The Tragicomedy of the Public Domain in Intellectual Property Law

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by
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I. Introduction

While the public domain is a pervasive concept in intellectual property law, it is hardly a robust one. Surprisingly little attention has been given to the public domain in the statutes establishing and regulating intellectual property,¹ in the case law interpreting these

¹. This title finds its stimulus from two well known articles: (1) Garrett Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243, 1244 (1968): “The rational herdsman concludes that the only sensible course for him to pursue is to add another animal to his herd. And another; and another . . . that this is the conclusion reached each and every rational herdsman sharing a common theory and is a tragedy. Each man is locked into a system that compels him to increase his herd without limit - in a world that is limited. Ruined is the destination towards which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons. Freedom in a commons brings ruin to all.” (2) Carol Rose, *The Comedy of the Commons: Custom, Commerce, and Inherently Public Property*, 53 U. CHI. L. REV. 711, 781 (1986): “Our law consistently allocates that access to the public, because public access to those locations is as important as the general privatization of property in other spheres of our law. In the absence of the socializing activities that take place on “inherently public property,” the public is a shapeless mob, whose members neither trade nor converse nor play, but only fight, in a setting where life is, in Hobbes’ all too famous phrase, solitary, poor, nasty, brutish, and short.” Professor Rose defines those types of public property (*jus publicum*) that she considers to be “inherently public property.” Additional stimulus from the other side of the coin may be found in Michael A. Heller, *The Tragedy of the Anticommons: Property in the Transition from Marx to Markets*, 111 HARV. L. REV. 621, 624 (1998) (“When there are too many owners holding rights of exclusion, the resource is prone to under use.”) and Michael A. Heller & Rebecca S. Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, 280 SCIENCE 698 (1998).

². Giles Sutherland Rich, Professor in Intellectual Property, University of Akron School of Law. I would like to thank Professor Francois Curchod for his thoughtful comments on the manuscript of this article, particularly with respect to the clarification of terminology. I would also like to acknowledge the valuable research assistance provided by Dr. Donald Schelling, as well as the valuable assistance provided by Dr. Lorys Fuge Oddi (my wife) in synthesizing neurophysiological research as it relates to cognitive processes (in particular notes 31-42 and accompanying text) and her valiant efforts to explain this to me.

¹. The Copyright/Patent clause of the Constitution grants Congress the positive
power “[t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.” U.S. Const. art. I, §8, cl.8. While this clause makes no explicit reference to “public domain,” the concept of public domain is, at least, implicit in the requirement of “originality” to be an “author” or an “inventor”. See, e.g., Lee v. Runge, 404 U.S. 887, 890 (1971); “An author’s ‘Writing’ or an inventor’s ‘Discovery’ can, in the constitutional sense, only extend to that which is his own. It may not be broadened to include matters within the public domain.” Even though copyright and patent statutes date from the First Congress in 1790, the term “public domain” has not appeared in the various patent statutes and has only recently made its appearance in the copyright statute (17 U.S.C.A. § 101 et seq.) by the addition of § 104A (Copyright in Restored Works) to comply with the World Trade Organization Agreements as implemented by the Uruguay Round Agreement Act. See 33 I. L. M. J. 1 (1994). No definition of “public domain” is provided, although “public domain” appears in the definition of “restored copyright.” The term “public domain” does not appear in the Trademark Act of 1946 (“Lanham Act”), (15 U.S.C.A §§ 1151-1127 (§§ 1-46)) or in the Uniform Trade Secrets Act (West 2002), reprinted in SELECTED INTELLECTUAL PROPERTY AND UNFAIR COMPETITION STATUTES, REGULATIONS, & TREATIES 626-629 (Roger E. Schechter, ed. 2000). Copyright Office Regulations, 37 C.F.R. § 201.26(b)(3), define “public domain computer software” as “software which has been publicly distributed with an explicit disclaimer of copyright protection by the copyright owner.”

2. The first Supreme Court case to mention “public domain” in the context of intellectual property was Singer Mfg. Co. v. June Mfg. Co., 163 U.S. 169 (1896). With respect to the sewing machine previously covered by patents, the Court stated:

It is self-evident that on the expiration of a patent the monopoly created by it ceases to exist, and the right to make the thing formerly covered by the patent becomes public property. It is upon this condition that the patent is granted. It follows, as a matter of course, that on the termination of the patent there passes to the public the right to make the machine in the form in which it was constructed during the patent.

Id. at 185. The Court asked the question: “But at the expiration of the patent, does the designation fall into the public domain with the patented invention?” Id. at 196. The answer given was: “That where, during the life of a monopoly created by a patent, a name, whether it be arbitrary or be that or the inventor, has become, by this consent, either express or tacit, the identifying and generic name of the thing patented, this name passes to the public with the cessation of the monopoly which the patent created.” Id. at 199. The Court, however, made clear that the designation [Singer] could not be used to confuse consumers as to the source of the sewing machine. This ruling was re-affirmed in Kellogg Co. v. National Biscuit Co., 305 U.S. 111, 119 (1938), where the “patented machines used were designed only to produce the pillow-shaped biscuits” and the designation “shredded wheat” was the generic designation of the product. In Scott Paper Co. v. Marcalus Mfg. Co., 326 U.S. 249, 263 (1945), the Court made the perhaps obvious but important point: “A machine that is not patentable because it is not novel is just as much part of the public domain as a machine on which the patent has expired.” This conclusion is tied into the Copyright/Patent Clause in the companion case to Sears, Roebuck & Co. v. Stiffel Co., 376 U.S. 225, 231 (1964), where the Court stated: “An unpatentable article, like an article on which the patent has expired, is in the public domain and may be made and sold by whoever chooses to do so.”

This conclusion is tied into the Copyright/Patent Clause in the implementing federal statutes, of allowing free
the scholarly literature, at least until recently. Public domain would
access to copy whatever the federal patent and copyright laws leave in the public domain.” In *Graham v. John Deere Co.*, 383 U.S. 1, 6 (1966), the Court indicated the constitutional limitations on Congress that it could not grant perpetual patents nor could it “authorize the issuance of patents whose effects are to remove existent knowledge from the public domain, or to restrict free access to materials already available.” In *Lear, Inc. v. Adkins*, 395 U.S. 653 (1969) the Court overturned the contract doctrine of licensee estoppel and permitted a licensee to challenge the validity of licensed patents. The Court found a strong federal policy, concluding that “enforcing this contractual provision would undermine the strong federal policy favoring the full and free use of ideas in the public domain.” *Id.* at 674. In *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 480-481 (1974), the Court reviewed the purposes of the federal patent system. These purposes are succinctly restated in *Aronson v. Quick Point Pencil Co.*, 440 U.S. 257, 262 (1979): “First, patent law seeks to foster and reward invention; second, it promotes disclosure of inventions, to simulate further innovation and to permit the public to practice the invention once the patent expires; third, the stringent requirements for patent protection seek to assure that ideas in the public domain remain there for the free use of the public.” In *Kewanee* the court held that state protection of trade secrets, including patentable trade secrets, did not violate these policies. 416 U.S. at 493. In *Aronson*, the Court sustained a contract that required continued payment of royalties on a key ring design that was unpatentable. The Court concluded: “Enforcement of the agreement does not withdraw any idea from the public domain” and stated that the public, if not the licensee, was free to use the design at the time “the design entered the public domain as a result of the manufacture and sale of the keyholders under the contract.” *Id.* at 263. In *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141 (1989), the Court struck down a Florida statute that prohibited the copying of unpatented boat hulls using a “direct molding process,” which was also unpatented and also the most efficient method of making the copy. Of relevance here, the Court stated that “the ultimate goal of the patent system is to bring new designs and technologies into the public domain through disclosure.” *Id.* at 151. Even though Congress reversed this decision and extended national protection against so copying boat hulls *(see 17 U.S.C.A. §§ 1301-1332 (2000)), the goal of inducing disclosure to stimulate innovation is advanced.* *See infra* text accompanying notes 14-23 (discussing the relevance of this *quid pro quo* to the basic thesis of this essay).

3. Copyright appears to be the only title of intellectual property that has stimulated much scholarly interest. In a 1981 essay by Professor Lange, he argued “that the growth of intellectual property in recent years has been uncontrolled to the point of recklessness” and this “should be offset today by an equally deliberate recognition of individual rights in the public domain.” David Lange, *Recognizing the Public Domain*, 44 LAW & CONTEMPORARY PROBLEMS 147 (No. 4, 1981) (note omitted). In the process of reviewing the scope of his research, he observed: “Remarkably little attention has been paid to the public domain in recent years. There seems to have been no extended treatments of the subject in its own terms.” *Id.* at 150 n.20. In this extended footnote, Lange acknowledged that he had not attempted “to formulate a general, public domain theory” but “hoped to encourage a wider concern for its definition in case law and literature alike.” *Id.* at 151. Almost a decade later (and with the continued growth of copyright protection), Professor Litman took up the challenge. *See Jessica Litman, The Public Domain*, 39 EMORY L.J. 965 (1990). She provocatively begins her article: “Our copyright law is based on the charming notion that authors create something from nothing, that works owe their origin to authors who produce them.” *Id.* (note omitted). She dismisses this “romantic” view of authorship and argues: “The public domain should be understood not as the realm of material that is undeserving of protection, but as a device that permits the rest of the system to work by leaving raw material of authorship available
for authors to use.” *Id.* at 968. She concludes that originality is an “apparition,” and, would reserve the “raw material of authorship to the commons” of the public domain. *Id.* at 1019-22. In Wendy J. Gordon’s *A Property Right in Self-Expression: Equality and Individualism in the Natural Law of Intellectual Property*, 102 YALE L.J. 1533 (1993), Professor Gordon would go further and assert that the public domain is a source of rights rather than a mere repository. To accomplish this, she extends Lockean natural law theory to intangibles and equates this intangible common with the public domain. *Id.* at 1558. She then defines the components of the public domain: “[T]he public domain is largely filled with creations whose period of protection has expired, works which have been abandoned, or works for which no protection existed ab initio. Similarly, if there are works which under Lockean principles would have only limited duration but would not be capable of being owned, they would be part of the common.” *Id.* at 1559 (footnote omitted). She then goes on to equate “property” with “liberty,” concluding: “For Locke, the word “property” embraces virtually any liberty or claim to which one was entitled under the law of nature. The public’s liberty to use the common is a species of property in even a stronger sense, for as a ‘liberty right’ it is stable and guaranteed entitlement.” *Id.* It is conceptually untenable to keep “property” and “liberty” as if they were fully separate theories. *Id.* (footnotes omitted). Professor Samuels seems to have had the last word — at least in this round — on any general theory of the public domain in copyright law. See Edward Samuels, *The Public Domain and Copyright Law*, 41 JCP (1993). He concludes: “The ‘public domain’ is thus not so much a theory as a tendency to resolve border-line or new cases in favor of nonprotection rather than protection.” *Id.* at 138 (emphasis added). Samuels dismisses Litman’s negative definition of the public domain (that which copyright does not protect) as hardly “more clear than the positively stated one in terms of originality.” *Id.* at 141. He questions Gordon’s reliance on Locke as a model of justification for intellectual property and her reliance on “far fetched” examples that hardly “would expand the public domain itself beyond the traditional categories.” *Id.* at 147-149. Samuels concludes: “It seems a little late in the game to be developing a “theory of the public domain” to put the brakes upon the expansion of intellectual property rights.” *Id.* at 182. This seems to be what Boyle is suggesting: “Perhaps we need to invent the public domain in order to call into being the coalition that might protect it.” James Boyle, *A Politics of Intellectual Property: Environmentalism for the Net*, 47 Duke L.J. 87, 113 (footnote omitted). My purpose here is not to limit the expansion of intellectual property (or to expand it further) or to invent (reinvent?) the public domain. My limited purpose is to attempt to describe the public domain in relation to the private domain, with both expanding or contracting in response to positive law. See infra note 13 (discussing the various definitions of “public domain” and “intellectual commons”).

4. See papers presented at the “Conference on the Public Domain,” Nov. 9-12, 2001, Duke University School of Law, [http://law.duke.edu/pd/papers.html](http://law.duke.edu/pd/papers.html), including James Boyle, *The Second Enclosure Movement and the Construction of the Public Domain*, [http://www.james-boyle.com/papers.pdf](http://www.james-boyle.com/papers.pdf) (accessed Apr. 24, 2003) (arguing that logical arguments against the enclosure of the public domain are inadequate; what is needed is an umbrella concept, similar to the environmental movement, to embrace disconnected issues arising from privatization); Charlotte Hess & Elinor Ostrom, *Artifacts, Facilities, and Content: Information as a Common-pool Resource*, *id.* at 44 (analyzing the “intellectual public domain” as a “common-pool resource” rather than one of “common property” of the traditional commons; see *id.* note 1 collecting literature on the public domain); Pamela Samuelson, *Digital Information, Digital Networks, and the Public Domain*, *id.* at 80 (identifying the contributions to the public domain enabled by digitalizing information and providing digital networks for its distribution and also indicating the threats to the public domain by various legislation and judicial decisions); Negativland, *Two Relations to a Cultural Public Domain*, *id.* at 108 (arguing that artists have a “logical and inalienable right” to define what constitutes art including that which copies the copyrighted works of
appear to be a minimalist concept indicative of the negative legal conclusion that something is not protectable or protected under the law. Accordingly, something is either protected (i.e., in the private domain) or unprotected (i.e., in the public domain). Something may be in the public domain because it is unprotectable (i.e., it does not fall within a protectable category of intellectual property; “the law just does not spread its protection so far”). In addition, something may be in the public domain although it fits within a particular title of intellectual property because it is unprotected, i.e.: (i) protection has not been sought; (ii) if protection is sought, the subject matter fails to satisfy formal or substantive requirements for protection; or (iii) if protection is sought and obtained, the protection has terminated (e.g. by expiration, abandonment, invalidity). In short, a presumably discernable dichotomy is drawn between the private and public domains, with the fundamental distinction being that subject matter in the latter domain is available to all while that in the former is subject to the control of the owner.

Under such a dichotomy, the public domain may be impacted in a number of ways. First, the categories of subject matter that are protectable may be expanded (e.g. reclassifying certain subject matter from unprotectable to protectable status; protecting newly discovered or developed subject matter). This would delay such subject matter from entering the public domain if protection is sought and obtained. A second means would be to lower the standards for protection (formal and/or substantive) with respect to protectable subject matter. Thus, subject matter now protectable at a lower standard, that would have previously entered the public domain, is delayed

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from entering. Delays in entering a public domain may also be achieved by extending the term for which protection is granted or by resuscitating works whose protection had terminated. Finally and perhaps more seriously, the public domain may also be impacted if subject matter protected under one form of intellectual property upon termination of that form may continue to be protected under another form of intellectual property for an extended term.

All of the foregoing impactions are current today to the correlative benefit of the private domain: there has been an expansion of protectable subject matter in all areas of intellectual property. The duration of protection has been increased for certain titles. Certain terminated copyrights have been given new life.

6. In patent law, subject matter protection has been expanded to include, inter alia: living matter (Diamond v. Chakrabarty, 447 U.S. 303 (1980)); computer-related inventions (Diamond v. Diehr, 450 U.S. 175 (1981)); computer programs and methods of doing business (State Street Bank & Trust Co. v. Signature Fin. Group, Inc., 149 F.3d 1368 (1998)). In copyright law, 3-dimensional commercial products starting with Mazer v. Stein, 347 U.S. 201 (1954) extending to a large variety of products from jewelry to soft sculptures (aka toys); computer programs (see, e.g. Computer Assoc. Int'l Inc. v. Altai, 982 F.2d 693 (1992). In trademark law, color (see Qualitex Co. v. Jacobson Prods. Co., Inc., 514 U.S. 159 (1995); 3-dimensional “devices” including the interior of a Mexican-style restaurant (Two-Pesos, Inc. v. Taco Cabana, 505 U.S. 763 (1992); fragrances (In re Clarke, 17 U.S.P.Q.(BNA) 2d 1238 (T.T.A.B.1990); sound (NBC’s three chimes, Reg.No. 523,616 (Apr.4, 1950)). As the Supreme Court stated in Qualitex, 514 U.S. at 164: “It is the source-distinguishing ability of a mark – not its ontological status as color, shape, fragrance, word, or sign – that permits it to serve these basic purposes.” See Graeme B. Dinwoodie, The Death of Ontology: A Teleological Approach to Trademark Law, 84 IOWA L. REV. 611 (1999) (elaborating on the shift in philosophy). The same shift in philosophy may be seen in patent law in Chakrabarty, supra, and particularly in State Street, supra, where Judge Rich states: “The question of whether a claim encompasses statutory subject matter should not focus on which of the four categories of subject matter a claim is directed to — process, machine, manufacture or composition of matter — but rather on the essential characteristics of the subject matter, in particular, its practical utility.” 149 F.3d. at 1375 (footnote omitted).

7. With the possible exception of patents (from 17 years from grant to 20 years from filing), copyrights, in particular, and trademarks, in one sense, have increased terms of protection. First, there were the transitional provisions between the 1909 Act and the 1976 Act that extended the copyright of existing copyrights beyond their original expiration date under the 1909 Act. More recently there has been the extension under the Sonny Bono Term Extension Act of 1998, Pub.L. No. 105-298, 112 Stat.2827. The copyright term has been increased from life of the author plus 50 years to life plus 70 years (15 U.S.C.A § 303(a)), and for pseudonymous works and works made for hire from 75 to 95 years from publication or from 100 years to 120 years from creation. (Id, § 302(c)). The constitutionality of this extension was affirmed in Eldred v. Ashcroft, 123 S.Ct. 769 (2003), by a 2-1 majority. The sense in which trademark protection has been extended is by the adoption of an intent-to-use standard rather than by requiring commercial use permitting the applicant to claim a constructive use date and warehouse the mark for more than four years. See Trademark (Lanham) Act of 1946, § 1(b),15 U.S.C.A. § 1051(b) (2000).

8. See 17 U.S.C.A. § 104(a) (2000). The restoration of these works would clearly
There are certain indications that lower substantive standards of protection are being applied. There is overlapping protection of the same subject matter by different forms of intellectual protection delaying full entrance of that subject matter into the public domain.

Accordingly, there is increasing concern among those constituencies who rely upon intellectual subject matter. To these, any hindrance to full access to intellectual subject matter of whatever nature may be disconcerting (if not tragic) whether the access is desired for commercial ends, or for purely academic, artistic or philosophical pursuits. Professor Lessig laments the insidious assault on the public domain: “So invisible is public domain that we don’t even see it when it is everywhere around; so invisible is the idea that diminish the contents of the public domain in the United States. Derivative works created on the basis of unprotected foreign works now may give rise to a claim of reasonable compensation awardable to the owner of the restored work. This may strike some as surprising that a party, acting in good faith on the basis of existing U.S. law, would find itself paying reasonable compensation for the use of what was once free. However, this slight aberration as a consequence of international political compromises should return to normal once these restored foreign works expire.

