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Patently Unconstitutional: The Geographical Limitation on Prior Art in a Small World¹

Margo A. Bagley[†]

INTRODUCTION

Our world is getting smaller each day. As a consequence, a statutory provision that may have been constitutional when originally enacted a very long time ago is now patently unconstitutional. That provision is 35 U.S.C. § 102, which excludes evidence of foreign public knowledge or use of an invention from being considered in U.S. patentability decisions.²

[†] Associate Professor of Law, Emory University School of Law. The ideas presented in this Article benefited greatly from presentations made at the CASRIP Patent and Intellectual Property Law Summer Institute at the University of Washington, at the Traditional Knowledge, Intellectual Property, and Indigenous Culture symposium at Cardozo University, and to the faculty at the Washington & Lee University School of Law and the George Washington University School of Law. The author also would like to thank Anita Bernstein, Bob Brauneis, Dorothy Brown, Bill Buzbee, Martha Duncan, Cynthia Ho, Paul Heald, Tom Irving, Mark Lemley, Marc Miller, Ruth Okediji, Robert Schapiro, and Charles Shanor for their helpful comments and critique. Thanks also to William J. Haines and Erica Beck of the Emory Law Library and to Jeremy Flax, Mathew Kannady, Terriea Lipscomb, and Marni Weiss for their invaluable research assistance.

1. The title alludes to the song "*It's a Small World*." *It's a Small World*, DISNEY'S THEME PARK SING-ALONG, available at <http://disney.go.com/disneyrecords/sing-alongs/themeparks/media/smallworld.wav>. The song's conclusion that "there's so much that we share that it's time we're aware it's a small world after all" is quite apropos of the issue of geographical limitations on prior art in U.S. patent law.

2. 35 U.S.C. § 102 (2000). The problematic portion of 35 U.S.C. § 102, its geographical limitation on prior art, first appeared in U.S. law in the Patent Act of 1836, ch. 357, 5 Stat. 117. The limitation in § 102(b) is illustrative:

A person shall be entitled to a patent unless . . . 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

Section 102's geographical limitation is particularly problematic with respect to public knowledge or use of inventions in developing countries. The neem tree controversy provides a fitting example of the types of problems the limitation engenders.³ The neem tree is indigenous to India and is called "curer of all ailments"⁴ and "the village pharmacy."⁵ Its fruit, leaves, seeds, and bark have been freely used by the people of India for two millennia as, among other things, a natural pesticide, contraceptive, toothbrush, soap, feedstock, and fuel; and as a treatment for ailments ranging from septic sores to ulcers.⁶ It has been called the "Tree of the 21st Century," because almost every part of the tree has multiple, substantial, environmentally friendly uses.⁷

Yet all is not well with neem. In the early 1990s, W.R. Grace (Grace), a multinational corporation of U.S. origin, obtained several U.S. patents on pesticide products derived from the neem tree and on methods of making and using those products.⁸ The issuance of the patents created an uproar in

35 U.S.C. § 102(b) (emphasis added).

3. See Craig D. Jacoby & Charles Weiss, *Recognizing Property Rights in Traditional Biocultural Contribution*, 16 STAN. ENVTL. L.J. 74, 75-76 (1997) (describing the neem tree dispute as evidence of the need for a new property regime that protects traditional biological contributions); Emily Marden, *The Neem Tree Patent: International Conflict Over the Commodification of Life*, 22 B.C. INT'L & COMP. L. REV. 279, 282 (1999) (discussing the western use of and property rights protection for biological resources in the context of the neem tree dispute); Steven Mark, *Harmonization or Homogenization? The Globalization of Law and Legal Ethics—An Australian View Point*, 34 VAND. J. TRANSNAT'L L. 1173, 1181-82 (noting that W.R. Grace's U.S. and European patents on neem extracts "had a direct economic impact upon Indian society"); Charles R. McManis, *The Interface Between International Intellectual Property and Environmental Protection: Biodiversity and Biotechnology*, 76 WASH. U. L.Q. 255, 257 (1998); Srividhya Ragavan, *Protection of Traditional Knowledge*, 2 MINN. INTEL. PROP. REV. 1, 11-13 (2001) (stating that neem is not prior art because the issue of prior art "has not been resolved yet at an international level"); Michael D. Lemonick, *Seeds of Conflict*, TIME, Sept. 25, 1995, at 50, 50 (discussing the issue of rights to biological resources and arguing that W.R. Grace's actions would not "keep farmers from using neem seeds in traditional ways").

4. Mark, *supra* note 3, at 1181; Lemonick, *supra* note 3, at 50 (stating that neem is known "in Sanskrit as *sarva roga nivarini*, 'the curer of all ailments'").

5. McManis, *supra* note 3, at 257.

6. *Id.* at 258; *The Neem Tree: Medicinals*, at <http://www.theneemtree.com/medicinals.htm> (last visited Oct. 10, 2001).

7. Neem Foundation, *Neem Foundation: Towards a Greener World*, at <http://www.neemfoundation.org/intro.htm> (last visited Oct. 10, 2002).

8. See, e.g., U.S. Patent No. 5,281,618 (issued Jan. 24, 1994) (patenting

many quarters since the “free tree,” as neem is also called, seemed to have entered a type of captivity.⁹ Activists tried to get the United States Patent and Trademark Office (USPTO) to revoke one of the patents,¹⁰ but the patent was deemed valid over the evidence presented (limited, by statute, to prior patents or printed publications).¹¹

At the same time, Grace (in conjunction with the United States Department of Agriculture) also applied for and obtained neem-related patents from the European Patent Office (EPO). In 1995, one of these patents¹² was targeted by the “Neem Team,”¹³ a group composed of two Indian non-governmental organizations¹⁴ and the Health and Environment Minister of Belgium. The group requested that the EPO revoke the patent because its subject matter did not meet basic patentability requirements of the European Patent Convention (EPC).¹⁵ Evidence supporting the notice included, in addition

pesticide compositions containing neem seed extracts and characterized by non-degrading solvent systems and high concentration of azadirachtin, the active ingredient in neem extract); U.S. Patent No. 5,124,349 (issued June 23, 1992) (patenting pesticide compositions containing neem seed extracts and characterized by non-degrading solvent systems); U.S. Patent No. 5,001,146 (issued Mar. 19, 1991) (patenting pesticide compositions containing neem seed extracts, characterized by non-degrading solvent systems); U.S. Patent No. 4,946,681 (issued Aug. 7, 1990) (patenting a process producing stable solutions of neem seed extract).

