

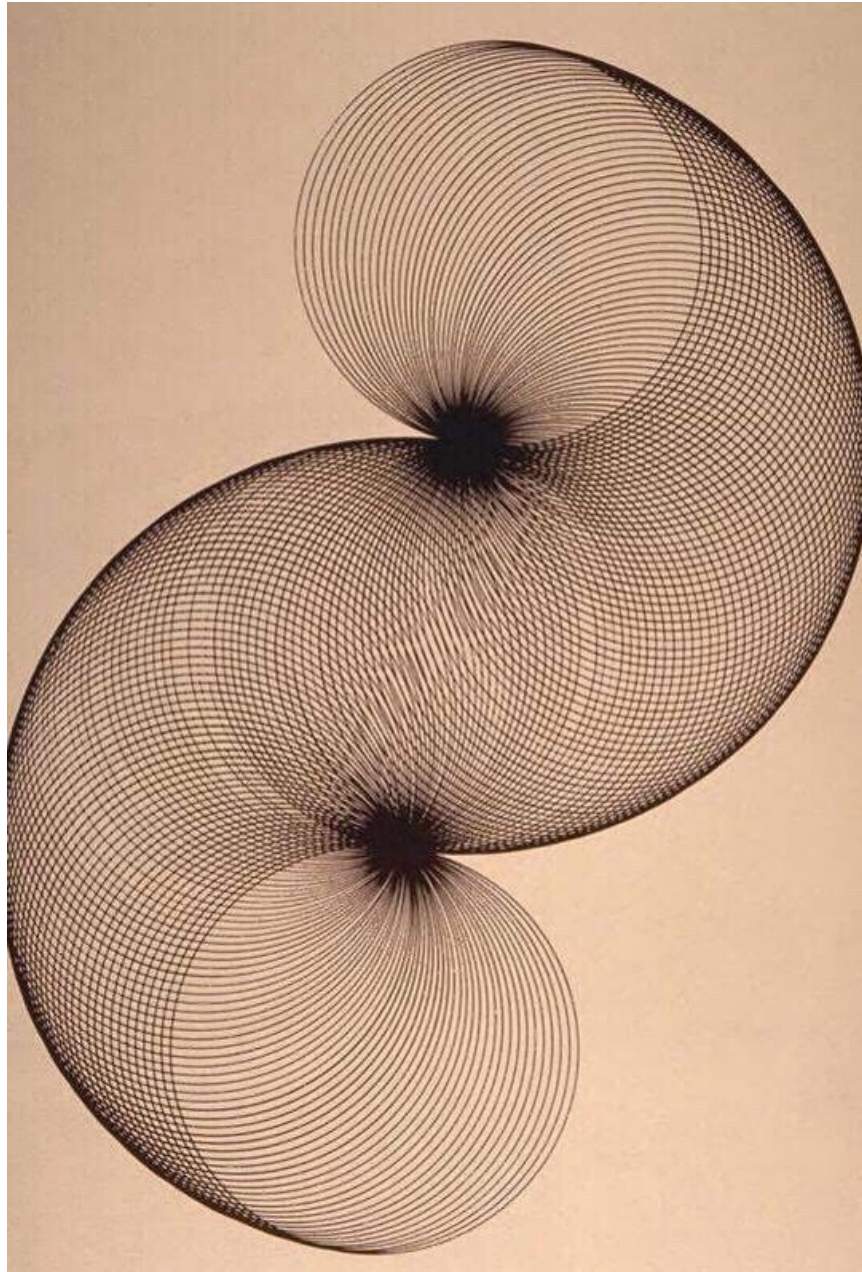
Law for Computer Scientists • Law for Computer Scientists

7. Copyright in Cyberspace

Mireille Hildebrandt

Published on: Sep 06, 2019

License: [Creative Commons Attribution 4.0 International License \(CC-BY 4.0\)](https://creativecommons.org/licenses/by/4.0/)



Bauhaus Poster Monochrome

Interestingly, we did not manage to obtain the *copyright* for this image, a famous Poster of the [Bauhaus](#) movement that had a major influence on architecture, art and design in the first half of the 20th century. Bauhaus was about ‘rethinking the world’, based on a ‘new unity between art and technology’. This monochromatic image seems to depict the recursive element (the circle) that is core the law while also drafting its progression (the spiral). Let’s see

how copyright can be situated at the nexus of law, art and technology, taking note that its enforcement may be spiralling out of control.

For computer scientists the most relevant part of copyright law concerns copyright on computer programs, or software. In this chapter I will provide an introduction to the domain of intellectual property (IP) rights, of which copyright is one – important – example. Before zooming in to copyright on software, which is the enabling precondition for the General Public License (GPL) and the open source initiative, I will first investigate the position of IP law in the context of constitutional democracy and clarify that IP law is private law.

In chapter 1 we discussed the role of law and the rule of law as both constitutive and limitative. The constitutive role can be found in the ordering of an architecture that enables individuals to flourish in society, aiming for legal certainty, justice, and the purposiveness of the law. Part of this architecture is the creation of an incentive structure, such as an economic market, that stimulates transactions that in turn stimulate productivity in terms of products and services. The attribution of IP rights supposedly creates an incentive structure for the creation of works, technical inventions, trademarks, and designs. Because these rights provide both (1) control and (2) the ability to reap financial rewards for their authors or inventors, they incentivize the creation of these immaterial goods, which would otherwise not be protected. The reason is that if such control were not created by law, it would be very hard to protect one's work or invention other than by keeping it secret. Other than tangibles and real estate intellectual goods are neither rivalrous nor exclusionary; one person accessing a work does not imply that other can no longer access it, and one person applying an invention does not reduce the extent to which another person can apply it.

The limitative role can be found in protecting citizens as deserving equal respect and concern. Intellectual property rights differ from other property rights because (1) they are limited in time and because (2) after a specified time period the work or invention will enter the public domain. Basically, the creation of IP rights ensures that the right-holders have an incentive to share their work or invention due to the rewards they will obtain, while simultaneously ensuring that such work or invention will become available for all after a certain period of time. IP law has a limitative role also in that it imposes certain restrictions on the exercise of IP rights, such as the common law doctrine of 'fair use' and the European doctrine of the home copy.

7.1 IP law as private law

In chapter 2, we discussed the difference between absolute and relative rights in private law. We did this by framing a legal system as an architecture of legal relationships, both between the state and its

legal subjects, and between those legal subjects. Ownership is an absolute right in the sense that it can be enforced against anybody, as everybody has to respect the right of the owner. A contract creates relative rights that can only be enforced against one's contracting party or parties, since contract is based on consent and only binds those who consented to enter into the contract. A contract thus creates two relative rights that the other party complies with the terms of the contract, e.g. in the case of a contract of sale: (1) one party has the right that the other party pays the price, while (2) the other party has the right that the good is delivered or the service provided.