9. In patent law, the Court of Appeals for the Federal Circuit has essentially been given free rein and the percentage of patents found “not invalid” has increased significantly: A recent study by Allison and Lemley found the patent validity rate of the Federal Circuit during the period 1989-1996 to be approximately 52%. See John R. Allison & Mark A. Lemley, Empirical Evidence on the Validity of Litigated Patents, 26 AIPLA Q. J. 185, 241 (1998). Prior to the creation of the Federal Circuit in 1982, the historical average for patent validity was approximately one-third. See A. Samuel Oddi, An Uneasier Case for Copyright than for Patent Protection of Computer Programs, 72 NEB. L. REV. 351, 393 n.173 (collecting studies). The Supreme Court has only taken one “obviousness” case under 35 U.S.C.A § 103 (Dann v. Johnson, 425 U.S. 239 (1976) since Graham v. John Deere Co., 383 U.S.1 (1966). The much more interesting issue in Dann v. Johnson was whether a computerized financial recording keeping system was patentable subject matter under § 101; the Court avoided this issue by relying solely on § 103. The substantive standard of “originality” has never been very high in copyright law (the “shaky hand” of Alfred Bell & Co., Ltd. v. Catalda Fine Arts, Inc., 191 F.2d 99 (1951) and somewhat more, but not much, of a telephone book (Feist Publications, Inc. v. Rural Telephone Service Co., 449 U.S. 340 (1991)). In trademark law, the Supreme Court has held that the interior of a Mexican-style restaurant is protectable as an unregistered mark under § 43(a) of the Lanham Act (15 U.S.C.A.§1125(a)), based on a jury finding of “inherently distinctive” without a requirement of that the mark have acquired secondary meaning. See Two-Pesos, Inc. v. Taco Cabana, 505 U.S.763 (1992). Cf. Wal-Mart Stores, Inc. v. Samara Brother, Inc. 529 U.S. 205 (2000), where secondary meaning was required for the protection of an unregistered clothing design, with Justice Scalia stating that the holding in Two-Pesos was “inapposite” because clothing was a “product-design” while the interior of a restaurant was “either product packaging . . . or else some tertium quid akin to product packaging.” Id. at 206. It is not immediately apparent how strictly one should construe his new category of “devices tertium quid.”

10. See infra Part V.E (discussing the impact on the public domain of such overlapping protection — such as when patent protection has expired, yet either copyright or trademark protection remains in force).
the free might matter to creativity, that when it is enclosed, we are
convinced this is progress.” On the other side are those producers
and owners of intellectual subject matter who urge expanded
intellectual property protection, insisting that sufficient incentives
must be provided to ensure an adequate supply of intellectual
creations that will redound to the benefit of society as a whole. As
well put by Professor Samuelson: “Whether the public domain is a
virtual wasteland of undeserving detritus or the font of all new
creation is the subject of some debate.”

In this article, the concept of public domain will be addressed as
generally as possible. The basic premise is that the public domain
serves primarily as a source of sensory stimuli (which will be termed
the “public-domain-as-stimuli” thesis) and only secondarily as some
sort of “intellectual commons,” where all may freely exploit its
contents.

11. Lessig, supra n. 4, at 189.
12. Samuelson, supra n. 4, at 80.
13. The literature has not produced a consistent definition of “public domain” or
“intellectual commons” (sometime “intangible commons”) or their interrelationship, if
any. Patterson and Lindberg include biological and cultural aspects: The public domain
is not a territory, but a concept. For instance, there are certain materials – the air we
breathe, sunlight, rain, idea, words, numbers – not subject to private ownership. The
materials that compose our cultural heritage must be free for all to use no less than matter
necessary for biological survival. L. R Patterson & Stanley W. Lindberg, The Nature of
Copyright: A Law of Users Rights 50 (1991). Litman, supra n. 3, appears to equate the two
and espouses free exploitation. She provides a functional definition: “[T]he public domain
is the law’s primary safeguard of the raw material that makes authorship possible.” Id. at
967. Then she elaborates: “The concept of the public domain is another import from the
realm of real property. In the intellectual property context, the term describes a true
common comprising elements of intellectual property that are ineligible for private
ownership.” Id. at 975. In a recent article, Benkler considers Litman’s “traditional
definition too narrow and would define the public domain as “the range of uses of
information that any person is privileged to make absent individualized facts that make a
particular use by a particular person unprivileged.” Yochai Benkler, Free as the Air to
Common Use: First Amendment Constraints on Enclosure of the Public Domain, 74
N.Y.U. L. Rev. 354, 362 (1999). Hence, the public domain would include non-infringing
fair uses (“easy cases”) of otherwise protected subject matter. For Gordon, the public
domain is a component of the “intangible common”: “The most obvious component of the
intangible common is equivalent to what our law now identifies as the ‘public domain’;
those intellectual creations already in existence but not privately owned.” Gordon, supra
n. 3 at 1559. The second component are those “works which, under Lockean principles,
would have only limited duration or would not be capable of being owned.” Id. She also
maintains full access to both components. See infra n. 61 (discussing Gordon’s
sophisticated argument that the “intangible commons” constitutes a source of rights in the
public). Reese, without reference to the “public domain” or Gordon’s article, expansively
defines the “intellectual commons”, to include “resources such as language and
symbolism; literary, visual and musical traditions and conventions; the history of idea – in
short, every thing that can be described as ‘culture’ in both the artistic and anthropological
senses.” R. Anthonly Reese, Reflections on the Intellectual Commons: Two Perspective on
philosophical justifications for the thesis will be introduced. Then the
“creative cognitive process” will be outlined to illustrate how human
intervention though this process, in response to stimuli from the
public domain, transforms and transports subject matter from the
public domain to the private domain. In Part III, the dichotomy
between the public and private domain will be considered in a “state-
of-nature” model before the introduction of an intellectual property
system. According to this model, in response to stimuli in the public
domain and as a consequence of the creative cognitive process of the

Copyright Duration and Reversion, 47 Stan. L. Rev. 707, 710 (1995). Madison considers
the public domain to be a cousin of fair use, and would recognize the public domain as a
source of raw material for authorship along with Litman. He then goes on to assert a
political and social dimension: “The public domain may do more: it provides a common
reference library of publicly accessible facts and ideas—an intellectual commons—which gives
our diverse polity the vocabulary and syntax necessary to engage in a variety of political
and social debate and to function at some levels a single community.” Michael J.
Madison, Legal-Ware Contract and Copyright in the Digital Age, 67 Fordham L. Rev.
1025, 1097 (1998) (footnote omitted). Hughes considers the “common” in the following
manner: It requires some leap of faith to say that ideas come from a “common” in the
Lockean sense of the word. Yet it does not take an unrehabilitated Platonist to think that
the “field of ideas” bears a great similarity to a common. Justin Hughes, The Philosophy
of Intellectual Property, 77 Geo. L. J. 251, 315 (1988). He defines “idea” to be
shorthand for the unique product of cognitive effort.” Id. at 294. He then would further
subdivide the “common” in two: “a ‘common of ideas’ and a ‘common of potential
ideas.’” Id. at 323. It would seem to me that, if “ideas” require cognitive effort to be
formed by humans, then “potential ideas” would be stimuli. But for that matter so would
publicly known ideas. Yet another view is that of Schaffner, who offers as an “aside”:
“[I]t is important to understand that the common under Lockean principles is not the
same as the “public domain” for patent purposes. The “public domain” under the patent
laws defines prior art, which will prevent an inventor from obtaining a patent grant.” Joan
“public domain” definition of “prior art” in the patent law sense is too narrow. Certainly
the claimed invention of a patent is in the private domain while the patent is extant and
still is “prior art” within 35 U.S.C. §§ 102, 103. Lessig, supra n. 4 at 180, defines commons
as follows: “By a commons I mean a resource that is free. Not necessarily zero cost, but if
there is a cost, it is a neutrally imposed, or equally imposed cost.” (emphasis added).
Reichman & Uhlir, supra n. 4, at 242, “define public domain in terms of sources and types
of information whose uses are not impeded by legal monopolies grounded in statutory
intellectual property regimes, and which is accordingly available to some or all members of
the public without authorization.” Samuelson, supra n. 4, at 84, provides “A Map of the
Public Domain and Adjacent Terrains.” See also Boyle, supra n. 4, at 26-38, who after
discussing various definitions proposed, concludes: “And what is true for property, is true
for the public domain. Just as there are many ‘properties,’ so too there are many ‘public
domains.’” Id. at 36. “We have not one public domain, one theory of the public domain,
but many.” Id. at 38. Hess & Ostrom, supra n. 4, at 48, conclude: “In relation to the
intellectual public domain, the commons appears to be an idea about democratic process,
freedom of speech, and the free exchange of information. While we agree that freedom of
speech and open exchange of information are fundamental to the creation and sustenance
of democratic systems of governance, we need to develop useful tools for analyzing what
we mean by commons, public demand, and free exchange of information.”
responding individual, an “idea” is formed in the mind of that individual. For want of a better definition we can use John Locke’s: “Idea is the object of thinking.” 14 This idea is privatized (i.e., is in the private domain) by virtue of being secret. The loss of secrecy transfers the result of the creative process to the public domain.

The modifications to the basic model necessitated by the introduction of an intellectual property system will be addressed in Part IV, including the expansion of the private domain to include a “strong version” of protection under various titles of intellectual property in addition to the “weak version” implemented by secrecy. The public domain will also be compartmentalized to illustrate a “weak version,” whose function is to serve as a source of stimuli for the creative process, and a “strong version,” which would also permit public exploitation in the absence of extant intellectual property protection. In Part V, the public-domain-as-stimuli thesis will be examined within the various forms of intellectual property and any differences identified among them. Because certain intellectual subject matter is unprotectable in a strong version, consideration will be given in Part VI to the nature of this subject matter (“unprotectables”) in the context of the public-domain-as-stimuli thesis. Finally, some conclusions are drawn concerning modifications in the intellectual property system as suggested by the public-domain-as-stimuli thesis.

II. The Creative Cognitive Process

The legal justification for the public-domain-as-stimuli thesis is the basic norm of the Copyright/Patent Clause of the Constitution granting Congress the power “[t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.” 15 In Sony Corp. v. Universal City Studios, Inc., the

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14. John Locke, An Essay Concerning Human Understanding, Great Books Of The Western World 121 (John Maynard Hutchins ed. 1952). Thus the idea may be said to be conceived in response to stimuli and cognitive function in the brain by the mental process of “conception.” See infra n. 27 (further discussing Locke’s theory).

15. U.S. Const. Art . I, cl.8, § 8. As stated in Mazer v. Stein, 347 U.S. 201, 219 (1954): The economic philosophy behind the clause empowering Congress to grant patents and copyrights is the conviction that encouragement of individual effort by personal gain is the best way to advance public welfare through the talents of authors and inventors in “Science and useful Arts.” Sacrificial days devoted to such creative activities deserve reward commensurate with the services rendered.
purposes underlying the grant of this broad power to Congress were stated by the Supreme Court in the context of copyrights and patents:

[This] limited grant is a means by which an important public purpose may be achieved. It is intended to motivate the creative activity of authors and inventors by the provision of a special reward and to allow the public access to the products of their genius after the limited period of exclusive control has expired.  

Specifically with respect to copyright, the Court states in *Feist Publications, Inc. v. Rural Telephone Service Co.*:

The primary objective of copyright is not to reward the labor of authors, but “[t]o promote the Progress of Science and useful Arts.” . . . *To this end copyright assures authors the right to their original expression, but encourages others to build freely upon the ideas and information conveyed by the work.*  

In *Aronson v. Quick Point Pencil Co.* the Court elaborated on the policies underlying patents:

First, patent law seeks to foster and reward invention; *second, it promotes disclosure of inventions, to stimulate further innovation* and to permit the public to practice the invention once the patent expires; third, the stringent requirements for patent protection seek to assure that ideas in the public domain remain there for the free use of the public.  

In *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, decided ten years after *Aronson*, the Court went so far to say: “*the ultimate goal of the patent system is to bring new designs and technologies into the public domain through disclosure.*” In 1943, during the dark days of patent law, the Court in *Universal Oil Co. v. Globe Co.* had made

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the disclosure aspect of patent policy quite clear:

As a reward for inventions and to encourage their disclosure, the United States offers a seventeen-year monopoly to an inventor who refrains from keeping his invention a trade secret. But the quid pro quo is disclosure of a process or device in sufficient detail to enable one skilled in the art to practice the invention once the period of the monopoly has expired...

Even in *Kewanee Oil Co. v. Bicron Corp.*, where the Court upheld state protection of trade secrets against federal preemption, the disclosure policy underlying patent protection was emphasized:

*When a patent is granted and the information contained in it is circulated to the general public and those especially skilled in the trade, such add-ons to the general store of knowledge is of such importance to the public weal that the Federal Government is willing to pay the high price of 17 years exclusive use for its disclosure, which disclosure is assumed will stimulate ideas and the eventual development of further significant advances in the art.*

Nonetheless, the Court found a parallel, at least to one of the policies supporting patents on a constitutional basis, and went on to extend the “reward” theory to trade secrets: “The maintenance of standards of commercial ethics and the encouragement of invention are the broadly stated policies behind trade secret law.” Obviously, secret inventions cannot stimulate further inventions; but if the trade secret can be shared with others by means of licensing, this would provide licensees with stimulation perhaps leading to further ideas and creations.

Trademarks by their nature are valuable because of their commercialization: the more publicity they receive the better. The underlying policy for granting trademark protection, as set out in *Park’N Fly, Inc. v. Dollar Park and Fly, Inc.*, is to “secure to the owner of the mark the goodwill of his business and to protect the

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20. 322 U.S. 471, 484 (1943) (emphasis added).
22. *Id.* at 481.
ability of consumer to distinguish among competing producers.”

While protecting consumers against confusion is highly desirable, the incentive to create new marks and market them is provided by excluding competitors from using confusingly similar marks. But, in any event, competitors and the public in general have access to the protected mark at least as a stimulus for whatever creative purposes it may instill.

In sum, I would argue there is a strong theme running through intellectual property law that recognizes the importance of the disclosure of intellectual creations for their value as stimuli for further creations. Without the quo of disclosure, the quid of protection is undermined.

If a philosophical justification for the public-domain-as-stimuli thesis is needed, Emanuel Kant’s Critique of Pure Reason would seem admirably to serve that purpose. In Kant’s view there are two forms of cognition. One is based on experience, i.e., the perception of exterior (to the mind) sensations (stimuli). This Kant calls empirical or a posteriori cognition. The other form is independent of sensory perception but is inherent in the individual’s mental process; as such he terms this pure or a priori cognition. Kant posits that pure cognition consists of space and time, which are not perceived but which provide means for ordering perceptions. The cognitive


26. Id. at 137 (“[E]mpirical cognition [are] those that are possible only a posteriori, i.e. through experience.”)

27. Id. (“[W]e will understand by a priori cognition not those that occur independently of this or that experience, but rather those that occur absolutely independently of all experience.”)

28. Id. at 157 (“[T]here are two pure forms of sensible intuition as principles of a priori cognition, namely space and time. . .” ) By introducing the concept of a priori cognition, Kant refutes Locke’s tabula rasa conception that “there is nothing in the mind except that which was first in the senses.” Locke, supra n. 14, at 121. While Locke’s “Second Thesis on Civil Government” (see infra n. 47) has recently become a favorite of those seeking to justify intellectual property on a natural law basis, his “Essay” has been largely ignored even though it deals fundamentally with cognitive processes upon which the creation of intellectual subject matter obviously depends. According to Locke there are only two sources of ideas: “sensation” and “reflection.” Id. Ideas of the “sensation” category are from perceptions of things (“external objects”) “depending wholly on our senses, and
process would thus involve an individual’s sensing of an external stimulus (e.g., from an object – an apple falls from a tree), perceiving this sensation and ordering it in response to space and time. This ordered perception may be further processed cognitively to generate an idea. Whatever may be the metaphysical implications or complications of time and space as pure cognition, modern science seems to confirm to a surprising extent Kant’s underlying conception of the cognitive process. The following brief (and admittedly highly simplified) overview of the cognitive process is offered as an aid to illustrate the public-domain-as-stimuli thesis. It is, of course, well beyond the scope of this article to attempt a detailed explanation of how the peripheral nervous system senses stimuli and how the central nervous system, in particular the brain, processes transmitted information about the stimuli. Rather, a brief overview of selected mechanisms of neurobiology will be used as a basis for discussing creativity on the level of the mind, which may be simply defined as “what the brain does,” even though we are only beginning to scratch the surface of how the brain does it. As Bertrand Russell put it:

"derived by them to the understanding." Id. The other source of ideas, “reflection,” is internal from the “the perception of the operations of our minds within us.” Id. Locke seems to equate thinking to perception and define the power of these as understanding.

29. For present understanding of the relevance of time and space to the nervous system, see infra n. 34. See also Dee U. Silverthorn, Human Physiology: An Integrated Approach 278 (2nd ed. 2001) (investigations showing the ability of the brain to change neuronal connections “show us that the brain is not ‘hard-wired’ as we once had thought.”) Nonetheless, whether the brain is “pre-wired” for time and space ordering or “wires” itself in response to external and/or internal stimuli does not affect the prescience of Kant’s construct. As put by Silverthorn: “One of the most difficult aspects of brain function to translate from the abstract realm of philosophy into the physical circuits of neurobiology is the combination of attributes that we call personality.” Id. at 275.

30. Steven Pinker, How The Mind Works 24 (1997). Pinker emphasizes that the mind is not the brain itself, but the special function of the brain: information processing or computation. He defines the mind as “a system of organs of computation, designed . . . to solve . . . problems.” Id. at 21. He views the brain as the processor of information and thinking as a kind of computation. As the human nervous system is specialized to perform the function of information processing (including transmitting, integrating, storing and retrieving information; using information in forming perceptions; thinking and learning, inter alia), a highly schematic outline is offered here of how the nervous system works. The focus will be limited to the interface of the nervous system with the individual’s external environment and will not include consideration of how stimuli arising inside of the body are handled. The intent is to render the public-domain-as-stimuli thesis less abstruse.

31. See generally Silverthorn, supra n. 29, at Ch. 8 (“The Nervous System”) 214-251, Ch. 9 (“The Central Nervous System”) 252-280, Ch.10 (Sensory Physiology) 281-325. See also Arthur C. Guyton & John E. Hall, Textbook Of Medical Physiology Ch. 45 (“Organization of the nervous system; basic functions of synapses and transmitter substances”) 565-582, Ch. 46 (“Sensory receptors; neuronal circuits for processing information”) 583-594, Ch. 57 (“The cerebral cortex; intellectual functions of the brain;
“The mind is a strange machine which can combine the materials offered it in the most astonishing ways.”

In the beginning, incoming stimuli (sight, sound, touch, taste, smell) are sensed by the respective sense organs, which are part of the peripheral nervous system. In response to these stimuli, information is transmitted to the central nervous system for processing. A perception may be formed in the mind in response to what has been received by a classifying and differentiating process. Thus, the...

and learning and memory”) 733-748, Ch. 58 (“Behavioral and motivational mechanisms of the brain–The limbic system and the hypothalamus”) 749-760 (9th ed.1996). The author notes the irony of understanding least that which is the largest part of the nervous system (the mechanisms of the brain) and that discussion of thought is difficult because the neural mechanisms underlying thought are not known. Id. at 742.


