University of Trento

Crash Course on research funding, intellectual property and start up creation

Tuesday, 6 May 2014

Copyright, Digital Age, and Open Access to Scientific Knowledge

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Copyright Law and the Digital Age
...let’s start...

- Human creativity needs technology to express itself.

- The discipline of intellectual works is strictly related to technological developments.
  - The embryo of a legal protection of copyright takes shape at a turning point ➔ the invention of movable type printing

- The historical antecedents of modern laws on protection of intellectual works are represented by the privileges granted by the sovereign for printers.
Copyright Law

- 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 is 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 printing:
  - Classic world: Greece and Rome
  - Medieval Age: authors (and scribe), painters, sculptors, architects, musicians and theater
Copyright is a recent law

- 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)
  - Absence of the possibility of creating 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 infringement)?

- “Only when media technology and market conditions made piracy profitable could copyright arise” (P.E. Geller)
Emergence of a new revolutionary technology and its impact on the 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 copies 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: a “good” with distinguishing characteristics

- 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 for 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 Intellectual Property

- Relationship between the Gutenberg invention of the press and the legal protection of literary works:
  - Press invented in the 15th century: first Bible published in 1455
  - Privilege of the Republic of Venice (1469)
The Statute of Anne – The Authors’ Copyright

- 1710 - the Statute of Anne:
  - Declamation: “The encouragement of learning” (no reference to "property" contained in the preamble of the Bill)
  - 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
The Extension and Globalization of Copyright Law

• 1883: draft of the International Copyright Agreement

• 1886: Berna Convention for the Protection of Literary and Artistic Works


• April 15th, 1994: Annex 1C to the Marakesh Agreement: Trade Related Aspects of Intellectual Property Rights; GATT becomes the World Trade Organization

• 1996: WIPO Copyright Treaty

• ...
Copyright Law

- Copyright law grants authors an **exclusive rights** in their **intellectual works**.

- The exclusive right embraces:
  
  - **Moral rights**
    - i.e. right of attribution
  
  - **Economic Rights**
    - i.e. publication, reproduction, derivative works, etc.
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 93/98/EC, 29 October 1993: 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
Copyright in the digital age

- Until the specimens were copied with difficulty or a copy was qualitatively much lower than the original → the rules mentioned before have fulfilled the assigned task.

- The system has started to crack with
  
  - tools to easily reproduce protected works:
    
    - photocopiers,
    - tape recorders,
    - VCRs

- Epochal challenge of digital technology!
Copyright in the digital age

- Challenge of digital era with respect to the traditional patterns of protection of copyright:
  - Easy production of copies
  - Impossibility to distinguish the copy from the original by a quality point of view
  - Easiness of distribution of copies.

- Copyright laws are still there to recognize exclusive rights to creators of original works.
  - New threats and new instruments of protection.
Copyrigth in the digital age

- Digital age brings to a redefinition of the elements that characterize intellectual works:
  - Concept of work
  - Concept of author
  - Concept of creativity
The paradigmic case of software

- Machine or Symbolic Code?

- In any case, the added value lies in the utility, functionality

- Complementary and alternative protection – The Copyright Approach
The ambiguous nature of software

- Text:
  - literal elements (similarity to a work protected by copyright)

- Machine:
  - functional elements (similarity with an invention protected by patent)
Complementary and alternative protection – The Copyright Approach

- Copyright
- Contracts (License; EULA, ...)
- Unfair Competition
- Trade Secret
- Patent
  - Art. 52 European Patent Convention excludes "programs for computers" from patentability to the extent that a patent application relates to a computer program "as such" (Art. 52(3)).
  - Any invention which makes a non-obvious "technical contribution" or solves a "technical problem" in a non-obvious way is patentable even if that technical problem is solved by running a computer program.

