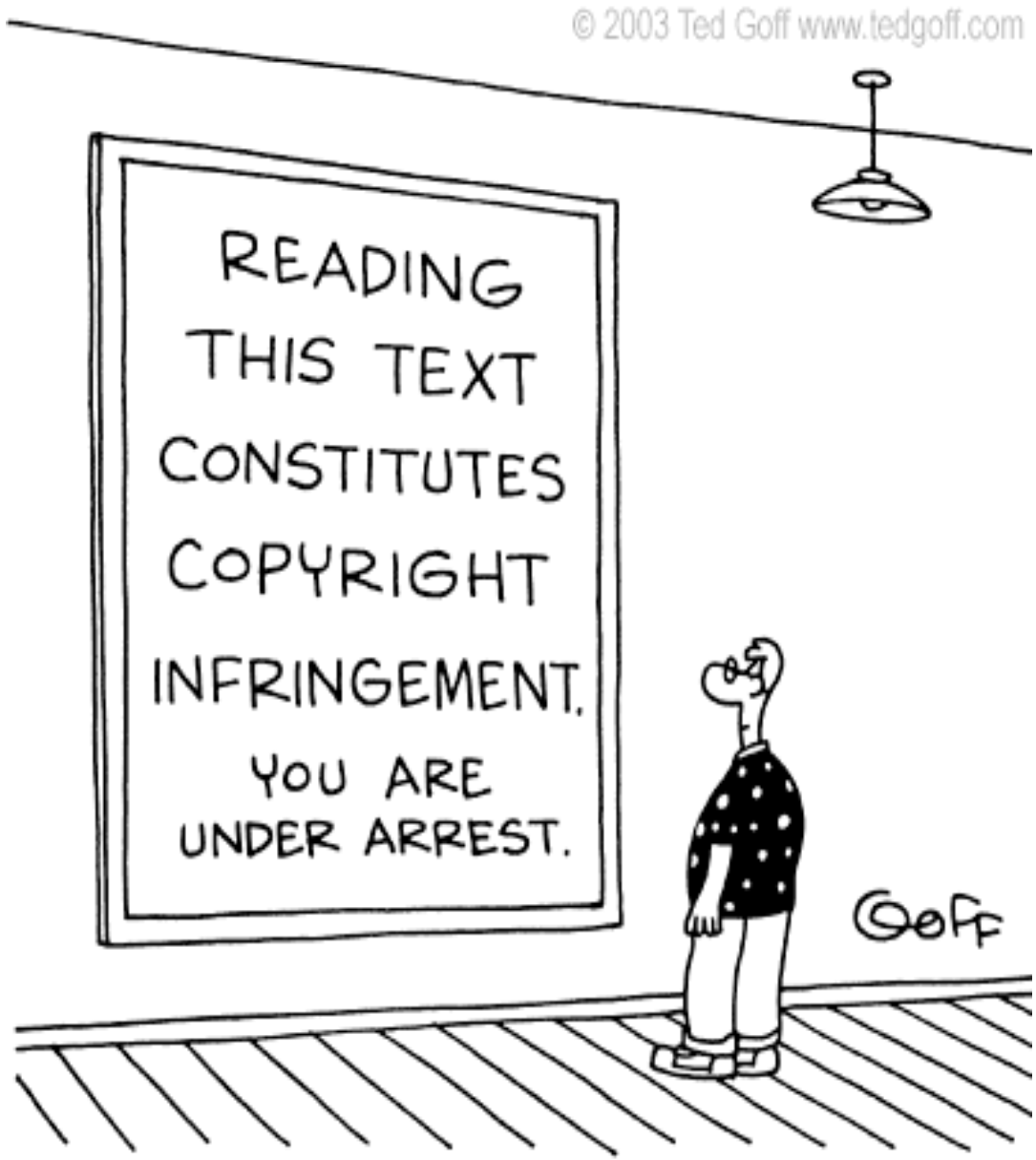
IPRs Rationale

- The Statute of Anne (1710): "*An act for the encouragement of learning, by vesting the copies of printed books in the authors or purchasers of such copies, during the times therein mentioned*"

- U.S. CONST. art. I, Sec. 8, cl. 8 "*The Congress shall have Power . . . To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries*"

Copyright

Psychological pressure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GOFF

A recent law

- Unlike the property on material things (which dates back to the dawn of time, which means the earliest forms of human legal organization).
- Copyright is a recent law
- Before the printing technology:
  - Classic world: Greece and Rome
  - Medieval Age: authors (and scribe), painters, sculptors, architects, musicians and theater

A world without copyright...

- Hypothesis to justify the absence of copyright:
  - Economic incentives (patronage) and uniqueness of representation
  - Non economic incentives
  - Not immorality of plagiarism
    - Creativity and plagiarism: an ambiguous relationship (i.e. Shakespeare and following slides)
  - No possibility for a market for piracy (the cost of the original is equal to the cost of the copy (you must pay the scribe))

Which did come first: the egg (protection) or the chicken (its infringment)?

"*Only when media technology and market conditions made piracy profitable could copyright arise*" (P.E. Geller)

Technology and market

- Before the invention of movable type printing, the original costs the same as the copy (the cost is the payment of the slave, the scribe).
- With movable types, the original (matrix) is very expensive, the copy is cheap (the marginal cost of producing the copies is low).
- The second printer copyies the matrix (supporting costs) and then he must support only the marginal costs of producing copies.
- With a new market (the book) and a new business model (selling large-scale copies of the originals with a cover price) → comes the need for new rules

Information as a “public good”

- Information features:
  - Immateriality
  - Inexhaustible
  - incremental and cumulative nature (“on the shoulders of giants”)
- Information → “Public Good”:
  - Not rival
  - Not excludable
- A market of public goods → Market Failure

Remedies to the market failure

- State remedies for market failure:
  - Direct intervention
  - Awards and grants
  - Monopoly/Property rights (copyright and patents)
    - To create artificially (ie, by the force of law) the excludibility that is missing to information in the state of nature
    - An exclusive right that allows to apply an higher price with respect to the marginal cost in order to incentive the creation and distribution
    - A poised balance → The exclusive right is limited in time and extent

The Origins of Copyright

- Relationship between the Gutenberg invention of the press and the legal protection of literary works:
  - Press invented in the 15th century: first Bible published in1455
  - Privilege of the Republic of Venice (1469)

The Statute of Anne - 1710

- Declamation: ”The encouragement of learning” Operational rules:
  - "The sole liberty of printing and reprinting books ..." (Proprietor), but uncertainty in the nature of law
  - Time limits: 14 years from publication plus another 14 if the author is still alive (for works already published: 21 years from 1710)
  - Registration
  - Penalties

Copyright Law

- Copyright law grants authors an exclusive rights in their intellectual works.
- The exclusive right embraces
  - Moral rights
  - Economic Rights
- Limits of the exclusive right:
  - Extension (originality; expression/idea dichotomy)
  - Duration

Economic rights

Main economic rights:

- Reproduction (right to make copies)
- Distribution (right to distribute copies)
- Communication (right to communicate)
- Derivative works (right to make derivative works)

Moral rights

Main moral rights:

- Right of attribution (diritto di paternità)
- Right to the integrity of the work

Copyright Law limits: extension

- Extension:
  - Originality
  - Expression/Idea Dichotomy
  - First Sale Doctrine (Once a work is sold or distributed on a specific territory with the consent of the right holder, the latter may not control or prevent the further distribution).

Copyright Law limits: duration

- Statute of Anne – 1710: 14 years (+ 14)
- U.S. Copyright Act 1790: 14 years
- Berne Convention art. 7: author's life + 50 years
- Directive 2006/116/EC: author’s life + 70 anni
  - Art. 25, l. 22 aprile 1941, n. 633 (Italian) “Copyright Law”
- Sonny Bono Copyright Extension Act of 1998: author’s life + 70 years