33. See Robert M. Berne & Matthew N. Levy, Physiology 81 (4th ed.1998). Among its many functions, the nervous system enables individuals to interact with their external environments. This interaction is accomplished through the action of its three broad components: (a) a sensory component to detect events in the environment, (b) an integrative component to process and store incoming sensory data, and (c) an effector component to generate responses to the stimuli. The peripheral nervous system is that division of the nervous system that contains specialized sensory receptors that detect various forms of environmental energy that impinge on the body (e.g., mechanical, thermal, chemical, electromagnetic, sound, etc). These types of energy act as stimuli to excite sensory receptors, which then change this information into a signal (nerve impulse) that can be understood and processed by other nervous system structures. The nerve impulse carries the particular information about the environment on pathways of nerves to the central nervous system. The central nervous system is the other division of the nervous system and is the site of higher level processing of the information received via the peripheral nervous system. See also Silverthorn, supra n. 29, at 282: All sensory pathways have common elements: They begin with a stimulus (internal or external) that acts on a sensory receptor. Receptors are transducers that convert stimuli into electrical signals. If the signal is of sufficient intensity (i.e. threshold) it passes via the sensory neuron to the central nervous system, where signals are integrated. Some are perceived consciously, while others are acted on without conscious awareness. Along the way, the nervous system can modulate and shape the information. The brain’s perception (interpretation) of a sensory stimulus may be very different from the actual stimulus (e.g., light waves may be perceived as color). Moreover, the brain can “fill in” sensory information to create a “complete picture,” which is an important aspect of perception. The process of translating a stimulus into a perception allows information (stimuli) to be acted on and used in complex cognitive functions (i.e. thinking). Id. at 266. “What we learn or experience and what we store in memory create a unique pattern of neuronal connections in our brains.” Id. at 275. See also, Guyton & Hall, supra n. 31, at 565. On reaching the central nervous system, for example, the information may be assigned meaning (i.e., perceived) and generate an immediate response (e.g. moving one’s finger from a hot stove) or may be stored as a memory to help determine reactions to stimuli at some future date (e.g., avoiding an electric burner when it is turned on). The nervous system is a network of billions or trillions of nerve cells linked together in a highly organized manner to form the rapid control system of the body. Id. at 215.

34. See Guyton & Hall, supra n. 31, at 109. Perception, the conscious awareness of the incoming stimuli, takes place in the cerebral cortex, the outer covering of the brain.
stimulation produced by an apple falling from a tree may result in a corresponding perception in the mind of an apple falling from a tree. We would expect a substantially identical perception by other human beings observing the same occurrence. The stimulus may be the sound of the apple hitting the ground, which may be sensed and correspondingly perceived as the sound of an apple hitting the ground. Should the person be sitting under the apple tree, the perception may be that of touch—an object hitting the head and a response of pain. Spatial relations and time would appear to be ordered as part of the cognitive process.

At this stage of the cognitive process, the perception that an apple fell from a tree at a particular space and time may be stored in the memory of the individual. This perception may then serve no further purpose. On the other hand, the perception of an apple falling from a tree may trigger further cognitive processing, either shortly after the perception, or at a later date in response to the

The initial processing may include the extraction of selected features of the stimulus, and serves as a preliminary step to further processing involving a number of other central nervous system structures. See also Jeane Ellis Ormrod, Human Learning 194 (2d ed, 1995). Differentiating sensation, a physiological phenomenon, from perception, a psychological phenomenon, illustrates a basic issue that has been identified above. See supra n. 31. Precise knowledge of underlying physiological mechanisms of higher cognitive functions of the nervous system is not yet available; thus, language and concepts from the field of psychology are used to express how the mind functions. Perception, as defined by Ormrod, is the meaning (i.e., recognition and interpretation) that we give to environmental stimulation. “The mind interprets and recognizes what the body has sensed.” Id. At this time, there is a need to rely on data from psychological language and research to communicate these concepts.

35. See Berne & Levy, supra n. 33, at 100. As noted supra n. 33, sensory receptors encode the multiple stimuli that impinge on the body so that the information can be interpreted by the central nervous system. Among the aspects of stimuli that are encoded are their spatial and temporal characteristics. Id. at 50. See also Guyton & Hall, supra n. 31, at 578: Aspects of these time and spatial characteristics are crucial to the processing of information because the nervous system structures are limited in the time available for responding to a stimulus, and stimulation of various areas may be needed to generate a response. The rapidity and number of impulses is of major importance in information processing at a cellular level. The significance of time and space is also recognized in the “holistic theory of thought”, which suggests that thoughts result from . . . “a ‘pattern’ of stimulation of many parts of the nervous system at the same time and in definite sequence . . .” Id. at 742.

36. See Guyton & Hall, supra n. 31, at 565, who note that the complexity of the nervous system enables it to receive millions of bits of information from different sensory receptors and to integrate all of these to determine a response. In fact, the central nervous system constantly receives millions of bits of information from the environment. A mechanism has evidently evolved to protect the brain from being overwhelmed with information: On a subconscious level, the brain has the capacity to ignore information determined to be of no importance, to suppress incoming information, or to store the information as memory for future use. Id. at 743.
retrieved memory of such a perception in conjunction with others. The perception may include an emotional response, e.g., if seeing the apple falling evokes a happy memory of how good your mother’s apple pie tasted. However, beyond emotional responses a higher level cognitive processing may occur. Included in the higher level of cognitive processing is the “creative process,” which entails a complex and incompletely understood mental process resulting in the formation of a new and original mental conception, i.e., an idea.

37. See Silverthorn, supra n. 29, at 272. In the memory multiple levels of storage with varying retention times exist. Furthermore, a person’s memory bank is constantly changing. Newly acquired information can be integrated with stored information, and this connection of new and old information can be used in reasoning to solve problems or plan actions. See Guyton & Hall, supra n. 31, at 742-43: Although knowledge about the mechanisms underlying memory is limited, memories can be stored in the nervous system for time periods varying from seconds to a lifetime. Intricate chemical and structural changes in the nervous system are believed to be required for a memory to be “consolidated” for recall after a period of time. Id. at 745. During the process of consolidation, memories are codified into different classes of information by using previously stored information to help process the new incoming information. The brain sorts through the new and old information for similarities and differences, and then stores new information in association with the same types of memory (rather like a filing system). Thus, what has gone before continues to act on new incoming stimuli and to influence how they are processed.

38. See Guyton & Hall, supra n. 31, at 752. The limbic system, which is situated under the cerebral cortex (the outer covering of the brain), is known to control emotional and motivational behavior. The limbic system plays a key role in whether stimuli are perceived as pleasant or unpleasant. Id. at 756-757. This emotional reaction is a critical factor in determining which information is stored in memory, as opposed to which information is discarded or forgotten. See infra n. 43 (discussing the relationship of memory to creativity.)

39. Complex cognitive functions or processes are commonly designated “higher level” because they involve more neural interconnections than the transduction and transmission that take place at “lower levels.” Higher level functions also take place at the anatomically highest level of the nervous system—the brain. See also Gerald C. Cupchik, Perception and Creativity, in 2 Encyclopedia Of Creativity 355 (Marc A. Runco & Steven R. Pritzker eds. 1999) (the cerebral cortex is identified as the site of thinking logically and hypothetically, which is associated with the “higher order processing involved in creativity”) Id. at 359. See also John C. Houtz & Cathryn Patricola, Imagery, in 2 Encyclopedia, Id. at 1-2, (noting that the creative process is considered to be primarily cognitive).

40. See Ruth Richards, Four Ps of Creativity, in 1 Encyclopedia, supra n. 39, at 733-742. Richards summarizes the four conceptual approaches to the studies of creativity conducted over the past 40 years: Person, product, press of environment, and process. Studies of person may include attempts to identify characteristics of ongoing traits or fluctuating states of the creator. The product aspect is focused on the outcome or results of creative effort, such as a concrete product or an idea. Studies of the press of environment seek to discern the surrounding circumstances necessary to release creative production. Attempts to identify the ways in which creative individuals think, feel, motivate themselves, and behave as they generate original and meaningful products are involved in the process approach to studying creativity. See, e.g., Houtz and Patricola, in 2 Encyclopedia, supra note 39, at 1, where creativity is defined as “the cognitive processes
creative process is individualized and subjective in contrast to what may be expected of an objective perception of an object. The process would involve, *inter alia*, the individual’s memory, rational thinking process (logical thinking), motivation, problem solving ability, talent, and a final component, which though little understood, may be called *creativity*. Memory, especially, is thought to play a critical role in that lead to the production of new, original ideas, processes, or artifacts that are judged to be useful or otherwise of some value.” Others (Gerald C. Cupchik, in 2 Encyclopedia, *infra* n. 39, at 355) view creativity as a bi-directional process involving integration of higher level (i.e., intellectually based) central nervous system processes with sensory-based (i.e., “lower”) peripheral nervous system processes. Creativity results as higher level processing modifies the “automatic” processes of “transduction, feature extraction and figural synthesis” of information coming from stimuli. See also Edward Necka, *Memory and Creativity*, in 2 Encyclopedia, *infra* n. 39, at 193. Necka emphasizes that “there is no evidence whatsoever” that external sensory stimuli, when initially received, are connected to creative processes/abilities. *Id.* at 193-194. Rather, creativity is an activity of the mind executed through memory. *Id.* at 193. One might conclude, therefore, that all stimuli received from the external environment must be acted upon by stimuli that have previously been subjected to processes of encoding and storage by the central nervous system for the generation of creativity.

41. That the creative process is individualized and subjective to the individual creator may be inferred from descriptions of information processing in the nervous system, especially the aspects of memory processing. See *infra* n. 43. Studies of creative individuals across different fields have yielded a plethora of characteristic patterns. See Michael A. West & Tudor Rickards, *Innovation*, in 2 Encyclopedia, *infra* n. 39, at 45 (identifying cognitive flexibility, self-discipline and self-direction, a high degree of drive and intrinsic motivation, concern with achieving excellence, perseverance, ego strength, independence of judgment, ability to tolerate ambiguity, and need for freedom in work. *Id.* at 47-48. See also Ravenna Helson *Personality*, in 2 Encyclopedia, *infra* n. 39 at 361 (including in creativity: concern for meaning (as opposed to concern with facts for their own sake), intellectual curiosity, high investment in work, ability to give form to ideas, and other distinguishing motivational, cognitive, and affective traits). *Id.* at 361-370. See, in addition, Richards, in 1 Encyclopedia, *infra* note 39, at 735 (citing the existence in creative persons of “core” personality traits and features of cognitive style, including independence, flexibility, nonconformity, and openness to experience, among others). Cropley provides a cognitive definition of creativity as the production of “effective novelty.” Effective novelty is beyond mere novelty (e.g. difference or variability) and would involve additionally the satisfaction of “technical, professional, aesthetic, or scholarly criteria.” Arthur J. Cropley, *Creativity and Cognition: Producing Effective Novelty*, 21 Roeper Rev. 253 (1999). He then goes on to indicate the steps in the creative process: “Thinking, reasoning, and problem solving can be regarded as cognitive processes that use existing information to produce further information. (In the case of creativity this further information would contain effective novelty.) This involves selecting from among the masses of information available at any moment (i.e., perception is not simply a passive acceptance of everything that impinges on the senses or is already stored in the mind); relating new information to what already is known; combining elements of new and old information; evaluating newly emerging combinations; selectively retaining successful combinations (which may then function as new information, returning the process to the phase of relating elements of information; and communicating the result to others.” *Id.* at 257. (It is not apparent to me why “communicating the result to others” must be part of the process. The creative person could decide to keep the idea/creation secret and
creativity. This particularized high level cognitive process could produce wide ranging and different ideas among individuals. The

42. See Edward Necka, Memory and creativity, in 2 Encyclopedia, supra n. 39, at 193-199. Necka describes several elements in the stages of memory processing that he believes may account for individual differences between creative and less- or non-creative individuals. He maintains that creativity cannot occur without participation of one’s memory structures and processes, but notes that, as yet, no psychological theory regarding this relationship has been developed. Id. at 193. Necka’s perspective may be summarized as follows: The stages of memory processing (encoding, storage, retrieval) determine how one’s long-term memory performs functions associated with creativity, problem-solving, and insight. Id. at 195. During the encoding of information received from external stimuli, incoming information is “labeled” and categorized for storage. How this activity differs between creative versus non-creative individuals may contribute to creativity: Creative individuals are viewed as encoding differently because they tend to perceive the world in an “unusual subjective and personalized manner” Id. In addition, creative individuals are thought to simplify complex information for storage Id. at 196. Creative individuals are also thought to differ significantly in how their brains store information in the memory banks. See generally id. at 196-197. As noted supra n. 37, the information already stored in the memory continually acts on incoming information from external stimuli. A “selective forgetting” process may eliminate any unnecessary information and enable the creative individual to view problems from a new and different perspective. Selective forgetting may account for the phenomenon of “incubation” or unconscious production of a (creative) idea and precedes its illumination and elaboration. In addition, an element termed “familiarization,” in which repeated efforts to solve a problem are unsuccessful, acts to eventually render the problem more understandable, clearer and simpler. The final element in the storage process is termed “spontaneous recovery.” This element is defined as the likelihood that information that has been dormant for a time will be recalled. Necka assumes that one’s long-term memory is progressively organized in an unintentional manner during the storage stage, and that this organization is important for creative thinking because the mental sets and obstacles to attaining original ideas are thus eliminated. Id. at 196-197. The third stage of memory processing, retrieval, refers to the ability to recall from memory the information previously encoded and stored. Necka suggests that creative ideas may exist in long-term memory just “waiting” to be noticed and used. Id at 197. The decoding of information for retrieval depends on cues; the creative individual may be able to use new labeling cues different from the initial coding categories to broaden the approach to solving a problem. That is, creative individuals may be more inclined to conduct a global, rather than a restricted, search of the information stored in the memory. Necka infers that a “priming stimulus” activates the memory and enables the creative person to make remote, unusual associations across many different categories of information, thereby giving rise to new and original ideas. Thus, he concludes that aspects of the memory of the creative individual differ qualitatively from the memory of those who are less creative. Id. at 198.

43. The foregoing description of how the human nervous system processes environmental stimuli (see supra nn. 33-39) offers substantial evidence for the proposition that the same environmental stimulus may be processed with radically different outcomes by different individuals. The complexity of the genetic make up of the individual nervous system, the number and types of past experiences that each individual undergoes, how a particular nervous system handled particular environmental stimuli (which were stored, ignored, discarded, etc.), and how previous perceptions were ordered to what effect would seem to ensure that differences in conception would inevitably occur. Clearly, in light of evolving knowledge of how an individual’s nervous system processes information from environmental stimuli, identical stimuli may produce indifference in one individual, while
stimulus of the falling apple in the context of the creative process may lead to a scientist’s conceiving the law of gravity, a poet’s conceiving an “Ode to a Falling Apple,” an artist’s conceiving a painting “An Apple Falls,” a chef’s conceiving a recipe for an apple soufflé.

The idea as a result of the creative process may remain in intangible form as a mental conception. The creative process, however, may not end here. The next step may be the transformation from the intangible idea conception to a tangible implementation, which will be called here a “creation.” This creation may be a work of authorship, an invention, a trade symbol, or other tangible thing. The creative process continues, as the idea may require refinement and improvement, or even a change in direction as the attempt to implement this idea is undertaken. The process continues during the course of implementation with new stimuli being perceived, conceived, then entering the creative process to produce the desired creation.

In sum, while the perception of a quite ordinary occurrence in life may, to the vast majority of us, be merely that (an apple fell, so what?), it may in creative individuals be a stimulus toward a fundamental scientific discovery, a magnificent work of art, or an invention of great societal value. This is not to say that the stimulus per se is the cause, but, at least, it is a cause in the sine qua non sense, i.e., an integral component of the creative cognitive process involving talent, motivation, rational skills, problem-solving ability, and creativity. The creative process of each individual (however vibrant or placid) is sui generis and distinctive to that person; indeed, creativity may be the most distinguishing characteristic of individuals. Again bearing in mind that the foregoing is a highly

in another the same stimuli produce something of creative genius. Our perceptions of environmental stimuli clearly do not order themselves automatically into coherent thought or creative invention. It is the unique mental processing of the individual that gives shape and molding to the objective phenomena.

44. The story that Isaac Newton’s discovery of the law of gravitational force was stimulated by a falling apple is attributed to John Conduitt, the husband of Newton’s niece: [When Newton] “was musing in a garden it came into his thought that the power of gravity ([which] brought an apple from the tree to the ground) was not limited to a certain distance from the earth but the power must extend much farther.” James E. Force, Isaac Newton, The Columbian History Of Western Philosophy, 424-425 (Richard H. Popkin, ed.1998). Whether the great scientist was actually hit by an apple remains a subject of historical, if not philosophical, speculation.

45. If Sir Isaac Newton had an identical twin brother (thus having an identical generic structure) who had a substantially identical environment (upbringing, education, experience, etc.), it would be far from assured that the brother would have responded in the same way to the apple.
schematic description of the creative cognitive process, it may at least serve the intended purpose of providing a theoretical foundation for exploring the dichotomy between the public and private domains, first in a “state of nature” and then in an advanced state with the introduction of an intellectual property system.

III. Public/Private Domain Dichotomy in the “State of Nature”

In what may be called the “state of nature,” at a time prior to the adoption of an intellectual property system, the basic dichotomy between the public domain and the private domain is defined by secrecy. Reference to Figure 1 may aid in considering this interrelationship within the context of the creative process. This model is a linear one with a single feedback loop. Stimuli from the public domain are acted upon by human intervention in the creative cognitive process. As a consequence, an idea is formed by the individual and privatized in the private domain by the maintenance of secrecy. When secrecy is lost, the idea is de-privatized and fed back to the public domain as such (i.e., the idea itself).

46. We need not go so far back as Locke to a pre-law or pre-property state of nature. Intellectual property protection in a systemized way dates from the fifteenth century. The Council of Venice enacted a general patent statute in 1474. See Giulio Mandich, Venetian Patents (1450-1550), 30 J. PAT. OFF. SOC’Y 166, 176-177 (1948) (translating and quoting statute).
As conceived here under a Kantian model, the public domain consists of all stimuli from the external world perceivable by the senses of humans. These stimuli emanate outside of the individual to be processed by an individual's cognitive processes, as described above. The stimulus may emanate from a simple material object (an apple) or from a complex of objects and materials (a machine, painting, treatise, symphony). The stimulus may be from the concrete (from the tangible object itself) or the most abstruse rendering (reading a passage from a metaphysical tract). In sum, stimuli range on a continuum from the most abstract to the most concrete capable of being perceived by humans. The stimulus may come from any source external to the perceiving individual from any of the senses—reading a book, observing nature, listening to music or to another person, feeling an apple, smelling a rose. In addition there may be internal stimuli emanating from the individual’s brain from memory or other aspects of the cognitive process.\(^47\)

The primary source of external stimuli is from that which is publicly known and hence accessible to all. In addition there are stimuli that are not publicly known, namely, those that have not yet been perceived (e.g. bacteria before being observed under a microscope) and those that have been perceived but not yet made public (after bacteria were discovered but before the discovery was made public). All these forms of stimuli may be said to be in the public domain.

A public domain consisting of known (previously perceived) and unknown (yet to be perceived) stimuli is obviously different from the public domain in the form of a tangible commons in the “state of

\(^47\) See supra n. 43 (concerning the importance of memory in the creative process).
nature” in the Lockean sense. In the words of Locke:

> Whatsoever then [a man] removes out of the State that Nature hath provided, and left it in, he hath mixed his Labour with, and joyned to it something that is his own, and thereby makes it his Property. . . at least where there is enough, and as good left in common for others.\(^\text{48}\)

Hence, a person is entitled to the apples picked from a tree in the “commons” if the proviso is satisfied. Overpicking apples, like overgrazing the village commons, violates the proviso and leads to the consequent tragedy of over-exploitation of tangible resources. However, with respect to the public-domain-as-stimuli thesis, all stimuli are non-rivalrous by nature and are available to all who may be in a position to be stimulated.\(^\text{49}\)

The Kant-based conception of the public domain as stimuli as envisioned here is also different from one (perhaps a Platonic one) where the sometimes-called “intellectual commons” consists not merely of stimuli but of intangible forms of ideas, inventions, works of authorship, etc. These forms then are supposedly ready to be picked from the commons —much like apples — through intellectual intervention.\(^\text{50}\) In the present model, the public domain serves only as a source of stimulation for the creative process of individuals, although stimuli may include, inter alia, inventions, works of authorship, etc.