9. The botanical name for the neem tree is *Azadirachta indica*, and is derived from the Persian words for “free tree,” *Azad darakht*. Vandana Shiva, *Free Tree*, Hindustan Times Online, at <http://www.hindustantimes.com/nonfram/090600/detOPI01.htm>, (June 9, 2000) (on file with author); see also Int’l Federation of Organic Agricultural Movements (IFOAM), *Neem Patent Revoked!!—Major Victory Against Biopiracy*, at http://www.ifoam.org/press/win_final_neu.html (last visited Oct. 10, 2002) [hereinafter *Neem Patent Revoked*] (stating the neem tree’s scientific name means “free tree”).

10. Lemonick, *supra* note 3, at 50.

11. Reexamination certificate, U.S. Patent No. 5,124, 349 (issued Oct. 20, 1998). For patentability determinations, § 102 prevents consideration of evidence of foreign knowledge or use of a claimed invention from being used in patentability determinations. 35 U.S.C. § 102.

12. European Patent No. 0436 257 A1 (issued July 10, 1991) (patenting an insecticide and fungicide products derived from neem seed extract and the methods of making and using the products).

13. Shiva, *supra* note 9, at <http://www.hindustantimes.com/nonfram/090600/detOPI01.htm>.

14. *Neem Patent Revoked*, *supra* note 9 (“The Legal Opposition [was] lodged [by] Indian scientist Vandana Shiva, IFOAM President Linda Bullard, [and the] Environment Minister of Belgium.”).

15. *Back Where It Belongs*, 9 DOWN TO EARTH 13, 13 (2000), at http://www.cseindia.org/html/dte/dte00000615/dte_news.html [hereinafter

to printed publications, affidavits attesting to public use of the invention by researchers in India prior to the filing of Grace's application.¹⁶ The EPO found the evidence of foreign public use compelling and revoked the patent on May 10, 2000, noting that the claims were not novel in view of prior public use of the tree in India.¹⁷

Why was one Grace neem patent revoked by the EPO while a related patent was upheld by the USPTO? One of the culprits may have been § 102's geographical limitation on prior art.¹⁸ Evidence of foreign use of the invention that was key to

Back Where It Belongs]. The notice of opposition requested revocation on the grounds that the patent lacked novelty and an inventive step (i.e., nonobviousness), had insufficient disclosure, and also that it was contrary to morality, in violation of European Patent Convention (EPC) Articles 53(a), 54(1)-(2), 56, and 83, respectively. Convention on the Grant of European Patents, Oct. 5, 1973, 13 I.L.M. 270, 286, 291 available at <http://www.european-patent-office.org/legal/epc/e/ma1.html> (last updated July 2002) [hereinafter EPC]. For more on the European Patent Office (EPO) and EPC, see *infra* notes 195-202 and accompanying text.

16. Decision Revoking European Patent No. 0436257, European Patent Office, at 2-3 (Feb. 13, 2001) (available from European Patent Office; on file with author).

17. *Id.* at 1, 9-13. Apparently, the corroborated testimony of an Indian researcher, Mr. A. D. Phadke, was instrumental in the EPO Opposition Division's decision to revoke the patent based on prior public use of the claimed invention. *Id.* at 9. As stated in the "Grounds for Decision":

The basic statement of Mr. Phadke both in the above affidavit and his testimony was that there were field trials in summer 1985 and 1986 in . . . Western India which were open to an unlimited number of local farmers. . . . [H]e further specified that the fungicidal effect under discussion has been observed . . . and presented a list of sixteen farmers plus their telephone numbers who were present at the trials. He further specified . . . that not only his employees carried out the trials, but also that he himself carried out some of the tests together with farmers whose names he could present. Additionally, he stated that the farmers did not only watch the trials, but were given samples of the various extracts and the recipes to prepare them.

Accordingly it is clearly established *when* and *where* the prior use took place. Additionally, it has been made clear that the trials in fact were made available to the public.

Id. The two-day opposition hearing at the EPO in Munich, Germany drew protesters, who carried signs protesting the patenting of neem, symbolically "freed" a neem tree from patents, and presented to EPO representatives signatures of 500,000 Indian citizens demanding the revocation of all patents on neem. Anna Salleh, *Victory Over Biopiracy*, Australian Broadcasting Corporation (ABC) Online, at http://www.abc.net.au/science/news/print/print_128927.htm (May 19, 2000); *Back Where It Belongs*, *supra* note 15, at http://www.cseindia.org/html/dte/dte20000615/dte_news.htm; *Neem Patent Revoked*, *supra* note 9, at http://www.ifoam.org/press/win_final_neu.html.

18. 35 U.S.C. § 102(a)-(b), (g) (2000). The claims in the United States and European patents, while similar and related, are not identical. *Compare* U.S.

the revocation of the European Grace patent would not be admissible to challenge the validity of any related U.S. patent(s) on neem¹⁹ because of the geographical limitation on prior art codified in various subsections of § 102 of the Patent Act of 1952.²⁰ In a nutshell, § 102 excludes evidence of foreign public knowledge or use of an invention from being considered in both novelty and nonobviousness determinations if the evidence is not contained in a patent or printed publication.²¹

The statutory provision that requires classification of information as relevant or non-relevant based on its geographical origin and form conflicts with the very source of its power: The United States Constitution. Article 1, section 8, clause 8 of the U.S. Constitution (Intellectual Property Clause) authorizes Congress to grant exclusive rights for limited times to inventors for the purpose of “promot[ing] the progress of the

Patent 4,946,681 (issued Aug. 7, 1990) with European Patent No. 0 43 256 (issued July 10, 1991). Consequently, the specific evidence found persuasive in the EPO decision may not have impacted the U.S. patent’s claims. It is possible other foreign public use evidence exists, however, that may have invalidated claims in one or more of the U.S. neem patents. Moreover, in U.S. reexamination proceedings, only evidence in patents or printed publications can be used to invalidate a patent. 37 C.F.R. § 1.552(a) (2001); see also *Dow Chem. Co. v. Astro-Valcour, Inc.*, 110 F. Supp. 2d 104, 109 (N.D.N.Y. 2000); David Downes, *Using Intellectual Property as a Tool to Protect Traditional Knowledge: Recommendations for Next Steps*, <http://www.ciel.org/Publications/publac.html> (Nov. 21, 1997). Mr. Downes noted that with the Grace neem-related patents,

[m]any of these patented inventions are different from traditional uses of neem. They apply only to the specified inventions, without interfering with Indian farmers. . . . However, it is possible that some of the patents were not truly novel because in fact they not only drew upon but consisted of traditional knowledge.

Id.

19. The EPO patent claimed priority from U.S. Patent Application No. 456,762 (filed Dec. 20, 1989), from which several U.S. patents also claimed priority, even though Application No. 456,762 itself ultimately was abandoned and never issued as a patent. A search of the U.S. Patent and Trademark Office website (<http://www.uspto.gov>) revealed more than 70 patents with claims relating in some way to neem (on file with author). This Article does not suggest that any one of those particular patents (or any other for that matter) is indeed invalid, because novel and nonobvious inventions can build on, or be derived from, publicly available information. Rather, this Article simply points out that evidence necessary to accurately assess validity in a manner consistent with the U.S. Constitution may be improperly excluded by § 102’s geographical limitation on prior art.

