This paper has been first published in the Chicago-Kent Law Review.

# SHARING ACCESS TO INTELLECTUAL PROPERTY THROUGH PRIVATE ORDERING

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## INTRODUCTION

Intellectual property is a complex mix of different interests that either protects an intellectual creation by an exclusive and proprietary right or guarantees some free access to, and use of, an intellectual creation. The intellectual property ("IP") laws accommodate these different and often contradictory interests—oscillating between propriety and freedom; exclusivity and sharing; and privatization and socialization. Property and exclusivity are at the core of the intellectual rights—the grant of an exclusive right to the creator in her artistic work or to an inventor in her invention is the primary objective of copyright and patent laws and has all the characteristics of a private property right. Nevertheless, there are many avenues within the intellectual property regime enabling collective access to and use of protected objects. The copyright and patent regimes can equally be described as engines of public availability. The duration of patent rights and copyrights are limited, leaving, by the lapse of time, a number of intellectual creations free for everybody to use. Some products of the mind are excluded from protection—sometimes only to prevent an exploitation of an invention that would adversely harm morality or public policy but more often to ensure free and collective access.[1] Limitations on the scope of the exclusive rights conferred by patent or copyright also enable the public, in some circumstances, to use the work or invention without the fear of com-

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1. Exclusions from copyrightability and patentability are quite diverse depending on the countries. In almost all national regimes, except the United Kingdom, official texts are barred from copyright protection. A notable exclusion from patentability in Europe are inventions that would be contrary to "ordre public" or morality. The European Directive of 1998 on the Protection of Biotechnological Inventions has given some examples, including human cloning, the modification of the genetic identity of humans, or the production of chimeras. Other exclusions from patents are justified by the abstract or non-technical nature of the invention, such as algorithms or business methods, at least in the European patent system.

mitting an infringement. No intellectual right encompasses the knowledge and enjoyment of the work or invention—what one could call intellectual access to the creation. Patent law expressly protects and promotes intellectual access by imposing divulgation of the invention as a counterpart to the exclusivity. Copyright, even though more insidiously, does not reach the intellectual enjoyment of works. No exclusive right extends to the mere reception, reading, listening, or viewing of the work regardless of the increasing tendency of copyright provisions to allow for such encroachment upon private enjoyment of works.[2]

As a consequence, intellectual property regimes are not solely a field of private appropriation. Intertwined with the exclusive right of property is a public domain—realms of intellectual resources access to and use of which are collectively enjoyed by the public.[3] At least if one adopts a broad view of the public domain embracing not only what is not privatized under the intellectual property regime but what is left outside the copyright or patent and, equally important, those resources that might be copyrighted or patented but that are yet open in the sense that their use is not limited by intellectual property rules.[4] Aligning the private domain of exclusivity and the public domain of collective use within one regime of intellectual property is another way of describing the balance of interests embedded in copyright or patent laws—their inherent blend of exclusivity and collectivity.[5] This assortment of property and commons—which fundamentally distinguishes intellectual property from the traditional right of property in a tangible—is normally achieved through traditional law making and through the public ordering process which is more capable of taking into account all interests involved.

This settlement formula may certainly make some people unhappy. Copyright or patent owners might argue that their rights are too limited and make a claim for an extension of their monopoly or a strengthening of their

2. The expanding reach of copyright provisions over the mere use of copyrighted work is mainly due to the expansion of the reproduction right over temporary copies (in Europe at least) and to the legal protection of technological measures that are broadly defined to include technology controlling the use and reception of works. *See* Séverine Dusollier, *Technology as an Imperative for Regulating Copyright: From the Public Exploitation to the Private Use of the Work*, 27 EUR. INTELL. PROP. REV. 201 (2005).

3. *See* Anupam Chander & Madhavi Sunder, *The Romance of the Public Domain*, 92 CAL. L. REV. 1331, 1340 (2004); Julie E. Cohen, *Copyright, Commodification, and Culture: Locating the Public Domain*, *in* THE FUTURE OF THE PUBLIC DOMAIN: IDENTIFYING THE COMMONS IN INFORMATION LAW 121 (Lucie Guibault & P. Bernt Hugenholtz eds., 2006).

4. This view is further elaborated in Séverine Dusollier, *Mapping the Public Domain in Intellectual Property: Beyond the Metaphor of a Domain* (June 2006) (working paper, on file with the Universitaires Notre-Dame de la Paix Namur), *available at* http://www.crid.be/pdf/public/5422.pdf.

5. This balance exists in all IP regimes even if the composition of the mixture, its ingredients, or their respective parts might be different from one country to another.

rights.[6] Users of artistic works or inventions may believe that their freedom is far too narrow—that some uses should not be judged to be infringements at all. Other stakeholders might believe that their interests have not been taken into account in the overall balance. All of them can benefit from the public nature of the law-making process in a democratic society and lobby for a better consideration of their interests.

When stakeholders fail to succeed in the law-making process they still have the ability to seek recourse in other processes of lawmaking. Recent IP history is rich in examples of such "regime shifting"[7] where dissatisfied stakeholders look outside the IP regime to ensure their interests are best taken into account. IP questions are sometimes pursued in other forums not primarily in charge of such matters—demonstrated by the discussions around biodiversity that have raised the protection of sovereignty over biogenetic resources as well as the various IP aspects. Issues involving IP are often dealt with by bodies as diverse as the Food and Agriculture Organization ("FAO"), the World Health Organization ("WHO"), or United Nations' organizations in charge of human rights. Non-governmental organizations ("NGOs") have been particularly prompt to follow these non-IP strategies, with relative success.

Recourse to private ordering mechanisms has also been a favorite method for protecting one's interests beyond the protection devoted by the copyright or patent laws.[8] Generally, use of private ordering mechanisms has been a way to expand the monopoly granted by the law and to constrain or prevent the free use of resources by the public. The deployment of contracts and technological measures to pursue that goal has been thoroughly discussed in copyright doctrine,[9] a bit less in patent law.[10] Private ordering

6. As they have exceedingly and systematically done in recent years.

7. *See* Laurence R. Helfer, *Regime Shifting: The TRIPs Agreement and New Dynamics of International Intellectual Property Lawmaking*, 29 YALE J. INT'L L. 1 (2004).

8. Private ordering operates when "the rule-making process regarding the use of information is privatized, and the legal power to define the boundaries of public access to information is delegated to private parties." Niva Elkin-Koren, *A Public-Regarding Approach to Contracting over Copyrights*, *in* EXPANDING THE BOUNDARIES OF INTELLECTUAL PROPERTY: INNOVATION POLICY FOR THE KNOWLEDGE SOCIETY 191, 192 (Rochelle Cooper Dreyfuss, Harry First & Diane Leenheer Zimmerman eds., 2001).

9. *See e.g.*, Yochai Benkler, *An Unhurried View of Private Ordering in Information Transactions*, 53 VAND. L. REV. 2063 (2000); Julie E. Cohen, *Copyright and the Jurisprudence of Self-Help*, 13 BERKELEY TECH. L.J. 1089, 1090 (1998); Mark A. Lemley, *Shrinkwraps in Cyberspace*, 35 JURIMETRICS J. 311, 319 (1995); Margaret Jane Radin & R. Polk Wagner, *The Myth of Private Ordering: Rediscovering Legal Realism in Cyberspace*, 73 CHI.-KENT L. REV. 1295 (1998); Pamela Samuelson, *Copyright, Commodification, and Censorship: Past As Prologue—But to What Future?*, *in* THE COMMODIFICATION OF INFORMATION 63, 72 (Niva Elkin-Koren & Neil Weinstock Netanel eds., 2002).

10. *See, e.g.*, Dan L. Burk, *Legal Constraint of Genetic Use Restriction Technologies*, 6 MINN. J.L. SCI. & TECH. 335 (2004).

mechanisms rely upon contractual or technical means to enforce owners' rights but also to inflate their rights so as to cover uses that have been held legally non-infringing. This is done by locking up public domain works or by preventing fair uses or other limitations on the intellectual property rights. The main consequence of such private initiatives is to cause a shift from the balance embedded in the law—crafted through the law-making process—to a unilaterally determined norm of usage of intellectual assets.[11]

Most surprising is the use of private ordering mechanisms by the proponents of public access to works—the other side of the balance—to counteract IP expansion instead of intensifying it. From open-source software to open-access initiatives in artistic creation, scientific publications, or biotechnological inventions, licensing is now employed to promote a collective access to, and sharing of, intellectual resources produced and distributed through a logic opposed to proprietary exclusion.

All these private initiatives—which we can gather under the umbrella term of "open access"—share the desire to subvert the IP regime from within. Not content with lobbying against the ongoing strengthening of copyright and patent laws, proponents of open access avail themselves of private ordering to change the exercise of such rights, thereby attempting to effectively undermine them. In the open-access narrative, copyright or patent rights are exercised to share and socialize intellectual property—counter to the very meaning of the exclusivity that characterizes it. Ironically, it also signifies that the public interest in the dissemination of works and inventions is now ensured by such private initiatives, whereas intensifying IP private protection—with no proven effect on the overall public interest—is increasingly pursued by public ordering.

Similar to its use to expand intellectual property rights, private ordering deployed to enhance sharing and to open access to creations has a normative effect. On an initial level open-access licenses regulate the use of the works or inventions to which they apply. The licensee has rights and obligations arising from the license governing the intellectual asset she wants to use. More importantly, open-access licensing schemes seek to cause a normative change in the way intellectual property rights are exercised. Sharing is advocated as a new norm in copyright and patent. A powerful discourse and ideology is voiced by the open-access movement—not only do they exercise IP rights differently, they hope their model will signify a real and durable change in the law itself. In order to propagate that new ethos, open-access licenses include a trick that aims at contaminating

11. *See* Dusollier, *supra* note 2, at 203–04.

any modified or improved work or invention first licensed under such a scheme. This so-called *copyleft* feature of open-access schemes endeavors to attach the sharing norm to the intellectual resource itself—not only to the contractual parties. The copyleft feature can lead to a particular provision or regulation applying to any user of the work or invention—almost equating the contract to a right against the world. Mere private ordering tools would then seemingly gain a public-ordering dimension.

This Article aims at assessing the nature of mechanisms of lawmaking operated by open-access initiatives, as well as its normative sustainability as a project to enlarge the public domain within intellectual property. As a norm-creating process, does the private ordering method, particularly when used for sharing objectives, form a regulatory force in IP to be reckoned with? What are the ideological and legal tools deployed by such a model that could mimic a normative effect similar to that of the law? Can they contribute to give open-access licensing the features of a valid and general norm?

A second question will address the international dimension of the open-access norm making. Open-access schemes seek to operate as a global mechanism, enabling the sharing of intellectual products across borders. Since open-access advocates a global and broad availability of intellectual creations, its discourse seduces less-developed countries that imagine they could find in open access a useful tool to collectivize intellectual assets and to counteract the expansion of IP and exclusionary practices within IP.[12] Therefore, the open-access strategy might have an international impact as a norm-making process, which begs the question of its normative sustainability on a global scale. Is its international dimension sufficiently constructed and solid to rival international law making that nowadays shapes most of the intellectual property regime? Should such models that aim at reducing the IP monopolies rest upon a solid international foundation and include peculiarities of other markets and countries, they could be an alternative route (though parallel to multilateral law making) to explore for developing countries, allowing them to assess their own capability to foster national innovation. These models may allow developing countries to loosen the intellectual property corset that has constricted them since the

12. It should be noted that equating the interests of less-developed countries with the strategy of gathering intellectual property would unduly simplify the matter. For instance, the less-developed countries in the Convention on Biological Diversity of 1992 have achieved recognition of a privatization of biological resources through the sovereignty principle and the ensuing benefit-sharing rule. *See* Ikechi Mgbeoji, *Beyond Rhetoric: State Sovereignty, Common Concern, and the Inapplicability of the Common Heritage Concept to Plant Genetic Resources*, 16 LEIDEN J. INT'L L. 821, 827–28, 836–37 (2003).

enactment of the Agreement on Trade-Related Aspects of Intellectual Property Rights ("TRIPS").