IP law provides authors, inventors and other IP right holders with a property right in the 'intellectual good' they e.g. created or invented. In that sense IP law is private law, even if international public law plays an important role in requiring states to protect IP rights. The category of property rights includes ownership but also freehold, leasehold, servitude, right of superficies, apartment right, usufruct, pledge and mortgage, and, finally, a defined and limited set of intellectual property rights (see section 3.2.2). The set of property rights is a closed set, they cannot be created at will by way of contract. Since a property right can be enforced against anybody, everybody must be in the clear which property rights can be enforced against them. This requires some form of publicity. In the case of tangibles this is achieved by way of possession, in the case of real estate and some IP rights by way of registration. In the case of copyright, publicity is achieved by the duty to credit the author of a work and by the use of the © sign to indicate the copyright holder (which may be another legal subject than the author, for instance an employer or a publisher). Note that the © sign does not constitute copyright, it merely publicly claims the copyright.

Copyright thus provides the freedom to dispose of one's **absolute right** in a work, even though – as discussed in chapter 2 – absolute rights are limited by written and unwritten law. For instance, abuse of the legal power inherent in a property right can constitute a tort action. An example could be the use of a patent in a medical drug in a way that results in physical harm to those who cannot afford it. As mentioned above, copyright is also limited by the 'fair use' or the 'home copy' exception.

A copyright **license**, however, is a relative right. Whoever has the absolute right in a 'work', can decide to license another to exercise some of their rights, e.g. the right to reproduce and publish. This creates a legal relationship between the licensor and the licensee. As discussed in chapter 2, in the case of contract, the freedom to contract is default, but nevertheless limited by written and unwritten law. Based on the software copyright directive, for instance, the licensor cannot stop the licensee from creating a backup if that is necessary to run the program. Based on the case law of the CJEU, the licensor cannot stop the licensee from 'performing acts necessary to observe, study or test the functioning of the program, as long as these acts do not infringe the copyright in that program'.¹

Another relative right that may be at stake in the case of copyright is the right to compensation or the right of injunctive relief in the case of a tort. This is highly relevant when third parties violate a right-

holder's copyright by illegally uploading or downloading works to which they have no right. Such tort liability would require the right-holder to provide evidence of wrongfulness, damage and causality (if suing for compensation), whereas the defendant may claim that they had an excuse (e.g. that they were not aware that they were violating the copyright as they wrongly but reasonably assumed it was put in the public domain by or on behalf of the right holder). Even more topical, a right-holder may sue an intermediary for wrongfully facilitating others that violate the copyright. Think of *The Pirate Bay* and the many attempts to obtain court orders prohibiting *The Pirate Bay* from enabling to upload and download protected content, or court orders that impose an obligation on internet service providers (ISPs) to filter and/or block all traffic to *The Pirate Bay*. Note that copyright-holders are often officially represented by a legal person that has the statutory goal of defending their rights, as they often lack the means to file complaints by themselves.

The interaction between the absolute and relative rights in a 'work' can be complex. For instance, as I will explain in section 7.5 below, a **GPL license** obliges those who share a work to only share under the conditions of the specific license. If a licensee violates this obligation, the licensor could sue for breach of contract, but if there was no copyright, the original licensor would not be able to enforce the relevant conditions against third parties. Precisely because copyright is an absolute right, it will follow the protected good (*droit de suite*), irrespective of subsequent licensing. In that sense, the protection of 'free software' that is offered by a GPL license, depends on the property right that underpins the license.

7.2 Overview of IP rights

As related above, there is a closed set of IP rights. Though this chapter focuses on copyright, this section offers a succinct overview of the various types of IP that are most relevant. Note that neither a discovery nor an idea can be protected; protection is limited to the 'expression of an idea in a certain medium', or to an invention that is not merely a discovery.

7.2.1 Copyright

Generally speaking, two types of copyright must be distinguished. First, the moral right of the author to be credited with their authorship; this is an absolute right in the sense that it can be enforced against anyone and everyone and it is not transferable. Second, the economic rights that (1) enable the sale or licensing of a copyright (this is an absolute right that can be enforced against anyone and everyone and it is transferable), and (2) allow the use of e.g. a software license (this is a relative right that can only be enforced against the licensor).

Sometimes, the difference between the absolute and the relative right becomes blurred. In Oracle/Usesoft,² the CJEU determined that the sale of a copy of a software program with unlimited

usage rights must be qualified as a sale (transfer of ownership) even if the contract speaks of a licence to use.

Copyright is the exclusive right to reproduce, distribute and publish a ‘work’, created by an author. Note that in continental European law, the right is called ‘author’s right’ instead of ‘copyright’. Section 7.3 will explain the difference. Copyright is limited in time and jurisdiction; the time period is determined in national jurisdiction. A copyright concerns ‘an expression in a particular medium’. In most jurisdictions, the right is attributed automatically once the ‘work’ is created.

Besides the copyright in a ‘work’ in general, we have specific copyrights in ‘design’, in ‘databases’ and in ‘software’ (note that in the US one can obtain a patent in software, whereas in Europe that is only possible if the software is part of an ‘invention’ that has a material component).

Sections 7.3 and 7.4 will further explore copyright.

7.2.2 Patents

Like copyright, a patent is limited in time and jurisdiction. The time period during which a patent is valid again depends on national jurisdiction. To qualify as a patent the intellectual good must be:

1. An invention
2. that is novel
3. and has an industrial application.

In other words, to create the legal effect of being protected as a patent, these three legal conditions must apply (they are cumulative). The legal effect of being qualified as a patent is that the right-holder has the exclusive right to commercial exploitation, though only if a fourth legal condition has been fulfilled, which stipulates that an application must be filed with disclosure of the novel invention and its industrial application. Whoever is the first to apply obtains the patent. Here, the patent differs from copyright as this is automatically attributed when a work has been created; a patent is not automatically attributed when an invention is both novel and has an industrial application. The patent office that registers the application will not investigate whether the applicant is ‘really’ the person who invented the application and neither will it register two patents if a second person proves that they ‘really’ invented the same application. If one considers investing in the industrial application of an invention it is wise to first check whether a patent has already been registered, as in that case the commercial exploitation will be an exclusive right of whoever registered first. If one finds that an invention has been ‘stolen’ and registered the only way to obtain compensation is to initiate a tort action. Note that oftentimes more than one patent applies to one industrial application. In that case each right-holder can prohibit commercial exploitation by others, meaning that whoever wishes to develop a business model for the application will have to secure permission from all other right-

holders. In that sense a patent includes the right to exclude that overrides another's right to exploit (the same goes for joint copyright).

As the reader will imagine, issues with patent law concern:

1. What qualifies as an invention? Is the 'discovery' of the genetic profile of a specific gene an invention or a discovery? Or should we rephrase and ask under what conditions a genetic profile qualifies as an invention instead of a discovery? Under US patent law, the following is not considered 'patentably subject matter': natural laws, phenomena, or products or abstract ideas. In a famous US case in 1980,³ the Supreme Court found that a recombinant – man-made living - bacteria was patentable, because it was man-made (isolated, purified and its DNA recombined). In a more recent US case of 2013,⁴ the Supreme Court found that 'a naturally occurring DNA segment is a product of nature and not patent eligible merely because it has been isolated, but that cDNA is patent eligible because it is not naturally occurring'.
2. When should an invention be considered novel? In US patent law novelty requires that the invention is new, has utility and is non-obvious.
3. What counts as an industrial application?