20. Patent Act of 1952, ch. 950, Pub. L. 106-113, 66 Stat. 797, codified at 35 U.S.C. § 102(a), (b), (g) (2000).

21. 35 U.S.C. § 102(a)-(b). Public knowledge, use, or sale of an invention “in this country,” i.e., the United States, does constitute relevant prior art. *Id.*

useful arts".²²

On its face, a geographical limitation that allows an invention that was known or used in another country to be patented here may seem to promote the progress of technology in the United States by providing U.S. citizens with access to information and products that they otherwise might not have had.²³ Additionally, if the Framers' goal was only to promote the introduction of useful technology to the United States, § 102's geographical limitation would certainly further that goal by granting inventors exclusive U.S. rights over technology known and used in other parts of the world.²⁴ Yet that clearly was not the only goal. From its earliest days, the Intellectual Property Clause has been understood to prohibit the grant of patents (1) to non-inventors and (2) for inventions in the public domain, even if the grant of a patent might have expedited the introduction of beneficial technology within U.S. borders.²⁵

22. U.S. CONST. art I., § 8, cl. 8.

23. See e.g., U.S. Patent No. 5,401,504 (issued Mar. 28, 1995) (patenting the administration of turmeric to a wound in order to promote healing); Sanjay Kumar, *India Wins Battle with USA Over Turmeric Patent*, 350 THE LANCET 724 (Sept. 6, 1997); *India Prevents Patenting of Turmeric*, THE STATESMAN, Aug. 24, 1997 at 17. In 1995, two researchers from the University of Mississippi obtained a U.S. patent on methods of using the spice turmeric to heal wounds. Kumar, *supra*, at 724. The use of turmeric as a wound-healing agent has been known in India for centuries. *Id.* If there were no published records regarding the use of turmeric in the way described in the patent, a person in the United States might think § 102's geographical limitation is a good idea since it allows the patenting and dissemination of useful information, here a wound healing treatment, that might be hard for a U.S. consumer to access otherwise. The patent gives its holders the right to exclude others from using that method (or pay "rent" in the form of license fees or premium monopoly based pricing), however, and to the extent the information is publicly accessible in the legal sense consumers now have to pay monopoly prices for something that is not novel. Furthermore, *any* limitation on one's ability to patent information, such as barriers against patents on information that has already been published, and on patents derived from an invention by someone else, may keep desirable goods from reaching consumers. In the turmeric case, the patent was invalidated based on the claimed method's being disclosed in various printed publications.

24. See 35 U.S.C. § 271(a) (2000) (stating that the owner of a U.S. patent has the right to exclude others from making, using, selling, offering to sell, or importing that invention in the United States during the term of the patent).

25. See discussion *infra* at notes 26, 65, 97. For example, the First Congress deliberately excluded patents of importation from U.S. law in the first patent act, even though such patents would have provided incentives for intrepid entrepreneurs to import much needed technology from England, France, and other locales, to the fledgling nation. See *infra* note 62 and accompanying text.

While the Framers believed incentives were needed to advance the progress of technological development in this country, they also were well aware, from pre- and post-Statute of Monopolies abuses in England, of the dangers to the public domain of monopoly-like grants of power over existing information.²⁶ To safeguard against the repetition of such abuses in America, the Intellectual Property Clause contains clear constraints on the ways Congress can promote the progress of useful arts by granting exclusive rights for limited times to true inventors of new (and nonobvious) technology.²⁷

Understanding that the Framers of the Intellectual Property Clause sought to avoid the granting of patents on “old” information informs a reading of the Intellectual Property Clause that requires the inclusion of all publicly accessible

26. See Statute of Monopolies, 1623, 21 Jam., c. 3, § 6 (Eng.) (providing that patents shall not be used in any way “mischievous to the state, by raising prices of commodities at home,” nor shall they “hurt. . . trade” or be “generally inconvenient”); Letter from James Madison to Thomas Jefferson (Oct. 17, 1788), in *LETTERS AND OTHER WRITINGS OF JAMES MADISON 1769-1793*, at 421, 427 (1865) (“With regard to monopolies they are justly classed among the greatest nuisances in Government Monopolies are sacrifices of the many to the few. Where the power is in the few it is natural for them to sacrifice the many to their own partialities and corruptions.”); see also Paul J. Heald & Suzanna Sherry, *Implied Limits on the Legislative Power: The Intellectual Property Clause as an Absolute Constraint on Congress*, 2000 U. ILL. L. REV. 1119, 1144 (2000). In the words of the former Commissioner of Patents,

Americans generally detest monopoly in the true sense of the term because it makes possible the ruthless exercise of power. Indeed, the American Revolution was precipitated by popular resentment of the monopoly on tea held by the East India Co. It would, therefore, have been exceedingly strange if, only a few years later, the delegates sent to the Constitutional Convention by Massachusetts and the other Colonies had been willing to sanction an equivalent form of monopoly under the new government they were creating.

Hearings before the Temporary National Economic Committee, 76th Cong., 838, 840 (1939) (statement of Conrad P. Coe, Commissioner of Patents).

27. U.S. CONST. art. I, § 8, cl. 8; see John Golden, *Biotechnology, Technology Policy, and Patentability: Natural Products and Invention in the American System*, 50 EMORY L.J. 101, 104-05 (2001) (“[B]ecause patents provide this spur to progress through a monopoly grant, there is an ever-present concern that they will overreach—granting property rights beyond what inventors legally deserve, or (of more fundamental concern) beyond what best promotes the development and dissemination of technological products.”); see also Robert Patrick Merges & Glenn Harlan Reynolds, *The Proper Scope of the Copyright and Patent Power*, 37 HARV. J. ON LEGIS. 45, 46 (2000) (“[T]here are limits on Congress’s power to create and extend intellectual property interests. Such limits are ‘internal’ in the sense that they are the result of the very same constitutional provision giving rise to Congress’s power in the first place, the [Intellectual Property] Clause of the Constitution.”).

information as prior art in patentability determinations. Such a reading is consistent with “fidelity”²⁸ because it provides “a reading in the new context that has the same meaning as a different reading had in a different context.”²⁹ The new context is the technologically advanced, twenty-first century world of diminishing borders and open markets, where scientists seek inventive inspiration in remote corners of the globe with an ease unknown in 1836, the year the first prior art geographical limitation entered U.S. patent law.³⁰ Thus, properly

28. Fidelity refers to the notion of remaining faithful to original constitutional principles. See Barry Friedman & Scott B. Smith, *The Sedimentary Constitution*, 147 U. PA. L. REV. 1, 4 (1998).