Questions other than those involving the validity of the open-access initiatives as a norm-making process will not be examined. For instance, I will not discuss the possible success of this movement as a content-production process—whether open access can effectively succeed to create and propagate more open intellectual content.[13] I will also not consider whether open access can really succeed in satisfying the needs and demands of the developing countries for another IP regime.[14]

Part I of this Article discusses the development of the open-access movement and explains the different projects that were born out of it—from the pioneers in open-source software to the very recent attempts of sharing norms in the patent field. Part II will assess the nature and mechanism of the norm deployed by the open-access scenarios and will underline its unsolvable contradiction as a norm caught between a private ordering device and a public interest ideology and objective. Part III will look into the geographical scope and meaning of some open-access projects in order to consider whether and how the international dimension has been taken into account in the elaboration of the open-access norms.

## I. THE DEVELOPMENT OF PRIVATE OPEN-ACCESS INITIATIVES

Since the creation of open-source software, open-access initiatives have flourished in many fields.[15] Open-access initiatives have embraced a differing terminology—ranging from "open source" to "commons." Open source is the germinal term that has embraced a myriad of licenses governing free software. It insists on the core obligation arising from such licenses—the obligation to provide the source code of the software. The movement or licenses promoting non-proprietary software are also generally dubbed as F/OSS, standing for Free/Open-Source Software.

13. For the adequacy of the open-source model to the software environment, see Yochai Benkler, *Coase's Penguin, or, Linux and* The Nature of the Firm, 112 YALE L.J. 369 (2002). For a discussion about the use of Creative Commons in artistic creation, see Séverine Dusollier, *The Master's Tools v. the Master's House: Creative Commons v. Copyright*, 29 COLUM. J.L. & ARTS 271 (2005). For the suitability of the open-source model for biotechnology, see David W. Opderbeck, *The Penguin's Genome, or Coase and Open Source Biotechnology*, 18 HARV. J.L. & TECH. 167 (2004); Arti K. Rai, "*Open and Collaborative" Research: A New Model for Biomedicine*, *in* INTELLECTUAL PROPERTY RIGHTS IN FRONTIER INDUSTRIES: SOFTWARE AND BIOTECHNOLOGY 131 (Robert W. Hahn ed., 2005), *available at* http://ssrn.com/abstract=574863 (dealing with the biopharmaceutical industry).

14. *See, e.g.*, Shruti Ahuja-Cogny, *Interrogations on a Passion-Filled Debate on Open-Source Software and the Digital Divide*, 1 INFO. TECH. & INT'L. DEV. 60 (2004).

15. For an early example of the idea that the principles of open source could benefit other fields than software, see Ira V. Heffan, *Copyleft: Licensing Collaborative Works in the Digital Age*, 49 STAN. L. REV. 1487 (1997).

While the principles of open source have spread beyond software, these open-source initiatives have forsaken the "source" element—referred to instead as "open access" or "open content." The "source" element is not as relevant in the context of artistic creations, texts, or other types of intellectual material. "Source" is even less relevant in the patent field where one key principle is to ensure the disclosure of the invention.[16] The openness of the resource, whether such openness lies in its access or use, is emphasized.[17] Following a body of literature applying the economic concept of the "commons" to intellectual property,[18] many projects have borrowed that word to signify the newly gained communality of the resources that the open access and sharing initiatives could yield. The term "commons-based initiatives" has sometimes served to designate sharing projects in copyright or patent fields.[19]

However, the general expression "open source" is still used to encompass an ideological movement that is rooted in this first application of open sharing in the software field. Also taken from the open-source software, the term "copyleft" gained momentum in the open-access schemes and in the literature describing them. Copyleft is an ambiguous word because it can be understood in a broad or strict sense. In a broad sense, copyleft can be used as a synonym of open source or open access. It results from a play on words where copy*left* stands in a stark contrast with copy*right*—"left" versus "right"—but also progressive versus conservative, "right" as legal entitlement versus "left" as relinquishment of the property. Given its semantic opposition to copyright, the application of that terminology to non-proprietary projects in the patent field makes less sense, although copyleft has now gained a life of its own, depicting the exercise of an intellectual property right not based on exclusion.[20] In a more strict sense, copyleft refers to a particular mechanism in open-source or open-access licenses by which the anti-exclusion effect propagates along the derivative works cre-

16. Sara Boettiger & Dan L. Burk, *Open Source Patenting*, 1 J. INT'L BIOTECHNOLOGY L. 221, 224 (2004).

17. See the terminology of "open and collaborative science" used by Rai, *supra* note 13, at 132.

18. *See* LAWRENCE LESSIG, THE FUTURE OF IDEAS: THE FATE OF THE COMMONS IN A CONNECTED WORLD 84 (2001); James Boyle, *The Second Enclosure Movement and the Construction of the Public Domain*, 66 L. & CONTEMP. PROBS. 33, 37 (2003); Julie E. Cohen, Lochner *in Cyberspace: The New Economic Orthodoxy of "Rights Management,"* 97 MICH. L. REV. 462, 538–39 (1998); Ben Depoorter & Francesco Parisi, *Fair Use and Copyright Protection: A Price Theory Explanation*, 21 INT'L REV. L. & ECON. 453, 458 (2002); Eli M. Salzberger, *Economic Analysis of the Public Domain*, *in* THE FUTURE OF THE PUBLIC DOMAIN, *supra* note 3, at 27; *see also* Robert A. Heverly, *The Information Semicommons*, 18 BERKELEY TECH. L.J. 1127 (2003).

19. *See* Robert P. Merges, *A New Dynamism in the Public Domain*, 71 U. CHI. L. REV. 183 (2004).

20. Some also use the term "patent-left." *See* Janet Hope, Open Source Genetics: A Conceptual Framework 12 (May 22, 2006) (unpublished article, on file with Chicago-Kent Law Review).

ated from the original work licensed in open source. Also called the "viral nature," the copyleft effect is a key element of the norm-making machine set in motion by the open-access movement.

I will use hereafter the terminology of "open access" to embrace all sharing and commons-based initiatives.

### *A. Open-Access Initiatives in the Copyright and Patent Fields*

#### 1. Open-Source Software

The history of the open-source software is now well known and documented.[21] Reacting to the early development—along with the transformation of software into a mass commodity—of licensing practices aimed at restricting the "rights of use" of software and of the increasing closure of the source code, Richard Stallman imagined a new model of software distribution—a return to a model that would fit more closely with the habits of the programmers' community. This alternate framework was named "free software" in order to convey the necessary axiom of this new model—the freedom to access and use the software. In his founding text *Why Software Should Be Free*, Stallman explains that "[m]y conclusion is that programmers have the duty to encourage others to share, redistribute, study, and improve the software we write: in other words, to write *free* software."[22]

The history of open-source software then took different paths. Richard Stallman founded the Free Software Foundation, which has developed and continues to manage the General Public License ("GPL")—the first license embedding the free software principles. The development of the operating system Linux by a student quickly gave a market pedigree to the idea of free software, demonstrating the possible commercial success of this new model. A schism occurred in 1998 when less radical programmers launched the Open Source Initiative whose objective was to develop open-source principles that could be seen not only as a confrontation to the practices of the software industry but that could be part of a business strategy. They invented the term "open source" to emphasize not the freedom to use but the necessity to make the source code of the software available. This meet-

21. *See* LESSIG, *supra* note 18, at 49–72; Heffan, *supra* note 15, at 1490–97.

22. Richard M. Stallman, *Why Software Should be Free*, *in* FREE SOFTWARE, FREE SOCIETY: SELECTED ESSAYS OF RICHARD M. STALLMAN 119, 119 (Joshua Gay ed., 2002), *available at* http://www.fsf.org/philosophy/shouldbefree.html.

ing also gave birth to the Open Source Definition,[23] which lays down the key elements and provisions that a license should include to merit the open-source label. This definition contains ten "commandments"[24] that form a sort of label certificate. They combine the four basic freedoms that a free or open-source license should grant—(1) the freedom to run the program, for any users or purpose (e.g., for commercial purpose or not); (2) the right to get access to source code; (3) the freedom to redistribute copies; and (4) the freedom to improve the program and release improvements if wished.

The legal instrument of the open-source software is the license. One estimate is that there are more than one hundred open-source licenses in use worldwide. The GPL takes the biggest share of the licenses now employed on the market. Licenses can be classified in two categories: the copyleft or non-copyleft licenses. The copyleft licenses, to which the GPL belongs, have a viral nature. The license applies automatically—along the chain of distribution—to each new copy of software as well as to each derivative or adapted version of the software. The person responsible for a modification of the software developed and distributed in a free model is no longer able to impose restrictions other than those permitted by the original license. The free/open-source qualification of the software is said to contaminate each derivative work based on it. The objective is to prevent a piece of software written and distributed in open source from being modified and captured in a proprietary manner. In other words, the goal is to keep the software free even if it is the subject of modifications and improvements.

The copyleft provision is not a necessary feature of all open-source licenses. Some do not include such a viral effect while still fulfilling the basic definition of an open-source license. Those are the non-copyleft licenses. This distinction will have its importance in the norm-making effect of the open-source licenses.

23. *See* Open Source Initiative OSI: The Open Source Definition, http://www.opensource.org/docs/definition.html (last visited Feb. 21, 2007) [hereinafter Open Source Definition].

24. The ten commandments are (1) the redistribution of the software has to be freely allowed by the license; (2) "[t]he program must include source code, and must allow distribution in source code as well as compiled form"; (3) "[t]he license must allow modifications and derived works, and must allow them to be distributed under the same terms as the license of the original software"; (4) the integrity of the source code of each contributor can be protected by the license, e.g., by requiring derived works to carry a different name or version number from the original software; (5) "[t]he license must not discriminate against any person or group of persons"; (6) "[t]he license must not restrict anyone from making use of the program in a specific field of endeavor"; (7) "[t]he rights attached to the program must apply to all to whom the program is redistributed"; (8) the license must not be specific to a product or a particular mode of software distribution; (9) "[t]he license must not place restrictions on other software that is distributed along with the licensed software"; (10) the license must be technology-neutral and not depend upon particular technology or style of interface. *Id.*

It is important to stress the claimed interrelationship between the freedoms granted to the users of an open-source program and the values of exchange and sharing of knowledge that the computer programmers—attracted to an open-source model—argue form the core principles of programming and computer science research. The cooperative process and peer-based production of software as well as the reciprocal sharing of innovation are regularly put forward to justify the appropriateness of the free software scheme.[25]

### 2. Creative Commons

Lawrence Lessig, a well-known scholar in cyberspace law, has followed Richard Stallman and the overall open-source movement by imagining the transposition of the copyleft model at work in free software to other types of creation.[26] He founded the Creative Commons ("CC") project and organization in 2001. The main objective of Creative Commons parallels that of the free software movement—to grant basic freedoms of copying and distributing a copyrighted work to users—but has devised licenses applicable to any type of literary and artistic work and not only software.[27]

Besides developing licenses applicable outside of software, Creative Commons departs from the open-source model used in software by giving the author choices between different licenses. Each license grants diverse rights to the user. When deciding to license her work under Creative Commons, an author can choose whether she will allow the work to be modified by the user, whether she wants to limit uses of her work to non-commercial purposes, and whether she wants to oblige the user to grant the same freedom of use when the latter modifies the work and publicly communicates the derivative work. Regardless of which Creative Commons license the author chooses, a work should be attributed to its author when it is disseminated.[28]

Creative Commons offers six different licenses for the author to choose from, divided into three basic characteristics: Commercial/Non-Commercial, Derivative Works/Non-Derivative Works, and Share

25. *See* Benkler, *supra* note 13.

