Copyright and Protection of Research Results in the Digital Age

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…let’s start…

- Human creativity needs technology to express itself.
- The discipline of intellectual work 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).

- Intellectual Property Law (patent and 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))
Manet, Olympia (by wikipedia)
Tiziano, Venere of Urbino (by Encarta)
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.
Market changes and changing rules

- 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

- New rules → regulating the relationship between first and second arrived player.
Information: a “good” with distinguishing characteristics

- Information features:
  - Immateriality
  - Inexhaustible
  - Incremental and cumulative nature ("on the shoulders of giants")

- Information → "Public Good":
  - Non rival
  - Not excludable

- A market of public goods → Market Failure
  - A situation in which an efficient market (i.e., the contract system on which it is based) cannot work and the state must intervene to correct the failure
Remedies for market failure

- State remedies for market failure:
  - Direct intervention
  - Awards and grants
  - **Monopoly/Property rights** (copyright and patents)
    - Rationale → to create artificially (ie, by the force of law) the excludibility that is missing to information in the state of nature
Copyright (or patent) is an exclusive right that allows (in theory) to apply an higher price with respect to the marginal cost.

The possibility to charge a very competitive price is an incentive to create and distribute.

A poised balance:

- The exclusive right is limited in time and extent → necessary mechanism to balance the incentive to produce inventive and creative information with access to that information.

- The timing and extent limits represent the defense of access and use of information.
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 Stationers’ Copyright

- Creation of a guild on the Venetian model (movement of legal models)
  - 1556: the Charter of the Stationers' Company was granted by Philip and Mary, the Roman Catholic successors to Henry VIII's Protestant son, Edward VI:

- Patterson: «The stationers created their copyright, shaped it to their ends, and kept control of it for themselves.»:
  - Registration of the book's title (mandatory since 1662 with the Licensing Act)
  - Perpetual monopoly
  - Delegation of enforcement and censorship
  - Policies to avoid competition
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: seizure and delivery to the rightful owner of the right to destruction; fine of one penny for every page of seized volumes
The Authors’ Copyright

- 1787 – U.S. Constitution art. 1, sec. 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”

- 1790: U.S. Copyright Act
  - A copy of the Statute of Anne
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 Scope:
  - Encourage learning
  - Promote the progress of sciences and arts
  - Dissemination of knowledge

- The Scope is achieved by:
  - Securing to the Authors an exclusive right:
    - Right to exclude others
    - Limited Times

- Compatibility between the scope and the means:
  - Importance of the limits to the right to exclude
Copyright Law

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

- The exclusive right embraces
  
  - **Moral rights**
    
    - Right of Attribution
    
    - Right against misattribution
    
    - Right to integrity of a work

  - **Economic Rights →**
Copyright Law

- **Economic Rights**
  - Exploitation of a work in tangible form:
    - Reproduction
    - Translation and adaptation
    - Distribution
  - Exploitation in intangible form
    - Public Performance (of dramatic, dramatic-musical and musical works)
    - Recitation of literary works
    - Broadcasting
Copyright Law: limits

- Limits of the exclusive right:
  - Extension:
    - Originality
  - Expression/Ideas 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).
    - Some exceptions to this rule have been made however with respect to the rental and public leading fo works.
  - Duration
**Limits: Originality and Idea/expression dichotomy**

**Originality:**

- Sec. 102 (a) Title 17 U.S. Code: “Copyright protection subsists, in accordance with this title, in original works of authorship fixed in any tangible medium of expression…”

**Idea/expression dichotomy**

- Art. 2 WIPO Copyright Treaty: “Copyright Protection extends to expression and not to ideas, procedures, methods of operation or mathematical concepts as such”.

- Sec. 102 (b) Title 17 U.S. Code: “In no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work”
Copyright protection is not perpetual, but it is limited in time. It usually lasts for the life of the author plus seventy years after her death.

When the protection of a work lapses, the work normally falls into the public domain, so everyone is free to reproduce or communicate to the public.