**B. Private Domain**

As outlined above, when stimuli emanating from the public domain are sensed by one or more sense organs of an individual, a perception in the mind of the individual may be produced. In


\(^\text{49}\) There is, of course, no common response to any given stimuli. Moreover, stimuli may be transitory. Halley’s comet was last here in 1986 and is not expected to be visible again for another 75 years around 2061. Interestingly, Edmund Halley, after whom the comet was named, predicted its orbit but never saw the comet. He unfortunately did not live long enough to see his prediction come true. The stimulus for his prediction obviously came from something other than actually observing the comet. \(<\text{http://www.mste.uiuc.edu/scied/ci407/htmlproj/halley/halley.html}\>\) (showing photographs of the comet from 1910 and 1986).

\(^\text{50}\) See supra n. 13 (considering various definitions of the “intellectual commons” in relation to the “public domain”) and infra n. 61 (discussing the “intangible common” as a source of rights).
response to this perception, and as a consequence of the cognitive process, an idea may result, so that an idea may be said to be conceived. The creative process may end here with only an idea. However, at this stage, there may be further cognitive activity coupled with physical labor to implement the idea into a tangible form — a “creation.”

With the conception of the idea, it may be said that the conceiving individual has a natural right to that idea in what may be termed the “weak version” of the private domain, whose protection depends on maintaining the idea in secrecy. This applies to all forms of ideas, and as such constitutes a natural right in a weak form of that individual, at least, to keep it secret, i.e., not to disclose it except voluntarily. The weak form of protection will continue through the conception stage to a tangible stage (creation), if so implemented, contingent on maintaining secrecy.

The period of protection in the weak version will depend upon the period of secrecy. This could be very short with the conceiver blurting the idea out to the world, or it may have an extended period of secrecy and may even die with the conceiver. The fact that one individual has conceived and kept secret the idea or tangible version thereof and has as such privatized it (at least in this weak sense) does not affect the ability of others to perceive the same or related stimuli from the public domain and to privatize by the creative process the

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51. This is consistent Lockean property theory of mixing ones person by labor into the creation thus making the tangible work product the “property” of its creator. See Hughes, supra n. 13, at 300-14 (discussing the labor theory in the context of intangible ideas). Note the term “creation” will be used to indicate the tangible work product of the creative process whatever its form, while “idea” will be used with reference to intangible conceptions.

52. As put by Weinreb: To the extent one accepts the Lockean premise that individuals are independent and self-sufficient, an author’s entitlement to the fruits of his labor can perhaps be maintained while he keeps his work, fixed or unfixed, to himself for his own use. Lloyd L. Weinreb, Copyright for Functional Expression, 111 Harv. L. Rev. 1149, 1227 (1998).

53. While Moses may only have been a “receiver” rather than a “conceiver,” he had exclusivity in the Ten Commandments until he disclosed them to the Israelites.

54. One such example is the original formula for Coca-Cola. Similarly, a handwritten recipe was recently found in the basement of the former mansion of Colonel Harland Sanders by the purchasers of the mansion. The recipe listed 11 herbs and spices and was thought to be the “original” recipe. KFC was quick to file suit against the couple to maintain the secrecy of the recipe. A spokeswoman for KFC’s parent corporation, however, maintains that “the Colonel’s secret original recipe is safe and sound locked in our vault.” See <http://www.cbsnews.com/stories/2001/01/28/national/main267700.shtml> (accessed March 17, 2003).

55. Unfortunately, we may never know what we missed. On the other hand, not too many of us are likely to be terribly interested in the trade secrets of mummification.
same idea themselves. Should another conceive the same idea, the weak version of propertization would result, provided the condition of secrecy is maintained. If someone misappropriates the idea from its originator and publicly discloses it, the conceiver may seek redress against the misappropriator; however, this will not generally mitigate against the loss of the weak form of protection to the public domain.

C. The Public Domain Revisited

With the loss of secrecy, the idea or creation protected only in a weak version enters the public domain as stimuli and remains there for the taking through sensory perception. The idea/creation is as much a stimulus as any other stimuli-producing thing in the public domain. Indeed, the idea/creation has enriched the public domain according to the creative contribution of the conceiver/creator. In the state of nature without an intellectual property system, once a particular idea/creation enters the public domain, it presumably will be not only available as stimulus but also may be exploited by others. This may be conceptualized as the “strong version” (“black hole” model) of the public domain, even to the extent that such a

56. A classic example of this is the controversy over who was the first inventor of the calculus. Newton published his first full treatment of the calculus 20 years after Leibniz. However, Newton had discussed the calculus in unpublished manuscripts dating back prior to Leibniz. There were charges of plagiarism and derivation from both sides, but it would appear they both arrived at the calculus independently while using somewhat different terms. See Donald Rutherford, *The Newton-Leibniz Controversy, The Columbian History Of Western Philosophy*, 431-437 (Richard H. Popkin, ed. 1998). In justification for protecting trade secrets against being preempted by the Patent Act, the Supreme Court in *Kewanee*, supra n. 2, 416 U.S. at 490, makes the following observation: “The ripeness-of-time concept of invention, developed from the study of the many independent multiple discoveries in history, predicts that if a particular individual had not made a particular discovery others would have, and in probably a relatively short period of time. If something is to be discovered at all very likely it will be discovered by more than one person.” [citation of such studies omitted].

57. Ideas would appear to be at least as difficult to suppress as rumors. See infra text accompanying n. 167 (quoting Thomas Jefferson on the difficulty of affording property status to ideas).

58. See Hughes, supra n. 13, at 316 (note omitted) (“[O]nce a ‘new’ idea has been put into intellectual commerce, once people know about it, it leads to an ‘expansion’ of the common, or of the accessible common.”).

59. This is with the assumptions that the other party has not acquired the idea/creation or is using it in a manner that may be categorized as commercially unfair. The fact that an idea/creation may be deemed in the public domain does not justify unfair competition. See supra n. 2.

60. The “black hole” model evidently is the position of the Supreme Court, at least in the context of expired patents. Justice O’Connor concluded in *Bonito Boats*, supra n. 2, 489 U.S. at 161: “For almost 100 years it has been well established that in the case of an expired patent, the federal patent laws do create a federal right to ‘copy and to use.’ *Sears
and Compco extended that rule to potentially patentable ideas which are fully exposed to the public.” The Court found the Court of Appeals for the Federal Circuit decision in Interpart Corp. v. Italia, 777 F.2d 678 (Fed.Cir.1985) (Rich, J.) “troubling,” which held that a state anti-direct molding process statute was not preempted by federal patent law since “the patent laws ‘say nothing about the right to copy or the right to use, they speak only in terms of the right to exclude.’” Id. at 685. (quoting from Mine Safety Appliances Co. v. Electric Storage Battery Co., 405 F.2d 901, 902) (C.C.P.A.1969) (J. Rich). As stated by Justice O’Connor: “The Interpart court’s assertion to the contrary is puzzling and flies in the face of the same court’s decisions applying the teaching of Sears and Compco in other contexts.” Id. While I have somewhat of a vested interest in defending the reputation of Judge Rich, it may be suspect to extend the obiter dictum of Mine Safety to the ratio decidendi of Interpart; however, the patent laws indeed are directed only to the right to exclude as implementing the Copyright/Patent clause of the Constitution. Moreover, aside from the “troubling” remark, Judge Rich’s commentary on the public domain is enlightening: “Patent laws function only to keep things out of the public domain temporarily. They have nothing to do with putting things into it. They say nothing about right to copy or right to use, they speak only in terms of right to exclude. ‘Public domain,’ moreover, is a question-begging legal concept. Whether or not things are in or out of the public domain and free or not free to be copied may depend on all sorts of legal concepts including patent law, antimonopoly policy and statutes, the law of unfair competition, copyright law, and the law of trademarks and trademark registration. What we really do is to determine these legal rights; then we may express the ultimate conclusion by saying something is in the ‘public domain’— or not in it.” Id. In other words, what Judge Rich is saying, and what I am trying to elaborate further upon, is that there is no general right to copy or to use inventions included in expired patents or unpatented subject matter, there may still be available federal exclusionary rights based on trademark and/or copyright, less whatever limits are placed on states to so protect. See infra Part V.E.

61. Gordon, supra n. 3, argues on the basis of Locke's natural law/labor theory that the public has a property interest (“entitlement” in the “intangible common”): “For Locke, the word “property” embraces virtually any liberty or claim to which one was entitled under the law of nature. The public’s liberty to use the common is a species of property in even a stronger sense, for as a ‘liberty right’ it is a stable and guaranteed entitlement.” Id. at 1559 (notes omitted). She had previously defined a “liberty right”: “I use the phrase ‘liberty right’ to denote the moral entitlement to do or not do something free of duties owed to others or to God. A ‘liberty right is a privilege to which one has a vested entitlement.’” Id. at 1541 n. 46. She then concludes: “It is conceptually untenable to treat ‘property’ and ‘liberty’ as if they were fully separate categories. Every conventional private property right contains a “liberty to use, some liberties are public property strong enough to keep conventional private property from forming.” Id. at 1559-1560 (n. 153 omitted after “liberty to use”). To justify “liberty to use” in the public by means of the “common” she must give them a property interest in the “common”. In n. 153 she cites 17 U.S.C. § 106 for the right of copyright owners to “do” certain acts. Of course, we are no longer in a state of nature. Positive law grants these “exclusive rights”. Copyright owners, like the owners of other titles of intellectual property and tangible property, do not have an absolute “liberty to use.” They are all bound by positive law in a post-state-of-nature legal system. In the case of intellectual property, there may be a “blocking” situation where superceding intellectual property rights may preclude the “liberty to use”. See infra text accompanying n. 107-116 (discussing “blocking” situations).
The loss of secrecy entails the loss of the natural right and any right to exclusive knowledge or use of the idea/creation. Nonetheless, the public domain in all cases is the repository of de-privatized ideas/creations as stimuli and as such may be considered the “weak form” of the public domain, though not an original source of rights.

To reward a conceiver/creator beyond what is entailed in secrecy requires societal intervention to maintain some form of protection (e.g., exclusivity) after the idea or creation becomes publicly known. This intervention is normally by means of an intellectual property system as a “strong version” of protection constituting various forms of intellectual property. However, it could be envisioned—perhaps on a natural rights theory—that courts could enforce a strong version of protection without constitutional or legislative authority.62

IV. Public/Private Domain Dichotomy Within an Intellectual Property System

Figure 2 illustrates the modifications to the state-of-nature model of Figure 1 to accommodate the introduction of an intellectual property system and the compartmentalization of the public domain into weak (as stimuli) and strong (as exploitable) forms. The creation and adoption of an intellectual property system, for whatever philosophic or policy reasons, requires a fundamental modification of the private domain from the unitary form of protection of secrecy to provide some form of protection after an idea/creation becomes public. With this modification, the private domain would include two components: one is the previously designated “weak version,” which would still maintain the natural right of secrecy to the conceiver/creator; the other is designated the “strong version” as implemented by the intellectual property system, which provides a

Nonetheless, Gordon's analysis is ingenious and a footnote is a poor vehicle for doing it justice. The point I want to make is that in our post-state-of-nature intellectual property system positive law determines what is left to the public. At minimum, however, the public should be entitled to the stimulus value of publicly available subject matter. The proper balance between incentive to create and access to exploitation by the public remains the unanswered question.

62. This would seem to be the result if the copying of a product unprotected by a form of intellectual property could be enjoined without proof of an unfair trade practice beyond the fact of copying by the copier. This was the issue in Sears and Compco. See supra n. 2. It could also be envisioned that such protection could evolve according to the common law to encompass various creations akin to copyright and patent protection analogously to the development of common law trademark protection. Establishing a common law period of exclusivity would present a problem, but it could be based on continued use (non-abandonment).
“positive” right\textsuperscript{63} that will withstand loss of secrecy of the idea/creation and will continue to provide a certain scope of protection depending upon the particular title of the intellectual property involved.

\textsuperscript{63} This has been designated a “positive” right to distinguish it from a natural right based on secrecy. The “positive” right arises only by virtue of the intellectual property system as established by legislation or judicial decision. It should, however, be recognized that this “positive” right is one of exclusion in the negative sense rather than necessarily as a right to exploit oneself. See infra text accompanying n. 107-113 (discussing blocking situations). This usage is consistent with Hohfeldian terminology that the correlative to the claim right to exclude (stay off Blackacre) is the duty not to exploit (break the close). See generally, Wesley N. Hohfeld, \textit{Some Fundamental Legal Conceptions as Applied in Judicial Reasoning}, 23 Yale L.J.16 (1913); Wesley N. Hohfeld, \textit{Some Fundamental Legal Conceptions as Applied in Judicial Reasoning}, 26 Yale L.J.710(1917). Based upon Hohfeld’s work, Corbin provides the following definitions: “(1) RIGHT: A legal relation between two persons. The correlative of duty, and the opposite of no-right. An enforceable claim to performance (action or forbearance) by another. It is the legal relation of A to B when society commands action or forbearance by B and will at the instance of A in some manner penalize disobedience. (2) DUTY: The correlative of the concept right, above defined, and the opposite of privilege. It is the legal relation of a person, B, who is commanded by society to act or to forbear for the benefit of another person, A, either immediately or in the future, and who will be penalized by society for disobedience. (3) PRIVILEGE: The correlative of the legal concept no-right and the opposite of duty. The legal relation of A to B when A (with respect to B) is free or at liberty to conduct himself in a certain matter as he pleases; when his conduct is not regulated for the benefit of B by the command of society; and when he is not threatened with any penalty for disobedience, for the reason that society has made no command. . . (4) NO-RIGHT: The correlative of privilege, and the opposite of right. The legal relation of a person (A) in whose behalf society commands nothing of another (B). A has no control over B. A, knowing that he has no right against B, can answer this question, “What may another person (B) do?” (A court will not prevent him or penalize him.)” Arthur L. Corbin, \textit{Legal Analysis and Terminology}, 29 Yale L.J. 163, 167-168 (1919). See infra text accompanying notes 181-182 (further elaborating on these concepts).
A conceiver/creator may elect to convert the weak version into the strong version by taking advantage of the intellectual property system, at least to the extent that it is applicable to the particular creation. In order to convert from the weak version to the strong version, it is necessary that the requirements of a particular title of intellectual property protection be satisfied.

These requirements generally include: (1) qualifying subject matter, (2) compliance with formal and substantive standards, and (3) transformation of the intangible idea into tangible form—a creation. 64

With a satisfaction of these requirements, the creator may thus enter the strong version of the private domain, which would provide protection within the scope afforded by the particular title of intellectual property obtained. On the other hand, if a particular creation does not qualify as subject matter protectable by at least one of the recognized titles of intellectual property, upon public disclosure

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64. This does not mean that an invention must be actually built. It is only necessary that the invention be disclosed in the patent application in sufficient detail that it would enable one skilled in the art to replicate it. See 35 U.S.C.A.§ 112. For copyright, the work must be fixed in a tangible medium of protection. See 17 U.S.C. A. § 101. For trademark, at least a drawing of the mark sought to be registered must be submitted. See Lanham Act § 1, 15 U.S.C.A. § 1051.
this creation will go directly into the public domain as stimulus in the weak version and also, at least at this stage, into the strong version. This is illustrated in Figure 2 by the feedback loop between the weak version of the private domain to both weak and strong versions of the public domain. The same disposition would occur with respect to a creation for which the strong version of intellectual property protection is not sought or, if sought, fails to satisfy the formal or the substantive requirements for protection. In sum, three dispositions of a creation are possible: (1) it may remain in the weak version of the private domain by maintaining secrecy; (2) it may be transferred to the public domain by the loss of secrecy; or (3) it may enter the strong version of the private domain by intellectual property protection. Nonetheless, unless maintained in secrecy, the creation becomes a sensory stimulus to others. Any restraint on the exploitation of the creation by others is imposed by the strong version of protection, if any.  

A creation that has been protected by the intellectual property system under a strong version also eventually loses that protection. This termination may occur in a number of ways: expiration at the end of a statutory term of protection, abandonment, disclaimer, dedication to the public, a holding of invalidity.

The introduction of an intellectual property system does not change the dichotomy between the public and private domains according to the public-domain-as-stimuli thesis; it is the loss of secrecy that places creations in the public domain as stimuli. That which prevents the exploitation of a creation protected by a strong version of intellectual property is the positive law that establishes and grants such protection. Nonetheless, everything that has been made public with respect to the protected subject matter enters the weak version of public domain as stimuli from that time.

With the termination of the strong version of protection, one may expect that the protected subject matter would go into the strong version of the public domain and be available for all to exploit. This expectation remains to be examined.

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65. Again, this is with the assumption that access to the conception/creation is not obtained by an unfair trade practice.

66. In theory, a holding of invalidity by a court or an agency renders the title of protection void ab initio, with the protected creation being considered unprotected from at least the time of its public disclosure. The question of whether any consideration (e.g. license fees already paid) may be recouped for exploitation rights prior to the holding is another matter. See Studiengellschaft Kohle, m.b.h. v. Shell Oil Co., 112 F.3d 1561, 1567 (Fed.Cir.1997) (stating that no recoupment—enforcement of contract rules to pay royalties not contingent on validity of licensed patent).
V. The Public-Domain-as-Stimuli Thesis Within the Titles of Protection

So far the public/private domain dichotomy has been addressed with respect to the intellectual property system in general without particular reference to the major titles of protection. With the introduction of an intellectual property system and the creation of the right to exclude certain others from infringing the protected creation, a distinction must be drawn between independent creation and derivative creation. An independent creation would be one not based upon (i.e. without knowledge of) another’s creation. A derivative creation would be one based upon (i.e. with knowledge of) another’s creation. This distinction then raises the question of the rights of the independent creator compared to the derivative creator in exploiting the creation. In the state of nature, before the introduction of an intellectual property system, independent creators should be entitled to equivalent rights to their creations at least in the weak form. With the introduction of an intellectual property system, the answer would seem to depend upon how strong is the strong version of protection granted under a particular title of protection. With the supposition that there may be differences, the public-domain-as-stimuli thesis will be examined with respect to the major titles of protection.

A. Trade Secrets

In essence, trade secrets are ideas\(^67\) that have been further

\(^67\) Ideas as intangibles would appear to be the basic conceptual starting point for all intellectual property beginning at the most abstract level and then proceeding to a more detailed state. The legal protection of ideas, as one might expect, is quite weak. The generally stated requirements for protection are that the idea be “concrete” and “novel.” See, e.g., Richter v. Westab, Inc. 529 F.2d 896, 902 (6th Cir.1976) (“The law does not favor the protection of abstract ideas as the property of the originator. . . A concept is of little use until solidified in a concrete application.”); Downey v. General Foods Corp., 31 N.Y.2d 56, 61, 286 N.E.2d 257, 259 (1972) (“Lack of novelty in an idea is fatal to any cause of action for its unlawful use.”). California seems to take a more liberal view of idea protection. See, e.g. Peter Swarth, The Law of Ideas: California and New York Are More Than 3,000 Miles Apart, 13 Hastings Comm.& Ent. L. J. 115 (1990). There is no formalized statutory regime of protection. Protection depends upon other bodies of law: tort (misappropriation); contract (express, implied, quasi); property (sometimes alluded to but rarely invoked). The various theories of protection are nicely summarized in Paul Goldstein, Copyright, Patent, Trademark and Related State Doctrines 44-49 (Rev.4th ed.1999). Whenever an idea is conceived in the mind of an individual in response to the creative process, it is protected in the weak version as a natural right by virtue of maintaining it in secrecy. With respect to the individual who independently conceives the same idea without knowledge of the idea from original concever or the public domain, the same natural right would accrue. If and when the idea is made public, it becomes a stimulus in the public domain. Nonetheless, even with respect to an idea in the public
refined and concretized so as to provide commercial value to the possessor over competitors who do not know of the trade secret.\textsuperscript{68} The law, as might be expected, treats trade secrets more kindly than it does ideas, both on the basis of the common law and on statutory protection in many states.\textsuperscript{69} Also trade secret conversion relating to a product to be placed in interstate or foreign commerce has been made a federal criminal offense.\textsuperscript{70} Misappropriation and confidential relationships may be established more easily when trade secrets compared to more abstract ideas are involved.\textsuperscript{71} This may be expected because of the competitive nature of trade secrets as opposed to the more generalized aspect of ideas. Accordingly, the weak version of protection is stronger for trade secrets than for ideas. It would also be an expectation that the creative process would go beyond the conception stage and that some tangible fixation of the trade secret would be created and that the trade secret would be capable of being practiced within the veil of secrecy.\textsuperscript{72}

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\textsuperscript{68} See Restatement (3d) of Unfair Competition § 39 (1995): A trade secret is any information that can be used in the operation of a business or other enterprise and that is sufficiently valuable and secret to afford an actual or potential economic advantage over others. \textit{See also} Uniform Trade Secrets Act § 1(4): “Trade secret” means information including a formula, pattern, compilation, program, device, method, technique or process, that: (i) derives independent economic value, actual or potential, from not being generally known to, and being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use, and (ii) is the subject of efforts that are reasonably under the circumstances to maintain its secrecy.