Digital Revolution

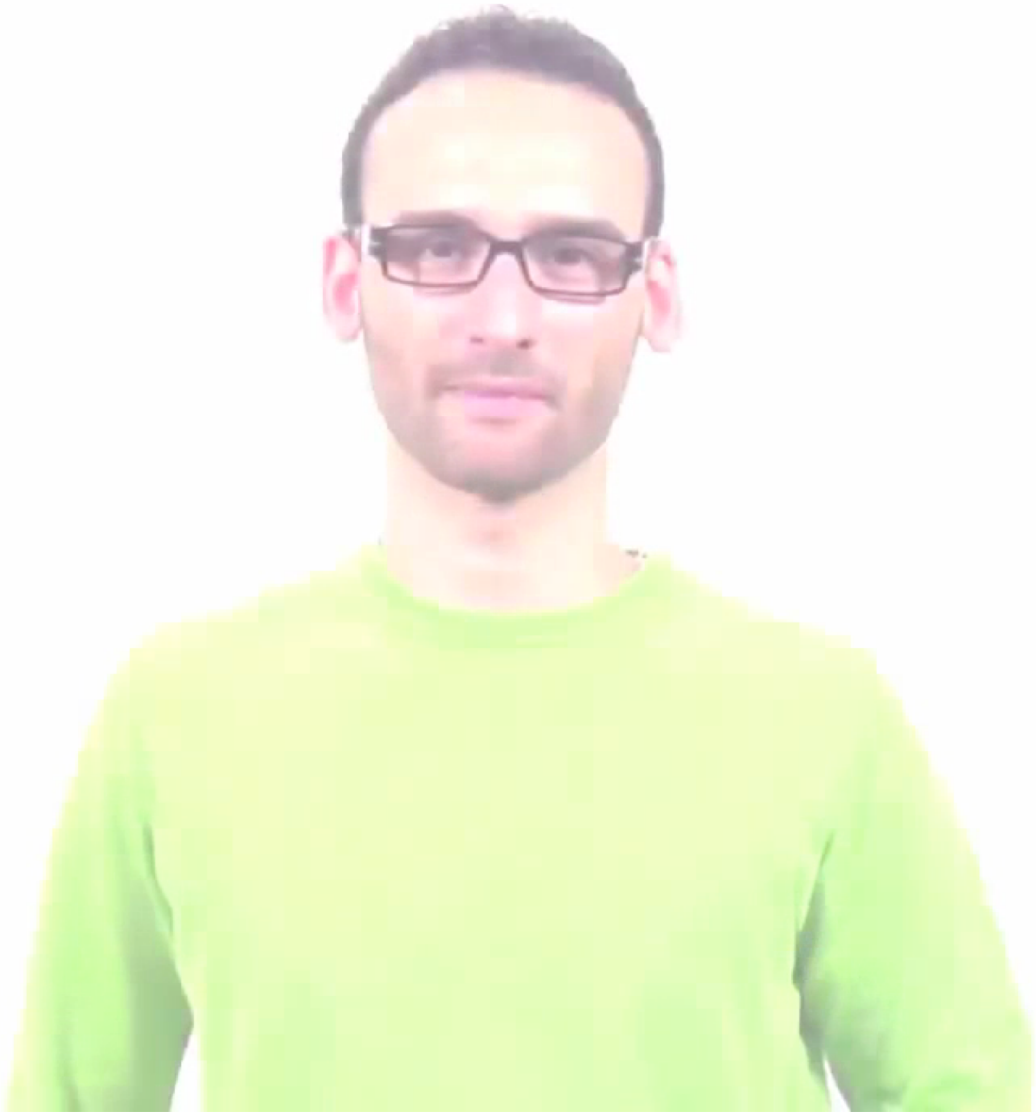
- Producing and distribution of tools aimed at easily reproducing copyrighted works:
  - photocopiers,
  - tape recorders,
  - VCRs
- First attempt to contrast the phenomenon by the right holders
  - → suing the producers of these “new” (devil) technologies!

Digital Revolution

- Challenges:
  - Easy production of copies
  - The copy = the original
  - Easiness distribution of copies.
- …and traditional copyright laws are still there to recognize exclusive rights to creators of original works.

Copyright in the digital age

- Redefinition of the main features of intellectual works:
  - Concept of work
  - Concept of author
  - Concept of creativity



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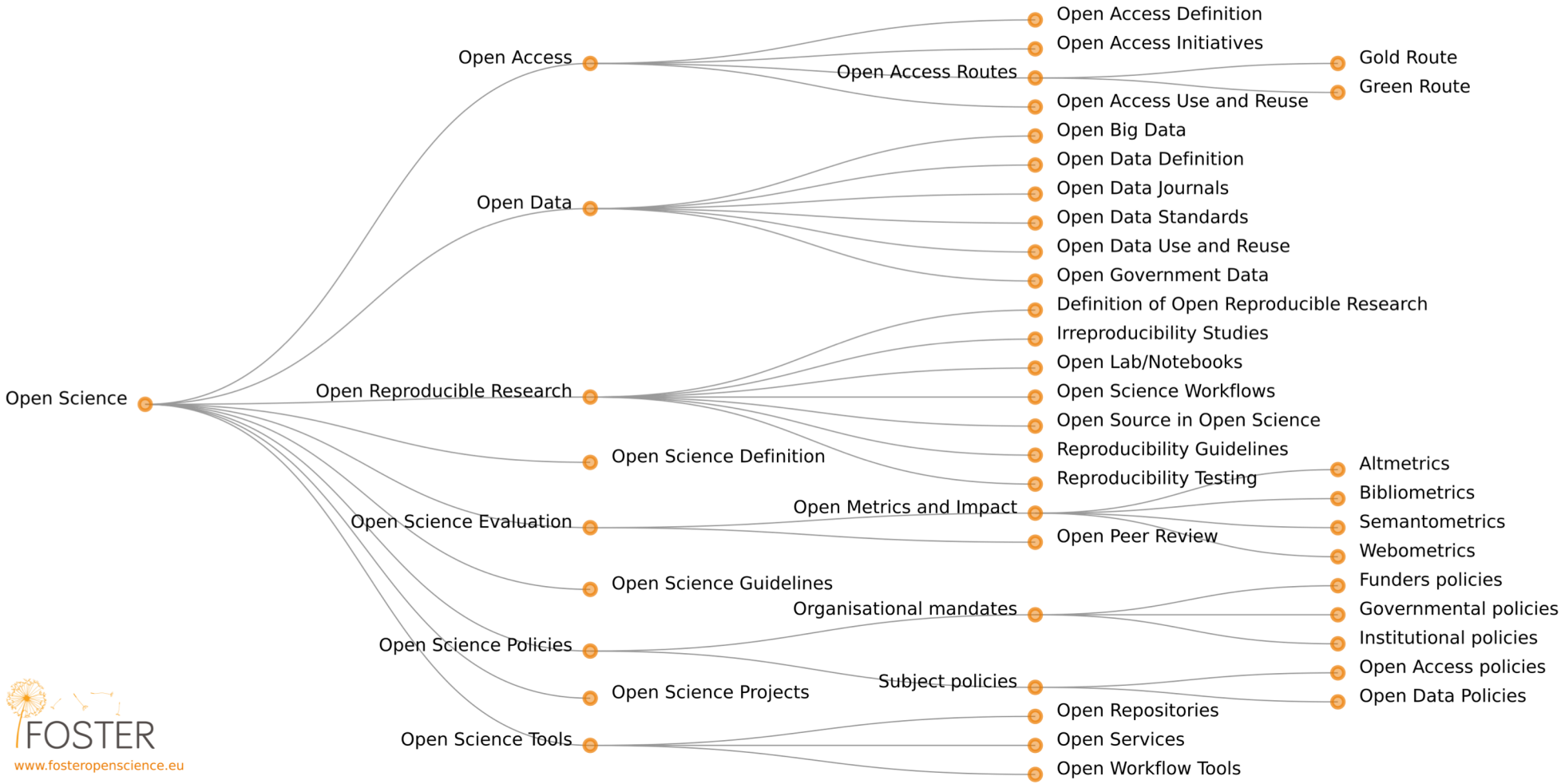
Open Access to Scientific Publications

Open Science

- Free and Open Software
- Open Access to Scientific Publications
- Open Research Data
- Open Educational Resources