7.2.3 Trademark

A trademark has been defined as 'signs fit to identify and distinguish a product or service' and the IP right to a trademark entails the exclusive use of such signs. As with a patent, deposition of the trademark is required.

7.3 History, objectives and scope of copyright protection

As discussed in chapter 1, before the advent of the printing press, writing was done by hand; written text concerned written manuscripts that were painstakingly copied by hand in monasteries and early universities. In those circumstances there was a clear difference between an 'authentic' original and an 'authentic' copy. Whereas paper was first invented in China by Cai Lun in 105, and woodblock printing was developed in China between the 7th and 9th century, the invention of the movable type technology that became the prevailing technology of the printing press is usually dated to Gutenberg's invention in 1450.

The proliferation of identical copies of printed text, as a result of the movable type printing press, gave rise to a curious combination of **censure** and **privileges**. Printed text was used for manifestos and pamphlets, with opinions on politics and religion not necessarily to the liking of the church or the sovereign. The urge to control such proliferation of information, drove both the Catholic Church and the sovereigns to a variety of measures meant to restrict and control the dissemination of printed text and the ideas they expressed. The Catholic Church e.g. compiled an Index of printed matter that was

considered sinful and therefore prohibited (censure). The sovereigns took to the granting of privileges or monopolies to a limited set printers (publishers), based on their willingness to censure the content in line with royal instructions. The struggle to resist and outlaw such censure on printed text took two to three centuries, finally resulting in a shift from royal privileges for e.g. a printers' guild to a subjective right of the author. The protected object of this right is the 'work'. This is neither an abstract idea (like a mathematical formula), nor the material carrier on which an idea has been expressed (a copy of a printed book), but only refers to the expression itself.

In the course of the 18th century the idea that the choice to disseminate printed text should be in the hands of the author instead of the printer or publisher, let alone the government, was consolidated in Acts of Parliament and Royal Decrees that established the right of the author to the works they create. In England, the Queen Anne Act of 1710, in France: the Royal Decrees of 1777, and in the US the Federal Copyright Act of 1790. These Acts and Decrees attributed the first authors' rights or copyrights, providing authors with the means to obtain remuneration for their intellectual 'work', while also ensuring that after a fixed period of time, the 'work' would enter 'the public domain'. In copyright law, 'the public domain' has a very specific meaning, referring to all those 'works' to which no exclusionary rights are applicable, meaning that 'the public' is free to access, reproduce, distribute and further publish such 'works'. The rise of modern copyright law thus coincided with human rights such as the freedom of expression, which includes the freedom of information.

Finally, in the 19th century 166 contracting Parties (states) negotiated a treaty, the Berne Convention of 1886,⁵ to enable the protection of copyright beyond national borders, based on a unified definition of the scope of protection. Though copyright law is national law, the Berne Convention and a number of other treaties aimed to harmonise IP protection and to ensure a certain degree of transnational protection. Art. 2 of the Berne Convention defines the object of protection, or 'protected works' as:

(1) The expression "literary and artistic works" shall include every production in the literary, scientific and artistic domain, whatever may be the mode or form of its expression, such as books, pamphlets and other writings; lectures, addresses, sermons and other works of the same nature; dramatic or dramatico-musical works; choreographic works and entertainments in dumb show; musical compositions with or without words; cinematographic works to which are assimilated works expressed by a process analogous to cinematography; works of drawing, painting, architecture, sculpture, engraving and lithography; photographic works to which are assimilated works expressed by a process analogous to photography; works of applied art; illustrations, maps, plans, sketches and three-dimensional works relative to geography, topography, architecture or science.

- (2) It shall, however, be a matter for legislation in the countries of the Union to prescribe that works in general or any specified categories of works shall not be protected unless they have been fixed in some material form.
- (3) Translations, adaptations, arrangements of music and other alterations of a literary or artistic work shall be protected as original works without prejudice to the copyright in the original work.
- (4) It shall be a matter for legislation in the countries of the Union to determine the protection to be granted to official texts of a legislative, administrative and legal nature, and to official translations of such texts.
- (5) Collections of literary or artistic works such as encyclopaedias and anthologies which, by reason of the selection and arrangement of their contents, constitute intellectual creations shall be protected as such, without prejudice to the copyright in each of the works forming part of such collections.
- (6) The works mentioned in this Article shall enjoy protection in all countries of the Union. This protection shall operate for the benefit of the author and his successors in title.
- (7) Subject to the provisions of Article 7(4) of this Convention, it shall be a matter for legislation in the countries of the Union to determine the extent of the application of their laws to works of applied art and industrial designs and models, as well as the conditions under which such works, designs and models shall be protected. Works protected in the country of origin solely as designs and models shall be entitled in another country of the Union only to such special protection as is granted in that country to designs and models; however, if no such special protection is granted in that country, such works shall be protected as artistic works.
- (8) The protection of this Convention shall not apply to news of the day or to miscellaneous facts having the character of mere items of the press.

In the course of the 20th century, IP protection became an essential part of trade agreements, resulting in an important role for the World Trade Organisation (WTO), and in the Trade-Related Aspects of Intellectual Property Rights (TRIPs) agreement that aims to establish a global regime of protection. In this book the focus will be on EU law, with some attention to US law, taking note that IP treaties are international public law even if their subject matter is private law and private law is mainly national law. This is also the reason to focus on EU jurisdiction, as it directs national law regarding copyright in the MSs.

Before investigating EU 'copyright law', I will first discuss briefly how UK and US copyright law differs from continental European 'authors' law'.

In the continental European tradition, the focus has been on the author and the work. This understanding of ‘**authors’ law**’ built on the Age of Romanticism of the 18th and 19th century, where the singularity of creative imagination of an individual author took precedence over the mundane business interests of a publisher. The idea was that ‘authors’ law’ is part of ‘**natural law**’ rather than being invented and enacted by a legislator (**positive law**). The ‘authors’ right’, in that line of thinking, is constituted by the original act of creation of the author and should not be tied to formalities (such as registration), while the ‘work’ that is created belongs to the ‘author’s domain’. This is a matter of personality rights (*droit moral* or moral right), rather than a matter of ownership (as Locke would have it).

In the **common law** that inspired the UK and the US, the focus was not on the author and their work, but on the original and the copy. This was less a matter of personality and romantic imagination than a matter of pragmatism. Copyright was simply a choice made by a legislator, rather than a natural right inherent in the author’s act of creation. This led to the requirement of registration and an emphasis on copyright as an economic, not a moral right. Here, copyright law is about the domain of the ‘work’ rather than the domain of the ‘author’, and such work is considered original in the sense of not being copied, rather than being creative or novel.