26. *See* LESSIG, *supra* note 18, at 177–200; LAWRENCE LESSIG, FREE CULTURE: HOW BIG MEDIA USES TECHNOLOGY AND THE LAW TO LOCK DOWN CULTURE AND CONTROL CREATIVITY 183–200 (2004).

27. *See* Creative Commons, About Us, http://creativecommons.org/about/history (last visited Feb. 21, 2007).

28. *Id.*

Alike/Non-Share Alike.[29] Each license grants a worldwide, royalty-free, non-exclusive, perpetual license to the user to reproduce, display, perform, communicate, and distribute copies of the work. Depending on the type of license selected, the right to create derivative works or to use the work for commercial purposes might also be granted. All rights not expressly granted by the licensor are reserved with the exception of limitations to copyright that are not prejudiced by the license. The so-called Share Alike licenses require that the further distribution of derivative works be made under the same license terms, which resembles the copyleft effect contained in most open-source software licenses.

Each license is then labeled with some symbols that represent the basic rights granted by the license, which help the user (due to the success of the Creative Commons project and its iconography) to immediately recognize the type of license governing the distribution of the work. Creative Commons licenses have been applied worldwide to a vast array of copyrighted works. It is now recognized as a successful project that challenges the basic assumptions of copyright regulation. To a certain extent, Creative Commons can be said to provide a useful answer to the needs of some communities of creators who might consider sharing as the normal way of disseminating their creation, whether artistic, informational, scientific or functional.[30]

### 3. Open-Source Patent

The patent field has also found inspiration in open-source initiatives. The move is more recent and differs from open access in copyright in many ways. Numerous projects have been developed, mostly in the biotechnological field.[31] Their common principle is to resist the increasing patenting of the results of biotechnological research and the ensuing fear that access either to basic research tools or to genes whose patentability is dubious might be unduly impeded.[32] Scientists and researchers have become in-

29. For a list of these licenses, basic information about each, and links to more information, see Creative Commons, Creative Commons Licenses, http://creativecommons.org/about/licenses/meet-the-licenses (last visited Feb. 21, 2007).

30. *See* Dusollier, *supra* note 13.

31. For a description of some projects, see Kenneth Neil Cukier, *Open Source Biotech: Can a Non-Proprietary Approach to Intellectual Property Work in the Life Sciences?*, 1 ACUMEN J. LIFE SCI. (2003), *available at* http://www.cukier.com/writings/opensourcebiotech.html; Robin Feldman, *The Open Source Biotechnology Movement: Is it Patent Misuse?*, 6 MINN. J.L. SCI. & TECH. 117, 122–35 (2004).

32. On the rampant commodification of scientific commons, see Michael A. Heller & Rebecca S. Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, 280 SCI. 698 (1998).

creasingly opposed to the trend of the biotech industry to patent more and more biotechnological inventions. They have developed a strong ethos of sharing and a desire to keep the scientific commons available to all.[33] This ethos's practical realization takes many forms.[34]

A primary open-access model can be found in the release of scientific research data in publicly available databases.[35] This has been the choice of many industries and research centers working in genomics. Namely, the Human Genome Project decided early on to release its data into the public domain and not to claim patent rights in any part of the genome resulting from its mapping.[36] Private companies have also endorsed a public domain policy. For example, Merck sponsored a cDNA sequencing effort whose results were promptly and publicly disclosed. Nowadays, most of the genetic databases are freely accessible.

The policy of public disclosure of genetic data was justified by ideological reasons—similar to the ethos of the software open-source community—to create a commons of genetic information free for everybody to use. But it was also interlaced with a strategy of defensive publication because the disclosure of identified sequences prevented their patenting. The open-access move was thus also used as a means to thwart an exclusionary appropriation of an invention, which is another key feature of the open-source movement.

Yet it was not considered sufficient by some. Generally, open access to cDNA databases is not restricted in any way, which gave rise to the concern that products made from such genetic information or downstream improvements might be captured by patents and removed from the public domain. For example, the rice genome project placed masses of information into the public domain, most of which enabled private companies to develop applications such as genetic markers, specific genotypes related to nutrition, new quality of fibers, or targets for herbicides for which they filed a patent application.

33. Some biotech projects also employ open-source software to annotate genome data. For example, see the Ensembl Genome Browser and the license they apply to the use of their software. Ensembl, Software License, http://www.ensembl.org/info/about/code_licence.html (last visited Feb. 21, 2007).

34. For models enhancing access to patents in the biotechnology field, other than open source, see Geertrui Van Overwalle et al., *Models for Facilitating Access to Patents on Genetic Inventions*, 7 NATURE REV./GENETICS 143 (2006).

35. *See, e.g.*, Rebecca S. Eisenberg, *Intellectual Property at the Public-Private Divide: The Case of Large-Scale cDNA Sequencing*, 3 U. CHIC. L. SCH. ROUNDTABLE 557 (1996); Alexander K. Hass, *The Wellcome Trust's Disclosures of Gene Sequence Data into the Public Domain & the Potential for Proprietary Rights in the Human Genome*, 16 BERKELEY TECH. L.J. 145 (2001).

36. On this policy and the subsequent choice not to use an open-source system, see John Sulston, *Intellectual Property and the Human Genome*, *in* GLOBAL INTELLECTUAL PROPERTY RIGHTS: KNOWLEDGE, ACCESS AND DEVELOPMENT 61, 66 (Peter Drahos & Ruth Mayne eds., 2002).

The application of open-source principles to such databases was then thought of as a way to avoid such shortcomings of public accessibility. One early example was the HapMap project, whose objective is to identify genetic variations called haplotypes which describe the common patterns of human DNA sequence variation and help researchers to detect possible causes of or susceptibility to diseases. At the beginning of the project, HapMap developed a copyleft model based on the GPL license. In order to ensure that the data remained in the public domain, the data was made available on the Internet under a license that prevented licensees from restricting access to the data or patenting any invention that could result from access to such data. The licensees could file a patent application for identified phenotypes such as disease susceptibility, drug responsiveness, or other biological utility so long as public access to—and use of—the data produced by the HapMap project was preserved.[37] Given that such an access policy preserves the openness of innovations based on the data governed by the license, it implies virality qualifying for the "copyleft" label invented in open-source software. Even though this licensing scheme has now been abandoned by the HapMap project it could still serve as a model for analysis and inspiration in other bio-databanks projects.

More radical is the proposition to apply open-source licensing principles to the patented invention itself and not only to unpatentable information or inventions whose inventors have decided not to patent. The most notable project is the Biological Innovation for Open Society ("BiOS") project, launched by the Australian organization CAMBIA.[38] CAMBIA operates in the field of agricultural biotechnology. The owner of some patents in critical crop genetics technologies, CAMBIA has opted for a licensing mechanism that would guarantee that any improvement of its technology remains free to use for all participants in the initiative. Two particular licenses have been developed: the first one covers patented plant molecular enabling technologies while a second applies to health-related technologies and is not limited to plants.[39] All BiOS agreements aim at providing for a world-wide, non-exclusive, royalty-free right to make and use the technology, and at conferring such freedoms to any improvements of the technology through a "grant-back" mechanism. Both in the HapMap and BIOS projects, improvements of the licensed technology or data can

37. *See* International HapMap Project, Data Access Policy, http://www.hapmap.org/ datarelease-policy.html.en (last visited Feb. 21, 2007) [hereinafter HapMap Data Access Policy].

38. *See* CAMBIA, http://www.cambia.org/daisy/cambia/home.html (last visited Jan. 26, 2007).

39. BiOS, What BiOS-Compliant Agreements are Available?, http://www.bios.net/daisy/bios/licenses/398/2534.html (last visited Feb. 21, 2007).

still be patented, but existing rights in such improvements cannot exclude the licensor and other licensees within the protected commons.

In a recent article,[40] scholars from Yale, including Yochai Benkler, elaborate on these commons-based practices in biotechnology and devise a twofold licensing scheme based on open access and copyleft principles to take into account two predominant concerns of developing or poorer countries regarding pharmaceutical research.[41] The first license, named the Equitable Access License, purports to include clauses in the technology transfer licenses that universities enter into with pharmaceutical companies governing drugs or pharmaceutical inventions elaborated in academic research and laboratories.[42] Such clauses would request industry licensees to allow manufacturers of generic medicines the right to sell such generic drugs in poorer countries.[43] Under the second license, the Neglected Disease License, universities could also promote research in neglected diseases (which constitute a minor part of the research occurring in pharmaceutics but a major part of diseases in less developed countries) by granting to those engaged in neglected disease research the right to use and experiment with technologies invented by such universities as well as to market derived innovations in countries afflicted with such diseases.

A viral nature characterizes both licenses. The Equitable Access License provides that any rights in an end product developed by the licensee on the basis of the technology produced by the university must be transferred to the university via a grant-back and cross-licensing structure.[44] This cross-license is restricted to the sole purpose of creating an automatic sub-license flowing from the university to any third party who wants to supply a developing country.[45] This grant-back provision also applies to any improvements made to the product covered by such license—improvements made to adapt it to the peculiar needs of patients in developing countries in a similar way and for the same limited purpose.[46] The license is not free on a monetary level since it includes a mechanism to receive royalties, albeit minimal, and to divide them between the university and the licensee. The Neglected Disease License does not necessarily re-

40. Amy Kapczynski, Samantha Chaifetz, Zachary Katz & Yochai Benkler, *Addressing Global Health Inequities: An Open Licensing Approach for University Innovations*, 20 BERKELEY TECH. L.J. 1031 (2005).

41. *Id.* at 1090.

42. *Id.* at 1094.

43. *Id.* at 1100.

44. *Id.* at 1100–01.

45. *Id.* at 1100.

46. *Id.* at 1105.

quire a viral contamination to improvements, even though the proposal imagines capturing any improvements made by the licensee on the university's technology, enabling researchers working on such diseases to freely use the tools and products developed by the university as well as any improvements.[47] Unlike the Equitable Access License, no royalty would be due to the university nor to the licensee.

By promoting free access to its patented inventions and by trying to preserve that freedom along the development of the technology, the BiOS project and the licenses dedicated to access to medicines adhere to the open access or open-source ideology,[48] even though their legal technique—the grant-back mechanism—slightly differs from the copyleft or viral feature of other open-source licenses.[49] That methodological difference will have an influence on their normative process.

### 4. Open-Access in the Field of Scientific Publications

Open-access ideology has also spread to the field of scientific publications where it has been seen as a strategy for counteracting the increasing commodification of scientific publications and the reduced availability of scientific knowledge.[50] In the realm of scientific publications, the open-access dogma has been applied by putting in place free electronic distribution of scholarly journals in almost all fields of science.

Open-access ideology in the realm of scientific publications has been aided by the Budapest Open Access Initiative. The Budapest Open Access Initiative was launched in 2001 with the aid of the Open Society Institute.[51] Its objective was to launch new journals to which access would be free and to convert old ones to open access. In 2003 many research organizations, universities, libraries, research funding agencies, and publishers signed the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities. This declaration requires authors associated with the signatories

47. *Id.* at 1110.

48. On the compatibility between this model and the norms of science and whether open-source patenting can fit with the need of the biotech industry and/or researchers' needs, see Richard R. Nelson, *The Market Economy, and the Scientific Commons*, 33 RES. POL'Y. 455 (2004); Opderbeck, *supra* note 13, at 186–89.

49. Given the power retained by the original inventor and licensor on any developments through the grant-back technique, some scholars do not consider the BiOS license a proper open-source license. On this point see Hope, *supra* note 20, at 20.

50. *See* Andrés Guadamuz González, *Open Science: Open Source Licenses in Scientific Research*, 7 N.C. J.L. & TECH. 321, 324–30, 332 (2006); Lucie Guibault, On Owning the Right to Open Up Access to Scientific Publications (Apr. 20, 2006) (unpublished article, on file with Chicago-Kent Law Review).