\textsuperscript{69} The Uniform Trade Secrets Act has been enacted by 41 states and also the District of Columbia.


\textsuperscript{71} \textit{See}, \textit{e.g.}, \textit{E.I. duPont de Nemours & Co. v. Christopher}, 431 F.2d 1012 (5th Cir.1970), cert. denied, 401 U.S. 967 (1971) (misappropriation in flying over a plant under construction and taking photographs); \textit{Philips v. Frey}, 20 F.3d 623 (5th Cir.1994) (implied confidentiality between owner and prospective acquirer).

\textsuperscript{72} Certain types of conceptions/creations obviously do not lend themselves to trade secret protection due to their easy comprehension upon public disclosure. Also there is always reverse engineering stimulated by the public disclosure. However, processes may...
Thus, trade secrets would follow the basic creation process of stimulus, perception, conception and creation. Independent, non-derivative creations of the same trade secret would be afforded the same natural right of secrecy. With loss of secrecy, the weak form of protection is lost and the trade secret enters the public domain in the weak version as stimulus and also in the strong version to be exploitable by others in the absence of a strong version of private domain protection.  

B. Trademarks

The creation of trademarks would seem to follow a similar creative process, however, with some qualifications. In the first place, the public domain as the source of stimuli would seem to play a more direct role in creating trademarks than with respect to other types of intellectual property. Nonetheless, with respect to arbitrary marks created for a particular product or service, a close following of the process would be expected. Also, the creative process would result in fanciful or suggestive connection being made between certain marks and certain products or services. Nonetheless, stimuli from

be maintained in secrecy for long periods of time where the marketed product does not itself disclose its method of manufacture. Also, analysis of the product may not entirely reveal its composition.

73. Compare Kewanee, supra n. 2, 416 U.S. at 470, discussing the misappropriation of the trade secret (a process) was by former employees of the trade secret holder and the sale of the product made according to the process did not disclose the secret. In this situation, the weak form of protection would still be afforded until public disclosure of the trade secret itself.

74. E.g. coined words such as “Kodak” which did not exist as such until created by Eastman Kodak. Also, the Nike swoosh may not have existed in exactly that form until designed by Nike Corporation, while “Nike” is a previously known word in the public domain appropriated in what could be categorized as fanciful usage with respect to shoes and other clothing items.

75. The degree of creativity in adopting “Wheaties” for breakfast cereal may be debated, but human ingenuity did make the connection with quite economically successful results over a long time period. Compare Trade-Mark Cases, 100 U.S. 82 (1879) (holding that trademarks did not fall within the Copyright/Patent clause of the Constitution): “The ordinary trademark has no necessary relation to invention or discovery. The trademark recognized by the common law is generally the growth of a considerable period of use, rather than sudden invention. It is often the result of accident rather than design. . .If we should endeavor to classify under the head of writings of authors, the objections are equally strong. . .The writings which are to be protected are the fruits of intellectual labor. . .The trade-mark may be, and generally is, the adoption of something already in existence as the distinctive symbol of the party using it.” Id. at 96-97. While we may agree with Justice Miller that trademarks were not intended to be encompassed by Article 1, § 8, clause 8, trademarks would seem to be subject sometimes, at least, to creation in a “eureka” moment, while inventions may be of the “perspiration” type; and is it always the case that there is more creativity in a map or compilation than in the Nike “swoosh” and
the public domain in the form of existing words, names, symbols or devices, as well as stimuli of other forms both external and internal, are perceived, and as a consequence of the cognitive process, lead to the conception and creation of marks for particular products or services.\(^7\)

Second, the weak form of protection by means of secrecy would seem to play a minimal role with respect to trademarks, except to the extent of keeping an unused but desirable mark from competitors’ knowledge. With the availability or intent-to-use applications, secrecy would seem to be of even further diminished importance.\(^7\)

Third, the acquisition of the strong form of protection is substantially automatic with the further concrete step of the adoption and use of the mark according to state common law. A stronger form of protection may be obtained by registration, particularly federal registration, by complying with the formal and substantive requirements for registration. Of particular relevance here is the statutory imposition of constructive notice against any junior users of the mark under the Federal (Lanham) Trademark Act.\(^8\)

Accordingly, with constructive notice of a federally registered mark, junior users who independently create and adopt the same mark or a colorable imitation would be barred from any uses that would infringe the originally registered mark.\(^9\) This would not be a permanent bar because upon the abandonment of the registered mark, the mark again would become available for others to adopt. Nonetheless, for the period of registration of the mark, it remains unavailable within the confines of likelihood of confusion; moreover, should the mark be accorded “famous” status and hence protected

\(^{76}\) Even those marks that are not inherently distinctive (e.g. descriptive of the goods or services) must be adopted by a cognitive process and perhaps with the recognition that their descriptive value is greater than immediate distinctiveness.

\(^{77}\) Under Lanham Act § 1(b), 15 U.S.C.A § 1051(b), an intent to use application may be filed prior to actual commercial use. If the applied-for mark is found registerable, it is published by the Patent & Trademark Office for opposition. §§ 15 U.S.C.A. 1062(a), 1063. At this time, it hence becomes a stimulus for others; however, upon actual use of the mark by the applicant, it will be registered and provide protection from the application date on the basis of constructive use from that date. 15 U.S.C.A.§ 1057(c).


\(^{79}\) See, e.g. Dawn Donut Co. v. Hart’s Food Stores, Inc., 267 F.2d 358 (2d Cir. 1959) (“[B]y eliminating the defense of good faith and lack of knowledge, § 1072 affords nationwide protection to registered marks, regardless of the area in which the registrant actually sues the mark.”) (Nonetheless, the court refused to enjoin the junior user from continuing to use the registered mark in its market area because it concluded there would be no likelihood of confusion in that area, but would be subject to being barred if the registrant should enter that geographical area.)
under the anti-dilution provisions of the Lanham Act, it would be extracted from use for whatever goods or services within the confines of “likelihood of dilution,” even though there is no likelihood of confusion. This result is analogous to patent law but contrary to copyright law, where constructive notice is not imposed.

With the making public of a mark, whether by use or publication, the mark goes into the public domain as a stimulus and is available for use in the creative process. Nonetheless, with the acquisition of a strong version of protection by registration, others may not infringe. With the abandonment or the invalidation of the registration, the mark would also enter the strong version of the public domain. An abandoned work then could be exploitable by its adoption and use by others and re-privatized to the exclusion of others. With respect to an invalidated registration, if the invalidation falls within one of the absolute proscriptions against registration (e.g. the work is generic, deceptive, or functional, exploitation of the work would be permissible within the bounds of unfair competition, in particular, passing-off. In short, all marks serve as stimuli from their being made public. However, when de-privatized, they may be recycled and re-privatized if they may again serve as valid marks.

C. Copyrights

According to copyright law, the dividing line between the weak version of protection (common law copyright) and the strong version (under the Copyright Act of 1976) is fixation by or with the authorization of the author. Copyright protection “subsists with the fixation of original works of authorship in a tangible medium of expression.”

The creative process would normally involve perception of sensory stimuli in the public domain, conception in the mind of the work at some level of abstraction and, at least for the strong version of federal protection, fixation in tangible form and a modicum of

81. See infra nn. 91-95 (discussing copyright) and nn. 103-108 (discussing patents).
82. Compare Manhattan Industries, Inc. v. Sweater Bee by Banff, Ltd., 627 F.2d 628 (2d Cir. 1980). General Mills expressly abandoned the well known mark “KIMBERLY” and two competitors tried to adopt it immediately thereafter. The court held that neither could appropriate the mark exclusively and could only use it in a manner not to confuse consumers.
83. See 15 U.S.C.A § 1052(a)-(d), (e)(3) and (e)(5) (2000).
84. See supra n. 2 (discussing Singer and Shredded-Wheat cases).
creativity to satisfy the “originality” standard. This creative effort on the part of the author generally would involve the expenditure of labor and resources in the fixation. The transformation from intangible idea to tangible original work (creation) through the creative process would be the instrumentalist justification envisioned in the Copyright/Patent Clause of the Constitution for protection in the strong form. The work itself may, of course, include unprotectable elements not satisfying the subject matter or qualitative standard of originally to be protected. Indeed, all the elements (as stimuli) may be extracted from the public domain and receive protection on the basis of originality in the form of a derivative work or a compilation. The transfer from weak to strong version would appear to be automatic upon the fixation, provided the qualitative standard of originality is satisfied. Upon publication of the work, its contents, including original expression, go into the public domain as stimuli. The positive law protects against the exploitation by others of the original expression from the protected work. Non-protected portions of the work remain available for exploitation as well as serving as stimuli.

The fixed work, however, may be kept secret (unpublished) by the author and still be entitled to the strong form of protection. Being maintained in secrecy would, of course, preclude the work’s contents (both protected and unprotected) from serving as stimuli for others. This raises the question whether the instrumentalist goal of the Copyright/Patent Clause of the Constitution is being served if the public is denied the stimulus value of the copyrighted but secret work. The copyrighting of computer programs without the disclosure of “original” code is an egregious example.

In response to any stimuli (except by means of access to the protected work), others through utilization of their creative process

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87. E.g. “any idea, procedure, process, method of operation, concept, principle, or discovery” are excluded in § 102(b). Also excluded would be non-original portions of the work, such as copied sections quoted or plagiarized from other works. See generally Copyright Regulations, 37 C.F.R. § 202.1 (2003).
89. Copyright protection subsists from fixation in tangible form, not from the date of publication. See 15 U.S.C.A. § 102(a). With the individual author’s term of protection being based upon life (plus 70 years), there would be no diminution of duration compared to fixed time from publication under the 1909 Act. See Copyright Act of 1909 § 24 (28 years from first publication and renewable for another 28 years.).
90. See 37 C.F.R.§202.20(c)(vii)(A) (requiring for both published and unpublished computer programs the deposit of the first and last 25 pages of source code which, of course, enables the depositor to include only “garbage” in these pages while maintaining an “original” code in secret.).
may arrive at the same creation independently - the “Ode on a Grecian Urn” syndrome.\textsuperscript{91} Originality, not objective novelty, is the standard, with access to the copyrighted work being required for infringement.\textsuperscript{92} Thus, the scope of protection under the strong version is limited to derivative conception and fixation—the plagiarist is not an author.\textsuperscript{93} Indeed, again in theory, the “second author” of the Ode should be entitled to copyright protection.\textsuperscript{94}

Copyrights are time-limited by the Constitution, and upon the expiration of the copyright the strong form of protection over the original expression of the work also expires, thus privileging what would otherwise be infringement. The entire work, it should be noted, entered the public domain, as stimulus, from its publication.

In sum, copyright law, as presently constituted, respects natural law, in that independent creation is recognized, and permits protection of the independent creation under the weak version. It also goes one step further to permit protection under the positive copyright law upon fixation of non-derivative original expression. Upon the publication of the work in fixed or unfixed form, the contents go into the public domain as stimuli. Whatever limitation placed upon another’s exploiting these stimuli is governed by positive copyright law within the context of infringement. Upon the expiration of the copyright, that which would have constituted infringement during its term is privileged in the sense that the creator has no right to exclude anyone from doing what previously would have been infringement. This privilege is nonetheless not absolute if there happens to be a positive law basis to preclude that exploitation,

\textsuperscript{91} In the words of Judge Learned Hand: “Borrowed the work must indeed not be, for a plagiarist is not himself pro tanto an ‘author’; but if by some magic a man who had never known it were to compose anew Keats’s Ode on a Grecian Urn, he would be an ‘author,’ and, if he copyrighted it, others might not copy that poem, though they might of course copy Keats’s.

\textit{Sheldon v. Metro-Goldwyn Pictures Corp.}, 81 F.2d 49, 54 (2d. Cir. 1936).

\textsuperscript{92} Evidence of access to the copyrighted work may be rather slim, including “striking similarity” based upon expert testimony. \textit{See Gaste v. Kaiserman}, 863 F.2d 1061,1068 (2d Cir.1988) (“Though striking similarity alone can raise an inference of access, that inference must be reasonable in light of all evidence.) \textit{Cf. Selle v. Gibb}, 741 F.2d 896,901 (7th Cir. 1984) (requiring “at least some other evidence which would establish a reasonable possibility that the complaining work was available to the alleged infringer.”)

\textsuperscript{93} \textit{See supra n. 91.}

\textsuperscript{94} \textit{Id.} This is the consequence of a subjective “originality” standard in copyright law as compared to the objective novelty standard of patent law. \textit{See 35 U.S.C.A.§ 10 (2002).}

As stated by Justice Connor: “Original, as the term is used in copyright, means only that the work was independently created by the author (as opposed to copies from other works), and that it possesses at least some minimal degree of creativity.” \textit{Feist Publications, Inc. v. Rural Telephone Service Co.}, 499 U.S. 340, 345 (1991).
as will be discussed below.  

D. Patents

The creation of an invention may be viewed as responding, inter alia, to stimuli from the public domain being perceived and then formed in the cognitive creative process in the inventor’s mind as an idea that evolves to a patent term-of-art “conception.” Some or all of the elements of the conceived invention may be found in the public domain and the inventor may have responded to these, or perhaps not. The creative process would continue if the conceived invention is “reduced to practice” (actual or constructive). To transform the conceived invention into tangible form normally requires the expenditure of labor and resources as well as creativity. At this stage the inventor has the option of maintaining the invention in secrecy (as a trade secret) or of filing a patent application. If the inventor elects to exploit the invention commercially while not filing for a patent application within the one-year grace period fixed by the patent statute, patent protection will be denied even though the invention has been maintained in secrecy, albeit commercialized. Also, if the inventor decides to keep the invention secret even without any commercialization, failure to file an application for an extended period of time may result in the abandonment of the invention in terms of patent protection.

On the other hand, if the inventor sought to invoke the strong version by applying for a patent, until recently, the application would be kept secret until the patent was granted. Under a new provision in the Patent Act, the application will be published eighteen months

95. See infra nn. 101-107.
96. See Jacobs v. Sohl, 280 F.2d 140, 143-144 (C.C.P.A.1960) (Rich, J) (quoting with approval from Mergenthaler v. Scudder, 11 App.D.C. 264, 276, 1897 C.D. 724, 731): “The conception of the invention consists in the complete performance of the mental part of the inventive act. All that remains to be accomplished, in order to perfect the act or instrument, belongs to the department of construction, not invention. It is therefore the formation, in the mind of the inventor, of a definite and permanent idea of the complete and operative invention as it is thereafter to be applied in practice.”
97. The invention need not be actually constructed but will be considered constructively tangible by a written description, drawings, etc., provided these would “enable any skilled in the art to which [the invention] pertains” to make or use the invention. See 35 U.S.C. § 112 ¶ 1 (2002).
98. 35 U.S.C. § 102 (2002): “A person shall be entitled to a patent unless—.(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States. . .”
after filing unless no application on the same invention is also filed in a foreign country that publishes applications.\textsuperscript{100} For unpublished applications that do not result in a patent being granted, the application continues to be maintained in secret.\textsuperscript{101} Alternatively, by filing the patent application within one year from the public use or placing on sale of the invention, the applicant may cure any loss of secrecy and deposit in the public domain that might otherwise occur by this conduct.\textsuperscript{102}

A major deviation is seen in the scope of protection granted under a patent as compared to the preceding titles of protection. The basic rule implementing natural law has been that independent creators can privatize creations independently perceived and conceived by them even though there had been prior (but non-derivative) privatization in either the weak or strong versions.\textsuperscript{103} However, according to patent law, only one inventor is awarded the patent on a given invention. The patent system is a lottery type of system with only one winner, regardless of whether there is a “first inventor” system, such as in the United States, or a “first to file” system, which prevails throughout the rest of the world.\textsuperscript{104} The exclusive patent monopoly is granted for the benefit of only one inventive entity. The consequences of this are to deny the independent inventor of the same invention any right to privatize except to a very limited extent: (i) secrecy always affords a weak version of protection, and (ii) any “independent inventor” rights that are recognized as a defense to infringement. For the first time, Congress has enacted a “prior inventor” defense, but in such a narrow form as to be applicable only as a defense to infringement of “business method” patents.\textsuperscript{105} Thus, it will not be of any appreciable


\textsuperscript{102} The one-year grace period is granted under 35 U.S.C. § 102(b) (quoted supram on. 98).

\textsuperscript{103} Compare the constructive notice imposition in the Trademark Act (Lanham Act) § 22, 17 U.S.C. § 1072, with respect to registered marks. See supra text accompanying nn. 76-79.

\textsuperscript{104} The “first inventor” system has merit in terms of the lottery winner being, at least, first in time to conceive the invention even though later to reduce it to practice, rather than being more efficient in winning the race to the Patent Office. See 35 U.S.C. § 102(g).

\textsuperscript{105} See 35 U.S.C. § 273 (Defense to infringement based on earlier inventor). The limitations on the applicability of this defense are many, including: it only applies to “methods of doing or conducting business.” 35 U.S.C. 273(b)(3)(A). The prior inventor must have actually reduced the invention to practice at least one year prior to the filing date of the patent and have commercially exploited the method prior to the filing date. 35 U.S.C. 273(a)(1). The prior inventor may not license the invention. 35 U.S.C.
benefit to the vast majority of independent inventors. Nonetheless, any exploitation (making, using, selling, offering for sale or importing) of the patented invention constitutes infringement and a violation of the exclusive rights granted under the strong form of protection, even when performed by an independent inventor, except in the exceptional situation when that inventor may qualify for the “prior inventor” statutory defense. The same analysis would apply to design patents as to utility patents with the grant of a design patent blocking exploitation of the ornamental design by other independent inventors of the same design.

Thus, the vast majority of independent inventors do not have the right to exploit their own creations, which is seemingly contrary to natural law theory. However, the grant of a patent encompasses only the “positive” right to exclude others and not what may be called the “strong version of the positive right” to exploit the claimed invention. There may be one or more so called “blocking” patents owned by others. The most common blocking situation would be where an “improvement” patent could not be exploited without the consent of the owner of the “basic” patent, whose invention has been improved by another. In the same sense, the Lanham Act grants the registrant of a trademark only the right to prevent others from

273(b)(3)(C). Also, they may only assign the invention with the enterprise or line of business. 35 U.S.C. 273(b)(7). The intent appears clear to limit the scope of “business method” patents expressly approved in State Street, because of the inherent difficulty of determining what the prior art is with respect to such intentions. How broadly “methods of doing or conducting business” will be interpreted remains to be seen. See State Street, supra n. 8, 149 F.3d at 1375-1377. After all, the claims in the patent involved in State Street were written in “machine” form. See generally David H. Hollander, Jr., The First Inventor Defense: A Limited Prior User Right Finds Its Way Into U.S. Patent Law, 30 AIPLA Q. J.37 (2002).