Open Science Taxonomy



FOSTER
www.fosteropenscience.eu

Peter Suber 2012

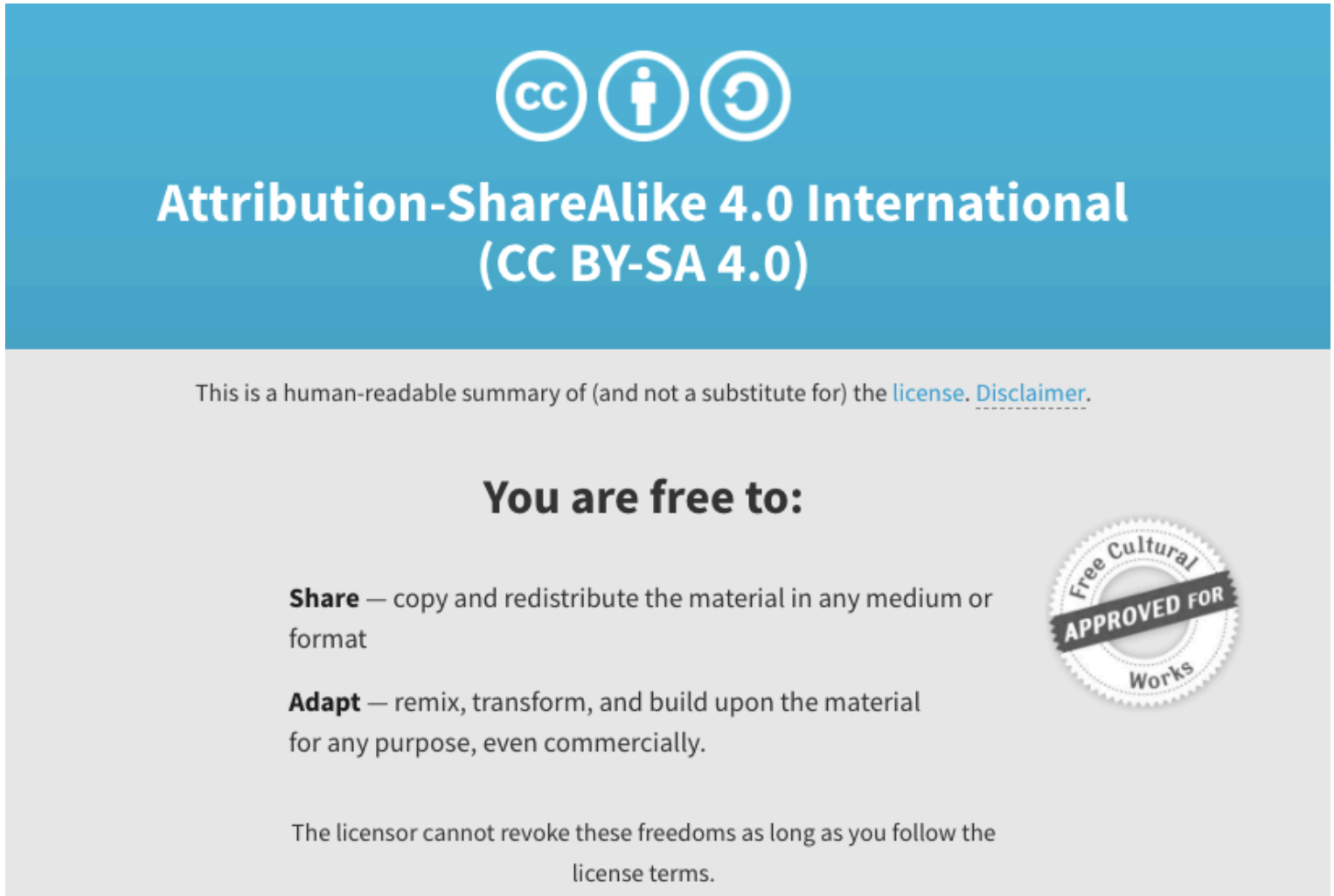
"Open access (OA) literature is

- digital,
- online,
- free of charge, and
- free of most copyright and licensing restrictions"

Digital, online https://www.openarchives.org/pmh/

- Interoperability through Metadata Exchange
-
- The Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH) is a low-barrier mechanism for repository interoperability. Data Providers are repositories that expose structured metadata via OAI-PMH. Service Providers then make OAI-PMH service requests to harvest that metadata. OAI-PMH is a set of six verbs or services that are invoked within HTTP.

Free



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Double identity

- Ethics
- Incentives

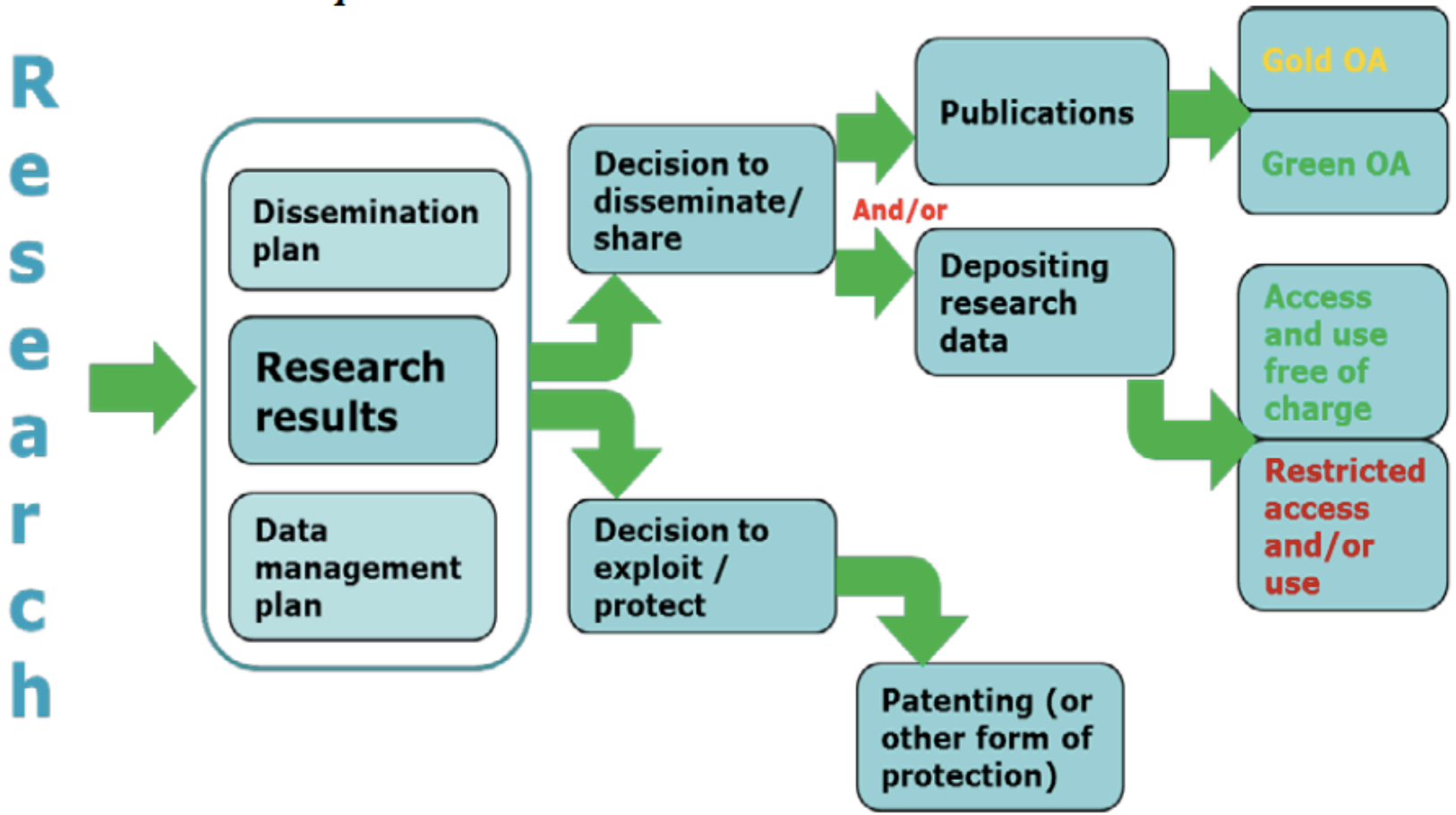
Double identity

- Bottom up

- Top down

Top down: e.g. UE H2020

Graph: Open access to scientific publication and research data in the wider context of dissemination and exploitation



H2020

- Article 29.2 of the Model Grant Agreement sets out detailed legal requirements on open access to scientific publications: under Horizon 2020, **each beneficiary must ensure open access to all peer-reviewed scientific publications** relating to its results.