* Sui Generis Exclusive Rights ?
Copyright in the digital age

- Forms of control of digital information
  - Contract
  - Technology
  - Copyright Law
Business Models and Licenses

1) Hierarchical Model
   - Based on traditional copyright
   - Proprietary License (i.e. EULA)

2) Not Hierarchical Model
   - Peers play hybrid roles (i.e. software)
   - Open Licenses
Not Hierarchical Model: open logic

Hierarchical Model: fixed roles

User/Programmer

User/Programmer

User/Programmer

User/Programmer

Programmer

Software Houses/Intermediaries

Users
GNU GPL
GNU GPL - Freedoms

- **Freedom 0** → The freedom to run the program, for any purpose

- **Freedom 1** → The freedom to study how the program works, and adapt it to your needs
  - Access to the source code is a precondition for this

- **Freedom 2** → The freedom to redistribute copies so you can help your neighbor

- **Freedom 3** → The freedom to improve the program, and release your improvements to the public, so that the whole community benefits
  - Access to the source code is a precondition for this
GNU GPL – Critical aspects

- Legal model based on US copyright Law

- No ported versions for different legal systems:

- Problems on Formation of the contract
  - When do you accept the agreement?

- Problems on the content
  - There are unfair terms (no warranty, limitation of freedom of contract with third parties)
  - Compatibility with Italian copyright law (art. 110 transmission of rights of use must be evidenced in writing)
GNU GPL logics

License by Name

The following licenses have been approved by the OSI via the License Review Process.

- Academic Free License 3.0 (AFL 3.0)
- Affero GNU Public License
- Adaptive Public License
- Apache License, 2.0
- Apple Public Source License
- Artistic license 2.0
- Attribution Assurance Licenses
- New and Simplified BSD licenses
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- CUA Office Public License Version 1.0
- EU DataGrid Software License
- Eclipse Public License
- Educational Community License, Version 2.0
- Eiffel Forum License V2.0
- Entessa Public License
- European Union Public License (link to every language's version on their site)
- Fair License
- Framework License
Authorship and Ownership

- The author is the creator of an intellectual work

- The rightholder is the person who is entitled to exploit the work in order to gain an economic revenue from it
  - Normally → the same person

- Problems when:
  - the work is the outcome of an employment relationship or for a special commission or order
  - in case of “collective works”;
  - in case of “joint works or works in collaboration”
Works within an employment relationship: INTELLECTUAL WORKS

- As a general rule → rights of economical exploitation belong to the employer (and not to the author) as far as the creative activity is present in the employment contract as an employee’s obligation.

- Moral rights always pertain to the author

- Teaching Exception

- Artt. 11 and 29 Italian Copyright Act
...software...

- Art.12-bis L. 633/41 (Italian Copyright Act):

  - “Save for an agreement to the contrary, the employer is the holder of the exclusive right of economic exploitation of the computer program or of database created by the employee in the execution of his/her duties or following the instructions given by his employer!”
Seneca - *Epistles*

“The best ideas are common property”
Open Access to Scientific Knowledge
Agenda

- Open Access phenomenon
- Legal Framework
- Licenses
- OA – Italian Law and Policy Unitn
Open Access
Open Access

- Many scientific communities publish their results, through Internet, on archives and journals accessible to anyone (and without a payment of a price)

- OA plays a pivotal role
  - It could make transfer of knowledge more transparent, fluid, and accessible
• Self-archived research impact is greater and faster because access is maximized (and accelerated)

1. Researcher writes pre-refereeing «pre-print»
2. Pre-print submitted to journal - Peer-review expert
3. Article accepted and published by journal
4. Article certified - Researchers can access the post-print if their university has a subscription to the journal

• Post-print is self-archived in University’s eprint archive

• Preprint is self-archived in University’s E-print Archive

• Comment and suggestion from colleagues and public
Open Access: changes

- Changing of the form of scientific publications (new literary genres).

- New “quality selection” function of publication system (impact on evaluation process)

- From traditional intermediaries (publishers, learning societies, editorial boards, etc.) to new ones (e.g. search engines, social software, Open Archives, etc.) and readers.
OA: declarations, policies, guide-lines, ...