106. However important “business method” patents might seem to Congress, they no doubt constitute a small percentage of all patents granted, where the independent inventor would have no such defense to infringement.


109. Another blocking situation could occur where the basic invention cannot be commercialized without employing a separately patented subcomponent. Bell obtained the basic patent on the telephone but did not have a commercially viable microphone for his telephone. Edison had invented and patented a microphone suitable for commercializing the telephone. These were thus blocking patents. Bell could not use Edison’s patented microphone and Edison could not use Bell’s telephone. Bell was able to acquire the patent rights from Berliner to an equivalent microphone to circumvent the block and eventually settled the telephone litigation with Western Union and acquired rights under the Edison patent. Both the Berliner and Edison transmitters were used by Bell. See Robert V. Bruce, Alexander Graham Bell and the Conquest of Solitude, Technology In America 105-111 (Caroll W. Pursell, Jr. ed. 1981); Arvin F. Harlow, Old Wires And New Waves 375-387 (1936).
However, the potential “blocking problem” would seem to be resolved by tying the registration requirement of no likelihood of confusion with another mark to the same standard of likelihood of confusion for infringement.\footnote{110} The Copyright Act is bolder and expressly grants to the copyright owner “the exclusive right to do and to authorize” the listed exploitations of the copyrighted work.\footnote{112} This asserted strong version, however, should be taken with a grain of salt, because the grant of a copyright obviously would not authorize any exploitation of the copyrighted work if that exploitation resulted in the infringement of an extant patent or a trademark or, indeed, another copyright.\footnote{113}

Returning to patents, the “second” independent inventor will suffer economic consequences because the investment in the independent creation will be lost if this investment was induced by the possibility of obtaining a patent.\footnote{114} Moreover, if patent protection is only available to one (a lottery type of system), this may result in “rent dissipation” in the form of excessive investment in an effort to be the first one to develop the invention to a protectable level.\footnote{115} Also, whatever increased incentives may exist with respect to a lottery-type system, it is far from clear that inadequate incentives would be provided if intervening rights were recognized with respect to independent inventors.\footnote{116} Nonetheless, it is not apparent that the

\begin{footnotes}
\item[110] See 15 U.S.C. § 1114 (providing a civil action for the unauthorized use of a registered mark). However that registration provides prima facie existence of the registrant’s “exclusive right to use.” 15 U.S.C.A. § 1115(a). If the mark has become incontestable under §§ 15, 17 such is conclusive evidence of that “exclusive right to use.” 15 U.S.C.A.§ 1115(b)).
\item[111] See 15 U.S.C. § 1052(d) (denying registration to a “confusingly similar,” to an already registered mark or one used by another in commerce).
\item[112] See 17 U.S.C. § 106 (listing the exclusive rights to (1) reproduction; (2) preparation of derivative works; (3) distribution; (4) performance; (5) display; (6) performance (digital audio transmissions)).
\item[113] Using a copyrighted computer program may infringe a patent; marketing a copyrighted “sculpture” may infringe a trademark on a two or three dimensional device; performing a copyrighted motion picture may infringe a copyrighted play.
\item[114] If the investment was induced by other than the patent system (e.g. the market), the loss can not be attributed to the fact that the patent system only rewards the first inventor. See A. Samuel Oddi, Uni-Unified Economic Theories of Patents–The Not-Quite-Holy-Grail, 71 Notre Dame L. Rev. 277-281 (1996) (discussing patent-induced and market-induced inventions).
\item[116] Certainly the minimalist approach limiting intervening rights to “business methods” adopted recently in the United States would seem to have minimal effects on
\end{footnotes}
scope of protection provided under the patent system or any of the strong forms of intellectual property would have an adverse effect upon the public domain; indeed, one could conclude that the stronger the strong version, the greater the incentive to create subject matter that would ultimately be deposited in the public domain. In sum, while denying independent inventors the right to exploit their inventions may be considered unjust and result in inefficient consequences, the public domain is not affected, because all inventions became stimuli upon becoming public.

On the other hand, an important question remains: What are the consequences within the public/private domain dichotomy when a patent expires or is prematurely terminated by being declared invalid or disclaimed by its owner? First, a distinction may be made between claimed subject matter (i.e., the invention as claimed) and subject matter disclosed in the written specification and drawings but not claimed as the invention. Unclaimed subject matter, even though previously unknown to the public, would go into the public domain upon publication of the patent document or public disclosure, whichever occurred first. The unclaimed subject matter is said to be “dedicated to the public,” and only the claimed subject matter is maintained within the strong version of the private domain as the exclusive right of the inventor. On the termination of the patent by expiration or otherwise, the claimed subject matter would then no longer be subject to the patent owner’s exclusive control. Nonetheless, under the public-domain-as-stimuli thesis, the claimed invention, upon being made public in the patent document or by public use, also enters the public domain as a stimulus for perception by others. The exploitation of the claimed invention is that which is limited by the positive patent grant. This then leads to the problem of overlapping subject matter eligible for more than one form of intellectual property protection

any incentive offered by the patent system. See supra text accompanying nn. 103-106.

117. See Edward Miller & Co. v. Bridgeport Brass Co., 104 U.S. 350, 352 (1882): “But it must be remembered that the claim of a specific device or combination, and an omission to claim other devices or combinations apparent on the face of the patent, are, in law, a dedication to the public of that which is not claimed. It is a declaration that which is not claimed is either not the patentee’s invention, or, if his, he dedicates it to the public.” The same may be said with respect to inventions for which patent protection has not been sought. As put by Justice O’Connor in Bonito Boats, supra n. 2, 489 U.S. at 149: “Once an inventor has decided to lift the veil of secrecy from his work, he must choose the protection of a federal patent or the dedication of his idea to the public at large.”
E. Overlapping Subject Matter

So far the assumption has been that a particular creation, if protectable, is to be protected by a particular title of intellectual property, i.e. there is no overlap that would permit the same subject matter to be protected by more than one title of protection. However, the reality is that the intellectual property system has evolved so that the same creation may be protectable and protected by more than one title.118 This reality introduces complications in any consideration of the public domain. With multiple protection of the same creation and hence protection ending at different times, the same creation may be exploited free of infringement with the termination of protection under one title but protection still may be extant with respect to the same creation under another longer-lived title.

As a consequence of the possibility of overlapping protection, a conflict arises concerning the availability for public exploitation (strong version of the public domain) of a creation whose protection has terminated under one title while still being protected under another title. Creations do not automatically sort themselves into the seemingly most appropriate title of protection. If overlapping protectable subject matter is permitted, the creator has an option of selecting one or another or multiple titles of intellectual property protection. Rationally, creators should select the title or titles of intellectual property protection to optimize their returns.

The possibility of overlapping subject matter with respect to the strong versions of intellectual property protection is probably, at least in part, an unintended consequence of a complex and evolving intellectual property system.119 The absence of industrial design

118. As put by Justice Reed in Mazer v. Stein, 347 U.S. 201, 217 (1954): “We do hold that the patentability of the statuettes, fitted as lamps or unfitted, does not bar copyright as works of art. Neither the Copyright Statute nor any other says that because a thing is patentable it may not be copyrighted. We should not so hold.” Prior to March 1995, the Copyright Office refused to register a copyright on a design if a design patent had issued. To avoid this, applicants would merely file for the copyright first because the Patent Office did not require an election between patent and copyright. See In re Yardley, 493 F.2d 1389 (C.C.P.A. 1974). The Copyright Office dropped the “election doctrine” in March 1995. See 60 C.F.R. §15606 (1995). See infra nn. 134-137 (discussing potential overlap between patents and trademarks).

119. It is hard to see any grand design in the intellectual property system. We continue to rely on the traditional forms but continue to expand them as time, technology, art and commerce go on. Attempts to legislate sui generis protection for “gaps” in the traditional system have been largely unsuccessful.
protection has also contributed to overlaps, as have technological developments, such as computer programs and other technology that does not quite fit into traditional categories. A pure system having no overlaps, with each title having its own defined scope of protection, would no doubt be an aspired archetype. Nonetheless, such has not been the reality of the development of the intellectual property system; indeed, the overlaps seem to be expanding rather than contracting.

If the discussion is limited to patents, copyrights and trademark, overlaps could occur where the same creation was protected by: (1) patent and copyright and/or trademark; (2) patent and trademark and/or copyright; and (3) copyright and trademark and/or patent. The owners of the overlapping protection would most likely be the same; however, this would not be universal, as different entities might own different titles of protection on the same creation.

120. The gap created by the lack of industrial design protection has forced enterprising intellectual property attorneys to seek protection in the recognized forms of intellectual property. Their efforts have pushed the limits of protection, which may have resulted in a higher level or protection for longer terms. Industrial designs that would have gone into the public domain (strong version) earlier, continue to be protected.

121. A pure form evidently was the aspiration of those advocating sui generis protection for semiconductor mask protection and computer programs. The Semiconductor Chip Protection Act of 1984, 17 U.S.C. §§ 901-914, is an example, where after 10 years of negotiating, the Act was passed, and then no infringers were to be found. See Ronald S. Laurie, The First Year's Experience Under the Chip Protection Act or “Where are the Pirates Now That We Need Them?” Computer L., (Feb. 1986), 13-14. The absence of “pirates” evidently was a consequence of the availability of computer-aided design that obviates the need for copying maskwork. See Robert L. Risberg, Five Years Without Infringement Litigation Under the Semiconductor Chip Protection Act: Unmasking the Spector of Chip Piracy in an Era of Diverse and Incompatible Process Technologies, 1990 Wis. L. Rev. 241. A similar failure has occurred in the attempt to legislate a sui generis system of computer software protection. The problem was well stated by Professor Samuelson: “Programs are in truth too much of a mechanical process to fit comfortably in the copyright system and too much of a writing to fit comfortably in the patent system.” Pamela Samuelson, Benson Revisited: The Case Against Patent Protection for Algorithms and other Computer Related-Inventions, 39 Emory L. J. 1025, 1128-29 (1990). But there they are in both and are likely to remain there. The TRIPS Agreement essentially forecloses the sui generis route for computer programs. TRIPS Agreement Art.10 (1): “Computer programs, whether in source or object code, shall be protected as literary works under the Berne Convention (1971).”

122. The typical case would be where a utility patent is acquired, and after its expiration, protection is sought to be extended under trademark law. The Singer and Shredded Wheat cases are old examples of this with respect to word marks. See supra n. 2. More recent examples include 3-dimensional product design being asserted under § 43(a) of the Lanham Act after the utility patent has expired or is invalidated. See, e.g. Vornado Air Circulation Systems, Inc. v. Duracraft Corp., 58 F.3d 1498 (10th Cir. 1995) (grill of household electric fan); Thomas & Betts Corp. v. Panduit Corp., 65 F.3d 654 (7th Cir. 1999) (electric cable tie); TrafFix Device Inc. v. Marketing Displays Inc., 200 F.3d 929 (6th Cir. 1999), cert. granted, 530 U.S. 1260 (2000) (sign stand). See infra n. 139 (for further
Doctrinal attempts are made to avoid or at least minimize these overlaps. The Copyright Act of 1976 makes federal preemption express to prohibit states from providing copyright-like protection.\textsuperscript{123} There has been an ongoing struggle at the Supreme Court level to restrain states from providing patent-like protection by means of common law unfair competition torts and legislation directed to states’ particular subject-matter interests.\textsuperscript{124} On the other hand, the Court has held that state protection of a trade secret is not preempted by patent law even though the trade secret may contain clearly patentable subject-matter.\textsuperscript{125} This result strengthens the weak form of protection at the expense of a reduced incentive to secure patents and relatively quick public disclosure of the invention, including an enabling disclosure.\textsuperscript{126} Having co-equal status with federal protection of marks (registered and unregistered) is not preempted by the federal patent or copyright statutes.\textsuperscript{127}

Any potential conflict between overlapping patent and copyright protection is theoretically resolved by § 102(b) of the Copyright Act, which excludes from copyrightability “any idea, procedure, process, system, method of operation, concept, principle or discovery.”\textsuperscript{128} These categories presumably are assigned to the patent system or are not protectable at all (e.g., facts, research, \textit{scenes à faire}).\textsuperscript{129} However,

\begin{itemize}
  \item历史 of the \textit{TrafFix} case. \textit{Mazer v. Stein}, 347 U.S. 201 (1954), is an example where the copyright on a lamp base was owned by one entity and sustained against design patents owned by others.
  \item \textsuperscript{123} Under the Copyright Act, 17 U.S.C. § 301, original works that are fixed in a tangible medium of expression are preempted from state protection whether published or unpublished if the right claimed falls within the exclusive rights listed in § 106.
  \item \textsuperscript{124} This started with \textit{Sears}, supra n. 2, and \textit{Compco}, supra n. 2, (preempting state unfair competition law and culminated with \textit{Bonito Boats}, supra n. 2 (preempting a state anti-direct molding statute), reaffirming the former with some excursions in between. See \textit{Aronson v. Quick Point Pencil Co},, 440 U.S. 257 (1979) (not preempting a license contract when no patent protection had been acquired); \textit{Kewanee}, supra n. 2, 416 U.S. 470 (not preempting trade secret protection when a patent could have been acquired).
  \item \textsuperscript{125} \textit{Kewanee}, supra n. 2.
  \item \textsuperscript{126} See \textit{Schaffner}, supra n. 13 (making a strong preemption argument against common law protection of patentable trade secrets).
  \item \textsuperscript{127} See \textit{Bonito Boats}, supra n. 2, at 166: “Section 43(a) of the Lanham Act [15 U.S.C. § 1125(a)] creates a federal remedy for making ‘a false designation of origin, or any false description of or representation, including words or other symbols tending falsely to describe or represent the same. . .’ Congress has thus given federal recognition to many of the concerns that underlie the state tort of unfair competition, and the application of \textit{Sears} and \textit{Compco} to nonfunctional aspects of a product which have been shown to identify source must take account of competing federal policies in this regard.”
  \item \textsuperscript{128} 17 U.S.C. § 102(b).
  \item \textsuperscript{129} “The most fundamental axiom of copyright law is that ‘[n]o author may copyright his ideas or the facts he narrates.’” \textit{Feist Publications, Inc. v. Rural Telephone Service Co.},
when the creation involves a three-dimensional object (e.g., a lamp base), the overlap between copyrightable and patent subject matter becomes apparent, particularly with regard to design patents. The resolution of this overlap is attempted by introducing an exception to the definition of “pictorial, graphic and sculptural works” as excluding “useful articles” that have “an intrinsic utilitarian function that is not really portrayed the appearance of the article for it to convey information.” Protection would be limited to “pictorial, graphic, or sculptural features that can be identified separately and are capable of existing independently of the utilitarian aspects of the article.” With respect to computer programs, the overlap is again apparent, as software for copyright purposes falls within the “literary works” category and is excluded under §102(b), and programs are protectable subject matter in patent law if correctly claimed.

Potential conflicts between patent and trademark law arising from the definition of trademarkable subject matter are intended to be resolved by the doctrine of “functionality.” Again, a creation considered functional is relegated to the realm of patent, while trademark is restricted to nonfunctional distinctive marks. The ambiguity of this doctrine has raised serious questions concerning its separating function. Particular concern arose when the trademarked

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134. The Supreme Court defined a product feature as being functional “if it is essential to the use or purpose of the article or if it affects the cost or quality of the article.” Inwood Laboratories, Inc. v. Ives Laboratories, Inc., 456 U.S. 844,850 n.10 (1982).
135. As stated in Qualitex Co. v. Jacobson Products Co., 514 U.S. 159, 164-165: “It is the province of patent law, not trademark law, to encourage invention by granting inventors a monopoly over new product designs or functions for a limited time, . . . after which competitors are free to use the innovation. If a product’s functional features could be used as trademarks, however, a monopoly over such features could be obtained without regard to whether they qualify as patents and could be extended forever (because trademarks may be renewed in perpetuity).”
product design was claimed and/or described in a patent, especially when the patent expired.\textsuperscript{137}

It may be even more difficult to rationalize overlaps between (1) design patents and copyrights and (2) design patents and trademarks. The fact that a design must be ornamental, new and non-obvious to qualify for design patent protection does not disqualify the same design for copyright or trademark protection. Certainly the qualitative standards of all these forms could be satisfied by the same design. The subject matter exclusions would apply, as discussed above, but if a design is “ornamental,” it may also be “nonfunctional” in the trademark sense and “non-useful” in the copyright sense.

Potential overlap between copyright and trademark may be seen with respect to two- and three-dimensional works that may have been copyrighted as “pictorial,” “graphic,” or “sculptural” works and are also distinctive of particular products or services in the trademark sense. Neither § 102(b) of the Copyright Act nor functionality would appear to separate adequately these two strong forms of protection. Such two- or three-dimensional works (such as cartoon or comic book characters) may readily be “original” in the copyright sense and also be “inherently distinctive” (or have acquired secondary meaning) in the trademark sense.\textsuperscript{138} This may be a matter of considerable concern

\textsuperscript{137} In \textit{TrafFic Device Inc. v. Marketing Displays Inc.}, 530 U.S. 1260 (2000), the Supreme Court held there was a presumption of functionality when a copied product design was disclosed in expired utility patents, at least when claims of the expired patent would be infringed by the copied design. The owner of the expired patents brought an action under § 43(a) of the Lanham Act against the copier of the design. The district court, dismissed the claim under the doctrine of functionality. 971 F.Supp.262 (E.D.Mich.1997). The Sixth Circuit reversed because the district court did not focus on the design as a whole but focused on a particular element. 200 F.3d 929 (6th Cir.1999).

\textsuperscript{138} For example, the \textit{Peanuts} comic strip’s loveable dog character “Snoopy” was registered as a word and design trademark on May 29, 1962, Reg. No. 732167, and has been renewed since then. A copyright registration was originally obtained on January 12, 1968, original Reg. No. GP59162 in the Visual Arts Class with a Note: “Stuffed dog resembling the Peanuts cartoon character Snoopy”. As this registration was under the 1909 Copyright Act, it had a term of 28 years renewable for another 28 years. However, the Copyright Act of 1976 extended the renewal term to 67 years. \textit{See} 17 U.S.C. § 304(a). Thus, as the Snoopy copyright was in its first term on January 1, 1978 (the effective date of the Act), it was renewable at the end of 1996 (\textit{see} 15 U.S.C. § 305), and a new registration (RE753956) was issued on April 8, 1997. Thus, adding 67 years to 1996 would extend the term until the end of 2063. But there is still the Sony Bono Extension Act. Under 17 U.S.C. § 304(b), a copyright still in its renewal term (which the Snoopy copyright was) “shall have a copyright term of 95 years from the date the copyright was originally secured. . .” As fate would have it, and unfortunately for Snoopy (and his heirs and assigns), his copyright life is not extended, as the original copyright was in 1968 and thus adding 95 years would still result in an expiration date of 2063.
when the copyright expires but the trademark is extant.\textsuperscript{139}

What, then, are the consequences to the public/private domain dichotomy with respect to these overlapping forms of protection? Copyrights have a longer term than patents, and trademarks continue until abandoned. Thus, the potential for extended protection arises even though the shorter strong version may have terminated. A longer strong version may still be extant, providing substantially equivalent protection. This overlap thus keeps the particular creation in the private domain with respect to the strong version that is extant, while the same creation was made available for exploitation when the strong version expired.