51. *See* Budapest Open Access Initiative, http://www.soros.org/openaccess (last visited Feb. 21, 2007).

to grant to all users a free worldwide right to access their works and requires that the works be deposited in at least one online repository enabling open access, unrestricted distribution, interoperability, and long-term archiving.[52] Its follow-on recommendation states that

> [i]n order to implement the Berlin Declaration institutions should implement a policy to: (1) **require** their researchers to deposit a copy of all their published articles in an open access repository and (2) **encourage** their researchers to publish their research articles in open access journals where a suitable journal exists (and provide the support to enable that to happen).[53]

Many open-access online journals or databases of scientific papers already existed or were born in recent years,[54] such as the European Integration online Papers ("EIoP"),[55] the Social Science Research Network ("SSRN"),[56] the Forum Qualitative Social Research,[57] the Scientific Electronic Library Online ("SciELO"),[58] the European Research Papers Archive ("ERPA"),[59] Public Library of Science ("PLoS"),[60] and BioMed Central[61] comprised of more than 120 journals. Some are specifically aimed at developing countries such as the Health InterNetwork Access to Research Initiative,[62] supported by the UN, or the Access to Global Online Research in Agriculture ("AGORA"),[63] operated by the FAO.

Such initiatives are mostly ideological manifestos—they have not yet set up any particular licensing framework for enabling open access; rather they rely on existing licensing platforms such as Creative Commons or let the authors or the open-access repositories draft their own open-access

52. For the complete text of the Berlin declaration, see Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities (Oct. 22, 2003), *available at* http://oa.mpg.de/openaccess-berlin/berlin_declaration.pdf.

53. Open Access Follow-Up Conference, http://www.eprints.org/events/berlin3/outcomes.html (last visited Feb. 7, 2007), *cited in* Guibault, *supra* note 50.

54. For a well-developed list, see Chris Armbruster, *Five Reasons to Promote Open Access and Five Roads to Accomplish It in Social and Cultural Science* 17–19 (Eur. Univ. Inst., Working Paper, Nov. 12, 2005), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=846824.

55. *See* European Integration Online Papers, http://eiop.or.at/eiop (last visited Feb. 7, 2007).

56. *See* Social Science Research Network Homepage, http://www.ssrn.com (last visited Feb. 7, 2007).

57. *See* Forum: Qualitative Social Research, http://www.qualitative-research.net/fqs/fqs-eng.htm (last visited Feb. 7, 2007).

58. *See* Scientific Electronic Library Online, http://www.scielo.org (last visited Feb. 7, 2007).

59. *See* European Research Paper Archive, http://eiop.or.at/erpa (last visited Feb. 7, 2007).

60. *See* Public Library of Science, http://www.plos.org (last visited Feb. 7, 2007).

61. *See* BioMed Central: The Open Access Publisher, http://www.biomedcentral.com (last visited Feb. 7, 2007).

62. *See* World Health Organization: Health InterNetwork Access to Research Initiative, http://www.who.int/hinari/en (last visited Feb. 7, 2007).

63. *See* Access to Global Online Research in Agriculture, http://www.aginternetwork.org/en (last visited Feb. 7, 2007).

policy. Therefore, virality is not a necessary feature of such models except when open access is embedded in licenses that impose such a contamination, such as the Creative Commons Share Alike licenses.

Science Commons,[64] a recent project born in the sphere of the Creative Commons organization, purports to build the conditions for an open and networked science.[65] It has started to develop licensing tools adapted to the field of science, but not only related to scientific journals and publications. Such licenses might include a copyleft mechanism attaching the "open" feature to all improvements and modifications of the originally licensed products.

### *B. Common Characteristics*

Despite their diversity, whether in objectives or in form, open-access initiatives present some common characteristics.

#### 1. The Assertion of the Intellectual Property Right

The purpose of open access and the transmittal of open access to a given work and its multiple byproducts is not to relinquish the work or invention into the public domain or to make it unprotected by the law. On the contrary, open-source licenses generally assert a copyright or patent right in the object they govern. Putting works, inventions, or data into the public domain or making them available with no restriction has been thought to jeopardize the sustainability of public availability. For example, releasing the results of the mapping of the genome—whether human, animal, or vegetal—has enabled many to patent applications of such genetic data. Not claiming a patent right in an invention—putting it in the public domain once published or divulged in any manner—does not prevent someone who might improve the invention to claim a patent in the improvements.

The strategy chosen by the open-source movement is to leverage the exclusive rights of copyrights or patents to guarantee and maintain the public accessibility of works and inventions and of derivative creations. In other words, commons-based initiatives "create a self-binding commons rather than an unrestricted public domain."[66]

64. *See* Science Commons, http://sciencecommons.org (last visited Feb. 7, 2007).

65. *See* JOHN WILBANKS & JAMES BOYLE, INTRODUCTION TO SCIENCE COMMONS (2006), *available at* http://www.sciencecommons.org/about/ScienceCommons_Concept_Paper.pdf.

66. Kapczynski et al., *supra* note 40, at 1072.

While there are a variety of projects and licenses purporting to promote the intellectual commons, some disparage that principle and relinquish any right in the intellectual resource—giving it to the public domain. This is the case of early genetic databases whose public domain strategy was deemed sufficient both on ethical grounds[67] and as a defensive means to block patents on the resource or data itself once divulged. In support of this view, Creative Commons also offers a license through which an author can abandon her rights and dedicate her work to the public domain (the so-called Public Domain Dedication License).[68]

In some cases there are no IP rights to assert under a license but only the contractual right itself. Open-source software, Creative Commons, or open access related to scientific publications all pertain to copyrighted works. The situation is more complicated in open-source patenting when licensing sometimes covers non-patented inventions or mere (genetic) data or discoveries. For example, the HapMap license does not have a patented invention as an object but only unpatented information. The database itself is not protected due to the lack of an internationally recognized right in non-original databases. The license does not authorize the use of the data under the exercise of a patent but only grants the access to the database under the material and *de facto* control of the project.[69] The BiOS licenses cover patented inventions but also cover the know-how related to the research tools. Such know-how is not protected by any intellectual property right but by the contract only. The absence of legal protection in the objects of those open-access licenses weakens the ground for licensing. This could be consequently considered a pure private ordering method since it creates a norm not relying on any legal entitlement conferred by public ordering. This will also have some decisive consequences for the validity of the norm-making process.

### 2. The Reverse Use of Exclusivity

Whereas traditional private ordering seeks to expand exclusivity beyond the limits of exclusive rights, commons-based private ordering enlarges freedoms of users within that very exclusivity granted by the law. An exclusive right is fundamentally a right to control the use of its object.

67. *See* Sulston, *supra* note 36, at 66.

68. *See* Creative Commons, Public Domain, http://creativecommons.org/licenses/publicdomain (last visited Feb. 7, 2007). In addition, the Creative Commons Founder's Copyright, by which an author adopts a shorter term of fourteen years for the protection of her work, after which the work enters the public domain. *See* Creative Commons, Founder's Copyright, http://creativecommons.org/ projects/founderscopyright (last visited Feb. 7, 2007).

69. *See* González, *supra* note 50, at 349–50.

In copyright it is a right to authorize or prohibit the reproduction or public communication of the work. A patent is a right to authorize or prohibit the use of the patented invention. Open access lies in the exercise of the right to *authorize* the use of the work or invention—a use that can be subject to some conditions depending on the open-access license. The author or inventor opting for an open-access scheme exercises her right not to exclude but to grant freedom to use—a freedom that is sometimes limited to some purposes or to which the obligation to grant the same freedom subsequently is attached.

The exclusivity conferred by the intellectual property right is thus conceived not as an exclusionary power but as a liberty or monopoly to decide not to engage in exclusion. This is not paradoxical if one adheres to the view that intellectual property is about exclusivity and not about exclusion—the terms not being synonymous. Exclusivity is a power to exclude but does not intrinsically lead to exclusion.

It is worthwhile to point out that copyleft licenses do go beyond the mere use of the author's or inventor's own exclusive rights in line with the arbitrary monopoly granted by copyright or patent laws. Through the viral effect of such licenses, the first creator is likely to require subsequent users to abide by the philosophy and principles of open access. Where free distribution only concerns subsequent copies of the work or use of the patented invention, the imposition of such freedom can be understood as justified by the exclusive rights of that creator. But when the principle of free access pertains to modified works or inventions based on that primary material, the free licensing scheme constrains the exercise of the exclusive rights of the subsequent creator.

Without going into too much detail on that issue, one could note that this expanded exercise of exclusivity—inasmuch as it touches upon the exclusivity of others—might raise problems in author's right countries where the moral right of divulgation entitles the author to decide when and how she wants to divulge her work. It also raises intricate issues when the derivative work is a work made-for-hire for which the employer—and in some countries the holder of the copyright in the work—might lose her right to choose proprietary models of distribution for the sole reason that her employees have included copylefted material in their own creation.

### 3. The Absence of Discrimination

Another trait of most open-access initiatives is the equal treatment of any user who wants to use the copylefted asset. The granted freedom should benefit all users whether individual, academic, or business-like and

should deploy whatever the context of use—whether the user is pursuing a commercial purpose or not. Absence of discrimination is even one of the mandatory requirements of the open-source licenses in software.[70]

The principle of equal treatment as to the users or the type of use has been qualified in some open-access schemes. Creative Commons licenses provide a good example of differentiated treatment. One of the basic choices that the author can make is to allow the freedom to use and copy only for non-commercial purposes—allowing discrimination not against the type of user but as to the purpose of use.[71] The absence of any definition of "non-commercial" in the CC license complicates the matter as there is no certainty as to what types of use are permitted.[72]

Licenses in favor of research and access to medicines for developing countries, proposed by the scholars at the Yale Law School,[73] are another example of discrimination within an open-access initiative. The objective of such licenses is to ensure that the freedom is reserved for generic manufacturers or governments that want to supply developing countries in essential medicines. The Neglected Diseases License is reserved for researchers or institutions carrying out research on such diseases. This privileged treatment has the advantage of combining for the same invention a traditional market distribution and a commons-based one based on the distinction between industrialized and poorer countries and their specific needs and means.

## II. THE AMBIGUITY OF A NORM CAUGHT BETWEEN COLLECTIVIZATION AND PRIVATE ORDERING

All open-access schemes purport to devise a new norm of sharing in intellectual property. However, relying upon a private ordering tool, such as the license, gives rise to a twofold paradox. On one hand, a collective and public change in the exercise of intellectual property is surprisingly pursued (and might be achieved) through purely private tools. On the other hand, the use of private tools qualifies somewhat the collective norm that is advocated and has equally surprising consequences on the sharing ethos at stake. This is what this section will try to demonstrate. This ambiguity between the pursued socialization of intellectual resources and the privatization that the use of licenses inherently induces is rooted both in the

70. Open Source Definition, *supra* note 23, para. 6.

71. *See* Choosing a License, http://creativecommons.org/about/licenses (last visited Feb. 7, 2007).

72. *See* Creative Commons Legal Code, http://creativecommons.org/licenses/by-nc-sa/2.5/ legalcode (last visited Feb. 7, 2007).

73. *See* Kapczynski et al., *supra* note 40, at 1035–36.

ideology of sharing that the open-access movement advocates and in the legal mechanism that enables private ordering to obtain an almost public dimension—the copyleft mechanism.

### *A. The Ideological Norm of Sharing*

Open access as a political objective ultimately aims at changing social practices in copyright and patent laws.[74] Its proponents are generally exceedingly critical of the expansion of intellectual property, which they consider to be overreaching and detrimental to the dissemination of culture, information, and the development of science and innovation. The new model they advocate for the exercise of intellectual property rights promotes free access to and use of works and inventions, so as to transform them into "commons," and to curtail copyright's and patent's overreaching and what they perceive as an increasing enclosure of the public domain. They offer "a model by which a network of independent but interconnected participants can choose to act—not to change the legal system, but to change their practices within it."[75]

All open-access projects are backed up by an ideological manifesto. Such manifestos are stronger in some projects such as in the GPL or Creative Commons licenses where the line between the use of copyright to achieve a commons agenda and the struggle against copyright itself is not always clear.[76] Such an ideological ground is sometimes rejected by open-access initiatives. One example is the foundation of the Open Source Initiative, which explicitly wanted to dissociate itself from the anti-copyright and anti-proprietary stance of Richard Stallman and the Free Software Foundation.