Despite these differences, copyright law – as well as patent law – is generally found to have four objectives, both in the realm of Anglo-American and in the realm of continental European law:

1. to reward the author or inventor;
2. to provide the author and the inventor with exclusionary control over the use others can make of their work or invention;
3. to incentivize investment in creative expression, invention and innovation;
4. to ensure the societal benefit of having such expression or invention in the public domain after a fixed period of time.

There is a certain tension between these goals and many IP scholars wonder to what extent current developments undermine the balancing act required to sustain all these goals. For instance, Dusollier writes, on the rhetoric of ‘remuneration-based or control-centered’ models of copyright and patent:

If that rhetoric is revealed as merely one choice amongst others, the imperative of making copyright or patent right an increasingly stronger instrument of control may well be undermined, which could ultimately resignify the meaning of intellectual property.

As to the scope of a copyright we can sum up the following control-rights:

1. Publication (communication to the public);
2. Reproduction (making a copy);

3. Distribution (of the tangible original or copy);
4. Right to prohibit 1, 2, 3;
5. Right to license others to exercise the rights of 1, 2, 3.

Note that the right-holder's exclusive right to distribution is exhausted after first sale, thus enabling the sharing of individual copies of books (and the sale of second-hand books). Under the EU Copyright Directive this does not apply to an ebook, as the right to distribution only concerns tangible copies.⁶ This is different in the case of a computer program that falls within the scope of the EU Software Copyright Directive, which should be interpreted as stipulating that the copyright is exhausted after first sale, even if software has been downloaded instead of being supplied on a tangible carrier.⁷

7.4 EU copyright law

As emphasized above, copyright law is private law and part of the national jurisdiction of the MSs. There is no European private law, even though various types of international treaties aim to solve cross-jurisdictional problems as part of International Private Law (see section 4.1.1). There is also no EU private law, even though exceptions apply when the EU legislature imposes duties on MSs to integrate private law liability into their national jurisdiction (e.g. in environmental and data protection law), which the CJEU often interprets as having an autonomous meaning based on the relevant EU directive or regulation.⁸

The EU copyright framework aims to harmonize the applicable law in the MSs, in order to ensure equivalent protection of the right-holders within the confines of the internal market, thus stimulating economic transactions across national borders within the EU. Recently, the Copyright directive has undergone a major update,⁹ involving—amongst others—the imposition of two highly controversial legal obligations on ISPs (paraphrased as a 'link-tax' and a 'private policing' obligation, which I will briefly discuss under 7.4.1.6).

7.4.1 The copyright directive and the enforcement directive

The legal framework of EU copyright law is based upon the EU copyright directive and the IP enforcement directive.¹⁰ Both the EU software copyright directive, and the EU database directive are a *lex specialis*,¹¹ meaning that they provide more specific legislation for the copyright in software and that in a database. A *lex specialis* has priority over the *lex generalis* (a law with more general application), just like *lex posterior derogat legi priori*, meaning that a more recent law has precedence over previous legislation.

7.4.1.1 *The scope of protection (restrictions) and the limitations*

The Copyright directive requires MSs to offer **the following scope of protection**: the exclusive right to authorise or prohibit reproduction of a work (art. 2), the exclusive right to authorise or prohibit publication or ‘communication to the public’ of a work (art. 3), and the exclusive right to authorise or prohibit the right of distribution of an original or a copy of the work (art. 4), noting the right of distribution is exhausted after first sale with the consent of the copyright holder (art. 4.2).

Interestingly, the directive also provides legal protection against circumvention of technological measures (think of digital rights management technologies, or DRM) (art. 6 and 7). The **scope of protection** is formulated in terms of **restrictions**, as the right allows the copyright-holder to restrict others from reproducing, publishing or distributing a work without permission.

Limitations are defined in art. 5. These concern, for instance, reproduction, distribution and possibly publication for teaching, scientific research, caricature, parody or pastiche. An important limitation of copyright applies to ‘private use’, defined in art. 5.2(b) as:

Reproduction (...) by a natural person for private use and for ends that are neither directly nor indirectly commercial, on condition that the rightholders receive fair compensation

In art. 5.5 the copyright directive stipulates that limitations are only valid if they comply with the so-called triple test:

Limitations shall only be applied in

- certain special cases
- which do not conflict with a normal exploitation of the work or other subject-matter and
- do not unreasonably prejudice the legitimate interests of the rightholder.

This triple test is similar to the test required by the Berne Convention (art. 9.2), ensuring that limitations of copyright will remain exceptions, not hinder the normal exploitation while respecting the economic interests of the right-holders.

Art. 5.5 has been relevant in pivotal case law concerning the exception regarding home copies (private use), more precisely with respect to the question of whether downloading of unlawfully uploaded copies of e.g. movies or songs falls within the confines of art. 5.2(b), or must be said to violate art. 5.5.

7.4.1.2 *The home copy case of the CJEU*

In a landmark case, the Netherlands Supreme Court submitted the following preliminary questions to the CJEU:^{[12](#)}

Is the exception [mh: of private use, art. 5.2(b)] valid irrespective of whether or not the home copies were reproduced illegally, or is the exception only valid in case the copies were reproduced legally?

If the last, can the criteria of 5.5 be used to extend the scope of the exception or can it only be used to restrict that scope?

If the last, does fair compensation in the case of home copies of illegally reproduced works violate 5.5 or any other EU legal norm? Is the fact that technical means to effectively enforce a prohibition of illegal downloading relevant for the answer to this question?

The court ruled that:¹³

EU law, in particular Article 5(2)(b) of Directive 2001/29/EC (...), read in conjunction with paragraph 5 of that article, must be interpreted as

- precluding national legislation,
- such as that at issue in the main proceedings,
- which does not distinguish the situation in which the source from which a reproduction for private use is made is lawful from that in which that source is unlawful.

This meant that downloading of unlawfully uploaded content was a violation of copyright that does not fall within the scope of the home copy exception. Thereby it became clear that downloading unlawfully uploaded content was wrongful, though not necessarily a criminal offence (as this requires an explicit and prior criminalisation of the relevant wrongful conduct).

7.4.1.3 IP enforcement against intermediaries

With regard to the enforcement of copyright, the Copyright directive requires that in case of infringements, MSs foresee sanctions that are ‘effective, proportionate and dissuasive’ (art. 8.1), enable ‘action for damages and/or apply for an injunction and, where appropriate, for the seizure of infringing material devices, products or components (...)’ (art. 8.2), and make sure ‘that rightholders are in a position to apply for an injunction against intermediaries whose services are used by a third party to infringe a copyright or related right’ (art. 8.3).

The IP enforcement directive also applies. Recital (23) of that directive stipulates that right-holders should be entitled to an injunction against intermediaries. This is further elaborated in art. 8 that provides a ‘Right of information’, obliging MSs to ensure that judicial authorities may order that information is provided on infringement related actions and actors. On top of that, art. 9 foresees ‘Provisional and precautionary measures’, such as an interlocutory injunction against an intermediary to prevent further infringement.