29. Lawrence Lessig, *Understanding Changed Readings: Fidelity and Theory*, 47 STAN. L. REV. 395, 396 (1995). As Professor Lessig notes,

Readings of the Constitution change. This is the brute fact of constitutional history and constitutional interpretation. At one time, the Constitution is read to say one thing. At another, the same text is read to say something else. No theory that ignored these changes, or that presumed that constitutional interpretation could go on without these changes, could be a theory of our Constitution.

Id. Professor Lessig theorizes that in the face of a changed context, which may be due to technological advances, the proper way to maintain fidelity is to change the reading of the constitutional text, to translate, if you will, the original meaning in to the new context. *Id.* at 396, 398. Such a changed reading of the Intellectual Property Clause clearly supports elimination of § 102's geographical limitation on prior art. But see Michael C. Dorf, *Integrating Normative and Descriptive Constitutional Theory: The Case of Original Meaning*, 85 GEO. L.J. 1765, 1787 (2000) (critiquing Lessig's theory as failing to account for much of modern constitutional law). However, reading the Intellectual Property Clause as requiring the inclusion of all publicly accessible information as prior art is arguably not even a different reading, but rather a return to the original reading, since the first two patent acts contained no geographical limitation on prior art. See Patent Act of Apr. 10, 1790 (An Act to Promote the Progress of the Useful Arts), ch. 7., 1 Stat. 109 (repealed by Patent Act of 1793). For other theories of the evolution of constitutional interpretation and rules, see Michael C. Dorf & Barry Friedman, *Shared Constitutional Interpretation*, 2000 SUP. CT. REV. 61, 77 n.67 (2000).

30. Patent Act of 1836, ch. 357, 5 Stat. 117; see McManis, *supra* note 3, at 269-75 (discussing the creation of several bioprospecting agreements between multinational corporations, government institutions, and universities, and developing country governments and indigenous groups in places such as Costa Rica, Micronesia, and Ecuador for the identification of information that may lead to patentable inventions); Anthony Faiola, *Amazon Cash Crop*, WASH. POST, July 9, 1999, at A20 (quoting a Brazilian traditional healer as saying that “[f]oreigners come around asking me all sorts of questions” and that “[y]ou can tell they're not tourists—they're scientists!”); see also Judith Resnik, *Categorical Federalism: Jurisdiction, Gender, and the Globe*, 111 YALE L.J. 619, 620 (2001) (“Technology permits easy transgeographic exchanges that diminish the significance of physical boundaries. Transnational organizations promulgate worldwide legal norms, affecting practices within

interpreted, the Intellectual Property clause prohibits the grant of patents on inventions in the public domain, i.e., inventions that are not novel and nonobvious because they are "open to the people of this country, as well as of others, upon reasonable inquiry."³¹ Because the current geographical limitation on prior art allows the patenting of inventions in the public domain, it is unconstitutional and must be eliminated.³²

The geographical limitation on prior art was not in the first two U.S. patent acts, but it has been in U.S. patent law for over 150 years.³³ While not directly ruled on by the Supreme Court, the limitation has been mentioned in Court decisions on occasion.³⁴ Thus one legitimately might be skeptical that a provision this old could be unconstitutional. Yet not all statutes ultimately deemed unconstitutional start out that way; some become that way over time.³⁵ It is possible that in 1836, the geographical limitation was not unconstitutional because difficulties associated with obtaining and verifying evidence of foreign public knowledge or use caused the bulk of such knowledge to be effectively inaccessible to the interested public and thus outside the public domain.³⁶ Due to advances in technology and changed world conditions, such reasoning is no longer tenable because evidence of foreign public knowledge or use is arguably as accessible in the twenty-first century as foreign patents and printed publications were in 1836.³⁷

nation-states.").

31. *Gayler v. Wilder*, 51 U.S. (10 How.) 477, 497 (1850).

32. See *infra* notes 92-174 and accompanying text.

33. See discussion *infra* Part I.B.

34. Generally, the Court simply recites a subsection of 35 U.S.C. § 102 at issue in the case. See, e.g., *Pfaff v. Wells Elec., Inc.*, 525 U.S. 55, 57 (1998) (referring to § 102(g)); *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 148 (1989) (referring to Rev. St. §§ 4886-4887, 4923, the predecessors to 35 U.S.C. § 102 (a)-(b), (g)); *Gandy v. Main Belting Co.*, 143 U.S. 587, 592-93 (1892); *Gayler*, 51 U.S. at 497 (quoting Patent Act of 1836, ch. 357, § 6, 5 Stat. 119). In dicta, the *Gayler* Court further explained the geographical limitation even though their applicability was not at issue. *Id.* at 496-98; see *infra* notes 70-71 and accompanying text.

35. See discussion *infra* Part II.

36. See Donald S. Chisum, *Foreign Activity: Its Effect on Patentability Under United States Law*, 11 INT'L REV. INDUS. PROP. & COPYRIGHT 26, 36 (1980).

37. See discussion *infra* Part II. B. Of course, all foreign public knowledge or use is not equally accessible, just as all patents and printed publications are not equally accessible. Public accessibility, the key to prior art legitimacy, is determined on a case-by-case basis and is fact specific. Nevertheless, this Article argues that, on the whole, the accessibility of foreign public knowledge

Moreover, the policy ramifications of the § 102 limitation are significant. First, returning to the neem tree controversy, the EPO's revocation of Grace's patent would allow other companies to make and sell products covered by the patent in Europe. If Grace patented the same invention in the United States, where § 102(b)'s geographical limitation would bar evidence of public use of the invention in India, European consumers could have competitive market access to an invention only available to U.S. consumers at monopoly pricing levels.³⁸ Second, the United States fiercely condemns the pirating of U.S. intellectual property by trading partners, often developing countries, imposing trade sanctions where deemed necessary to force countries to implement adequate protections.³⁹ Yet, the § 102 geographical limitation facilitates

or use should be considered at least equal to the categorical accessibility of foreign patents and printed publications in 1836 and thus should be treated the same for novelty and nonobviousness purposes.

38. In addition to the EPC, the patent laws of Japan, Canada, Mexico and many other countries also do not contain geographical limitations on prior art (although some other countries, such as Australia and Kuwait, still do.) See notes 191 and 204 (describing patent law of all EPC contracting states, Japan, and Canada) and the Collection of Laws for Electronic Access (CLEA), at <http://clea.wipo.int> (providing the patent laws of Mexico, Australia, and Kuwait), *infra*. Consequently U.S. consumers would theoretically be at a pricing disadvantage to foreign consumers as well, assuming the subject products are available in those markets.