- Budapest Open Access Initiative 2002
- Bethesda Statement Open Access Publishing 2003
- Berlin Declaration 2003 (Dichiarazione di Messina 2004; Linee guida per l'accesso aperto alle tesi di dottorato 2007)
“Open Access” to Knowledge in the Sciences and Humanities: Berlin Declaration 2003

Open access contributions must satisfy two conditions
First condition

• The author(s) and right holder(s) of such contributions grant(s) to all users a free, irrevocable, worldwide, right of access to, and a license to copy, use, distribute, transmit and display the work publicly and to make and distribute derivative works, in any digital medium for any responsible purpose, subject to proper attribution of authorship (community standards, will continue to provide the mechanism for enforcement of proper attribution and responsible use of the published work, as they do now), as well as the right to make small numbers of printed copies for their personal use.
Second condition

- A complete version of the work and all supplemental materials, including a copy of the permission as stated above, in an appropriate standard electronic format is deposited (and thus published) in at least one online repository using suitable technical standards (such as the Open Archive definitions) that is supported and maintained by an academic institution, scholarly society, government agency, or other well-established organization that seeks to enable open access, unrestricted distribution, interoperability, and long-term archiving.
Open Access: models

- **Gold road** → (natively) open journals

- **Green road** → self-archiving systems (institutional and disciplinary repositories) based on negotiated authorizations with publishers

- (Hybrid OA)
Open Access: models

**Gratis OA:** eliminates only the economic barrier to access

**Libre OA:** lower the legal barrier of restricted access
Paternity and Reputation

Attribution

Reputation: author’s name, institution’s name, repository’s name, search engine’s name

More visibility and more impact
Intellectual property vs. norms of science

- The institutional features of the production of scientific knowledge
  - not so linked to commercial dynamics
  - mostly shaped by the practices and customs of the community of scientists

- The Republic of Science (Polanyi)
  - science should be left free to govern itself
  - tension between standardization of shared knowledge by the community and originality
Informal norms governing the production of scientific knowledge

- **Universalism:**
  - Truthfulness of the results of the research is not bound to the scientist’s (national or institutional) identity

- **Communality:**
  - Knowledge is the product of collaboration among colleagues and it must be shared within scientific community

- **Disinterestedness:**
  - Scientists aspire to research the truth, not their personal interests

- **Organized skepticism:**
  - Scientists’ theories will be submitted to the critical evaluation of the community before being accepted
Scientific Researcher Goals

- Scientific results dissemination
- Visibility
- Academic Career - Publishing on high impact factor journal/review
- More university and single researcher funding
OA Weapons

• Technological standards and archives (institutional and disciplinary repositories)

• Policies

• Publishers/researchers standard forms contracts: addenda and License to Publish (Science Commons)

• Copyright holders/readers (Creative Commons Licenses)
Open Archives

- Disciplinary
- Institutional
  - metadata
Open Archives: main features

- Governance of Open Archives should pay attention to:
  - Interoperability
  - Redundancy
  - Multilingualism
  - Specific citation indexes and web searches
  - New institutional policies on OA
Disciplinary Archives, examples:

Social Science Research Network

Recent Announcements

- Announcing Finelwometrics 2010 Conference Abstracting eJournal
- Indian School of Business Joins MRN Business School Research Papers
- BePress
- Announcing 2 New ERN Research Paper Series Journals
- Announcing 3 New LSN Research Paper Series Journals
- Eurose Joins Economic Research Centers Papers
- University of the Pacific McGeorge School of Law Joins Law School Research Papers - Legal Studies
- Announcing CAAA 2010 Annual Meeting Abstracting eJournal
- Announcing New FEN Subject Matter eJournal
- Announcing 2 New and 1 Upgraded ERN Research Paper Series Journals

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Open Access and Publishing License

- Relationship among publishers and researchers/university
  - Traditional Publishing License
  - Addenda
  - License to Publish
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If the author wants to be sure that he/she retains all the rights needed for optimal access the author could use this Licence to publish. The translations of the Licence to publish are adjusted to the jurisdiction of the countries.

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Creative Commons

http://creativecommons.org/videos/wanna-work-together
Creative Commons

- The idea of GPL is extended to all the contents → Creative Commons
- Creative Commons (CC) is a non-profit organization headquartered in San Francisco, California.
- It is devoted to expanding the range of creative works available for others to build upon legally and to share
- Founded in 2001 by Lawrence Lessig, Hal Abelson and Eric Eldred.
- First set of copyright licenses → released in December 2002.
Intermediate regime between complete control (copyright) and no control (public domain)

Creative Commons defines the spectrum of possibilities between full copyright — *all rights reserved* — and the public domain — *no rights reserved*. Our licenses help you keep your copyright while inviting certain uses of your work — a "*some rights reserved*" copyright.