This is where the eCommerce directive becomes relevant,¹⁴ first of all, because art. 12, 13, 14 provide that providers of ‘mere conduit’, ‘caching’ and ‘hosting’ are not liable for the content shared by third parties on their platform, unless they have been notified that such content violates e.g. copyright. This exemption of liability, however, ‘shall not affect the possibility for a court or administrative authority, in accordance with Member States’ legal systems, of requiring the service provider to terminate or prevent an infringement (art. 12.3, 13.3 and 14.3)’. In the case of a hosting company, the exemption of liability moreover does not ‘(...) affect the possibility for Member States of establishing procedures governing the removal or disabling of access to information (art. 14.3)’.

Next to these exemptions of liability for a subset of ISPs, and the fact that they can nevertheless be ordered to end access or infringement, art. 15 establishes a prohibition to impose a ‘general obligation to monitor’:

1. Member States shall not impose a general obligation on providers, when providing the services covered by Articles 12, 13 and 14, to monitor the information which they transmit or store, nor a general obligation actively to seek facts or circumstances indicating illegal activity.
2. Member States may establish obligations for information society service providers promptly to inform the competent public authorities of alleged illegal activities undertaken or information provided by recipients of their service or obligations to communicate to the competent authorities, at their request, information enabling the identification of recipients of their service with whom they have storage agreements.

The confluence of a duty to foresee that ISPs can be required to remove infringing content with a prohibition to impose a general monitoring obligation has given rise to interesting case law, balancing the right to property and an effective remedy to enforce the property right (of copyright-holders), against the right to conduct a business (of ISPs that may have to pay for filtering and blocking of infringing content) and against the rights of privacy and data protection (of data subjects whose online behaviour may be monitored to detect infringement).

7.4.1.4 Injunctions to cease unlawful sharing: *Sabam v Netlog*

In 2008, the CJEU ruled in the Promusicae case.¹⁵ An association of copyright-holders (Promusicae) requested that a telecom provider (Telefonica) provide them with the identity and physical addresses they suspected of infringing their copyright via a peer-to-peer file-sharing service. Promusicae wished to initiate civil proceedings against the suspected infringers. The CJEU found (1) that MSs are not obliged to impose an obligation to communicate personal data such as those requested, but (2) they may nevertheless impose such an obligation, taking into account the eCommerce directive, the Copyright directive, the IP Enforcement directive, the ePrivacy directive and the Data Protection

directive, while also implementing the proportionality principle that informs the balancing of fundamental rights. Though this may sound rather vague, it is actually quite precise, pointing out that a complex set of interacting parameters, derived from the relevant directives, must be applied to the case at hand in a way that does not violate fundamental rights and principles of the legal order of the EU. The precision will come into its own when the national court performs the required balancing act.

In more recent case law, the CJEU has ruled against the imposition of monitoring and filtering obligations on ISPs, based on them violating the above quoted art. 15 of the eCommerce directive. In *Sabam v Netlog*,¹⁶ Sabam represented copyright-holders, authorising usage of copyrighted material by third parties, whereas Netlog was an online social network that allowed file-sharing. Sabam had filed an injunction against Netlog to cease unlawful sharing, whereas Netlog argued that this would constitute a general obligation to monitor all its customers, as a preventative measure. The Belgium court submitted the following preliminary questions to the CJEU:

‘Do Directives 2001/29 and 2004/48, in conjunction with Directives 95/46, 2000/31 and 2002/58, construed in particular in the light of Articles 8 and 10 of the European Convention on the Protection of Human Rights and Fundamental Freedoms (...),

- **permit Member States to authorise a national court, (...)**
- on the basis merely of a statutory provision stating that “[the national courts] may also issue an injunction against intermediaries whose services are used by a third party to infringe a copyright or related right”,
- to **order a hosting service provider** to introduce,
- for all its customers,
- in abstracto and as a preventive measure,
- at its own cost and for an unlimited period,
- a system for **filtering** most of the information which is stored on its servers
- in order to **identify on its servers** electronic files containing musical, cinematographic or audio-visual work
- in respect of which SABAM claims to hold rights,
- and subsequently to **block the exchange of such files?**

Taking into account the relevant directives, the CJEU decided in considerations 42-50, that as

- IP rights are fundamental rights to property,
- a fair balance must be struck between property rights (art. 17 CFREU);
 - the freedom to conduct a business (hosting service) (art. 16 CFREU);
 - the right to protection of the personal data of the user (art. 8 CFREU);

- the user's freedom to receive or impart information and the freedom of information (art. 11 CFREU).

It then finds that such a balance precludes an injunction for Netlog to systematically, indiscriminately, preventively monitor and filter, exclusively at its expense and for an unlimited period. I leave it to the reader to carefully excavate the precise reasons for this categorically precise answer to the questions raised.

7.4.1.5 Injunctions to cease unlawful sharing: *Brein v Ziggo*

In 2017, the CJEU decided the case of *Brein v Ziggo*,¹⁷ about the lawfulness of a court order to ISPs to block The Pirate Bay (TPB). This case is about the Netherlands Foundation Brein, which represents copyright-holders, applying for a court order to ISPs Ziggo and XS4ALL, to block TPB, claiming that TPB violates copyright. The court of first instance has granted the application. The court of appeal has denied the application, because though uploading and downloading of illegally distributed content is illegal, empirical evidence shows that blocking is not effective and therefore the measure is not proportional.

In its judgement,¹⁸ the Netherlands Supreme Court notes that the CJEU has decided in *UPC Telekabel Wien*,¹⁹ that even if a measure does not rule out violation this does not necessarily imply that it cannot be proportional; instead, the CJEU found that a measure may be proportional as long as the measure makes violation more difficult and provides a clear sign that users should not engage in illegal uploading and downloading. The Supreme Court concludes from this that the court of Appeal applied a wrong criterion to test the proportionality requirement, its interpretation being too strict. The Supreme Court subsequently submits preliminary questions to the CJEU, concerning the question whether TPB itself should be considered as committing copyright infringements. This question is interpreted by the CJEU as follows:

18. By its first question, the referring court asks, in essence, whether the concept of 'communication to the public', within the meaning of Article 3(1) of Directive 2001/29, should be interpreted as covering, in circumstances such as those at issue in the main proceedings, the making available and management, on the internet, of a sharing platform which, by means of indexation of metadata relating to protected works and the provision of a search engine, allows users of that platform to locate those works and to share them in the context of a peer-to-peer network.

The Court responds:

24. It is clear from Article 3(1) of Directive 2001/29 that the concept of 'communication to the public' involves two cumulative criteria, namely an 'act of communication' of a work and the

communication of that work to a ‘public’ (...).

26. (...) That user makes an act of communication when he intervenes, in full knowledge of the consequences of his action, to give his customers access to a protected work, particularly where, in the absence of that intervention, those customers would not be able to enjoy the broadcast work, or would be able to do so only with difficulty (...)