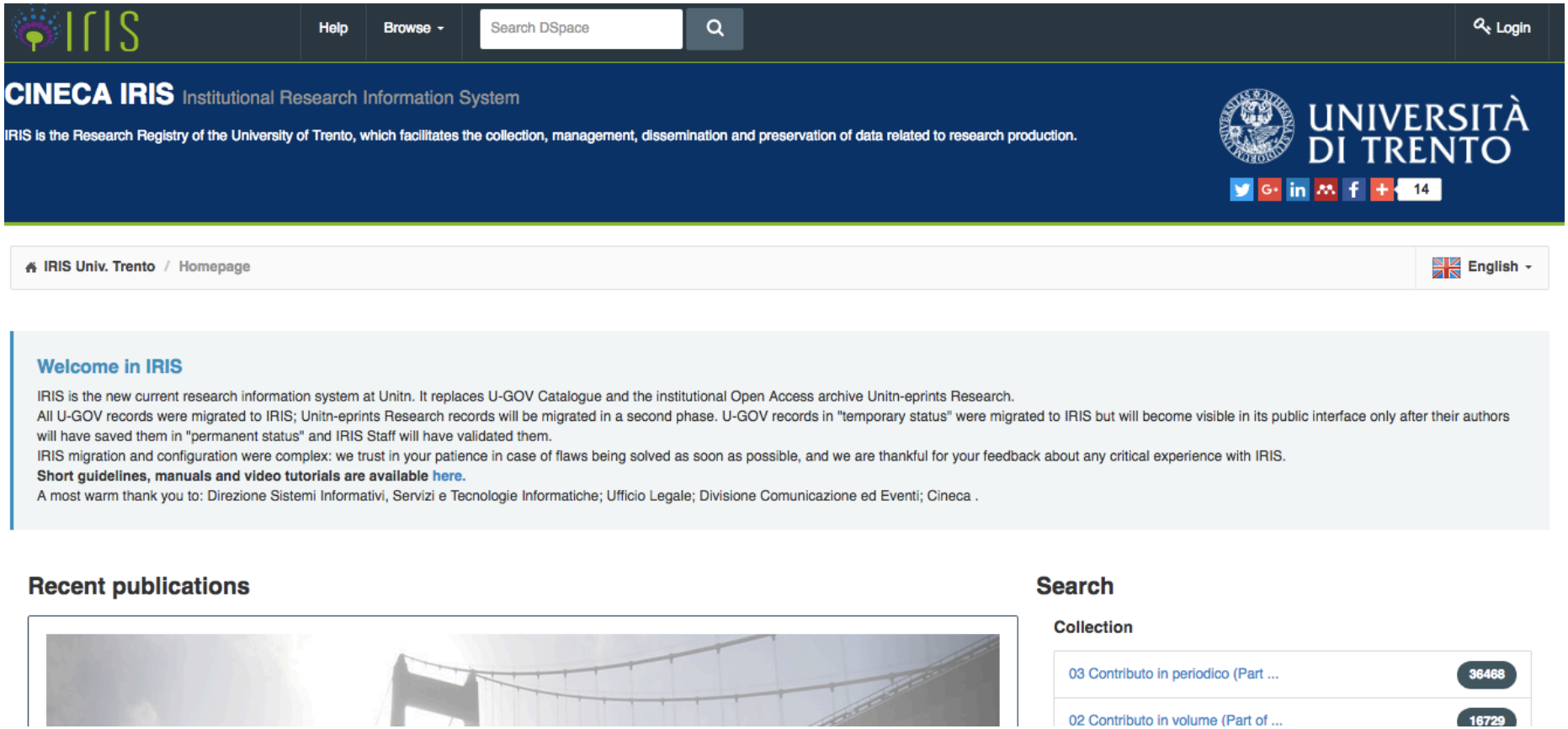
Unitn

- Mandatory deposit in IRIS (closed access)
- Clearing of copyright → eventually publishing in Open Access