It must be noted, however, that § 102's geographical limitation is not the only § 102 provision that differs from the patent laws of other countries. Section 102(b) also gives an inventor a one-year grace period, from the first time the invention is sold or used publicly, in which to file a patent application covering the invention in the United States. The EPC, for example, provides no such grace period; thus inventions may be patentable here that are not eligible for a European patent, resulting in the same effective disadvantage to consumers noted above for the prior art geographical limitation. See EPC, art. 20, *supra* note 15, 13 I.L.M. at 280. The grace period is also controversial internationally, but may be justifiable in that it provides the constitutionally required incentive to innovate while allowing an inventor a limited time to conduct a search of the prior art, prepare a patent application, and assess the value of her invention before seeking patent protection. See *Baxter Int'l, Inc. v. Cobe Labs., Inc.*, 88 F.3d 1054, 1058 (Fed. Cir. 1996) (noting that allowing the inventor a reasonable time to determine the potential economic value of a patent is one of the policies underlying the public use bar's one-year grace period). No such substantive justifications underlie the geographical limitation on prior art.

39. See United States Trade Representative, 2000 *Special 301 Report*, <http://www.ustr.gov/html/special.html> (last visited Oct. 13, 2002). The United States Trade Representative (USTR), under the Special 301 Provisions of the Trade Act of 1974, identifies trading partners that "deny fair and equitable market access to United States artists and industries that rely upon

the “pirating” of unpatented, unpublished, traditional knowledge⁴⁰ and genetic resources from developing countries, exacerbating feelings of ill will toward the United States for its hypocritical stance in this area.

Third, harking back to the neem tree example, to the extent indigenous holders of knowledge regarding the invention have shared that information with someone who later patents an obvious variant of the invention, they may receive no benefit or compensation for sharing that knowledge.⁴¹ Moreover, such indigenous knowledge holders are summarily denied the ability to supply the U.S. market with products covered by the patent.⁴² The geographical limitation thus may act, in a sense, as a trade barrier, retarding the ability of affected nations to become independent of foreign aid through the growth of domestic export industries. Consequently, not only is the § 102 geographical limitation on prior art unconstitutional, it is also bad policy. While the number of patents implicating the geographical limitation should be relatively modest, the expense and international ill will they generate is significant.

intellectual property protection.” *Id.* For example, the USTR suspended tariff preferences for Honduras after concluding that its government was not taking adequate steps to combat piracy of U.S. intellectual property. United States Trade Representative, *Trade Preferences for Honduras Restored*, at <http://www.ustr.gov/release/198/07/98-65.pdf> (July 21, 1998).

There is no geographical limitation on the sources of evidence that can be used under 35 U.S.C. § 102(f) to show that an applicant is not a true inventor. 35 U.S.C. § 102(f). Although actions under § 102(f) are fairly rare, the Patent Act’s geographical limitation may facilitate this type of piracy since derivation can be hard to prove and the presence of limitations on this type of evidence in other subsections of 102 may cause such evidence to be given less weight in a 102(f) dispute. Moreover, the geographical limitation may also facilitate the patenting of inventions that would be obvious in view of derived information.

40. Various definitions exist for the phrase “traditional knowledge.” For purposes of this Article, the definition supplied by the Convention on Biological Diversity (CBD) will suffice. See Convention on Biological Diversity, June 5, 1992, art. VIII, § j, 31 I.L.M. 818, 825-26. The CBD defines traditional knowledge as “knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity.” *Id.*

41. See *Neem Patent Revoked*, *supra* note 9, at http://www.ifoam.org/press/win_final_neu.html. Grace may have received information on the claimed invention from an Indian researcher. *Id.*

42. Farmers and indigenous groups in developing countries are poorly positioned to contest the validity of a U.S. patent either by instituting a reexamination proceeding in the USPTO or district court litigation to invalidate the patent. See *infra* notes 81-89 and accompanying text (describing a patent that effectively prohibits importing Mexican Enola beans, which has prevented Mexican exporters from expanding their market).

The neem controversy is not an isolated incident.⁴³

Other commentators on the geographical limitation in § 102 have considered many of the policy issues surrounding the provision. Scholars, however, have not considered the limitation's violation of constitutional strictures.⁴⁴ This Article argues that the geographical limitation in § 102 must be eliminated because it conflicts with the constraints embodied in the Intellectual Property Clause of the U.S. Constitution.⁴⁵

43. Other recent controversies regarding the patenting of information known or used but not necessarily patented or published in other countries include those related to the Mexican Enola bean patent, Ecuadorian Ayahuasca plant patent, Nigerian serendipity berry patent, and Indian turmeric patent, to name a few. See, e.g., Ragavan, *supra* note 3, at 11 (noting that the Indian government opposed a U.S. patent application for turmeric and that the application was rejected); Leanne M. Fecteau, Note, *The Ayahuasca Patent Revocation: Raising Questions About Current U.S. Patent Policy*, 21 B.C. THIRD WORLD L.J. 69, 70 (2001) (describing that Amazon tribal leaders were angered after an American patented a strain of the ayahuasca vine and that more than 400 indigenous tribes and South American groups obtained a rejection of the patent); Lester I. Yano, Comment, *Protection of the Ethnobiological Knowledge of Indigenous Peoples*, 41 UCLA L. REV. 443, 486 (1993) (concluding that the "utilization or loss of ethnobiological knowledge without compensation is becoming an issue of growing concern among indigenous peoples"); Jonathan Friedland, *As Two Men Vie to Sell Yellow Beans, Litigation Sprouts*, WALL ST. J., Mar. 20, 2000, at A1 (describing the controversy over the Enola bean); ETC Group, *Biotech Industry Sweet on African Plant Proteins* (Sept. 28, 1997), <http://www.rafi.org/article.asp?newsid=69> (reporting that "patent claims by the biotech industry fail to recognize or reward" African communities for sweeteners derived from plants used by tribes for centuries, such as the serendipity berry). Of course, not everyone agrees that § 102's geographical limitation is bad. See William LaMarca, *Reevaluating the Geographical Limitation of 35 U.S.C. § 102(b): Policies Considered*, 22 U. DAYTON L. REV. 25, 50-52 (1996) (urging that the geographical limitation of § 102(b) remain in place for situations of undisclosed third party conduct, but be removed where an inventor commercializes her invention outside of the United States beyond the limits of the 102(b) grace period).