As discussed above, there are economic consequences to extended protection.\textsuperscript{140} Whether these predicated adverse economic consequences brought about by the overlapping nature of protection are justifiable is debatable. Nonetheless, is there a violation of the public domain in the sense of the public’s being deprived of something? The answer, again, would seem to be no. The public is entitled to exploit a creation only to the extent that no protection has been granted. The fact that one strong version has been terminated and hence has lost its exclusivity does not entitle the public to exploit that same creation if it is protected by another and extant strong version. The expiration of one of the federal titles of protection cannot drag another extant title into the public domain.\textsuperscript{141} If a general rule is suggested, it would be that the public may exploit any creation in the public domain provided there is no extant form of protection that would otherwise preclude this exploitation. For example, the fact that a patent has expired, in theory, permits the public to exploit the patent in a manner that otherwise would constitute infringement of the patent claims. Nonetheless, this exploitation does not grant the

\textsuperscript{139} This could occur with respect to Snoopy because the trademark could be renewed beyond the expiration date of the copyright based upon continuing use. This issue was raised by Judge Nies concurring in \textit{In re DC Comics, Inc.}, 689 F.2d 1042, 1052 n6 (C.C.P.A 1982) (authorizing the registration as trademarks of the two-dimensional depiction of the three-dimensional toy dolls representing the comic book characters Superman, Batman and Joker), where she observed: “[I]f a copyright doll design is also a trademark for itself, there is a question whether the \textit{quid pro quo} for the protection granted under the copyright statute has been given, if, upon the expiration of the copyright, the design cannot be used at all by others. Whether there should be a temporary, permanent, or no loss of trademark protection at that time must await resolution in an appropriate case and I merely note the problem. At least during the term of copyright here, if any, I find no reason to deny trademark rights.”

\textsuperscript{140} \textit{See supra} nn.114-117 and associated text.

\textsuperscript{141} The expiration of a lease on Blackacre would not terminate the separate grant of an easement to cross Blackacre.
public the right to exploit the creation in the manner that would infringe an extant copyright or trademark covering the same creation. Stated another way, the expiration of a patent privileges the public to exploit the invention in a manner that would otherwise constitute patent infringement, and the patent owner has no right to exclude this exploitation. If there is an extant copyright or trademark, however, this privilege does not extend to the infringement of these separate titles of protection. Copyright and trademark owners still have the statutory right to enforce these titles of intellectual property to the exclusion of the public within the bounds of the scope of protection afforded under the particular title of protection. Consider a real property example: the transfer of title to Blackacre by its owner to the village, to be added to the common, does not grant public access to Blackacre if it is still subject to existing leases. Thus, the fact that one title of intellectual property protection no longer protects a creation does not automatically cast that creation into the strong version of the public domain if that creation remains protected by another strong version of intellectual property.\footnote{142}

VI. The Unprotectables

Even within the seemingly ever-expanding definition of protectable subject matter under the various titles in the strong versions of intellectual property protection, there still remains certain subject matter that is protectable only by the weak version of secrecy. Strong protection is denied such matter, even though its acquisition through the creative cognitive process may have required the expenditure of considerable talent, motivation, labor, and resources, it would meet a high qualitative standard, and proves to be extremely valuable to society. The public disclosure of such unprotectables thus redounds to the benefit of the public domain not only in the weak sense of stimuli but also in the strong sense of exploitability.

All titles of protection have their absolute exclusions from protection. The absolute exclusion of certain subject matter by copyright and trademark law seems in deference to patent law. Thus, §102(b) of the Copyright Act excludes ideas, processes, etc., from the §102(a) recitation of statutory subject matter. Also excluded are useful works. Trademark law excludes protection of functional

\footnote{142. This is, of course, with the presumption that the extant strong version of intellectual property is not invalid. If a trademark is found functional because it is disclosed as such in a patent, this would invalidate the trademark. But the same would be true if the functionality we based upon a journal article rather than a patent.}
Aside from secrecy, the last resort for certain subject matter would seem to fall to patent law. Even with the broad interpretation adopted by the Supreme Court for patentable subject matter as being “anything under the sun made by man,” the Court holds that certain subject matter, generally categorized as: (i) “laws of nature,” (ii) “natural phenomena,” and (iii) “abstract ideas,” does not constitute patentable subject matter and thus should fall from the private domain (weak version) to the public domain (strong version) with the loss of secrecy. Thus, regardless of how much the public disclosure of such subject matter may advance “Science and the useful Arts,” no reward in terms of a government grant of exclusivity is available. The logical consequence of this would be the loss of incentive on the part of even highly talented and motivated individuals to expend labor and resources in the pursuit of such subject matter. Some justification would seem to be in order for the failure to protect natural laws, physical phenomena, and abstract ideas solely in the weak form of secrecy, which hardly seems to be in the public interest. This would be especially true at the present time of unparalleled technological advancements and with a high level of protection being provided not only to such advancements but also to the seemingly trivial. Presumably, protecting these categories of “unprotectables” would satisfy the instrumentalist goals of the Constitution. We may start this inquiry by a definitional question of


144. These exclusions based on prior case law are restated in *Chakrabarty*, 447 U.S. at 309, after the “anything under the sun” standard: “This is not to suggest that § 101 has no limits or that it embraces every discovery. The laws of nature, physical phenomena, and abstract ideas have been held not patentable.” The Court cites: *Parker v. Flook*, 437 U.S. 584 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972); *Funk Brothers Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, 130 (1948); *O’Reilly v. Morse*, 15 How. 63, 112-121 (1854); *Le Roy v. Tatham*, 14 How. 156, 175 (1853).

145. Rewards in the form of government grants or awards may, of course, be available, as well as privately funded grants, awards, prizes, etc.

whether any of these categories satisfy the constitutional requirement that only “inventors” may be granted exclusive rights for limited times to their “discoveries.” In the parallel construction of the Copyright/Patent Clause, the common sense interpretation would be to equate the “discoveries” with “inventions” created by “inventors” as “writings” are respectively the creations of “authors”. This is what the Patent Act does with its unenlightening definition of invention: “The term ‘invention’ means invention or discovery.”

The Supreme Court also appears to treat the terms invention and discovery synonymously, provided the invention (discovery) qualifies as being “made” by a human. Hence, if a “made discovery” is an “invention,” can it be said that laws of nature, natural phenomena or abstract ideas can satisfy this requirement? A positive answer is certainly problematic with respect to laws of nature and natural phenomena that cannot be said to be made by humans, but rather are seen as being “discovered” in the sense that they exist prior to human cognition of them. Here the verb “discover” is used and should be distinguished from the noun “discoveries” of the Constitution and “discovery” of the Patent Act. The dictionary definition of the verb form is: “1: to make known or visible. . .2: to obtain sight or knowledge of for the first time. . .” The obtaining of “knowledge for the first time” appears particularly apropos of laws of nature and natural phenomena.

Laws of nature would fall within the categorization of “eternal law”:

The eternal law is nothing else than God’s wise plan for directing every movement and action in creation. . . . Those who know more than others know the eternal law better. *We can know the hidden things of God by looking at the things that he has made*, but no one fully comprehends the eternal law, because its effects do not fully reveal it.

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149. St Thomas Aquinas, Summa Theologia ch.9, 284 (Timothy McDermott, trans. & ed. 1989). As interpreted by Dimoch: “It is sufficient for those who do not accept the theological underpinnings of Aquinas’ view, to think of eternal laws as comprising all those scientific (physical, chemical, biological, psychological, etc.) ‘laws’ by which the universe is ordered.” Susan Dimoch, *The Natural Law Theory of St Thomas Aquinas*, in Joel Feinberg & Jules Coleman, *The Philosophy of Law* 19, 22 (6th ed. 2000). As defined in the Encyclopedia Britannica, at <www.britannica.com/eb/article?eu=564288&tocid=0>: “Laws of nature are of two basic forms: (1) a law is universal if it states that some conditions, so far as are known, invariably are found together with
In essence, these laws specify how the physical universe works. They are universal and ubiquitous and apply to everyone and everything without consent to be bound. Such laws may be universal, i.e., they apply in all circumstances, or as qualified by particular circumstances, but still applying universally within those defined boundaries. Newtonian mechanics work quite universally, except at particle levels and speeds approaching that of light. In any event, universal physical laws are or should be scientifically verifiable to qualify in this sense.

Laws of nature are operative, of course, whether or not anyone has yet conceived them (i.e., knows about them). In this sense, they pre-exist knowledge by anyone and their articulation awaits the creative cognition process of stimulus, to perception, to conception and knowledge. The law of gravity certainly was used, relied upon and applied prior to Newton’s monumental discovery and publication. The Supreme Court in Charkrabarty categorically denies protection to such physical laws: “Einstein could not patent his celebrated law that E=mc²; nor could Newton have patented the law of gravity.” These are classic examples of the pre-existant being discovered compared to being invented by human intervention.

Nonetheless, the Supreme Court made it quite clear that, while laws of nature per se are not patentable subject matter, their application as embodied to traditional categories of inventions (processes, machine, manufacture, composition of matter) is patentable. Thus, an incentive, at least to this extent, is provided: The discoverer has the first crack at patenting applications of the discovered law of nature. It may be that a “head start” may provide an adequate incentive to satisfy the instrumentalist goal of the

certain other conditions; and (2) a law is probabilistic if it affirms that, on the average, a stated fraction of cases displaying a given condition will display a certain other condition as well. In either case, a law may be valid even though it obtains only under special circumstances or as a convenient approximation. Moreover, a law of nature has no logical necessity; rather, it rests directly or indirectly upon the evidence of experience.”


151. The pre-existence of a scientific principle was affirmed in O’Reilly v. Morse, 56 U.S. 62, 112-121 (1853) (invalidating Moore’s broad claim covering any use of electromagnetism for telegraphic purposes) and reaffirmed in Parker v. Flook, 437 U.S.584, 591-592 (1978) (in the context of a computer-controlled method for updating an alarm limit in a catalytic converter): “Whether the algorithm was in fact known or unknown at the time of the claimed inventions as one of the “basic tools of scientific and technological work,” see Gottschalk v. Benson, supra n. 133 at 67, it is treated as though it were a familiar part of the prior art.
Copyright/Patent Clause.

In short, the instrumentalist goal of the Constitution may be satisfied without granting exclusivity to the discoverer of laws of nature without the adverse consequences of denying access to these fundamental laws to others, even if such denial is even possible. Other rewards, however, may be quite justified in order to encourage fundamental research, including grants, awards, etc., particularly in cases where such an investigation would not otherwise be undertaken because of the need to expend a great deal of time and resources.

The next category of unprotectables, phenomena of nature, would encompass “phenomenon” (using the dictionary definition): “an object or aspect known through the senses rather than by thought or intuition” as qualified by “nature” or “natural” to indicate tangibility in the real world.152 There is a major difference between such phenomena and laws of nature and abstract ideas. These phenomena are physical as opposed to intellectual or ideal (except in some Platonic sense). Phenomena, like laws of nature, pre-exist their discovery and hence are not made by humans. In Chakrabarty, the Supreme Court gave examples: “A new mineral discovered in the earth or a plant found in the wild is not patentable subject matter.”154 The mineral and the plant existed prior to their discovery, but in addition they are tangibles rather than intangibles, as are laws of nature.155 They existed in the physical world as opposed to the intellectual world, except perhaps in the sense that someone may have formed the idea that such a mineral or plant should exist based upon a particular theory or other evidence.156

The physical nature of these phenomena renders their protection, other than as tangible property, well-nigh impossible without the subjection of the tangible to the intangible. Should the discoverer of a previously unknown plant be granted exclusivity over that particular plant including the exclusion of the real property owner and, additionally, exclusivity over that species of plant wherever located? From a propriety standpoint, the principal

153. An apple is a natural phenomenon; an apple pie is not; the law of gravity is not.
155. In other words, you can put your hands on, or take pictures of, a newly discovered plant or insect. It will be named and categorized and hence distinguishable from other plants or insects by physically identifiable characteristics, which will define the archetype of that discovery.
156. This would often seem to be the case in nuclear physics, e.g. the neutrino particle was theoretically predicted in 1930 but was not detected until 1956. See Columbia Encl. 854 (5th ed., 1993).
intellectual content would seem to be the potential uses of the natural phenomenon, even though a great deal of time and resources may be expended in its discovery independent of its use.\footnote{157}

What also may be intended to be included are the intangible qualities of physical phenomena as stated in \textit{Funk Brothers Seed Co.}:

The qualities of these bacteria, like the heat of the sun, electricity, or the qualities of metals, are part of the storehouse of knowledge of all men. They are manifestations of laws of nature free to all men and reserved exclusively to none. He who discovers a heretofore undiscovered phenomenon of nature has no claim to monopoly of it which the law recognizes.\footnote{158}

Although there appears to be somewhat of a conflation of the independent concepts of laws of nature and phenomena of nature, it does appear clear that protection per se of qualities of particular things is impermissible if these qualities are inherent in the thing itself. In any event, it is the thing per se or its qualities per se that is critical rather than what it may be used for, because first uses of newly discovered phenomena certainly are patentable, as are new uses of presently known phenomena.\footnote{159}

As mentioned above, protecting natural phenomena per se by a strong version of intellectual property would introduce serious conflicts with other property rights. Moreover, there seems little justification for protecting phenomena per se on instrumentalist grounds. An adequate incentive outside of exclusivity of the phenomenon itself, would be afforded by protecting first or new uses of the discovered phenomena. That such an incentive is quite adequate is witnessed by the world-wide search being undertaken by pharmaceutical companies for the medicinal qualities of various plants and folk remedies.\footnote{160} In addition, the weak version of secrecy

\footnote{157. This is not to say that the mere discovery and study of physical phenomena may not have significant scientific importance from a theoretical perspective, e.g. Darwin’s theory of evolution.}

\footnote{158. 333 U.S. 127, 129 (1948).}

\footnote{159. See 35 U.S.C § 100(b): “The term ‘process’ means process, art or method and includes a new use of a known process, machine manufacture, composition of matter, or material.” See also Dawson Chemical Co. \textit{v. Rohm & Haas Co.}, 448 U.S.176 (1980) (sustaining a patent on a process for using a known but previously “useless” chemical composition).}

\footnote{160. This is indeed big business. \textit{See Gecile Gulerin, Out of the Forest and Into the Bottle}, Unesco Courier, May 1, 2000, at 30: “An estimated two-thirds of the drugs sold in pharmacies are of natural origin. They account for some $ 30 billion in sales every year.” Some developing countries have labeled this quest by industrialized counties as “biopiracy” and would like to share in the profits from the discoveries. The Convention of Biological Diversity adopted in 1992 as part of the United Nations Conference on}
provides the discoverer with a head start in finding uses for the discovered phenomena. This advantage in itself may provide a more-than-adequate incentive for expending resources on the search for such phenomena.

The final category of unprotectables listed in *Diehr* is “abstract ideas.” No definition is provided by the Supreme Court, except for the dictum in *Rubbertip Pencil Co. v. Howard*: “An idea of itself is not patentable . . .” 161 Presumably the Court is attempting to make a distinction between abstract and concrete ideas. If an idea is reduced to practice in the patent sense to qualify as a process, machine, manufacturer or composition of matter, it should thereby qualify, at least, for patent protection. This is made clear in *Rubbertip* itself where the Court in the complete sentence states: “An idea of itself is not patentable, but a new device by which it may be made practically useful is. The idea of this patentee was a good one, but his device to give it effect, though useful was not new.” 162

It may be that the Supreme Court was using “abstract idea” in the intangible sense, i.e. a conception, to distinguish it from the tangible implementation of the idea (the “creation” as used above), which may, of course, be protectable subject matter. If such is the case, then the question becomes whether or not abstract ideas that have not been (or even cannot be) reduced to a tangible state should be protectable in a strong form – if not by patent, then by another strong form of protection.

As defined by Locke: “*Idea is the object of thinking.*” 163 If abstract ideas were protected, the scope of protection presumably would correspond to the level of abstractness—the more abstract the broader the scope. Conversely, the more abstract an idea is, the less useful it is likely to be in the commercial sense. If the idea takes the form of a hypothesis and is scientifically verifiable and verified, it

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161. 20 Wal. 498, 507 (1874).
162. Id.
163. Locke, *supra* n. 14, at 121. He then goes on to define the sources of ideas: “*All ideas come from sensation or reflection.*” Id. One dictionary definition of “idea” is “a formulated thought or opinion.” Webster’s New Collegiate Dictionary 574 (10th ed. 1997).
would then seem to qualify as a law of nature.

Ideas, of course, are not limited to technological ones. They range from profound to trivial and from the immensely valuable to the worthless or dangerous. 164 Once made public, ideas would appear to go permanently into the public domain. Long ago Thomas Jefferson explicated the ephemeral nature of ideas:

Stable ownership is the gift of social law, and is given late in the progress of society. It would be curious then, if an idea, the fugitive fermentation of an individual brain, could, of natural right, be claimed in exclusive and stable property. If nature has made any one thing less susceptible than all others of exclusive property, it is the action of the thinking power called an idea, which an individual may exclusively possess as long as he keeps it to himself; but the moment it is divulged, it forces itself into the possession of every one, and the receiver cannot dispossess himself of it. Its peculiar character, too, is that no one possesses the less, because every other possesses the whole of it. He who receives an idea from me, receives instruction himself without lessening mine; as he who lights his taper at mine, receives light without darkening me. That ideas should freely spread from one to another over the globe, for the moral and mutual instruction of man, and improvement of his condition, seems to have been peculiarly and benevolently designed by nature, when she made them, like fire, expansible over all space, without lessening their density in any point, and like the air in which we breathe, move, and have our physical being, incapable of confinement or exclusive appropriation. Inventions then cannot, in nature, be a subject of property. Society may give an exclusive right to the profits arising from them, as an encouragement to men to pursue ideas which may produce utility, but this may or may not be done, according to the will and convenience of the society, without claim or complaint from any body. 165

As with laws of nature and natural phenomena, abstract ideas are inherently granted a weak version of protection. However, if a strong version of protection is recognized, which would grant exclusivity to the idea once it became public, serious concerns arise.

164. Even so-called “concrete” and “novel” ideas are afforded limited protection, even in the weak version. See supra note 67.
For example, suppose that the abstract idea is superconductivity, i.e., transmission of electricity with very little energy loss due to resistance in the conducting medium. If superconductivity is eliminated from the pool of available ideas, the entire concept has been appropriated. Indeed, the first conceiver of superconductivity has contributed little beyond the intellectual construct itself of “wouldn’t it be nice if...” But if the idea is made more concrete by the creative process, e.g., a process for producing superconductivity using a supercooled conducting medium, and there is sufficient concreteness in its tangible reduction to practice (actual or constructive) to enable the replication of this machine or process by one “skilled in the art,” appropriation may be justified under patent law. However, if the abstract idea of superconductivity were protected in a strong version, it would be an infringement to exploit the more specific idea of the supercooled process. Even though many may have benefitted from the idea of superconductivity (at least, in the sense of stimulating efforts to implement the idea), protecting the broad concept, which had not been reduced to practice, would undermine the incentive to so implement it. On an instrumentalist basis, the value of the abstract idea would have to be compared to the opportunities lost by those who could or would otherwise be stimulated by the abstract idea, and through the creative cognitive process transform it into an invention.