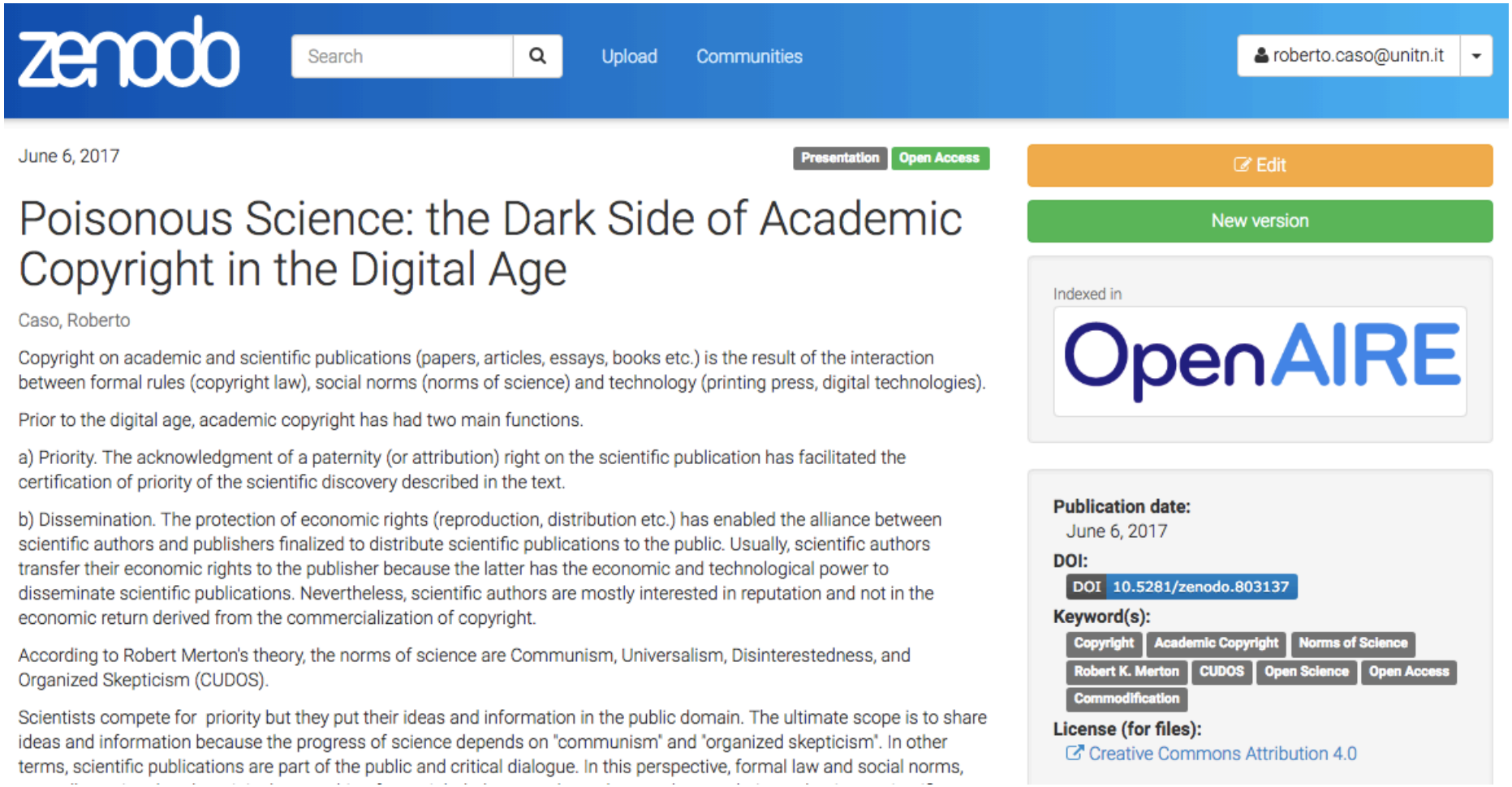
http://www.sherpa.ac.uk/romeo/index.php

Open Access Roads

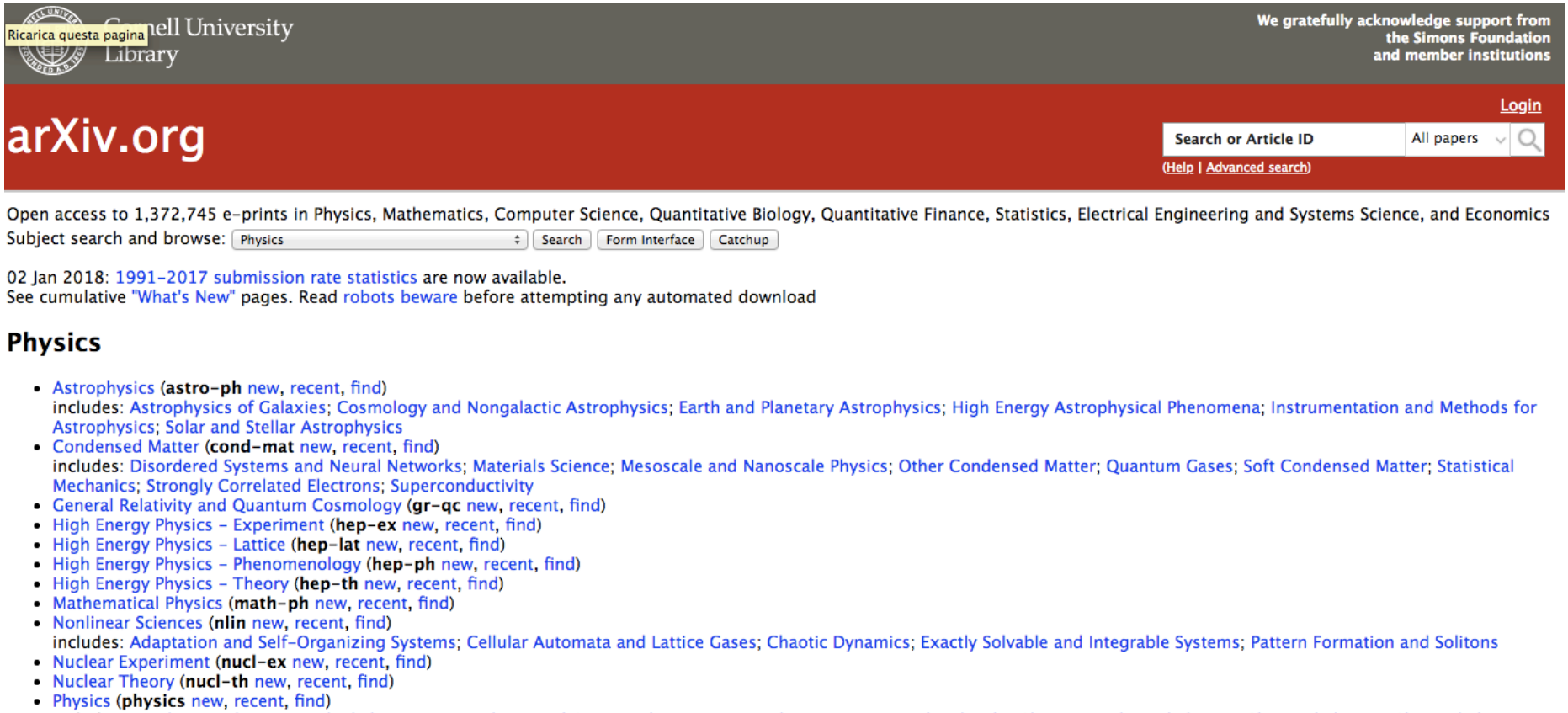
Green road: e.g. IRIS Unitn



Green Road: e.g. Zenodo



Green road: e.g. arXiv



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  includes: Astrophysics of Galaxies; Cosmology and Nongalactic Astrophysics; Earth and Planetary Astrophysics; High Energy Astrophysical Phenomena; Instrumentation and Methods for Astrophysics; Solar and Stellar Astrophysics
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  includes: Disordered Systems and Neural Networks; Materials Science; Mesoscale and Nanoscale Physics; Other Condensed Matter; Quantum Gases; Soft Condensed Matter; Statistical Mechanics; Strongly Correlated Electrons; Superconductivity
- General Relativity and Quantum Cosmology (**gr-qc** new, recent, find)
- High Energy Physics - Experiment (**hep-ex** new, recent, find)
- High Energy Physics - Lattice (**hep-lat** new, recent, find)
- High Energy Physics - Phenomenology (**hep-ph** new, recent, find)
- High Energy Physics - Theory (**hep-th** new, recent, find)
- Mathematical Physics (**math-ph** new, recent, find)
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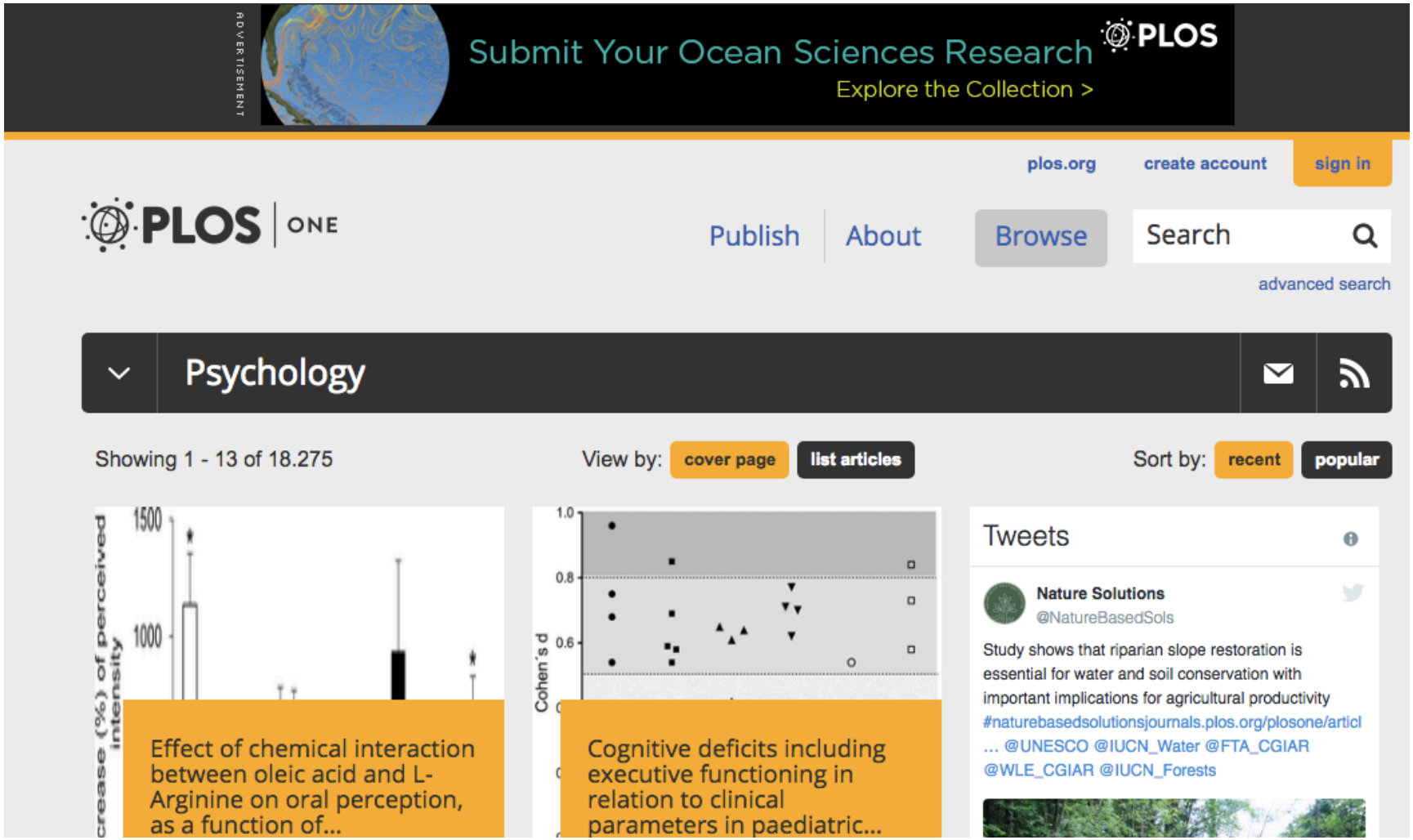
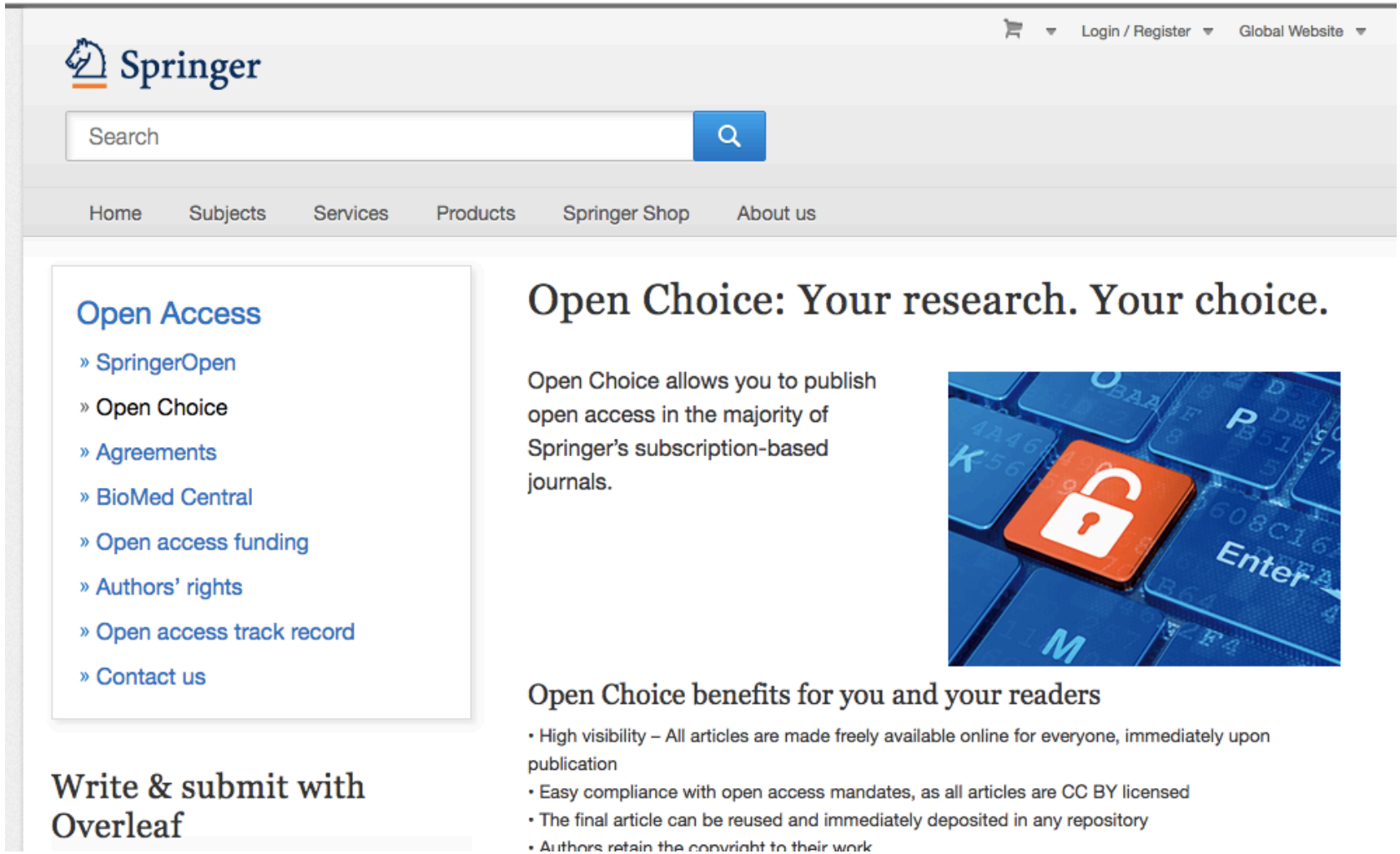
- Nuclear Experiment (**nucl-ex** new, recent, find)
- Nuclear Theory (**nucl-th** new, recent, find)
- Physics (**physics** new, recent, find)