Thus, part of the public domain is composed of works once subject to copyright, but created so long ago that the copyright has since expired.
Duration

- Statute of Anne – 1710: 14 years (+ 14)
- U.S. Copyright Act 1790: 14 years
- Berne Convention art. 7: author's life + 50 years
- Sonny Bono Copyright Extension Act of 1998: author’s life + 70 years
Copyright Law: Fair Use

- **Section 107 Title 17 U.S.C.:** “Notwithstanding the provisions of section 106 and 106A, the fair use of a copyrighted work, including such use by reproduction in copies or phonorecords or by any other means specified by that section, for purposes like criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research, is not an infringement of copyright. In determining whether the use made of a work in any particular case is a fair use the factor to be considered shall include:

  - **the purpose and character of the use**, including whether such use is of a commercial nature or is for nonprofit educational purposes
  
  - **the nature** of the copyrighted work
  
  - **the amount and substantially portion** used in relation to the copyrighted work as a whole; and
  
  - **the effect of the use** upon the potential market for or value of the copyrighted work. The fact that a work is unpublished shall not itself bar a finding of fair use if such finding is made upon consideration all the above factors”.

CrashCourse_Copyright_Guarda_10
Limits: 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 of that work.

- Some exceptions to this rule have been made however with respect to the rental and public leading for works.
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:
  - Easiness 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.
  - These exclusive rights and their enforceability through the system of state courts lose their importance.
  - New threats and new instruments of protection.
Copyrighth in the digital age

- Digital age brings to a redefinition of the elements that characterize intellectual works:
  - Evolution of the concept of work
    - i.e. software
    - The work can change and grow over time → Hypertext
  - More complex works due to techniques of assembling different works
    - Multimedia work
Copyright in the digital age

- Evolution of the concept of author

- Evolution of the concept of creativity
  - i.e. sampling
  - Data bases
  - Forms of collaborative and distributed creation
Copyright in the digital age

- Forms of control of digital information
  - **Contract**
    - End User License Agreement
    - General Public License
  - **Technology**
    - Technological Protection Measures (TPM)
    - Digital Rights Management (DRM)
    - Trusted Computing (TC)
Copyright in the Digital Age

- **Copyright Law:**
  - Redefinition of Exclusive Right
  - Responsibilities related to the production and use of technology
  - TPM legal protection
  - Imposition of technological standards
The ambiguous nature of software

- Machine or Symbolic Code?

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

- At the beginning, the resistance of state decision makers to recognize the patent was high

- Then, the choice → copyright
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 (→ next lecture of Crash Course)
  - 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?
The Software as Intellectual Work

- USA, 1980: Computer Software Copyright Act


- TRIPS 1994, art. 10

- WIPO Copyright Treaty (WCT 1996): art. 4
Software Licences

- Software Licenses:
  - «A contract between the copyright holder and an user to let the later enjoy some author’s exclusive rights»
  - usually considered SALES of goods
  - Application of the rules regarding consumer contract
    - Possibility to limit or exclude warranty and liability only with the specific and written consent of the consumer
    - Limited freedom of contract
    - Shrink-wrap licenses are probably NOT binding
    - BUT: there are no court decisions against End User LicensAgreement
End User License Agreement

- Proprietary Software

- A license to use one or more copies of software, but the ownership of those copies remains with the software publisher

- Document or electronic record that accompanies each (object code) copy of the program, which specify the scope of the end user’s legal right to make use of that software. If the end user uses computer program code in some way that contradicts the precepts of the license to which he is subject, he will be suit for copyright infringement.
Open Licences: GNU GPL

- No traditional Copyright – no public domain
- Richard Stalmann
  - The first version dates back 1989
- GPL → rights on copies and rights on source code
  - Standard contract
  - Preamble (It tries to be user-friendly (myth of a simplified law)):
    - Rights subject to obligations
    - No warranty
    - GPL v. TPMs
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:
  - Can it be enforced in Italy? (Actually no cases on this kind of license)

- 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)
GPL logics propagate....

Licenses by Name
The following licenses have been approved by the OSI via the License Review Process:

- Academic Free License 3.0 (AFL 3.0)
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- Apache License, 2.0
- Apple Public Source License
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- Common Development and Distribution License
- Common Public Attribution License 1.0 (CPAL)
- 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
4. Creative Commons

- [http://creativecommons.org/videos/wanna-work-together](http://creativecommons.org/videos/wanna-work-together)
Final Remarks

- First rules for the protection of copyright have been formulated with the technologies that allow copying of books in series.

- Traditional model of copyright enters into crisis because it is extremely easy to reproduce and distribute copyright works at optimum levels.

- The use of technology evolves concepts of work, the author, of creativity, ....

- The same technology can provide effective tools to safeguard the interests of authors and publishers.

- ....
References

- Reading materials:
  - L. Ray Patterson, *Copyright and “the Exclusive Right” of Authors*, 1 *Journal of Intellectual Property Law* 1 (1993)

- For further analysis:
Thank you!

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