27 (...) the concept of the ‘public’ refers to an indeterminate number of potential viewers and implies, moreover, a fairly large number of people

28. (...) according to a settled line of case-law, in order to be categorised as a ‘communication to the public’, a protected work must be communicated using specific technical means, different from those previously used or, failing that, to a ‘new public’, that is to say, to a public that was not already taken into account by the copyright holders when they authorised the initial communication of their work to the public (...)

29. (...) the profit-making nature of a communication, within the meaning of Article 3(1) of Directive 2001/29, is not irrelevant (...).

39. In the light of the foregoing, the making available and management of an online sharing platform, such as that at issue in the main proceedings, must be considered to be an act of communication for the purposes of Article 3(1) of Directive 2001/29.

43. It follows that, by a communication such as that at issue in the main proceedings, protected works are indeed communicated to a ‘public’ within the meaning of Article 3(1) of Directive 2001/29.

45. (...) In any event, it is clear from the order for reference that the operators of the online sharing platform TPB could not be unaware that this platform provides access to works published without the consent of the rightholders, given that, as expressly highlighted by the referring court, a very large number of torrent files on the online sharing platform TPB relate to works published without the consent of the rightholders. In those circumstances, it must be held that there is communication to a ‘new public’ (...).

46. Furthermore, there can be no dispute that the making available and management of an online sharing platform, such as that at issue in the main proceedings, is carried out with the purpose of obtaining profit therefrom, it being clear from the observations submitted to the Court that that platform generates considerable advertising revenues.

47. Therefore, it must be held that the making available and management of an online sharing platform, such as that at issue in the main proceedings, constitutes a ‘communication to the

public’, within the meaning of Article 3(1) of Directive 2001/29.

This results in the following decision:

On those grounds, the Court (Second Chamber) hereby rules:

The concept of ‘communication to the public’, within the meaning of Article 3(1) of Directive 2001/29/EC (...), must be interpreted as covering, in circumstances such as those at issue in the main proceedings, the making available and management, on the internet, of a sharing platform which, by means of indexation of metadata relating to protected works and the provision of a search engine, allows users of that platform to locate those works and to share them in the context of a peer-to-peer network.

7.4.1.6 *The update of the Copyright Directive*

In 2019 an update has been enacted with an eye to ‘copyright and related rights in the Digital Single Market’, which for instance provides an exception for reproductions or extractions to the extent that they are used for text and data mining.²⁰ The update caused an uproar around two other articles, notably art. 15 and 17.

Art. 15 aims to protect newspaper publishers against sharing of their content by providing them with the exclusive right to authorise or prohibit reproduction and online publication, requiring content aggregators to compensate these publishers by way of a so-called ‘link-tax’. This is deemed by many to seriously harm the freedom of information. Art. 17 aims to protect copyright holders against illegal sharing of their works via peer-to-peer sharing platforms, by overruling the exemption of liability of intermediaries of art. 14 of the eCommerce Directive. This basically requires extensive filtering of content to check whether protected content is uploaded without right. This is deemed by many to strengthen the powers of already powerful big players because they can afford to invest huge amounts of money in filtering software, whereas small players may shrink from even entering the market, fearing either huge compliance costs or high risk to incur liability for unwittingly sharing illegal content. On top of that many find the delegation of policing tasks to private companies highly problematic, as this may result in unintended censure of lawful content. The European Parliament, however, stated in a press statement that ‘[m]aking internet companies liable will enhance rights holders’ chances (notably musicians, performers and script authors, as well as news publishers and journalists) to secure fair licensing agreements, thereby obtaining fairer remuneration for the use of their works exploited digitally’.²¹

An in-depth discussion of the pros and cons of these articles is outside the scope of this book, but I encourage those interested to study the relevant articles of the directive and the relevant debates in the relevant scholarly literature.

7.4.2 The software copyright directive

The object of protection of the Software copyright directive is defined in art. 1, as a specific type of 'literary works' (within the meaning of the Berne Convention, see section 7.3), namely **computer programs**, including their preparatory design material, which concerns – as always in copyright – only the expression, not ideas or principles, including those which underlie its interfaces. Protection is only available if the program is original in the sense of being an author's own intellectual creation.

Art. 3 and 2 determine that the **right-holder** is the author of the program, defined as the **creator of the program**. However, if created by an employee, the employer is entitled to exercise all economic rights. If a group of natural persons jointly created the program, the exclusive rights will be owned jointly.

Art. 4 defines the **restricted acts** (scope of protection) with regard to a computer program due to the exclusive nature of a copyright: reproduction; translation, adaptation, arrangement, any other alteration; and distribution to the public (publication), including by way of rentals. First sale in the Community exhausts the right of distribution.

Art. 5 exhaustively defines **exceptions** to the copyright. Unless prohibited by contract, no authorisation is required for the reproduction and translation of a program if necessary for a reasonable use of the program, with the exception of the making of a backup copy which cannot be prohibited by contract insofar as necessary for the use of the program. A person who has the right to use the program is allowed to observe, study or test the functioning of a program to determine underlying ideas and principles, if done 'while performing any of the acts of loading, displaying, running, transmitting or storing the program which he is entitled to do'.

Art. 6 addresses **decompilation**, stipulating that reproduction and translation of code (as defined in art. 2) are allowed to achieve interoperability, if specified conditions are met (notably that such reproduction or translation is performed by the licensee or another person with a right to use a program; that the interoperability is not already readily available; that such reproduction or translation is confined to parts of the original program that are necessary for interoperability). Information obtained in order to achieve interoperability may not be further used for other purposes, nor be shared with others if not necessary to achieve interoperability, nor be used to create a similar program as the original one.

As the reader will note, I have not quoted the **original** articles of the directive, but paraphrased them and thus compressed their **underlying ideas**. This is risky, because it is only the **expression** in the wording of the directive that has force of law. Compression, as any computer scientist knows, implies an act of interpretation. To analyse the relevant law in terms of legal effect and legal conditions, the precise working must thereby be followed. Nevertheless, lawyers are used to such acts of compression

and interpretation, in function of clarity or speed, whilst remaining deeply aware that for decision-making the original expression is authoritative.

Nevertheless, even the original expression cannot speak for itself, requiring interpretation in the light of relevant facts to which it must be applied. As discussed above, this requires interaction between: (1) the text of the law that must be interpreted in the light of the facts, (2) the facts of a case that must be interpreted in the light of the applicable law. To further illustrate this point, I will discuss two leading cases of the CJEU with regard to the interpretation of the Software copyright directive.

7.4.2.1 Exceptions to the exclusionary software copyright: SAS v WLP

This case, [22](#) concerned the dividing lines between the exclusionary right in the object of protection and the exceptions relevant when seeking to uncover the underlying ideas and functionality of the program.