Gold road (author pay)



Platinum (no fees)

Red road (double dipping)



Academic copyright

Scientific authorship: freedom and responsability

- Freedom (freedom of speech, academic freedom → authonomy)

- Responsability (e.g., in terms of scientific misconduct, fraud, plagiarism etc.)

Balancing copyright

(Public) Access

Vs.

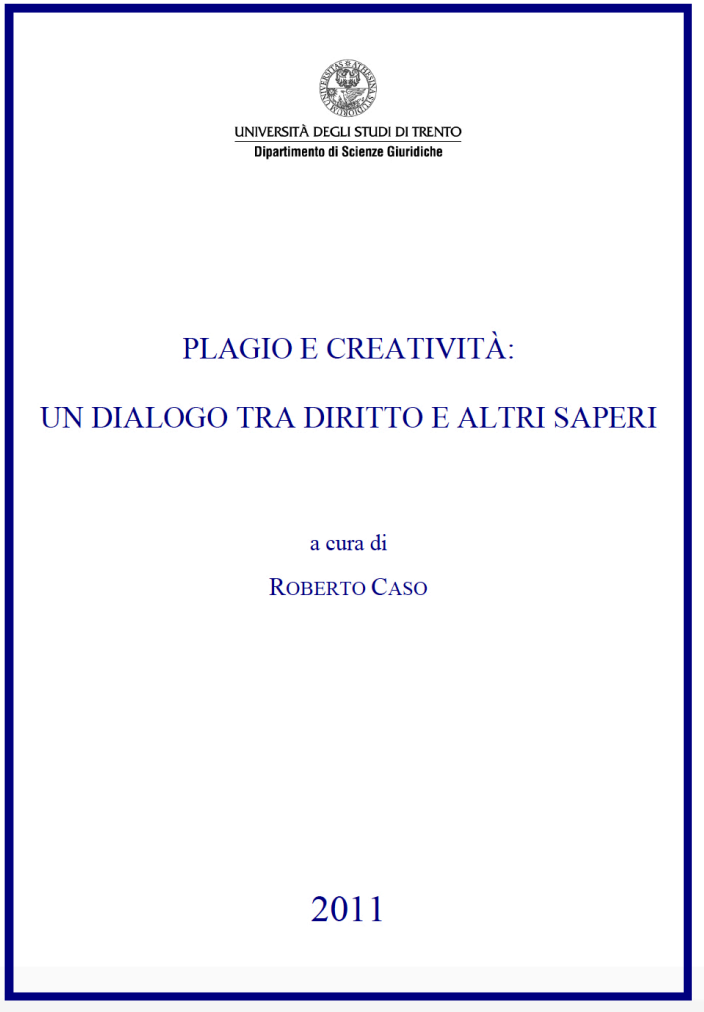
(Exclusive) Control

Formal and social norms

- Copyright law

- Social norms

Scientific publications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PLAGIO E CREATIVITÀ:

UN DIALOGO TRA DIRITTO E ALTRI SAPERI

a cura di

ROBERTO CASO

2011

Scientific Publications

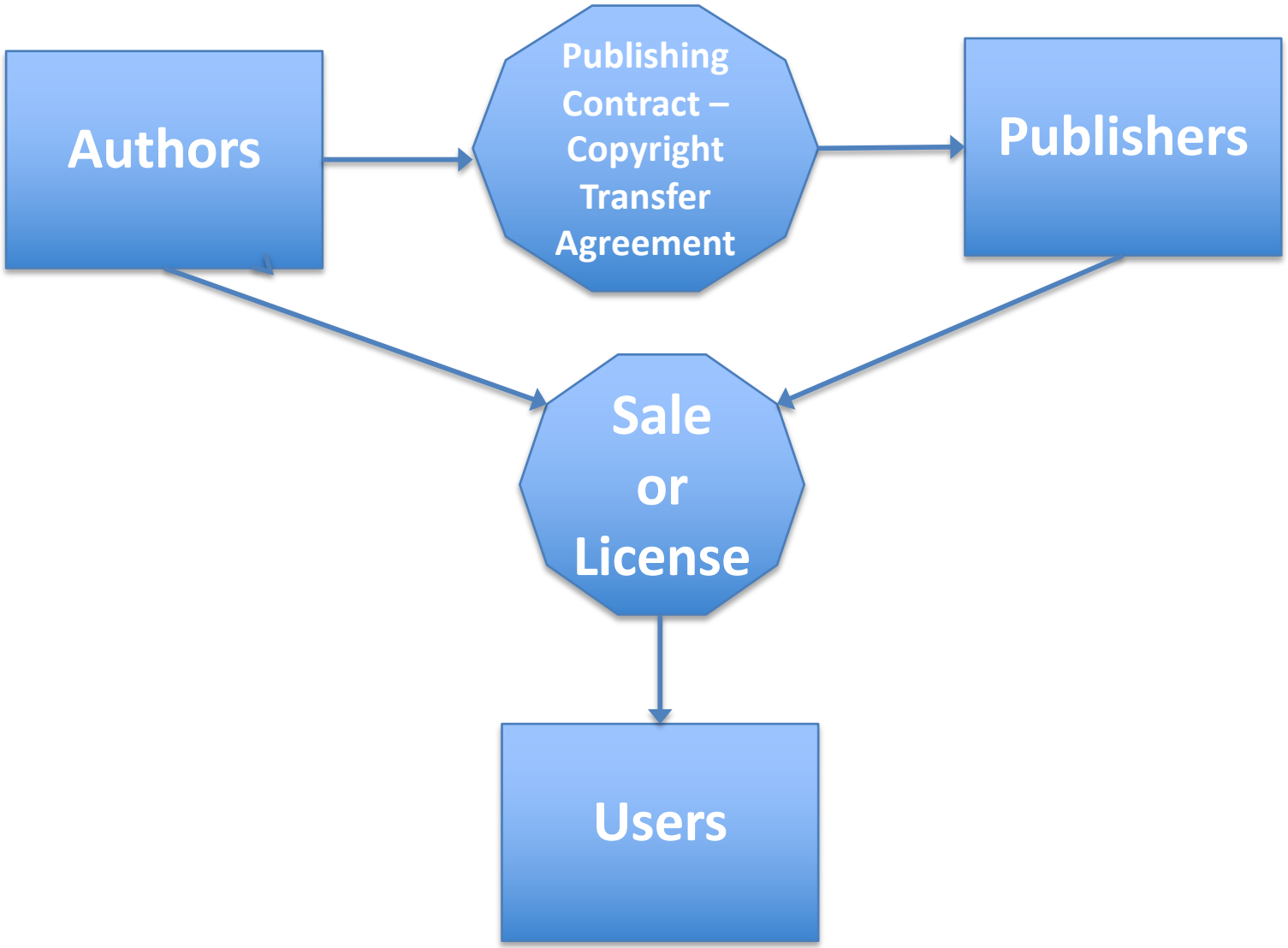
- Who is the copyright holder?
  - Default rule → the Author, but
  - by contract, the author can transfer the right to the Publisher
- How do you acquire copyright protection?
  - Creation of the work
- How do you transfer copyright?
  - Licenses/Assignments
  - Publishing contracts

Publishing Agreement or Copyright Transfer Agreement

- Usually the scientific author transfers her economic copyright to the publisher without negotiation