This ideological dimension is not as present in private ordering schemes that insist on expanding the intellectual property rights through DRM-based distribution models or constraining licenses. This ideal, lined with proselytism, is essential to deploying open-access schemes and convincing the rights owners to adhere.

This ideological foundation could also produce some subversive effects on intellectual property. The open-access licenses reenact copyright or patent laws in order to achieve another purpose. Exercising such exclusive

74. Milton Mueller, Info-communism? A Critique of the Emerging Discourse of the Property Rights in Information, Address at Governance, Regulations, and Power on the Internet, Paris (May 27, 2005), *transcript available at* http://web.si.umich.edu/tprc/papers/2005/403/Info-Communism-Mueller.pdf.

75. Kapczynski et al., *supra* note 40, at 1068.

76. *See* Dusollier, *supra* note 13, at 278, 287.

rights differently from what has become the usual, and almost normative, way could succeed in proving the artificiality of the traditional discourse in IP that tends to depict the remuneration-based or control-centered model as the normal way of exercising copyright or patent rights. 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.

The development of the sharing norm that is promoted by commons-based initiatives might be successful on two levels. The first level occurs in the ways individual rights owners feel they have to exercise their rights. At a higher level, the proliferation of such strategies might also change the law itself by inducing lawmakers to conform the law to such practices. This explains the twofold strategy that open-access promoters engage in. On the one hand, they deploy practical tools to enable sharing and marketing amongst creators and inventors. On the other hand, they lobby for legal changes of the IP regime.

The inherent limitation and weakness of the construction of the alternative norm of sharing comes from the private ordering nature of the norm. The socialization of the intellectual assets only occurs as a choice of rights owners who should be convinced by the ethics of the open-source movement. Therefore, it would be naïve to think that GPL, Creative Commons, or other similar licenses might change the exclusion-based practice of Microsoft, RIAA, Disney, Elsevier, Monsanto, or Genentech. As opposed to public ordering, open-access licensing does not bind all copyright or patent rightholders. The subjects of the copyleft "law" are limited to those who adhere to that specific model, the users of the works or inventions concerned, and, through the viral effect, possibly the improvers of such creations. The traditional law obliges all physical and legal persons in a territory. This shortcoming of the ideological construction of the open-access movements results from the very use of private ordering tools.

Beyond the somewhat imperfect capacity to really constitute a norm outside of the parties directly involved, private ordering has also a symbolic meaning that should not be neglected. In a recent article, Niva Elkin-Koren criticizes the recourse of the Creative Commons to private ordering methods, using the following argument: Claiming property rights in creative works communicates a message that information is proprietary, that it always has an owner. It strengthens the perception of informational works as commodities which are subject to exclusive rights. It reinforces the per-

ception that a license is always necessary, and that sharing is prohibited unless authorized.[77]

Her critique is valid for any open-access scheme based on licensing contracts. The narrative of property rights—backed up by contract—entails a logic of exclusion that seems to contradict the ideology of sharing that the commons-based projects promote. Niva Elkin-Koren further explains that the use of the licensing tool symbolically signals that reliance on contracts is a valid strategy in intellectual property which therefore aids the cause of private ordering for less innocuous purposes.

As I have written in another article dealing specifically with Creative Commons,[78] one could be skeptical of a strategy that uses the same tools and means of the regime it tries to dismantle. Relying on the private ordering scheme of property rights and licensing contracts installs a logic of fencing in intellectual assets despite its intent to free such assets. This could have unintended consequences on the message and ideology conveyed by such commons-based initiatives.

That logic of exclusion explains the reluctance of the Human Genome Project to abide by the open-source principle, which would contradict (in their view) the inherent public nature of any information of the human identity. As the Nobel Prize winner and director of the Human Genome Project John Sulston said, "nobody has a right to control access to [our common heritage]" whether by an exclusive patent right, by contract, or by an access mechanism.[79]

The commodification enabled by open-access contracts is especially disturbing when such licensing is applied to items not protected by an intellectual property right, which is the case for unpatented genetic information or inventions that the inventor has decided not to patent, such as the information contained in the HapMap database or the know-how licensed by BiOS. In such a case, open-access strategy implies a form of exclusivity where intellectual property regimes—as devised by public ordering—do not apply.

One could argue that some form of exclusivity is precisely the purpose of the open-access regimes compared to a policy of putting works, inventions, or unprotected information into the public domain where further commodification is not prohibited at all. In a way, it is a pragmatic way of recognizing that the principle of the public domain does not work well to

77. *See* Niva Elkin-Koren, *What Contracts Cannot Do: The Limits of Private Ordering in Facilitating a Creative Commons*, 74 FORDHAM L. REV. 375, 398 (2005).

78. *See* Dusollier, *supra* note 13, at 282.

79. Sulston, *supra* note 36, at 71.

ensure free availability of the resources contained therein, nor is it an effective buttress against their subsequent appropriation.[80]

### *B. The Copyleft Mechanism as the Legal Engine of the Sharing Objective*

The procedural nature of the norm built up by open-access initiatives relies on the so-called copyleft or viral effect, which effectuates—by a legal mechanism—the propagation ambition of the sharing ideology. Whereas the ideology itself is propagated by convincing people to adhere to its cause, the concrete working of the ideology is to construct a chain of successive contracts imposing the sharing principle at each stage. The copyleft effect enables the ideology of sharing to spill outside of the licensing parties and contaminate subsequent creations. The copyleft provision helps impose the sharing ethos to improvers of works or inventions, who are sometimes deprived of the choice of other distribution models when using open-source elements as building blocks of their own creation. The only choice they retain pertains to the elements they can use as primary material. A private company that does not want to adhere to the open-source model for its own software might well be advised to prevent its employees from integrating open-source elements in the construction of such software.

Even the choice of the elements to be used in the subsequent creation is not always possible. This is particularly true in the biotechnology sector where the possibility of inventing around a prior invention is rather constrained. If access to information regarding a specific genetic sequence is licensed under an open-access scheme and is not available elsewhere, the scientists working on the operation of such gene will have no choice but to redo the work of sequencing.[81] The mandatory character of the open-access mechanism is thus inversely proportional to the substitutability of the material governed by such licenses.

The viral nature of the open-source or open-access schemes is present in many licenses. Each person in the chain of distribution of open-source software—work licensed under a Creative Commons Share Alike or of data hosted in the HapMap database—is bound to propagate any improvements under the same licensing scheme. To make the virality of the open-source or open-access system work, a necessary feature of such contracts is to oblige the user to affix the license to such copies. The user then distributes

80. *See* Séverine Dusollier & Valérie-Laure Benabou, *Draw Me A Public Domain*, *in* COPYRIGHT LAW: A HANDBOOK OF CONTEMPORARY RESEARCH (P. Torremans ed., forthcoming 2007).

81. If the information is not patented but its access is only protected by contract.

copies of the work or improvements or modifications. As a consequence, any subsequent user will encounter the license when she desires to use the licensed material. As Margaret Radin has described this process, it is an "attempt to make commitments run with a digital object."[82] In viral contracts, the terms of the contract accompany the work or software that is disseminated,[83] the contract runs with the digital asset, and the license is embedded in the object it purports to regulate. It goes as far as running with modified or improved versions of the work or software it primarily seeks to rule. Therefore, the copyleft transforms a mere private ordering effect—normally applicable only to the parties to the private ordering tool (i.e., the contract)—into a feature applicable to the intellectual resource itself and to any user thereof. The protection transforms from contract to what oddly resembles a property right.

The contamination works in a slightly different way in open-source patenting where the copyleft effect or the reciprocal sharing is ensured through a mechanism of grant-back and not by a viral contract.[84] This difference can be explained by the nature of the resources governed by such licenses. The assets in question are knowledge, data, or research tools that are usually not commercialized or distributed as commodities—at least not on a large scale—as software or music can be, but assets for which access thereto forms the core of the licensing contract. Those are also not types of assets which could be subject to mass-market licenses since they are aimed at some specialists only. Therefore, it is more difficult to envision in that case that the license would run with the asset. Rather than being depicted as a viral phenomenon occurring in a long list of successive contracts, open-source patenting—at least in the examples of the BIOS licenses or in the proposals for an Equitable Access or Neglected Diseases License—is more akin to the management of goods in a commons pool resource. Commons-pool resources can be defined as "substractable resources managed under a property regime in which a legally defined user pool cannot be efficiently excluded from the resource domain."[85] Examples are the management of Antarctica or of sea resources. The typical trait of such commons-pool resources is that the bundle of rights to use such resources is collectively

82. Margaret Jane Radin, *Human, Computers, and Binding Commitment*, 75 IND. L.J. 1125, 1132 (2000).

83. This is particularly true in Creative Commons where the process of creating the license whose basic terms have been chosen by the author is completely automated and a digital code version of the license is provided to be affixed to the work. The product of the license is offered with the product of the work.

84. Or a reverse grant-back as preferred by Sara Boettiger and Dan L. Burk. *See* Boettiger & Burk, *supra* note 16, at 228.

85. SUSAN J. BUCK, THE GLOBAL COMMONS: AN INTRODUCTION 5 (1998).

enjoyed by defined users—members of the pool—who cannot be excluded from the resource domain.[86] As in the copyleft feature of open-access licenses, a commons pool resource generally includes a set of rights defining access to and use of the resources,[87] and therefore also relies upon private ordering. It differs from the virality in the sense that the obligation to share is more strictly related to the persons entering the pool through their access to the resource than being an inherent element of the resource that imposes itself on any recipient of that resource. Yet, it has a similar effect because it facilitates setting up reciprocal sharing and self-perpetuating commons. The legal entitlement is also related to the good rather than strictly attached to the contract and contractual parties.

### *C. The Efficiency of the Copyleft in Norm Making*

The extent and success of such a procedural contamination, whether by copyleft or grant-back mechanisms, requires that the chain of contracts distributing copies of the work, invention and improvements, or derivative works not be broken at some stage. Continuity enables the open-access feature to smoothly propagate beyond the first contract. It will depend on three factors: (1) the scope of the virality based on the definition of the derivative products to be contaminated, (2) the legal validity of the copyleft effect, and (3) the effective compatibility between the licenses.

#### 1. The Scope of the Viral Effect

In open-access licenses that contain a copyleft effect, the contamination of the openness will normally apply to improvements or modifications made to the object governed by such licenses. In other words, integrating part of copyleft-licensed resource into a larger work or invention entails the spreading of this license to the whole. How small the integrated part should be to trigger this contamination is a question on which will depend the effectiveness of the viral mechanism to impose the norm of sharing beyond the strict limits of the first contract.

A key issue is to define the subsequent or derivative products that will be subject to the open-access principle. It seems reasonable to look to the interpretation of such notions in copyright or patent laws. Copyright laws sometimes define "derivative work." For instance, § 101 of the U.S. Copyright Code states that a derivative work is "a work based upon one or more

86. *Id.*

87. *See* Edella Schlager & Elinor Ostrom, *Property-Rights Regimes and Natural Resources: A Conceptual Analysis*, 68 LAND ECON. 249, 250 (1992).

preexisting works, such as a translation, musical arrangement, dramatization, fictionalization, motion picture version, sound recording, art reproduction, abridgment, condensation, or any other form in which a work may be recast, transformed, or adapted,"[88] including works consisting of editorial revisions, annotations, elaborations, or other modifications when such modifications are sufficient to create a new original work. In contrast, the French Code of Intellectual Property defines a derivative work, or "composite work," ("oeuvre composite") as "a new work in which a preexisting work is incorporated without the collaboration of the author of the latter."[89]

This definition is also valid in other authors'-rights countries. The definition indicates that there is a derivative work as soon as any copyrighted (i.e., formal and original) aspect of the primary work is integrated—modified or not—into a new creation that should itself be copyrightable. In copyright the author of the primary work enjoys the right to control the making of derivative works based on her own creations since such a derivative creation is a reproduction of her work. This constitutes the justification of the copyleft effect: the primary author can impose a free distribution of the derivative work only as a condition on the secondary author's right to carry out such derivative work in the first place.