SAS developed a program for data analytics. Part of the program helps users to build their own modules which can then be used together with that same part of SAS's analytics program. World Programming Languages (SPL) sold a program that mimics the core part of SAS's program, thus creating an alternative for users of the SAS program. To protect its market share, SAS takes WPL to court for violation of its software copyright. This basically concerns the question of when reverse engineering is a violation of copyright and when it falls within the scope of the relevant exceptions.

The CJEU addressed three preliminary questions (as compressed and expressed in my own words):

1. Can the functionality of a computer program, the programming language and format of data files be construed as a form of expression, and therefore be protected as copyright?

The CJEU responds by concluding that: all forms of expression that permit reproduction of the program, including source code and object code are **protected**; the graphic user interface, the functionality of the program, the programming language, and format of data files used by a program to exploit particular functions of the program are **not protected**.

2. What is the liability of a licensee – even if they are a competitor – who acts outside the scope of that license to observe and study the functioning of a computer program in order to determine the ideas and principles behind that program?

The CJEU responds by concluding that: A licensee is entitled to observe, study or test the functioning of a software program in order to determine the ideas and principles behind any and all elements of the program, as long as the licensee does not infringe copyright e.g. by using the source code or the object code. The Court finds that this means that the licensee is entitled to determine the ideas and principles while loading, displaying, running, transmitting or storing the program. The Court also finds that

copyright owners cannot use the contractual nature of the software license to stop licensees from performing acts necessary to observe, study or test the functioning of the program, as long as these acts do not infringe the copyright in that program.

3. Does the reproduction in a program (or user manual for that program) of material described in a user manual for another (copyrighted) program constitute copyright infringement?

The CJEU concludes that: The reproduction of particular elements in a user manual for a computer program **may constitute a copyright infringement, if** the material reproduced constitutes an expression of the author's intellectual creation. Though keywords, syntax, commands, combinations of commands, options, defaults and iterations consist of words, figures or mathematical concepts by **themselves are not protected** by copyright, **they may be protected** if combined in a manner that constitutes an intellectual creation. Whether the choice, sequence and combination of words, figures or mathematical concepts is indeed an intellectual creation that constitutes a copyright in the user manual, will be **a matter of fact and degree**.

7.4.2.2 Exceptions to the exclusionary software copyright: Microsoft

This case,²³ concerns the interpretation of art. 4.2 and Article 5.1 and 2 of the Software copyright directive. It came about 'in the context of criminal proceedings brought by the (...) Department for the Prosecution of Economic and Financial Offences in Latvia against Mr Aleksandrs Ranks and Mr Jurijs Vasiļevičs, charged with the unlawful sale, as part of a criminal organisation, of objects protected by copyright, (...) having sold, through an online marketplace, used copies of computer programs stored on non-original media' (para 2 in the *Microsoft* case).

The Court reminds that the term 'sale' in art. 4.2 (exhaustion after first sale) 'must be given a broad interpretation, encompasses all forms of marketing of a copy of a computer program characterised by the grant of a right to use that copy, for an unlimited period, in return for payment of a fee designed to enable the copyright holder to obtain a remuneration corresponding to the economic value of that copy' (para 28).²⁴

The Court then decides that (...) 'it follows from the Court's case-law that Article 4.2 (...), refers, without further specification, to the 'sale ... of a copy of a program' and thus makes no distinction according to the tangible or intangible form of the copy in question' (para 35).²⁵ This implies that a lawfully downloaded copy must be considered equivalent with a copy stored on a DVD, as far as the exhaustion of first sale is concerned.

The facts of the case, however, concern the resale of a backup copy of the relevant software, because the Mr Ranks and Mr Vasiļevičs no longer had access to the original copy. They argued that as they had a right to make a backup copy in order to use the original copy (art. 5.2), they could sell such backup

copy under the exception of exhaustion after first sale of art. 4.2. The CJEU, however, finds that ‘a back-up copy of a computer program may be made and used only to meet the sole needs of the person having the right to use that program and that, accordingly, that person cannot — even though he may have damaged, destroyed or lost the original material medium — use that copy in order to resell that program to a third party’ (para 43). The CJEU therefore rules:

Article 4(a) and (c) and Article 5(1) and (2) of Council Directive 91/250/EEC of 14 May 1991 on the legal protection of computer programs must be interpreted as meaning that, although the initial acquirer of a copy of a computer program accompanied by an unlimited user licence is entitled to resell that copy and his licence to a new acquirer, he may not, however, in the case where the original material medium of the copy that was initially delivered to him has been damaged, destroyed or lost, provide his back-up copy of that program to that new acquirer without the authorisation of the rightholder.

7.5 Open source and free access

In 1983, Richard Stallman initiated the GNU project, publishing the GNU Manifesto, where he explains:

GNU, which stands for Gnu's Not Unix, is the name for the complete Unix-compatible software system which I am writing so that I can give it away free to everyone who can use it. Several other volunteers are helping me. Contributions of time, money, programs and equipment are greatly needed.

In 1985 he founded the Free software foundation (FSF), meant to develop and share software based on general public licences or GPLs.

In 1991 Linus Torvalds developed the LINUX kernel, aiming to enable software and hardware to interact. Together with the GNU software developed in the context of the GNU project, LINUX forms an operating system, though by now this is also achieved with other types of software that is not necessarily part of the GNU project. LINUX is free to use, and everyone has the freedom to contribute to its development.

In 1998 the Open Source Initiative (OSI) was founded, referring not merely to the freedom to use software, but including the necessity to disclose the source code.

The FSF defines free software in terms of 4 freedoms:^{[26](#)}

1. The freedom to run the program as you wish, for any purpose (freedom 0).
2. The freedom to study how the program works, and change it so it does your computing as you wish (freedom 1). Access to the source code is a precondition for this.
3. The freedom to redistribute copies so you can help others (freedom 2).

4. The freedom to distribute copies of your modified versions to others (freedom 3). By doing this you can give the whole community a chance to benefit from your changes. Access to the source code is a precondition for this.

To ensure that software remains ‘free software’ in the above sense, a variety of software licenses has been developed that contractually require that the software is further developed and shared ‘freely’ in the above sense. This can be done in an absolute way, meaning that: the freedom goes viral; that no restrictions are possible by subsequent users, for subsequent versions; that each derivative work is contaminated by the same requirements by means of the same license (this is referred to as ‘**copyleft**’). It can also be done in a less absolute manner, meaning that: such radical viral effect is not necessary, for instance allowing subsequent versions to be part of a proprietary licence (this is referred to as ‘non-copyleft’).

In 2001 Lawrence Lessig initiated the Creative Commons (cc), transposing the idea of Open Source to other creations (non-software). The CC have developed a set of different licences, enabling a more granular scale of control over subsequent versions of the same creative expression.²⁷

Attribution (by)

All CC licenses require that others who use your work in any way must give you credit the way you request, but not in a way that suggests you endorse them or their use. If they want to use your work without giving you credit or for endorsement purposes, they must get your permission first.

ShareAlike (sa)

You let others copy, distribute, display, perform, and modify your work, as long as they distribute any modified work on the same terms. If they want to distribute modified works under other terms, they must get your permission first.