- He/she has subject to the publisher decicional power

Contracts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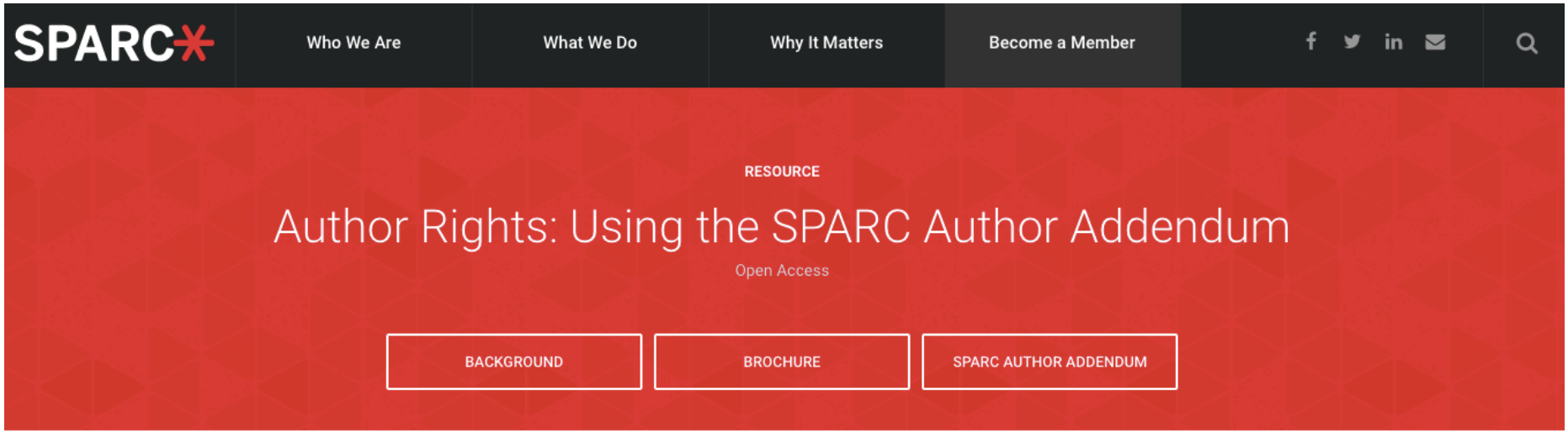

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4

Open Licenses

Exploitation and contractual tools

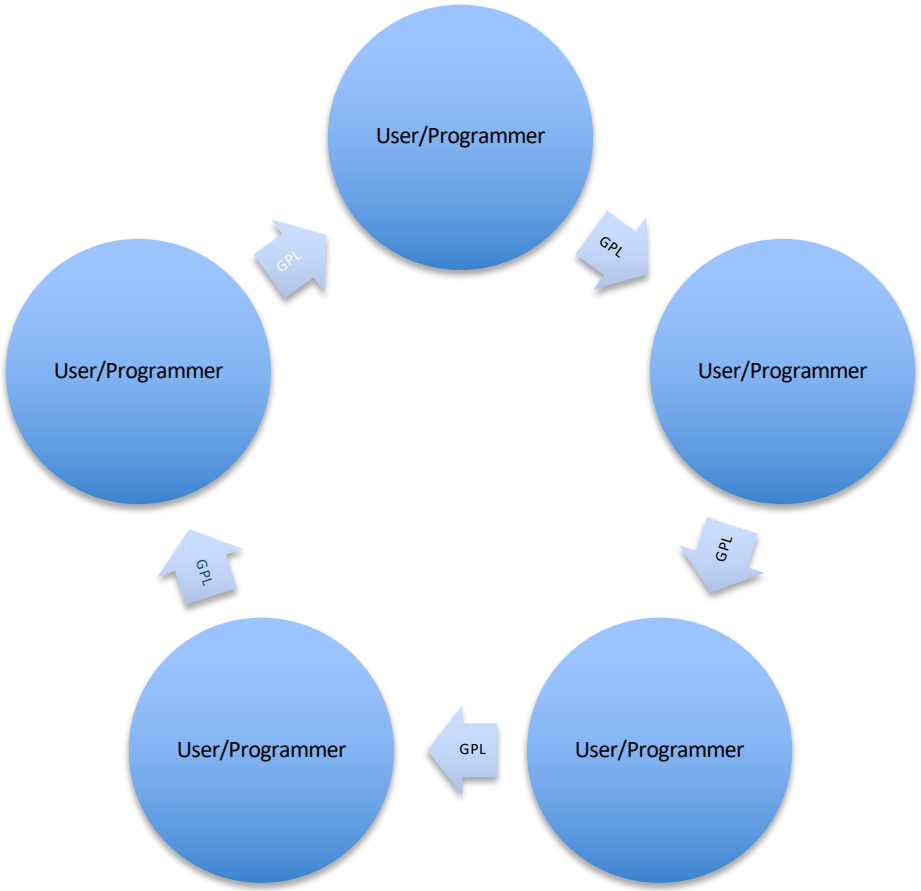
- *Assignment*
  - → full and final transfer

- *License*
  - Limited and temporary transfer
    - Exclusive license (no person or company other than the named licensee can exploit the relevant intellectual property rights)
    - Non-exsclusive license: (grants to the licensee the right to use the intellectual property, but means that the licensor remains free to exploit the same intellectual property and to allow any number of other licensees to also exploit the same intellectual property)

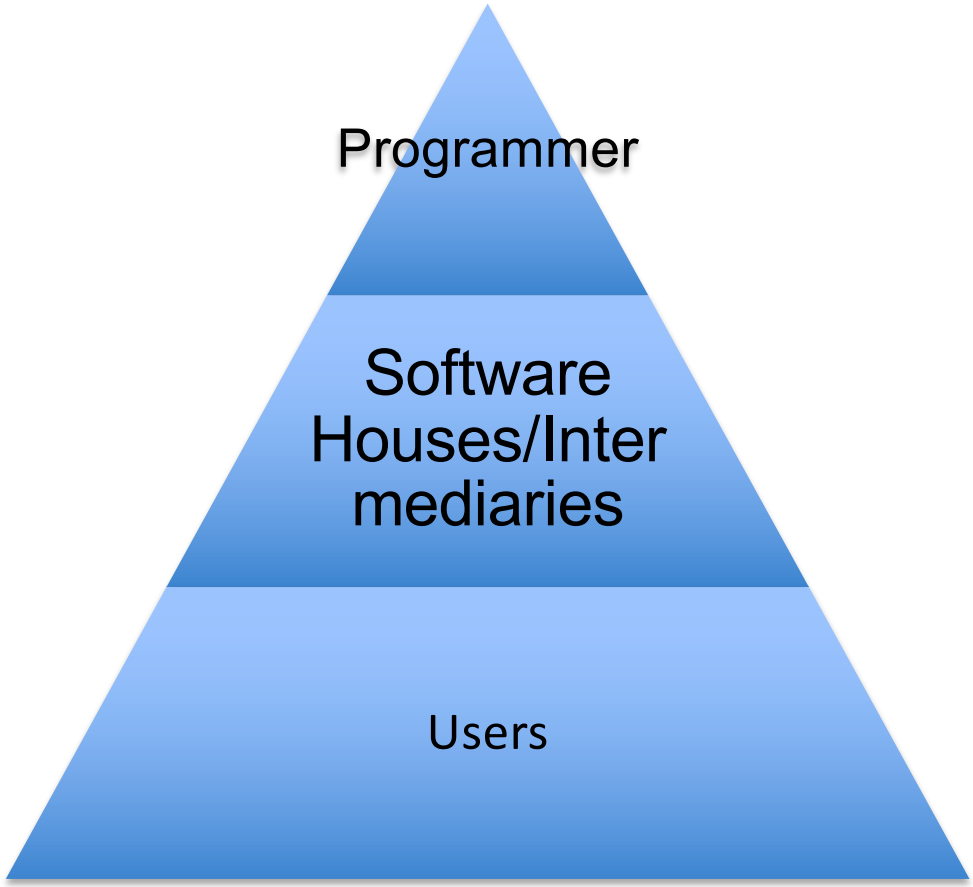
Business Models and Licenses

- Hierarchical Model
  - Based on traditional copyright
  - Proprietary License (i.e. EULA)
- Not Hierarchical Model
  - Peers play hybrid roles (i.e. software)
  - Open Licenses