So justified, the copyleft should logically reach only the works that can be qualified as derivative under the copyright law. However, the matter is sometimes more intricate. The problem notably arose in open-source software and particularly in the GNU General Public License ("GPL"). The GPL is deemed to embed a rather extended copyleft principle. In its version 2.0., currently in use, the GPL states that any work "that in whole or in part contains or is derived from the Program or any part thereof [shall] be licensed as a whole at no charge to all third parties under the terms of this License."[90] On the face of it, this language seems consistent with the definition of a derivative work under copyright law to which the definitional section of the license refers. Modifications of the code of a GNU GPL-licensed program or integration of such code into other software would definitely be considered derivative works subject to the copyleft provision. Yet, according to some commentators, the GNU GPL will also apply to the software that merely links to a GNU GPL-protected element such as a plug-in, a library, or any other routine. Libraries are a sort of toolbox for

88. 17 U.S.C. § 101 (Supp. IV 2004).

89. Law No. 96-564 of July 25, 1996, Journal Officiel de la Republique Francaise [J.O.] [Official Gazette of France], Dec. 26, 1996, *translation available at* http://195.83.177.9/code/liste.phtml?lang=uk&c=36&r=2495.

90. GNU General Public License Version 2 (June 1991), http://www.gnu.org/licenses/gpl.txt (last visited Feb. 13, 2007).

software. They are subprograms that provide code or data to software in order to perform certain tasks. Data contained in libraries are usually not copied in the main software but remain in a separate file on disk and are called upon when needed through a process called dynamic linking. The Free Software Foundation (the think tank of the GPL) assumes that even a program that merely links with a GPL-ed program is derived from the program and must therefore be licensed under the GPL in order to comply with its terms and conditions.[91] This is confirmed on their website where they recommend the use of a lesser copylefted license, the LGPL (more adapted to libraries), precisely to avoid this contamination through linking.[92]

One can reasonably doubt such an extensive expansion.[93] Theoretically, a dynamic linkage between two programs is only an incidental contact and does not amount to a modification or integration of the code. Hence, it does not constitute a derivative work under copyright law. The only reproduction of code that is made through dynamic linking occurs in the RAM of the computer where both programs are "merged." But this incidental reproduction does not suffice to form a derivative work, namely because of a lack of fixation.

The notion of derivative works to which the share-alike principle applies in homonymous Creative Commons licenses simply refers to the definition appearing in the U.S. Copyright Act. Consequently, this notion should be construed with reference to the case law applying the notion of a derivative work, which could raise additional problems when different laws are applied.

The issue might be even more complicated in open-source patenting since there is no similar concept of a derivative work. Indeed, the holder of a dominant patent cannot prohibit or control the making of improvements to her invention. She can only exercise her patent if the primary invention she holds rights to is used in the invention process and/or in the commercialization of the improved product, which will not be always the case.[94] Even if the primary invention is used in the improvement, the improver can, in some countries, get the right to use the dominant invention through

91. Richard Stallman, Why You Should Not Use the Library GPL for Your Next Library, http://www.fsf.org/licensing/licenses/why-not-lgpl.html (last visited Feb. 7, 2007).

92. *Id.*

93. For a thorough analysis of this issue, see Philippe Laurent, *Logiciels Llibres et Droit D'auteur: Naissance, Titularité et Exercice des Droits Patrimoniaux*, *in* LES LOGICIELS LIBRES FACE AU DROIT 77–86 (2005); *see also* LAWRENCE ROSEN, OPEN SOURCE LICENSING: SOFTWARE FREEDOM AND INTELLECTUAL PROPERTY 115 (2005), *available at* http://www.rosenlaw.com/oslbook.htm; Jason B. Washa, *Open source, Free Software, and the General Public License*, COMPUTER & INTERNET LAW., Mar. 2003, at 20, 22.

94. Boettiger & Burk, *supra* note 16, at 226–27.

a compulsory license on some conditions. This demonstrates that patent law deviates from the expansionist logic of the derivative works in copyright law. This suggests that the copyleft device embedded in open-source patent licenses does not actually rely on an exclusive right but is closer to a contractual restriction.[95] This is even more true for licenses applicable to unpatented information or inventions, such as the HapMap licenses.

This might explain why, in the existing proposals or licenses for open-source patenting, the copyleft effect is replaced by a softer version, i.e., the grant-back mechanism. As noted earlier, instead of setting up a contamination process—whose justification is weaker in the patent field—the grant-back mechanism avoids the debate by organizing a commons-pool regime gathering all users (and possible improvers) of the invention.

Whether based on a strict copyleft method or on a grant-back system, the notion of improvements could be defined in the contract to determine what triggers the grant-back or copyleft obligation.[96] If the license covers a patented invention, improvements can also be determined by looking at the patent claims concerned. The BiOS license defines the improvements subject to its grant-back provisions as

> any improvement to the IP & Technology made or discovered by or for BiOS LICENSEE or any party to which BiOS LICENSEE has granted a sublicense, comprising—without limitation—methods, compositions, know-how, statistically significant or repeatable observations, or protocols, which (1) is a Plant Enabling Technology improving or increasing the effectiveness, efficiency, applicability, or value of the IP & Technology from which it is derived, or (2) but for the terms of this License Agreement cannot be used without infringing a valid claim in an unexpired Licensed Patent, unless (1) developed without any use of the IP & Technology, or (2) existing as of the Effective Date of this Agreement or any specifically related Materials Transfer and Non-Disclosure Agreement, whichever is earlier, or (3) not relevant to the general use of the IP & Technology as a Plant Enabling Technology and relevant or applicable solely for production or use of a BiOS Licensed Product, or (4) consisting entirely of a confidential formula, pattern, process device, information, or compilation of information that is actively maintained as a proprietary trade secret for use in BiOS LICENSEE's business by obligation of confidentiality and by other reasonable efforts of BiOS LICENSEE such as would be defined as suppression or concealment imposing a statutory bar against patenting by the United States Patent Office.[97]

95. Opderbeck, *supra* note 13, at 200.

96. *See also* Boettiger & Burk, *supra* note 16, at 227–28 (recommending distinguishing patent improvements and separate application technologies that should not be encompassed by the grant-back mechanism).

97. CAMBIA BiOS License for Plant Enabling Technology, § 1.7, http://www.cambia.org/daisy/PELicense/751/1169.html (last visited Feb. 7, 2007).

This is a rather complicated and unclear definition that does not help much to ascertain the scope of the grant-back mechanism and the scope of the sharing norm. Improvements are said to include unpatented assets such as methods or know-how, which is a significant departure from the scope of a possible infringement of the patented invention primarily licensed under BiOS's terms. However, the definition endeavors to stay in line with what could be considered as a patent infringement.

The same provision adds that the licensee can also decide to consider as an improvement any other invention that she wishes to share under the BiOS pool. Here, the viral effect comes into play without any reference to an improvement of the patent but solely as a result of the will of the licensee, which triggers the application of the "patent-left" regime to a new object independent from the licensed patent. The contamination in that case happens by mere ideology.

The HapMap license deals with genetic information (the haplotypes) not likely to be protected by copyright and not likely to be patented since they are publicly divulged. Based on a copyleft principle, the license requires that the open-access principle apply to the further distribution of the data and to any claim in a use of the information contained in the HapMap database. But this copyleft obligation cannot rest upon the notion of derivative works or improvements to an existing patent. In contrast, it relies upon the sole contractual obligation, making it a pure private ordering process.

As a brief conclusion on that point, one could reiterate that the ambit of the copyleft contamination will thus depend on the definition—both legal and contractual—of the derivative works and of patent improvements. Where the open-access license deviates from the legal definition, its legal ground for extension beyond the mere contract is solely based on private ordering. The "public" character that the copyleft will gain as a norm will only be valid when self-perpetuation takes place within the powers granted by copyright or patent laws in modifications of the work or invention.

### 2. The Legal Enforceability of the Viral Effect

Open-source licensing can propagate along a chain of successive contracts only if each contract is enforceable against its parties.[98] For example, let's suppose that *A* licenses the software she created under a GPL license. *B* gets access to the software and distributes copies under the GPL. *C* gets access to those subsequent copies. *C* modifies the software and distributes

98. *See* Andrés Guadamuz González, *Viral Contracts or Unenforceable Documents? Contractual Validity of Copyleft Licences*, 26 EUR. INTELL. PROP. REV. 331 (2004).

the derivative software under a proprietary scheme and does not provide access to the source code. In order for the obligation to offer the source code to be imposed on *C*, *C* must be a party to the GPL license. When the software is redistributed many times, that chain of successive contracts, each link of which has to be legally ascertained, becomes even more complex.

The architecture put in place in most open-access licenses, at least in open-source software and Creative Commons, is not based on sublicensing but on a more intricate system. The licensor (*A* in the example mentioned above) grants to any licensee (*B*) the right to copy and distribute the work to third parties and requests that a copy of the license accompany the copy of the work. But the contract conferring the same rights to any new user of the work (third party to the first contract or *C*) is entered with the first licensor or author of the work (*A*), not with the licensee who stands earlier in the chain of distribution. When the work is modified, the licensee is obliged to confer a similar license to subsequent users but only as to her modifications—the primary work remains governed by the first license. To summarize, a threefold operation occurs when redistributing a work or software licensed under a copyleft scheme. The licensee, *B*, transfers a material copy of the program to *C* who receives a license from *A*, the original author of the program, and a license from *B* for the possible modifications. *C* can be legally bound by the open-access contractual system if the contract entered with *A* as well as the contract entered with *B*, if a derivative work is concerned, are enforceable against her. Two (or even more depending on the length of the chain of distribution and modification of the work) contracts are thus relevant even though the question of their enforceability against the user of the work can be stated in the same terms.[99] The copyleft mechanism makes things simpler by imposing the provision of the license with the software, when redistributed, and by requiring that any modification be governed by the same license.

Some commentators solve the issue of enforceability by arguing that the open-source license is not a contract but a unilateral act of consent by the right owner. Such an analysis might be valid as far as the provisions granting rights of use to the user are concerned. Indeed, because such provisions only cover the exercise of the exclusive right of copyright or patent,

99. I leave aside the interesting question as to whether *C* can sue *B* for not providing the source code to her, where the sole contract imposing such a provision is entered between *A* and *B*. That question can be addressed by reference to the concepts of privity under common law or to that of *stipulation pour autrui* in civil law countries. *See id.* at 336; Yorick Cool, *Aspects Contractuels des Licences de Logiciels Libres: Les Obligations de la Liberté*, *in* LES LOGICIELS LIBRES FACE AU DROIT, *supra* note 93, at 155.

they do not require the consent of the user. This explains section 9(5) of the GPL (in its draft version 3), which provides that "you are not required to accept this License in order to receive or run a copy of the Program. . . . However, nothing else grants you permission to propagate or modify the Program or any covered works."[100] Such a provision explains how the open-source model conceives the enforceability of its licenses—by relying upon the copyright protection. It is true that lacking the acceptance of the license, the copy or distribution of the software amounts to an infringement. Users of copylefted works should thus be encouraged to accept the license to fully enjoy the freedoms conferred therein.

However, the enforcement of the license cannot solely rely on the erga omnes opposability of the intellectual property rights. Some obligations or rights arising from the open-access license do not rely at all on a copyright or patent right. This is true in the case of the no-warranty clause or provisions dealing with the termination of the contract. For such provisions, the contract has to be enforceable against licensees. Limiting the warranty of the user, especially where she is a consumer protected by legal mandatory provisions—as is the case in the European Union—cannot result from a mere unilateral act. Similarly, the validity of the unilaterally imposed obligations on a third party, such as the obligation to provide the source code, is rather dubious.