166. Superconductivity was first observed in the early twentieth century. Superconductivity was achieved by cooling to levels approaching absolute zero, using liquid helium. The problem was to find materials that would enter the superconductive range at higher temperatures. Certain metals would become superconductors at temperatures as high as -415 deg. F. In the 1980s, it was discovered that certain ceramics could be made into superconductors at about -321 deg. F. using liquid nitrogen, which is much cheaper to use than liquid helium. The problem here is the brittleness of ceramics, which make it difficult to form them into wire. The latest reported development is the discovery that a metallic compound, magnesium dibromide, will become superconductive at -389 deg. F. See Guy Gugliotta, ‘Superconductor’ Gain Holds Promise of Energy Efficiency, Wash. Post (Feb.24, 2001), §A, at A2. The quest continues for a malleable material that will become a superconductor at liquid nitrogen temperatures.

167. The verb “may” is used because the process must still satisfy the utility requirement of patent law. See 35 U.S.C. § 101. As stated in Brenner v. Manson, 383 U.S. 519, 534 (1966) : “The basic quid pro quo contemplated by the Constitution and the Congress for granting a patent monopoly is the benefit derived by the public from an invention with substantial utility. Unless and until a process is refined and developed to this point—where specific benefit exists in currently available form—there is insufficient justification for permitting an applicant to engross what may prove to be a broad field.”

168. Kitch has proposed a prospect theory of patent protection wherein protection would be granted on a prospect basis analogous to mineral claims at an early state of technological development. See Edmond W. Kitch, The Nature and Function of the Patent System, 20 J. L.& Econ. 265 (1977); however, it is another matter to extend this theory to
In the instrumentalist sense, justifying the grant of exclusivity to abstract ideas may have exactly the opposite effect that one would hope. For example, the “Golden Rule” is an idea we would expect (or at least hope) to be as widely used as possible. Conversely, a bad idea (such as racial superiority) is one we would expect (or at least hope for) its use to be eliminated. Thus, exclusivity works for bad ideas (assuming the privatizer had the good sense to suppress them) but not for good ideas of this sort. The same would be true with respect to technologically based ideas. If protected, the good ones would be under-exploited (e.g., superconductivity), while the bad ones (e.g., perpetual motion machines) would have little consequence except to keep people from wasting their time and money on them. While we may bemoan the shortage of good ideas, there seems to be no dearth of bad ones.

Accordingly, the refusal to protect abstract ideas (at least those in a state of abstraction not reducible to practice within the skill of the art) seems justifiable along with laws of nature and natural phenomena. An adequate incentive for the search for ideas would seem to be the head start afforded by secrecy until the idea is implemented in tangible form. Human ingenuity and inquisitiveness also provide natural incentives. In sum, one would hope that good ideas would seek fruition in their implementation for the benefit of society, while the bad ones, upon being made public, would at least serve the public interest of identifying approaches to avoid and subject them to the scrutiny of the “marketplace of ideas.”

169. Consider some examples of elegant words by distinguished jurists. Justice Holmes dissenting in Abrams v. United States, 250 U.S. 616, 630 (1919): “To allow opposition by speech seems to indicate that you think the speech impotent, as when a man says that he has squared the circle, or that you do not care whole-heartedly for the result, or that you doubt either your power or your premises. But when men have realized that time has upset many fighting faiths, they may come to believe even more than they believe the very foundations of their own conduct that the ultimate good desired is better reached by free trade in ideas—that the best test of truth is the power of the thought to get itself accepted in the competition of the market, and that truth is the only ground upon which their wishes safely can be carried out. That at any rate is the theory of our Constitution. It is an experiment, as all life is an experiment. Every year if not every day we have to wager our salvation upon some prophecy based upon imperfect knowledge.” The marketplace was not quite as competitive as interpreted by Justice Holmes shortly before Abrams. See Schenck v. United States, 249 U.S. 47 (1919) and Debs v. United States, 249 U.S. 211 (1919). Judge Learned Hand in United States v. Associated Press, 52 F.Supp. 362, 372 (S.D.N.Y.1943): “The newspaper industry serves one of the most vital of all general interests: the dissemination of news from as many different sources, and with as many different facets and colors as is possible. That interest is closely akin to, if indeed it is not the same as, the interest protected by the First Amendment; it presupposes that right conclusions are more likely to be gathered out of a multitude of tongues, than through any
ideas as well as good serve the stimulus function of the public domain. If anything should be available to all from the exploitable strong version of the public domain, it is abstract ideas. The grant of exclusivity by the government would hardly be justifiable under the Copyright/Patent Clause and, more importantly, it would seem, incompatible with the First Amendment.  

**VII. Conclusion**

If the public-domain-as-stimuli thesis, premised on instrumental (*quid* of reward for *quo* of disclosure) legal theory and Kantian philosophy buttressed by the neurobiological foundation of cognition, provides any insights into the function of the public domain in the intellectual property system, it would suggest as a general proposition that the stimulus value of ideas and creations be enhanced within the intellectual property system. This would include two sub-propositions: (i) that incentives for maintaining secrecy be limited and (ii) that disincentives for creative utilization of protected subject matter be limited.

With respect to limiting secrecy, the most promising place to start would seem to be trade secrets. However, trade secret protection kind of authoritative selection. To many this is, and always will be, folly; but we have staked upon it our all.” Justice Powell in *Gertz v. Robert Welch, Inc.*, 418 U.S. 323, 340 (1974) (note omitted): “We begin with the common ground. Under the First Amendment there is no such thing as a false idea. However pernicious an opinion may seem, we depend for its correction not on the conscience of judges and juries but on the competition of other ideas.” The omitted note, *id.* n. 8: “As Thomas Jefferson made the point in his first Inaugural Address: ‘If there be any among us who would wish to dissolve this Union or change its republican form, let them stand undisturbed as monuments of the safety with which error of opinion may be tolerated where reason is left free to combat it.’” 170. Indeed, the inroads of intellectual property protection on First Amendment freedoms have been a major concern of scholars. See, e.g., Dan L. Burk, *Patenting Speech*, 79 Tex. L. Rev. 99 (2000); Benkler, *supra* n. 13; Mark A. Lemley & Eugene Volokh, *Freedom of Speech and Injunctions in Intellectual Property Cases*, 48 Duke L.J. 147 (1998); Gordon, *supra* n. 3; Rochelle Cooper Dreyfuss, *A Wise Guy’s Approach to Information Products: Muscling Copyright and Patent Into a Unitary Theory of Intellectual Property*, 1992 S. Ct. Rev. 195; Alfred C. Yen, *A First Amendment Perspective on the Idea/Expression Dichotomy and Copyright in a Work’s “Total Concept and Feel,”* 38 Emory L.J. 393 (1989); Robert C. Denicola, *Copyright and Free Speech: Constitutional Limitations on the Protection of Expression*, 67 Cal. L. Rev. 283 (1979); Lionel S. Sobel, *Copyright and the First Amendment: A Gathering Storm?,* 19 Copyright L. Symp. 43 (1971); Paul Goldstein, *Copyright and the First Amendment*, 70 Colum. L. Rev. 983 (1970); Melville B. Nimmer, *Does Copyright Abridge the First Amendment Guarantees of Free Speech and Press?,* 17 UCLA L. Rev. 1180, 1180-86 (1970). See also Burk, *supra*, at 112 n.85 (citing articles discussing whether there should be a First Amendment right to research).
seems here to stay.\textsuperscript{171} Licensing trade secrets shares their stimulus value with others, which may lead to further creation. It is not entirely clear that even forcing potentially patentable trade secrets into the patent system under preemption would significantly increase disclosure.\textsuperscript{172} Inventions (particularly processes) not easily subject to reverse engineering are likely to be kept secret, especially now, when patent applications will be published 18 months from filing.\textsuperscript{173} The trade secret holder always risks loss of secrecy by legitimate reverse engineering, laxity in maintaining secrecy, and misappropriation.

Trademarks are inherently public and offer whatever stimulus value they have in their commercial use. Little incentive is provided to warehouse marks in secrecy with the advent of intent-to-use procedures.\textsuperscript{174}

This leaves constitutionally based intellectual property—copyrights and patents. In this context, adequate incentives would generally appear to be offered for eschewing secrecy for statutory protection. The problem for the public-domain-as-stimuli thesis is not the adequacy of the incentive to disclose but that the scope of exclusivity granted may significantly diminish the stimulus value to others of these protected creations. Thus, the importance of the second sub-proposition: that enforcing an excessively broad scope of protection to copyrights and patents may be detrimental to creativity by denying full access to the stimulus value of the protected creation.

If at least part of the consideration for the grant of protection is to foster further creation (by transformation, improvement, etc.) by permitting access to the protected creation, then that access should be of such a scope as not to interfere significantly with the creative process. The doctrines of fair use\textsuperscript{175} in copyright law and experimental

\begin{quote}
\textsuperscript{171} See \textit{Kewanee}, supra n. 2, (discussed nn. 2, 21, 124-125 and text accompanying n. 21).
\textsuperscript{172} Compare \textit{Schaffner}, supra n. 15 (making a strong argument in favor of federal preemption).
\textsuperscript{173} See \textit{supra} nn. 100-102 and associated text (discussing recent amendments to Patent Act).
\textsuperscript{174} See \textit{supra} nn. 7 and 77 (discussing intent-to-use application procedures).
\textsuperscript{175} Fair use originated as a court-made doctrine that was codified in the Copyright Act of 1976, 17 U.S.C. § 107:
\end{quote}

\textbf{§ 107. Limitations on exclusive rights: Fair use}

Notwithstanding the provisions of sections 106 and 106A, the fair use of a copyrighted work, including such use by reproduction in copies or phonorecords or by any other means specified by that section, for purposes such as criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research, is not an infringement of copyright. In determining whether the use made of a work in any particular
in patent law, as currently applied, are considered by a number of scholars as providing inadequate safeguards to those creative individuals seeking access to protected creations for further investigation. By the means of infringement actions, or even the threat of such actions, further creativity may be retarded, to the likely detriment to the public.

A variety of elegant solutions have been offered to expand the fair use and experimental use “exceptions” or “exemptions” from case is a fair use the factors to be considered shall include— (1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes; (2) the nature of the copyrighted work; (3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and (4) the effect of the use upon the potential market for or value of the copyrighted work. The fact that a work is unpublished shall not itself bar a finding of fair use if such finding is made upon consideration of all the above factors.

176. Experimental use is a court-made doctrine. Justice Story is often quoted: “It could never have been the intention of the legislature to punish a man, who constructed such a machine merely for philosophical experiments, or for the purpose of ascertaining the sufficiency of the machine to produce its described effects.” Whitemore v. Cutter, 29 F. Cas. 1120, 1121 (C.C.D. Mass. 1813) (No. 17,600). See also Sawin v. Guild, F.Cas. 554 (CCD Mass 1813) (No.12,391). The Patent Act was amended to preclude generic drug producers from infringement with respect to previously approved drugs for uses solely related to regulatory purposes. See 35 U.S.C. § 271 (e)(1).

177. With respect to fair use, see, e.g.: Wendy J. Gordon, Fair Use as Market Failure: A Structural and Economic Analysis of the Betamax Case and Its Predecessors, 82 Colum. L. Rev. 1600 (1982) (a seminal article introducing the idea of “market failure” into fair use analysis); William F. Patry, The Fair Use Privilege In Copyright Law (1985) (collecting cases uses the fair use factors); Lloyd L. Weinreb, Fair’s Fair: A Comment on Fair Use Doctrine, 103 Harv. L. Rev. 1137 (1990); William W. Fisher III, Reconstructing the Fair Use Doctrine, 101 Harv. L. Rev. 1661 (1988); John Cirace, When Does Complete Copying of Copyrighted Works for Purposes Other Than for Profit or Sale constitute Fair Use? An Economic Analysis of the Sony Betamax and Williams & Wilkins Cases, 28 St. Louis L.J. 647 (1984); Lange & Anderson, supra n. 4 (proposing a presumption of fair use in favor of all transformative works, not merely parodies).

With respect to experimental use, see, e.g.: Rebecca S. Eisenberg, Patents and the Progress of Science: Exclusive Rights and Experimental Use, 56 U. Chi. L. Rev. 1017 (1989) (a seminal article proposing a structure for expanding the experimental use privilege); Rai & Eisenberg, supra n. 4; Michael A. Heller & Rebecca S. Eisenberg, Can Patents Deter Innovation? The Anticommons in Biomedical Research, 280 Science 698 (1998); Maureen A. O’Rourke, Toward a Doctrine of Fair Use in Patent Law, 100 Colum. L. Rev. 1177 (2000) (modifying the § 107 fair use factors in the context of patents); Mueller, supra n. 178 (proposing a “development” use model); cf. Note, Experimental Use as Patent Infringement: The Impropriety of a Broad Exception, 100 Yale L.J. 2169 (1991).

178. Mueller, supra note 176, at 17 n. 80, prefers the term “exemption” over “exception” considering the latter to be “more precise.” The Copyright Act of 1976 (17 U.S.C. §§ 101-1101 (2000) avoids the use of either term making § 106 (granting exclusive rights) subject to §§ 107-121. The title of § 107 is “Limitations on Exclusive Rights: Fair
infringement, primarily in the context of transformative works and scientific research. These solutions all have merit and offer significant instrumental, policy-based justifications for their adoption. Further justification, in my view, is provided by the public-domain-as-stimuli thesis, because the creative process is a complex one; without access to protected works, which, after all, are presumably of high stimulus value, further creation may be significantly hampered. This is not the place to critique the various solutions offered or to provide one of my own. What I might hope to add here is some clarification in terminology and an analogy to tort law as an approach to resolution of the conflict of property rights versus access for continued creativity.

First, with respect to terminology, if Hohfeldian definitions are

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179. See, e.g., Gordon, supra n. 3 at 1614: “Fair use should be awarded to the defendant in a copyright infringement action when (1) market failure is present; (2) transfer of the use to the defendant is socially desirable; and (3) an award of fair use would not cause substantial injury to the incentives of the plaintiff copyright owner”; see also Patry, supra n. 177.

Use.” Fair use under § 107 is then defined as “not an infringement of copyright.” I would prefer to use the term “privilege” as defined by Hohfeld (see supra n. 63) because this usage makes clear that there is no tortuous conduct (infringement) when fair or experimental use applies. This usage is consistent with that of Benkler, supra n. 13. See also Patry, supra n. 177.

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O’Rourke, supra n. 177, at 1205 (identifying five factors relevant to a fair use finding in patent law): (i) the nature of the advance represented by the infringement; (ii) the purpose of the infringing use; (iii) the nature and strength of the market failure that prevents a license from being concluded; (iv) the impact of the use on the patentee’s incentives and overall social welfare; and (v) the nature of the patented work. Mueller, supra n. 178, at 66: A potential solution is a “liability rule” model that permits the non-consensual “development use” of research tools not readily available for licensing or purchase, while providing an ex post royalty payment to the patent owner that would be correlated to the commercial value of the new product developed from the non-consensual use. This “reach-through” royalty approach provides the best approximation of the true worth of the research tool to its user. It ensures a royalty award of sufficient amount to maintain incentives for the development and patenting of new research tools, yet alleviates the access restrictions and up-front costs currently associated with acquisition and use of many proprietary research tools.
used: The owner of an exclusive right (copyright or patent) has a “right” to exclude infringers of that right, who have a correlative “duty” not to infringe. However, a situation may exist or be created that would change the legal relationship between the owner and the infringer to one where the owner has “no-right” to exclude the other, who may be said to have a correlative “privilege.” The most common example would be where the owner grants a license to one who would otherwise be an infringer. The grant of license changes the legal relationship to a “no-right” in the owner and a “privilege” in the licensee. By entering into the consensual relationship, that which would have been a tort (infringement) is non-tortious, permissible behavior on the part of the privileged licensee. The legal relationship, in certain circumstances, may be transformed from right—duty to no-right—privilege without the consent of the parties. An example from the law of torts may illustrate this.

In the well known case of Vincent v. Lake Erie Transportation Co., the master of the steamship Reynolds, owned by defendant, acted reasonably in not departing from plaintiffs’ dock into a storm on Lake Erie. During the storm, lines were replaced as needed to hold the vessel securely to the dock, and, as a consequence, plaintiffs’ dock was damaged. Technically, defendant was a trespasser on plaintiff’s property once the Reynolds had been unloaded. The court held that while “the defendant prudently and advisedly availed itself of plaintiff’s property for the purpose of preserving its own more valuable property, . . . plaintiffs are entitled to compensation for injury done.” In Hohfedian terms, defendant was privileged to trespass based upon the circumstance of the private necessity, but this was a qualified privilege limited to inflicting no damage. If any damage was caused, defendant had a duty to compensate the plaintiffs whose property right had been violated. To extend this reasoning by analogy to the present tension between property rights under copyright and patents and potentially privileged uses, I would suggest that in “qualifying circumstances”, those who otherwise would be infringers be granted a qualified privilege, limited as in Vincent to not causing any damage. The infringement (trespass)
would be privileged, but the right owner would be compensated if damaged. I would rely upon the stimulating work of others, as set out in the margin, for defining “qualifying circumstances” and “damages” in this context.  

Another approach would be to employ “liability” rules rather than “property” rules with respect to “qualifying circumstances.” However, due to the current dominance of property theory, whether qualified or not by “intellectual,” Hohfeldian legal analysis may be a more judicious approach.

Finally, and returning to the title theme, I would suggest that if, there is a tragedy lurking in the present intellectual property system, it is not so much secrecy as the unduly narrow access to protected creations. I would also offer that there is a counterbalancing comedic aspect to whatever protection secrecy could provide, for we are in an age of unprecedented stimulation. Our senses are constantly being assaulted by stimuli from sources undreamed of in the time of Kant, Newton, or even Einstein. This sensory overload may even have an adverse impact on creativity by lowering our sensitivity to the unique in the maze of an unrelenting barrage of mostly noise. Let us hope that we are capable of filtering out the bad ideas and being stimulated by the good ones.

\[184. \textit{See supra n. 177 (indicating some of the proposals that have been made).}\]

\[185. \text{The classic article is Guido Calabresi & A. Douglas Melamed, } \textit{Property Rules, Liability Rules, and Inalienability: One View of the Cathedral}, 85 Harv. L. Rev. 1089, 1092 (1972): “An entitlement is protected by a property rule to the extent that some who wishes to remove the entitlement from its holder must buy it from his in voluntary transaction in which the value of the entitlement is agreed upon by the seller . . . Whenever someone may destroy the initial entitlement if he is willing to pay an objectively determined value for it, an entitlement is protected by a liability rule.” See also J.H. Reichman, } \textit{Of Green Tulips and Legal Kudzu: Repackaging Rights in Subpatentable Innovation}, 53 Vand. L. Rev. 17, 43 (2000) (use of liability rules with respect to follow-on innovations).\]

\[186. \textit{See Boyle, supra n. 5, at 43: “The literature on governing the commons promises to be exceptionally useful here, as does the oft neglected tradition of Hohfeldian legal analysis; each can offer a different kind of clarity.” Compare Lessig, } \textit{supra} \textit{n. 4, at 189: “For these ideas take for granted the property in intellectual property; these ideas have lost the distinction that our framers made clear—by speaking as they did, not of intellectual property, but of monopolies and exclusive rights. That’s what a copyright or patent is — a government backed monopoly, not over a rivalrous or scarce resource like land or apples or heated homes, but over a nonrivalrous resource that the enlightenment taught us should be shared among more than the church. IP is not P, but this truth is lost on us.”}\]

\[187. \textit{See supra n. 36 (discussing how the mind deals with excessive sensory stimulation). Indeed, as put by Dennett: “It is the glory of science that it can find the patterns in spite of the noise.” Daniel C. Dennet, } \textit{Darwin’s Dangerous Idea: Evolution and the Meaning of Life} 358 (1995), quoted in Analytic Jurisprudence Anthology 50 (Anthony D’Amato ed. 1996).\]