Not Hierarchical Model: open logic



Hierarchical Model: fixed roles



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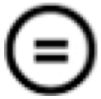
- No Derivative Works 
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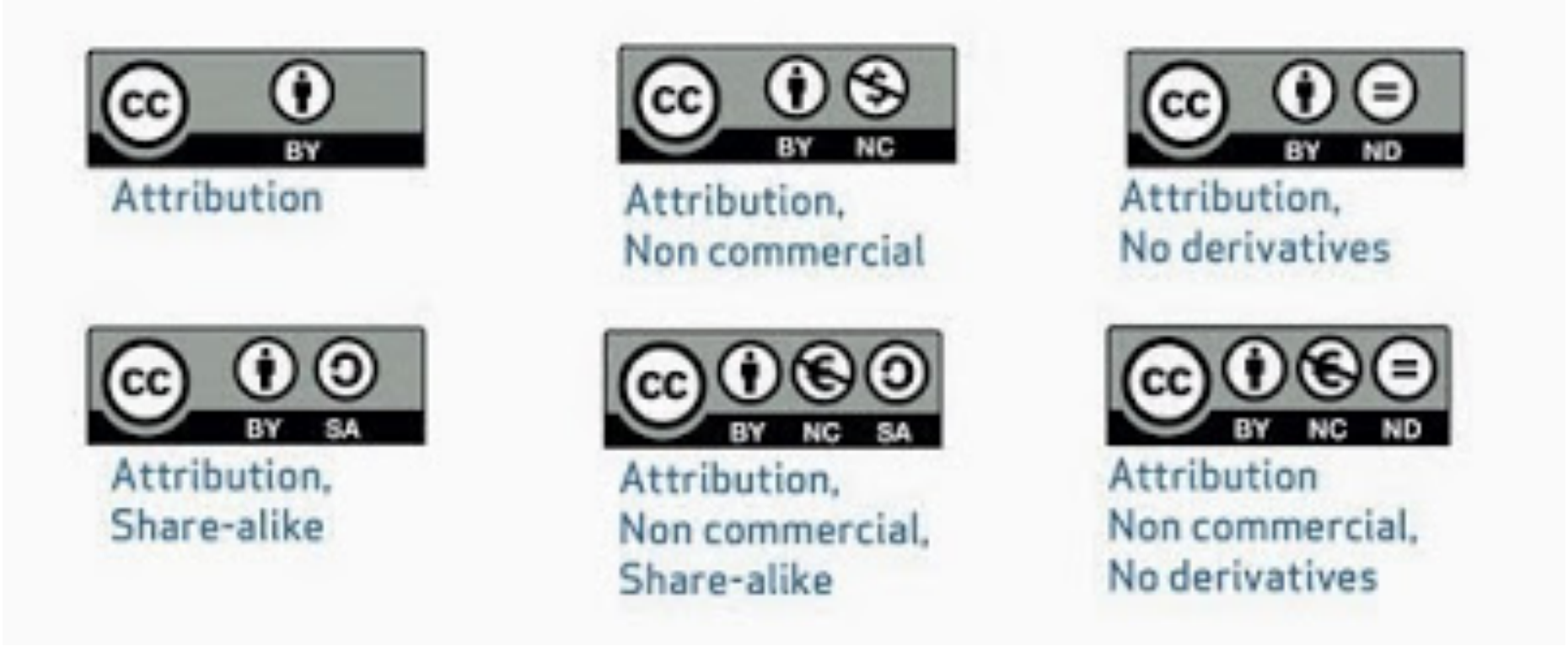
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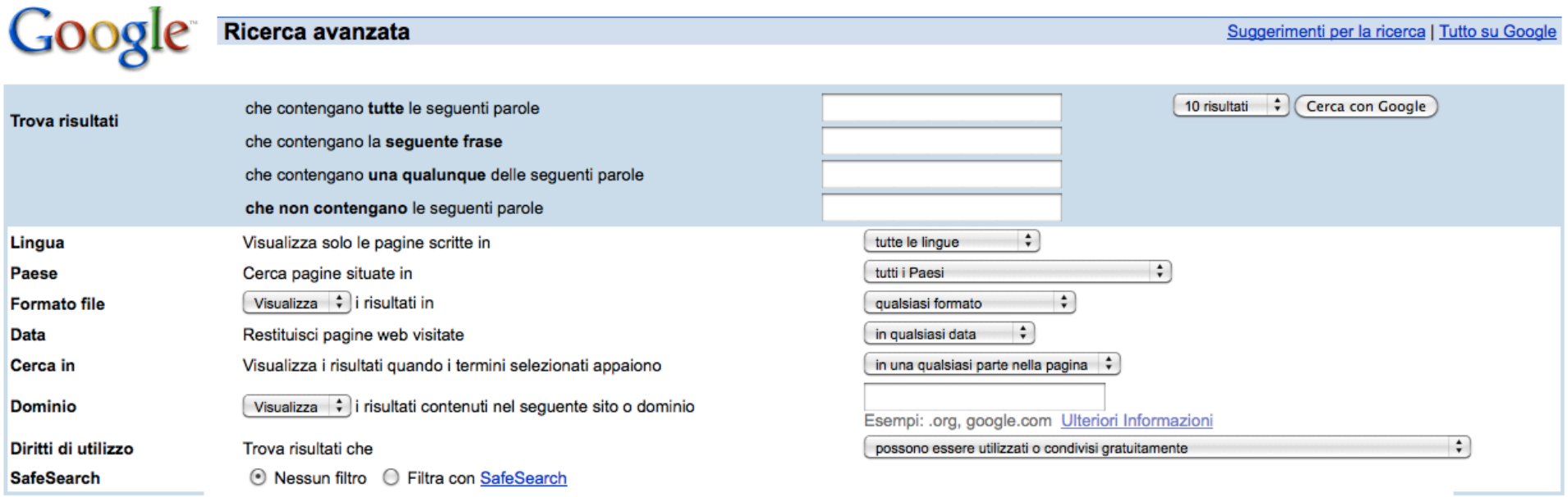
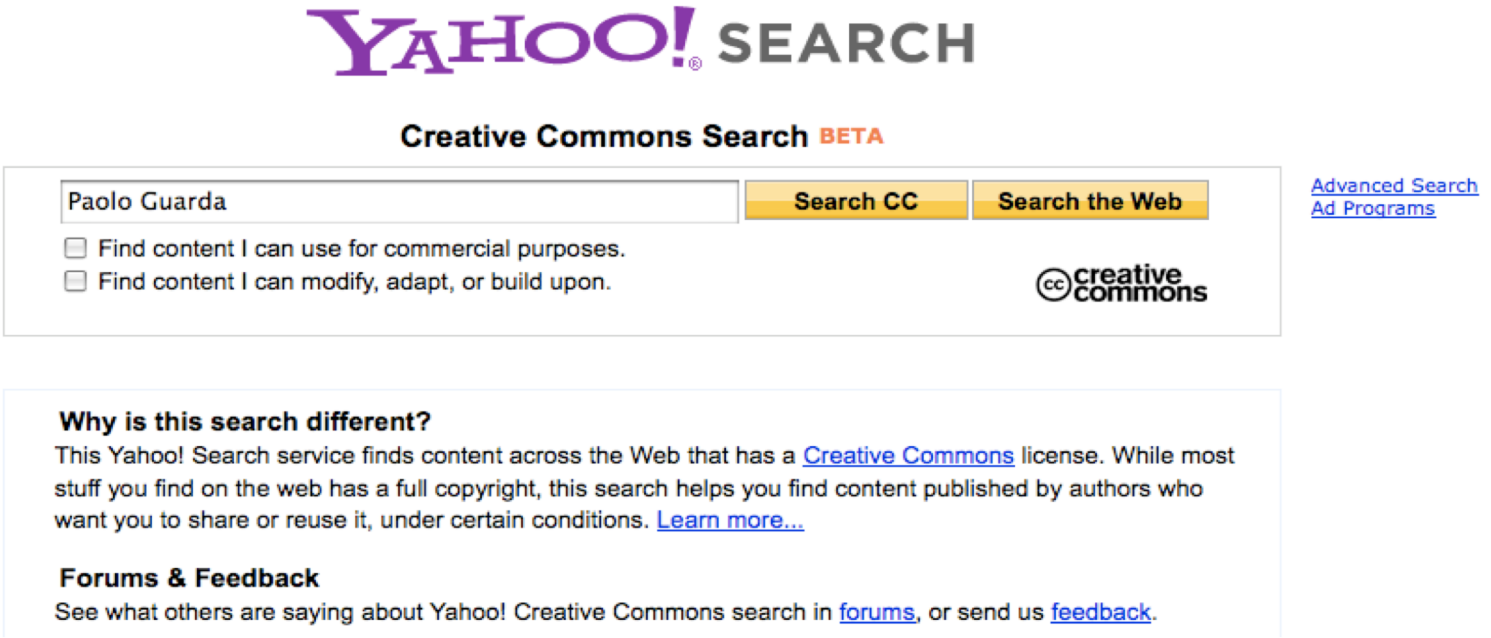
Three layers

Search engines





Thanks!

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