“*some rights reserved copyright*” !!
Features of these licenses

- The goal of intellectual property conservancies is achieved through the offering of a wide variety of licenses to protect creative works from muses.

- Main features:
  - Prepackaged
  - User-friendly
  - Modulars
Key elements of the license

- **Attribution**
  - You let others copy, distribute, display, and perform your copyrighted work — and derivative works based upon it — but only if they give credit the way you request.
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  - You let others copy, distribute, display, and perform your work — and derivative works based upon it — but for noncommercial purposes only.
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- **No Derivative Works**
  - You let others copy, distribute, display, and perform only verbatim copies of your work, not derivative works based upon it.

- **Share Alike**
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  - cc by-nc-nd = Attribution-NonCommercial-NoDerivatives
  - cc by-nc = Attribution-NonCommercial
  - cc by-nc-sa = Attribution-NonCommercial-ShareAlike
  - cc by-sa = Attribution-ShareAlike

- (pd = Dedicated to or certified to be in the public domain)
Three formats

- **Common Deed:**
  - a plain-language summary of the license, complete with the relevant icons
  - It explains the terms and conditions of the license in a simple manner

- **Legal Code:**
  - the fine print that you need to be sure the license will stand up in court
  - It is the full license

- **Digital Code:**
  - a machine-readable translation of the license that helps search engines and other applications identify your work by its terms of use
  - It provides an HTML version of the license that can be read by search engines
### Common Deed

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Open Access
Within European Union and Italy
OA: “Legal Framework”

- Research funding: FP7 – Horizon 2020
- Commission Recommendations of 17 July 2012 on access to and preservation of scientific information (2012/417/EU)

- Italian Law (Law of October 7, 2013, n. 112, section 4 §2,3,4)
Horizon 2020

Pursuant to art. 43, par. 2 Reg. UE 1291/2013 “With regard to the dissemination of results through scientific publications, open access shall apply under the terms and conditions laid down in the grant agreement. Costs relating to open access to scientific publications that result from research funded under Horizon 2020, incurred within the duration of an action, shall be eligible for reimbursement under the conditions of the grant agreement...”
29.2 Each beneficiary **must ensure open access** (free of charge, online access for any user) to all peer-reviewed scientific publications relating to its results. In particular, it must:

(a) **as soon as possible and at the latest on publication**, deposit a machine-readable electronic copy of the published version or **final peer-reviewed manuscript accepted for publication in a repository for scientific publications**;

Moreover, the beneficiary must aim to deposit at the same time the research data needed to validate the results presented in the deposited scientific publications.

(b) **ensure open access to the deposited publication** — via the repository — at the latest:

(i) on publication, if an electronic version is available for free via the publisher, or

(ii) within six months of publication (twelve months for publications in the social sciences and humanities) in any other case.

(c) **ensure open access** — via the repository — to the bibliographic metadata that identify the deposited publication.

The **bibliographic metadata** must be in a **standard format**
Model Grant Agreement

Enforcement

29.6 **Consequences of non-compliance**

If a beneficiary breaches any of its obligations under this Article, **the grant may be reduced** (see Article 43).
Law of October 7, 2013, n. 112, section 4 §2,3,4)

Implement the necessary measures for the promotion of Open Access

No financial planning for investing additional public funds in implementing OA

Articles publicly funded (50%)

To promote OA both gold road and the green road

Embargo: 18 months, technical and medical disciplines, 24 months humanities and social sciences.
University of Trento Statute,
Section 2.8:

l’Ateneo «sostiene la circolazione della conoscenza, anche attraverso l’accesso pieno e aperto alla letteratura scientifica»

Policy on OA to scholarly works

Writing works excepted those that generate royalties

“dark deposit”

→ for internal and external evaluation purposes, takes into account exclusively the works that are stored in the Repository

Republication in the Repository on a Libre or Gratis OA basis is strongly encouraged

Incentives
Section 8

In order to be admitted to the final examination PhD student MUST store the PhD T. in the Repository.

This exempting from providing hard copy to the National Library of Rome and Florence for legal deposit purposes.

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Thank you for the attention!

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