44. See Chisum, *Foreign Activity*, *supra* note 36, at 48 (concluding that there is no longer a justification for domestic-foreign distinctions in U.S. patent law); Shayana Kadidal, *Subject-Matter Imperialism? Biodiversity, Foreign Prior Art and the Neem Patent Controversy*, 37 IDEA 371, 395-401 (1997) (criticizing § 102's geographical distinctions); LaMarca, *supra* note 43, at 52-53 (proposing a qualified modification to § 102); Marden, *supra* note 3, at 295 (urging various steps to reform intellectual property laws); Daniel H. Bliss, Comment, *Bridge Over Troubled Water: Extending the Public Use Bar to Foreign Countries*, 1987 DETROIT C. L. REV. 65, 67 (1987) (arguing for changes in the public use doctrine and discussing the evidentiary problems involved in proving foreign public use); Fecteau, *supra* note 43, at 72-73 (summarizing suggested reforms to U.S. patent policy).

45. U.S. CONST. art. 1, § 8, cl. 8. For purposes of this Article, this provision will be called the Intellectual Property Clause. See also Heald &

While the limitation may have been justifiable when originally enacted in 1836, it is clearly unconstitutional now. Also, while facially treating all foreign public knowledge or use the same, it disproportionately impacts and discriminates against indigenous groups in developing countries, a distinction that is hypocritical for the United States to make in view of its stance on the piracy of U.S. intellectual property in developing countries. Moreover, by being out of step with laws in other major patent granting countries, the § 102 limitation may disadvantage U.S. consumers, whom it was originally designed to benefit.⁴⁶

Part I of this Article provides an overview of § 102 of the Patent Act, the role of prior art in the patentability analysis, and the origin of the limitation on relevant non-patent, non-published art to that existing “in this country.” Part II then analyzes the constitutional deficiency of the limitation in light of the express and implied purposes of the Intellectual Property Clause as informed by judicial decisions, technological changes, global contraction, and expanded notions of inventive research sources. Policy concerns are the focus of Part III, which discusses how § 102’s geographical limitation facilitates forms of “biopiracy,” conflicts with the policies underlying § 102(b), and is at odds with global patent harmonization efforts. Part III also explores the likely impact of elimination of the § 102 geographical limitation on U.S. patents. This Article ultimately concludes that eliminating the geographical limitation on prior art is a necessary step for the United States to take in this small, small world.

Sherry, *supra* note 26, at 1123 (asserting that limits on the Intellectual Property Clause are “principles of constitutional weight”).

46. See, e.g., *infra* notes 202-04 and accompanying text (describing Japan’s rejection of its section 102-like provision, based on fears that a geographical limitation on prior art would cause Japan to fall behind in research and development because inventors would be prohibited from using innovations available in other countries, ultimately denying benefits to consumers). Japan eliminated its geographical limitation in 1999, Canada did the same in 1989, and all European Union countries and other members of the European Patent Convention have been without geographical prior art limitations since at least 1977, when the EPC went into effect. See *infra* notes 191-99. Also other countries, such as the United States other close neighbor, Mexico, do not limit prior art based on geography or form. See Mexican Industrial Property Law, available at <http://clea.wipo.int> (last visited Nov. 22, 2002).

I. PATENTABILITY AND PRIOR ART

Article I, section 8, clause 8 of the Constitution authorizes Congress "to promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries."⁴⁷ Congress chose to promote progress in the useful arts by establishing a patent system whereby, in exchange for adequately disclosing a useful, novel, and nonobvious invention⁴⁸ to the public in a patent document, an inventor

47. U.S. CONST. art. I, § 8, cl. 8.

48. The disclosure requirements (written description, enablement, best mode, and distinct claiming) are codified in 35 U.S.C. § 112, which provides, in pertinent part:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention. The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

35 U.S.C. § 112 (2000). In addition to being useful, the invention must also be of the right type. Consequently, 35 U.S.C. § 101 provides: "Whoever invents or discovers any new and useful *process, machine, manufacture, or composition of matter*, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title." *Id.* § 101 (emphasis added).

35 U.S.C. § 102 contains the novelty requirement and provides:

A person shall be entitled to a patent unless—

(a) the invention was known or used by others *in this country*, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent, or

(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, or

(c) he has abandoned the invention, or

(d) the invention was first patented or caused to be patented, or was the subject of an inventor's certificate, by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application for patent or inventor's certificate filed more than twelve months before the filing of the application in the United States, or

(e) The invention was described in— (1) an application for patent, published under section 122(b), by another *filed in the United States* before the invention by the applicant for patent, . . .

or (2) a patent granted on an application for patent by another *filed in the United States* before the invention by the applicant for patent, . . .

or

(f) he did not himself invent the subject matter sought to be

would obtain a right to exclude others from making, using, selling, or offering to sell the invention for a period of years.⁴⁹

Both the novelty and nonobviousness requirements mandate a comparison of the invention with the prior art.⁵⁰ 35 U.S.C. § 102 defines relevant prior art for both novelty and nonobviousness analyses.⁵¹ Prior art is defined as “knowledge that is available, including what would be obvious from it, at a given time, to a person of ordinary skill in an art,” as long as that information is drawn from the sources of information identified in § 102.⁵² It is worth noting that an applicant need not actually be aware of the prior art cited against her application for the information to be considered prior art. Knowledge of all of the relevant art is presumed on the part of

patented, or

(g)(1) during the course of an interference . . . another inventor involved therein establishes, to the extent permitted in section 104, that before such person's invention thereof the invention was made by such other inventor and not abandoned, suppressed, or concealed, or (2) before such person's invention thereof, the invention was made *in this country* by another inventor who had not abandoned, suppressed, or concealed it. In determining priority of invention under this subsection, there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

35 U.S.C. § 102 (2000) (emphasis added).

The nonobviousness requirement is codified at 35 U.S.C. § 103 which provides, in pertinent part:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains

35 U.S.C. § 103 (2000).

49. The original patent term was fourteen years from issuance. Patent Act of Apr. 10, 1790, ch. 7, § 1, 1 Stat. 110 (1848). It is currently twenty years from the filing date, with the possibility of extensions for delays not attributable to acts or omissions of the inventor. 35 U.S.C. §§ 154, 271 (2000).

50. 35 U.S.C. §§ 102, 103.

51. 35 U.S.C. § 102(a).

52. *Kimberly-Clark Corp. v. Johnson & Johnson*, 745 F.2d 1437, 1453 (Fed. Cir. 1984); *see also* 35 U.S.C. § 102 (a)-(b),(e). Pursuant to paragraph (c) of § 103, subject matter that qualifies as prior art only under § 102(e), (f), or (g) cannot preclude the patentability of an invention where that subject matter and the invention, at the time the invention was made, were commonly owned or subject to an obligation of assignment to the same person. 35 U.S.C. § 103(e).

the hypothetical person of ordinary skill in the art.⁵³ Thus, § 102 identifies the knowledge against which patentability is assessed and details the grounds upon which an applicant can be denied a patent based on either lack of novelty of the invention or loss of right to the invention.