Besides, the enforceability of the license is particularly crucial when its object is not protected by an intellectual property right, such as the licenses governing some genetic databases. The rights and obligations are in that case completely dependent on the existence and validity of the contract. Rules of consent or privity will thus apply to determine whether the license has been accepted and is enforceable.

The enforceability of open-source licenses is somewhat uncertain when the use or distribution of the licensed object is deemed to constitute acceptance of the license, such as in the case of the Creative Commons licenses[101] or in the GPL.[102] This acceptance system is close to that of shrinkwrap licenses whose enforceability has only been implicitly recog-

100. Discussion Draft 2 of Version 3 of GNU General Public License § 9(5) (July 27, 2006), http://gplv3.fsf.org/gpl-draft-2006-07-27.txt (last visited Feb. 12, 2007). A similar provision appeared in the HapMap License which is copied verbatim from the GPL.

101. The Preamble of the Creative Commons License provides that "by exercising any rights to the work provided here, you accept and agree to be bound by the terms of this license. The licensor grants you the rights contained here in consideration of your acceptance of such terms and conditions." Creative Commons Legal Code, *supra* note 72.

102. Section 9(5) of the GPL (draft version 3) says that "by modifying or propagating the Program (or any covered work), you indicate your acceptance of this License to do so, and all its terms and conditions." Discussion Draft 2 of Version 3 of GNU General Public License, *supra* note 100, § 9(5).

nized by some case law. In civil law countries, the acceptance of terms and conditions can only be based on the certainty (1) that the licensee had the opportunity to read these terms and conditions and (2) that she agreed with the latter. The mere fact of using the licensed object, modifying it, or distributing it does not mean that the user is aware of all the terms and conditions and has accepted them. When access to the covered work is dependent on the acceptance of the contract—by a click-wrap process (like in the case of the HapMap license where assent to the contract by a click-mouse was a required step before entering the database[103])—consent to the license might be more easily proved. In other cases, one can infer a tacit acceptance of the license from the fact of using, modifying, and distributing the work subject to the license in some circumstances, particularly if one can prove that the licensee has had the opportunity to become aware of the license's terms. However, this must be assessed on a case-by-case basis. The BiOS licenses avoid this criticism by requiring the signed agreement of the licensees to the contract.[104]

Consequently, the contractual system put in place in open-access schemes does not necessarily ascertain the consent to the successive licenses, even though open-source and copyleft licenses have been enforced by some courts. One German court has applied the GPL license,[105] affirming that the terms and conditions of the GPL were part of the contract—as general terms and conditions would be—by the simple fact that a reference was made to a publicly available web page.

In the Netherlands, the proviso of the Creative Commons stating that the exercise of rights to the work entails the acceptance of the license has been held valid, particularly due to the fact that the infringer was a professional who should have checked the terms of the license.[106] Reproducing a picture licensed under a Non-Commercial License in a commercial newspaper was therefore considered to be an infringement of the copyright and a breach of the contract itself.

Both decisions dealt only with the existence of an infringement of the rights of the author when reproducing the work without complying with the conditions of the license. To my knowledge, there has never been a case where a provision of the license, not relying on the intellectual property

103. *See* HapMap Data Access Policy, *supra* note 37.

104. *See* CAMBIA BiOS License for Plant Enabling Technology, *supra* note 97.

105. Landgericht München I [LG] [Munich District Court], May 19, 2004, No. 21 O 6123/04, *translation available at* http://www.jbb.de/judgment_dc_munich_gpl.pdf.

106. Curry/Audax, Kort Geding [KG], [District Court], Amsterdam, Mar. 9, 2006, *available at* http://zoeken.rechtspraak.nl, *translation available at* http://mirrors.creativecommons.org/judgements/Curry-Audax-English.pdf.

right at all, was the subject of the litigation. They were also very simple cases where the license at stake was directly entered into with the author of the primary work, thus not very far down the chain of successive contracts that could apply to multiple subsequent modified works.

Due to the uncertain enforceability of the license, the freedom conferred by the license is not as solid as a limitation of copyright or patent right. This is directly linked to the nature of the norm imposed through private ordering. But it goes even further since the model put in place by some open-access licenses to compel their enforceability is likely to reinforce a disturbing feature of the private ordering process. Indeed, the use-as-assent rule was first used in the distribution of proprietary software through shrink-wrap contracts. The similarity of the models put in place in the proprietary exercise of IP and in open-access regimes should beg the question as to whether the contractual trick of open-access licenses would not "equally make enforceable corporate licensing practices, which override users' privileges under copyright law."[107]

Already in the context of the open-source movement, the software industry, despite its apparent animosity to open source, was happy to witness the enforcement of the viral character of contract (particularly the provision that says that each use of the software amounts to a consent to the license terms),[108] because it also uses viral contracts in its proprietary distribution of software and hoped that the enforceability of such an excessive rule would be recognized by the courts. Open-source software employs the very mechanism that made the distribution of software so pervasive (namely, the immediate application of a license as soon as the computer program has been used). By attempting to bind whoever comes into possession of the commodity, it enables the sale of a product or a service while simultaneously binding a user under terms of use, whether constraining (in proprietary licenses) or generous (in open-access licenses).

The use of viral contracts further enhances commodification by attaching the contract to the product in an indissociable way. This is a new area of contract law that has been implemented in adhesion contracts, "click-wrap" contracts, "machine-made" contracts, and "viral contracts."[109] In viral contracts the terms of the contract accompany the work, invention, or software that is disseminated. The contract runs with the digital asset and the license is embedded in the object it purports to regulate. This is particu-

107. Elkin-Koren, *supra* note 77, at 417.

108. *See* Robert W. Gomulkiewicz, *How Copyleft Uses License Rights to Succeed in the Open Source Software Revolution and the Implications for Article 2B*, 36 HOUS. L. REV. 179 (1999).

109. Radin, *supra* note 82, at 1128–33.

larly true in Creative Commons where the process of creating the license, whose basic terms have been chosen by the author, is completely automated and a digital code version of the license is provided to be affixed to the work. The product of the license is offered with the product of the work.[110]

The contract-as-product view makes the contractual rights closer to property rights to the extent that this model eludes the consent of the contracting party. The contractual rights almost become rights against the world. It also increases the commodification of intellectual resources, as any copy is governed by predetermined terms that apply to any use of the work or invention. Paradoxically, this is precisely the growing commodification of intellectual property that the open-access movement seeks to fight.

### 3. The Effective Compatibility Between the Licenses

Law uniformly applies to any object it governs. That is not always the case with open-access licenses, where accidents of propagation can occur and disrupt the propagation course. This is a result of the multiplicity of existing open-access licenses and to an additional obstacle to the copyleft effect—compatibility between the licenses. That is a major drawback of copyleft licenses that has been so far underestimated by their proponents. The issue is the following: Imagine that one programmer creates software by integrating one piece of code licensed under the GPL and another one distributed under another open-source license. Each license requires the modifications to be distributed under the same terms covering the original work. What license will apply to the derivative work in our case? Opting for one license will necessarily infringe the terms of the other one. The user wanting to comply with the licenses she entered into will be faced with an unsolvable dilemma. The same problem can occur with works distributed under different open-access licenses or even under different Creative Commons licenses. The problem can also occur with data or patented inventions under an open-source patenting scheme—such as improvements based on two different inventions—governed by separate licenses.

Compatibility is usually not regulated by the license itself, save for the GPL, which declares that some licenses are compatible with the GPL. This declared compatibility means in reality that the Free Software Foundation believes that the GPL can cover the derivative software based on code li-

110. *See* Creative Commons, Metadata Embedding, http://creativecommons.org/technology/ embedding (last visited Mar. 31, 2006); Creative Commons, Using Creative Commons Metadata, http://creativecommons.org/technology/usingmarkup (last visited Feb. 7, 2007).

censed under such licenses (also called *upstream* compatibility). Conversely, the GPL will apply to software integrating a piece of GPL-licensed code, whether or not this piece is minimal compared to other components licensed under other schemes (*downstream* compatibility). In its (draft) version 3, the GPL license indicates that the Free Software Foundation might authorize a licensee to incorporate parts of a GPL-ed program into other free programs under licenses other than the GPL, upon request.[111] However, one might fear that the FSF does not grant such an authorization easily.

The same problem can arise with Creative Commons licenses where the diversity of licenses is also increased by the choice between different features or jurisdictions. A piece of music can be composed by using two existing pieces—one governed by a CC Attribution Non-Commercial Share Alike license; the other by a CC Attribution Share Alike. In order to comply with her obligations under the CC licenses applying to the music she used as primary material, the derivative composer has to license the derivative work under a CC Attribution Non-Commercial Share Alike license which represents the common denominator between both licenses. The problem is thus less intricate than with open-source software, primarily because the compatibility issue arises between similar licenses originating from the same project. However, that signifies that the model chosen by the author of the second piece of music, allowing for commercial and non-commercial purposes alike, is now reduced to non-commercial purposes. It also theoretically infringes article 4(b) of the Share Alike license that binds the licensee not to offer any terms on the derivative works that alter the term of the license. Musical works can also integrate parts of music licensed under other open-access licenses that are not Creative Commons.

Due to the relative scarcity of open-source licenses in patent law, issues of compatibility between different licenses as applied to possible improvements of two different inventions or to combined applications of different data have not arisen yet but are bound to happen. As in the case of open-source software, the propagation of the chosen license would then be stopped and replaced by another license. From a normative point of view, that greatly decreases the ambition of commons-based private ordering to evenly proliferate along the multiple uses of the intellectual creation to which it applies. This is one of the biggest and still unknown weaknesses of the open-access normative model—that is intrinsically dependent on its private ordering nature.

111. *See* Discussion Draft 2 of Version 3 of GNU General Public License, *supra* note 100, § 15(10).

The issue of compatibility also proves that the approach might be very fragmented—not as global as a public ordering process might be. Therefore, there might be no legal certainty as to the limits of entitlements and freedoms granted by the license, which also reduces the effectiveness of the open-access norm.

## III. THE INTERNATIONAL DIMENSION OF THE OPEN-ACCESS NORM

Open-access initiatives mainly originate in industrialized countries. They are not primarily aimed at socializing the access to intellectual property in favor of developing countries, save for the specific Developing Countries License in Creative Commons or the propositions of the team of scholars led by Yochai Benkler to address health issues in poorer countries.[112] Nonetheless, if one recognizes that a key concern of developing countries is to get enhanced access to intellectual resources and to fight the increasing commodification of intellectual assets (that operates generally to the sole profit of the western countries), open access could provide them with an interesting lead. That would require that the licenses and tools deployed by all those commons-based initiatives be adapted to their specific situations.

Because this article is limited to an analysis of the validity of the open-access scheme as a norm and not as to its content and objective, the adaptability of the licenses to developing countries shall be judged only on its capability to be compliant with any national normative and legal framework. It can also carry out such an analysis only on an abstract level, not as to the peculiar situation and regulatory frameworks of developing countries. In addressing the global propensity of the open-access licenses, only some licensing frames will be assessed.

### *A. Open-Source Software*

Open-source software is rooted in the United States and most of its licenses are based on U.S. law. The licenses are expressed in an American style and vocabulary and refer to U.S. legal notions. This is particularly apparent where the licenses define the rights granted to the user and the type of damages for which the licensor declines any liability. As to the rights granted to the licensees, they fit within U.S. legal categories of rights as defined by the Copyright Act and refer to acts of exploitation that could receive another appellation in other countries. For instance, the American

112. *See* Kapczynski et al., *supra* note 40.

notion of "distribution" encompasses the diffusion of copies through the web, whereas the European (and WIPO for that matter) distribution right concerns only the distribution of tangible copies of the program, such as CDs, disks, etc. In Europe and other countries, the notion of communication to the public includes the right to publicly perform or to diffuse works through the air or networks (TV and radio diffusion; diffusion through the Internet) whereas American law distinguishes the right to perform the work from the right to display the work to the public, neither of which encompasses the right to distribute copies of the work through the Internet.