NonCommercial (nc)

You let others copy, distribute, display, perform, and (unless you have chosen NoDerivatives) modify and use your work for any purpose other than commercially unless they get your permission first.

NoDerivatives (nd)

You let others copy, distribute, display and perform only original copies of your work. If they want to modify your work, they must get your permission first.

Figure 5. Creative Commons License Conditions







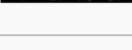
Icon ⇄	Description ⇄	Acronym ⇄	Free Cultural Works ⇄	Remix culture ⇄	Commercial use ⇄
	Freeing content globally without restrictions	CC0	Yes	Yes	Yes
	Attribution alone	BY	Yes	Yes	Yes
	Attribution + ShareAlike	BY-SA	Yes	Yes	Yes
	Attribution + Noncommercial	BY-NC	No	Yes	No
	Attribution + NoDerivatives	BY-ND	No	No	Yes
	Attribution + Noncommercial + ShareAlike	BY-NC-SA	No	Yes	No
	Attribution + Noncommercial + NoDerivatives	BY-NC-ND	No	No	No

Figure 6. Types of Licenses

In figures 5 and 6 the reader can see the kind of—limited—granularity this provides, especially when combining different conditions.

By now, similar open access models have been developed in the realm of patent law, for instance by building publicly available databases (scientific research, e.g. human genome project) to nourish the public domain, and as a defence strategy, since public release prevents patenting. This can be combined with copyleft prohibition of downstream restrictions, for instance with HAPMAP (only regards the data, not derived applications), BIOS (application to the patented invention, though improvements can be patented).

With special regard to developing countries, Benckler has proposed an equitable access licence and a neglected disease licence. Finally, we can observe further consolidation in the 2001 Budapest Open Science Initiative, the 2003 Berlin Declaration on Open Access to Knowledge in the Sciences and the Humanities, and the 2007 Science Commons.

The common core of all these varieties of open source, free software and open access models is:

1. The assertion of IP right;
2. the reverse use of exclusivity;
3. the absence of discrimination.

It is crucial to remember that CC licenses make no sense without the underlying property right in the work that is developed and shared.

References

On the history of copyright:

Rose, Mark. 1995. *Authors and Owners: The Invention of Copyright*. Reprint edition. Cambridge, Mass.: Harvard University Press.

On the nature of intellectual property rights:

Cohen, Julie E. 2014. "What kind of property is intellectual property? Houston Law Review. Symposium2014, (52) 12, 691-707.

Introduction to IP law:

Cook, Trevor. 2010. *EU Intellectual Property Law*. Oxford ; New York: Oxford University Press.

Hunter, Dan. 2012. *The Oxford Introductions to U.S. Law: Intellectual Property*. New York: Oxford University Press.

The relationship between intellectual property and creative commons:

Boyle, James. 2009. "What intellectual property law should learn from software," Communications of the ACM (52) (September), 71-76, available at <http://www.thepublicdomain.org/2009/08/26/what-intellectual-property-law-should-learn-from-software/>

Dusollier, Severine. 2007. "Sharing access to intellectual property through private ordering". *Chicago-Kent Law Review* (82), 1391-1435, available at: http://works.bepress.com/severine_dusollier/14/

Lessig, Lawrence. 2006. *Code Version 2.0*. New York: Basic Books, chapter 10

Footnotes

1. CJEU, C-406/10 (*SAS v World Programming*). [↵](#)
2. CJEU, 3 July 2012, C-128/11 (*Oracle v UsedSoft*). [↵](#)
3. Supreme Court USA, 16 June 1980, 447US 303 (*Diamond v. Chakrabarty*). [↵](#)
4. Supreme Court USA, 13 June 2013, 133 S. Ct. 2107 (*Association for Molecular Pathology v. Myriad Genetics, Inc.*) [↵](#)

5. Berne Convention for the Protection of Literary and Artistic Works 1886. [↵](#)
6. In C-263/18 the CJEU decided that making available of ebooks to subscribers must be qualified as 'communication to the public' and does not count as 'distribution' under the Copyright Directive. [↵](#)
7. In CJEU, C-128/11 (*Oracle/Usesoft*), the court determined that the sale of a copy of a software program with unlimited usage rights must be qualified as a sale (transfer of ownership) even if the contract speaks of a licence to use. [↵](#)
8. CJEU, 12 March 2002, C-168/00 (*Leitner*); CJEU, 25 October 2005, C-350/03, (*Schulte*); and CJEU, 2 June 2005, C-229/04 (*Crailsheimer Volksbank*). [↵](#)
9. Directive (EU) 2019/790 (on copyright and related rights in the Digital Single Market and amending the copyright and the database directives). [↵](#)
10. D 2001/29/EC (copyright), as amended by D (EU) 2019/790, and D 2004/48/EC (enforcement IP). [↵](#)
11. Directive 2009/24/EC (copyright software), and Directive 96/9/EC (database directive), as amended by D (EU) 2019/790. [↵](#)
12. CJEU, 10 April 2014, Case C-435/12. [↵](#)
13. CJEU, 10 April 2014, C-435/12, para 66. [↵](#)
14. Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market ('Directive on electronic commerce'). [↵](#)
15. CJEU, 29 January 2008, C-275/06 (*Promusicae*). [↵](#)
16. CJEU, 16th February 2012, C-360/10 (*Sabam v Netlog*). [↵](#)
17. CJEU, 14 June 2017, Case C-610/15 (*Stichting Brein v Ziggo*). [↵](#)
18. Netherlands Supreme Court, 13 November 2015, ECLI:NL:HR:2015:3307 (*TPB*). [↵](#)
19. CJEU 27 March 2014, C-314/12 (*UPC Telekabel Wien*). [↵](#)
20. For details, see art. 3 and 4 of D (EU) 2019/790. [↵](#)
21. News European Parliament, European Parliament approves new copyright rules for the internet, 26 March 2019, <<http://www.europarl.europa.eu/news/en/press->

room/20190321IPR32110/european-parliament-approves-new-copyright-rules-for-the-internet>. [↵](#)

22. CJEU, 2 May 2012, C-406/10 (*SAS v World Programming*). [↵](#)

23. CJEU, 12 October 2016, C-166/15 (*Microsoft*). [↵](#)

24. Referring to *UsedSoft*, at 49. See note 2 above. [↵](#)

25. Referring to *UsedSoft*, at 55. See note 2 above. [↵](#)

26. GNU website: <https://www.gnu.org/philosophy/free-sw.html#f1>. The website clarifies in footnote [1]: The reason they are numbered 0, 1, 2 and 3 is historical. Around 1990 there were three freedoms, numbered 1, 2 and 3. Then we realized that the freedom to run the program needed to be mentioned explicitly. It was clearly more basic than the other three, so it properly should precede them. Rather than renumber the others, we made it freedom 0. [↵](#)

27. <<https://creativecommons.org/share-your-work/licensing-types-examples/>>. [↵](#)