A. PRIOR ART AND 35 U.S.C. § 102

Section 102 prevents an applicant from obtaining a patent if the claimed invention is "anticipated" by the prior art, that is, if the invention is not "new" or novel as defined in one of the five prior art subsections of § 102.⁵⁴

Section 102's novelty, or anticipation, requirement is only met if each and every element of the claimed invention is disclosed in a single prior art reference.⁵⁵ Additionally, the reference must enable a person of ordinary skill in the field of the invention to make and use the invention.⁵⁶ If these requirements are not met, then a claimed invention is not "new" because it is fully disclosed in a reference that is accessible to the interested public.

In terms of the nonobviousness requirement, under § 103, references that qualify as prior art under § 102, but that do not by themselves anticipate the claimed invention, can be combined to show that the invention is obvious. In other

53. See *In re Carlson*, 983 F.2d 1032, 1038 (Fed. Cir. 1992) ("To determine patentability, a hypothetical person is presumed to know all the pertinent prior art, whether or not the applicant is actually aware of its existence." (citing *In re Nilssen*, 851 F.2d 1401, 1403 (Fed. Cir. 1988))); *In re Howarth*, 654 F.2d 103, 106 (C.C.P.A. 1981). The *Howarth* court stated,

Section 102 has as one objective that only the first inventor obtain a patent Foreign "patents" and foreign "printed publications" preclude the grant of a patent whether or not the information is commonly known. Under [§] 102 a conclusive presumption of knowledge of such prior art is, in effect, a statutorily required fiction.

Id.

54. 35 U.S.C. § 102. Subsections (a), (e), (f), and (g) are considered novelty provisions while subsections (b), (c), and (d) are loss of right provisions by which an inventor loses the right to a patent because the invention is legally deemed to lack novelty. Subsection (b) is also a prior art provision like the novelty provisions, while subsections (c) and (d) are generally not considered to be prior art provisions. See *OddzOn Prods., Inc. v. Just Toys, Inc.*, 122 F.3d 1396, 1401-02 (Fed. Cir. 1997) (categorizing subsections 102 (a)-(g)).

55. See *In re Paulsen*, 30 F.3d 1475, 1478 (Fed. Cir. 1994).

56. *Id.* at 1479 (citing *In re Spada*, 911 F.2d 705, 708 (Fed. Cir. 1990)). An "enabling" reference is one that would enable one of ordinary skill in the relevant art to practice the claimed invention. See generally *Titanium Metals Corp. of Am. v. Banner*, 778 F.2d 775, 780 (Fed. Cir. 1985).

words, the combination of references shows that all of the claimed elements are present in the prior art and that a patent should not issue (or if issued should be revoked) for the claimed invention. Such combinations are allowed as long as a suggestion or motivation, express or implied, to combine the multiple references also comes from the prior art.⁵⁷ The test is “what the combined teachings of the references would have suggested to those of ordinary skill in the art.”⁵⁸

Three of the five 102 subsections, (a), (b), and (g), contain a geographical limitation to “this country,” for non-patent, non-printed publication prior art.⁵⁹ For purposes of this analysis, however, we will focus on the geographical limitation in § 102(b), as the prior art problems it creates are representative of those pertaining to subsections (a) and (g) as well.⁶⁰ Section 102(b) provides:

A person shall be entitled to a patent unless . . . 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[.]⁶¹

Thus, under § 102(b), relevant prior art that can be used to invalidate a patent consists of information in a patent or

57. *In re GPAC Inc.*, 57 F.3d 1573, 1581 (Fed. Cir. 1995).

58. *Id.* (quoting *Cable Elec. Prods, Inc. v. Genmark, Inc.*, 770 F.2d 1015, 1025 (Fed. Cir. 1995)).

59. 35 U.S.C. § 102 (2000). A fourth subsection, 102(e), also contains a geographical limitation that also should be eliminated but is different in nature to the three mentioned above, and will not be dealt with in this Article.

60. See MARTIN J. ADELMAN ET AL., CASES AND MATERIALS IN PATENT LAW 312, 314 (1998). There are two key differences between subsections 102(a) and 102(b): 1) *Triggering Event*: Prior art under 102(a) is determined as of the date the applicant invented the claimed subject matter, whereas prior art under 102(b) is determined as of the date that is one year before the U.S. patent application filing date; and 2) *Who Can Trigger It*: Only a third party can create prior art under 102(a) (since, by definition, the inventor cannot publicly know or use the invention before she has invented it), whereas the inventor or a third party can create prior art under 102(b) because the critical date is tied to the filing of the patent application. See *id.* at 314.

Section 102(g) differs from 102(a) and (b) in that, in addition to serving as a source of prior art (if someone made the invention in this country before the applicant and did not abandon, suppress or conceal it, that “making” can be used to show lack of novelty or obviousness of the claimed invention) it also serves as the basis for the determination of priority of invention in patent interference contests. See *id.* at 312. Section 102(g)’s geographical limitation was modified in 1999 by the addition of § 102(g)(1), which removes the “in this country” limitation only in the context of certain interference proceedings. 35 U.S.C. § 102(g)(1) (2000).

61. 35 U.S.C. § 102(b) (emphasis added).

printed publication anywhere in the world, but information concerning prior public use or sale of an invention is only invalidating if the use or sale occurred in this country. Prior foreign public use or sale of the invention does not count. This geographical limitation may seem reasonable at first glance, since justifications for denying patents to applicants in the United States based on knowledge or use of an invention in a faraway country may not be readily apparent. To determine if this is only an anachronism or a justifiable distinction, we need to explore how the limitation became part of U.S. patent law in the first place.

B. ORIGIN OF THE SECTION 102(B) GEOGRAPHICAL LIMITATION

United States patent law has not always contained a geographical prior art limitation. The first patent act in 1790 defined prior art without regard to location, authorizing patents only to “the first and true inventor or discoverer” of “any useful art . . . not before known or used.”⁶² Interestingly, H.R. 41, the patent bill that ultimately became the Patent Act of 1790, originally contained language that would have limited the ban on prior use to “in the United States”⁶³ and would have allowed for patents of importation.⁶⁴ Those provisions were deleted before passage of the Act, apparently because of a belief, expressed by James Madison, that patents of importation, which would grant exclusive rights to the first importer (not inventor) of technology from another country to the United States, were unconstitutional.⁶⁵

62. Patent Act of Apr. 10, 1790, ch. 7, § 1, 1 Stat. 109-11.

63. Edward C. Walterscheid, *Charting a Novel Course: The Creation of the Patent Act of 1790*, 25 AIPLA Q.J. 445, 500, 521 (1997).

64. *Id.* at 501-02.