The GPL license only grants the rights to copy, modify, and distribute the program and expressly excludes any other copyrights.[113] A European judge construing this license with a strict European point of view and applying European law might therefore conclude that it excludes the right to offer the program throughout the web. Conversely, one could argue that the ongoing reference to U.S. legal notions does not threaten the validity of the licenses. This legal uncertainty could be solved by the judge by referring to common practices or usage in the open-source community so as to include communication to the public in the orbit of licensed rights. This interpretive method could be, in some countries, at odds with the principle of strict interpretation of copyright contracts.

It is not only a matter of U.S. terminology. Licenses are deemed to be compatible with the U.S. law but their compliance with other legal regimes has not been assessed. The provisions dealing with the acceptance of the contract, with the limitation of liability and warranty, or with the possible applicability of a new version of the license, can raise legal issues in some countries, particularly when the licensee is a consumer.[114] Besides, most of those licenses provide that the applicable law is the U.S. law and that any litigation shall be brought in a U.S. jurisdiction.[115]

Open-source licenses are also generally written in English and their proponents tend to control very strictly translation of the licenses into a different language. For instance, the Free Software Foundation has to vali-

113. *See* GNU General Public License Version 2, *supra* note 90 ("Activities other than copying, distribution and modification are not covered by this License; they are outside its scope.").

114. This point is elaborated upon in a survey carried out for the European Commission on the compatibility of some open-source licenses with the EU regulatory framework. *See* EUR. COMM'N, REPORT ON OPEN SOURCE LICENSING OF SOFTWARE DEVELOPED BY THE EUROPEAN COMMISSION (2004), *available at* http://europa.eu.int/idabc/servlets/Doc?id=19296. The study was carried out by Unisys for the economic aspects and by the University of Namur (Center for Research in Computer Law ("CRID")) for the legal aspects.

115. For example, see the Mozilla Public License which states that it will be governed by California law. Mozilla Public License Version 1.1, § 11, http://www.mozilla.org/MPL/MPL-1.1.html (last visisted Feb. 13, 2007).

date any non-English version of the GPL, which it has never done so far—the translated versions appearing on their websites having no official value. There seems to be no desire in the open-source community to nationalize the open-source process and licenses, probably because the open-source community is viewed as naturally international and English speaking but equally due to the fear of incompatibility between national versions. Software code is distributed and copied on a cross-border scale, especially in the free software community, and such an incompatibility could be a serious issue.

This association with U.S. law nonetheless explains some attempts to devise new open-source licensing systems based on other legal frameworks. For instance, some have proposed a French version of the GPL license. Elaborated by the CEA (Commissariat à l'energie atomique), the CNRS (Centre National de la Recherche Scientifique), and INRIA (Institut National de Recherche en Informatique et en Automatique), the so-called CeCiLL license claims to be a translation of the GPL, though adapted to the French laws.[116] They have asked the Free Software Foundation to officially acknowledge the CeCiLL license as a valid equivalent of the GPL, but it has been refused so far.

In 2004, after having assessed the possibility of adopting existing licenses,[117] the European Commission took a first step towards the elaboration of a European open-source license. It started when the DG Enterprises, which had developed software dedicated to management of public administrations, decided to ensure the distribution of this software under an open-source license. Even though the compliance of existing licenses with the EU law was not insurmountable, the national dimension of the license to be chosen was important for two reasons. First, the European Commission could not use a license that might not be enforceable on European soil and in front of the European courts. Second, because the target audience was public administrations, there were great expectations that the license governing the software they would use for public service tasks would be compliant with their national framework.

As a result, the European Public License (EUPL) was developed and is now applied to that specific software dedicated to the management of

116. *See* CeCILL, http://www.cecill.fr/index.en.html (last visited Feb. 13, 2006).

117. *See* EUR. COMM'N, *supra* note 114. Only five licenses, amongst the hundreds of existing open-source licenses, were considered by the study: the GPL (General Public License v.2) and its LGPL variant; the BSD (Berkeley Software Distribution—1998); the MPL (Mozilla Public License v.1.1); the OSL (Open Software License v.2.1); and the French CeCILL mentioned above.

public administrations.[118] The European Commission does not reject the possibility of applying it to other software or even of recommending it to the European software community for the software they developed. However, there is still a long way to go before the EUPL would be the official European standard open-source license.

In its current version, the EUPL contains some specific EU-centered provisions (particularly its jurisdiction and choice of law provisions) and thus replicates the approach of country-based specificity found in the GPL or other open-source licenses.[119] Nevertheless, the license has been written as much as possible in light of an international copyright framework—the rights covered by the license include rights phrased not only in EU terminology, but refer broadly to the right to reproduce, communicate, and distribute, as defined by the WIPO treaties. The EUPL also deals with the compatibility issue mentioned above, by providing that the further distribution of derivative works based upon a EUPL-licensed software is allowed under another open-source license, if deemed compatible, and the agreement refers to an annexed list of licenses meeting this requirement.[120] Consequently, due to this lack of ambition from the European license to colonize any derivative product based on EUPLed software, the copyleft effect of the license might be reduced, depending on the open-source licenses incorporated in that list.

To conclude the discussion of the international dimension of open-source software licenses, it is worthwhile to note that the Free Software Foundation, aware of the issue and criticism, has devised a new version of the GPL that tends to be less U.S.-centered. Primarily, the rights granted by the license have lost their legal wrapping and now refer merely to programming terms. The rights in the license revolve around two basic rights—the right to propagate and the right to convey—as defined by article 0 of the draft license:

> To "propagate" a work means doing anything with it that requires permission under applicable copyright law, except executing it on a computer, or making modifications that you do not share. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well. To "convey" a work means any kind of propagation that enables other parties to make or receive copies, excluding sublicensing.[121]

118. *See* European Union Public Licence V0.2, http://ec.europa.eu/idabc/servlets/Doc?id=24720 (last visited Feb. 13, 2007).

119. *Id.* art 14–15.

120. *Id.* art. 5.

121. Discussion Draft 2 of Version 3 of GNU General Public License, *supra* note 100, art. 0.

This new version also prohibits adding to the license terms, choice of law, forum, and venue clauses.

### *B. Creative Commons*

Even though the project originated in the United States, Creative Commons has tried early on to adapt its licensing system to other nations' regulatory frameworks. For that purpose, the organization has launched the iCommons project and asked national teams to translate the licenses into their languages and legal systems. Works can now be licensed under Creative Commons licenses that are customized to the laws and languages of more than thirty countries, a third of which are developing ones.[122] Since the Creative Commons team monitors and checks the translation of licenses into national laws, all of these licenses are designed to be compatible both with the generic licenses and with each other, and to give the same rights and obligations to the parties. Compared to most open-source licenses, the Creative Commons licenses are probably more easily accepted by authors and users, because they can understand the licenses' language and can rely on the licenses' compliance with their national law.

This national splitting and the ensuing intricate grid of multiple licenses have some consequences on the development of the open-access norm by giving birth to a paradoxical relationship between a homogenization objective and the need for each national license to comply with and take into account national regulations. As the process of translation of the licenses into national laws has shown, local peculiarities of the copyright regime can sometimes require an adaptation to the licenses that would disrupt their worldwide similarity. National licenses mainly differ from the generic one on the two following points: moral rights have sometimes been included in countries that recognize such a right;[123] and in some European countries, the object of the license has been modified in order to include related rights or the *sui generis* right in a database.

Sometimes, for the sake of the interoperability and synchronization between licenses, the Creative Commons team has decided not to adapt the license but to envisage the problem raised in one jurisdiction in the future revision of the generic license itself. For instance, the difficulty of licensing

122. Creative Commons, Worldwide, http://creativecommons.org/worldwide (last visited Feb. 13, 2007).

123. This point mainly concerns the right of integrity since all licenses impose the attribution of the work to its author. Since some licenses allow for the modification of the work, it touches upon the integrity right and could raise difficulties in countries where such right cannot be waived or even licensed.

moral rights in some jurisdictions is an issue that was taken into consideration when drafting version 3.0 of the licenses. At other times, a minor revision of the license has been permitted to make the license comply with the regulatory framework of one jurisdiction, even though the revision made that license slightly different from the generic one, in letter if not in spirit. In some cases, therefore, opting for a national adaptation of the licenses requires a choice between cross-border legal compliance, including global similarity between national versions, and national legal compliance leading to a dissimilarity between the different national CC licenses.

In addition, this possible (or inevitable?) national disparity amongst licenses, produced by this process of national adaptation, intensifies the issue of compatibility between different open-access licenses addressed earlier. The Creative Commons licenses provide that one can license a derivative work under a similar license specific to another jurisdiction.[124] Therefore, a new work integrating other works licensed under, for example, Japanese, Belgian, and U.K. Attribution Share Alike licenses does not have to be licensed under a determined jurisdiction-based license so long as it is an Attribution Share Alike one. But perfect compatibility will only be achieved in that case if the Japanese, Belgian, U.K., or any other country license chosen by the derivative creator are identical, which is difficult to ascertain.

Another sign of the desire of Creative Commons not to appear to be exceedingly U.S.-centric is the recent realization that the generic version of the licenses—the version applied if no country is specifically chosen by the author of the work—was designed according to U.S. copyright law. The "generic" appellation of the homonymous license might induce the public to assume that such a license encompasses all the other jurisdiction-specific ones. Such a (pretended) generic license being the basis for the adaptation of national versions, it has also shaped the global licensing scheme in a particular way.

In reaction, the Creative Commons team is currently trying to write a genuine and stateless generic license that could be considered compliant with the international copyright framework and adapted to international treaties' language. The present generic licenses would then be transformed into U.S.-jurisdiction ones. They have based their work on the Berne Convention, deemed to be the primary international framework for artistic property rights. During the summer of 2006, a first draft of this new generic license was internally circulated but it still contains many references to

124. See article 4(b) of any Creative Commons Share Alike license, including Creative Commons Legal Code, *supra* note 72, art. 4(b).

U.S. law—most definitions (e.g., definitions of collective work, adaptation, or of the conferred rights) are still literally borrowed from the U.S. Copyright Act, and the general flavor of the terminology and principles used is still very much American. Since all other countries' versions have been based on this falsely generic version, converting it into a U.S. license and replacing it by another generic one also raises the issue of the now lost link between national adaptations and the primary material on which they are based.

### *C. Open-Source patent*

The geographical scope of the license is particularly important in open-source patents, not particularly in terms of the language used in the license or of the legal system having inspired its redaction, but in the scope of its grant in relation to the scope of the patent covered.

The CAMBIA licenses state that the patents covered by the contract are patents listed in the Annex, which are U.S. patents, including "all foreign counterpart[s] thereof."[125] However, the license does not provide a list of the countries where a similar patent has been granted on the technology concerned. It means that the license will lose its patent protection in the countries where there is no patent, and creators should rely on the fact that the technology can be accessed only through the BiOS licensing mechanism. The use of the research tool in a country where it was not patented would then not be considered as an infringement, unless that tool was acquired from BiOS or a player in the BiOS pool on the condition that the contract be respected.

In practice, it signifies that, for the copyleft trick to be successful in open-source patenting, having a patent in all the countries where the exploitation of the patented invention occurs would be necessary to impose the open source license to such an exploitation. This will, of course, raise the cost of applying an open-access scheme quite a bit.

As far as the geographical origin of the license terminology and legal principles are concerned, it seems not to be as disturbing as in the open-access licenses that apply to copyrighted works. One reason might be that the patent laws are more uniform across borders than copyright laws are.

125. CAMBIA BiOS License for Plant Enabling Technology, *supra* note 97, art. 1.7.