65. *Id.* at 502-03. The language “first and true inventor” in the English Statute of Monopolies encompassed not only inventors, but also persons who “imported into England a manufacture not in use there within living memory.” Walterscheid, *supra* note 63, at 469; *see also* Statute of Monopolies, 21 Jam., c. 3, § 5 (1623) (Eng.). Although patents of importation were known and used in England (the Statute of Monopolies contained an express exception for such patents) and France, U.S. patent law “was interpreted (and indeed intended by Congress) to preclude patents of importation.” Edward C. Walterscheid, *Patents and Manufacturing in the Early Republic*, 80 J. PAT. & TRADEMARK OFF. SOC’Y 855, 856 (1998). Both James Madison and Alexander Hamilton clearly suggest in their writings that they both believed patents of importation, while potentially beneficial, were barred by the Intellectual Property Clause of the Constitution. *Id.* at 865, 874-75. In a letter to Tench Coxe dated March 28, 1790, James Madison opined: “Your idea of

The novelty requirement in the Patent Act of 1793 was very similar to that in the 1790 Act, the key difference being that the invention must not have been "known or used before the application" filing date.⁶⁶ Importantly, the phrase "known or used" was not geographically limited in any way in either Act.

The requirement that an invention must be new to the world, not just the United States, was confirmed and applied by the Supreme Court in early decisions.⁶⁷ For example, in *Shaw*

appropriating a district of territory to the encouragement of imported inventions is new and worthy of consideration. I cannot but apprehend however that the clause in the constitution which forbids patents for that purpose will lie equally in the way of your expedient." Letter of James Madison to Tench Coxe (March 28, 1790), 13 THE PAPERS OF JAMES MADISON 128 (Charles F. Hobson et. al., eds, Univ. of Va. Press 1981)) (first emphasis added).

Similarly, the final version of Alexander Hamilton's *Report on Manufactures* contains the following observation:

But it is desirable [sic] in regard to improvements and secrets of extraordinary value, to be able to extend the same benefit to Introducers [importers], as well as Authors and Inventors; a policy which has been practiced with advantage in other countries. Here, however, as in some other cases, there is cause to regret, that the competency of the authority of the National Government to the good, which might be done, is not without a question. . . .

But if the legislature of the Union cannot do all the good, that might be wished, it is at least desirable, that all may be done, which is practicable. Means for promoting the introduction of foreign improvements, though less efficaciously than might be accomplished with more adequate authority, will form a part of the plan intended to be submitted in the close of this report.

10 THE PAPERS OF ALEXANDER HAMILTON 308 (Harold C. Syrett, ed., 1966) (first emphasis added). That view was not shared by all, however. Notably, George Washington, and, of course, the House committee that drafted H.R. 41, apparently believed the Constitution posed no bar to such patents. Walterscheid, *supra* note 65, at 871, 872-73. As the Patent Act of 1790 shows, however, Congress, as a whole, did not agree and excluded such patents from the legislation. Walterscheid, *supra* note 63, at 502-03. Unfortunately, one can only surmise as to the reasons for the global prior art definitions in those early acts because no discussions of prior art definitions appear in the relevant legislative history.

66. Patent Act of Feb. 21, 1793 (An Act to Promote the Progress of the Useful Arts), ch. 11, § 1, 1 Stat. 318, 319 (repealed 1836). The 1793 Act changed the patent system from one of examination of inventions for patentability, to one of registration. An applicant could register a claim to an invention and receive a patent, but the patent could be invalidated on a showing that the invention did not meet the requirements for patentability laid down in the Act. *Id.* The 1836 Patent Act changed the process back to one of examination of applications, creating the structure for the system we have today. Patent Act of 1836, ch. 357, § 6, 5 Stat. 119.

67. See, e.g., *Pennock v. Dialogue*, 27 U.S. 1, 14, 24 (1829) (invalidating

v. Cooper, the Supreme Court invalidated a patent on an invention that had been in public use in England and France before the applicant filed for a patent in the United States. The Court took occasion in the decision to offer the following comments on the Patent Act of 1793:

The patent law was designed for the public benefit, as well as for the benefit of inventors. For a valuable invention, the public, on the inventor's complying with certain conditions, give him, for a limited period, the profits arising from the sale of the thing invented. This holds out an inducement for the exercise of genius and skill, in making discoveries that may be useful to society, and profitable to the discoverer. But it was not the intention of this law, to take from the public, that of which they were fairly in possession. In the progress of society, the range of discoveries . . . will be enlarged. . . . [I]t would be extremely impolitic, to retard or embarrass this advance, by withdrawing from the public any useful invention or art, and making it a subject of private monopoly. Against this consequence, the legislature carefully guarded in the laws they have passed on the subject.⁶⁸

Despite this cogent reasoning (or perhaps because of it), Congress, in 1836, introduced a geographical "in this country" limitation into U.S. patent law with the following directive:

The Commissioner shall make or cause to be made, an examination of the alleged new invention or discovery; and if, on any such examination, it shall not appear to the Commissioner that the same had been invented or discovered by any other person in this country . . . or that it had been patented or described in any printed publication in this or any foreign country, or had been in public use or on sale with the Applicant's consent or allowance prior to the application . . . it shall be his duty to issue a patent therefor.⁶⁹

Unfortunately, Congress did not articulate a rationale for the geographic provision. The Supreme Court, however, offered this dicta regarding the geographical limitation in the 1850 *Gayler v. Wilder* decision:

If the foreign invention had been printed or patented, it was already given to the world and open to the people of this country . . . upon

patent on invention that had been in public use for seven years before a patent application was filed); *Mellus v. Silsbee*, 16 F. Cas. 1332, 1333 (D. Mass. 1825) (noting that to obtain a patent "it has been uniformly held, that it must be shown that the invention is new, not only in the United States, but to the world, and that it was not in use before the asserted discovery").

68. 32 U.S. (7 Pet.) 292, 320 (1833).

69. Patent Act of 1836, ch. 357, § 7, 5 Stat. 117, 119-20. It has been speculated that Congress included the geographical limitation in response to the Supreme Court's decision in *Shaw v. Cooper*, 32 U.S. (7 Pet.) 292 (1833), perhaps because such foreign knowledge or use was deemed too remote to be accessible to the interested American public. See Kadidal, *supra* note 44, at 385-86.

reasonable inquiry. They would therefore derive no advantage from the invention here . . . and the inventor therefore is not considered to be entitled to the reward. But if the foreign discovery is not patented, nor described in any printed publication, it might be known and used in remote places for ages, and the people of this country be unable to profit by it. The means of obtaining [the] knowledge would not be within their reach. . . . [I]t would be the same thing as if the improvement had never been discovered. It is the inventor here that brings it to them, and places it in their possession. And as he does this by the effort of his own genius, the law regards him as the first . . . inventor . . . although the improvement had in fact been invented before, and used by others.⁷⁰

The Court's explanation is important because it was clearly talking about prior foreign use that is not accessible, not "open to the people of this country,"⁷¹ in the way foreign patents and publications were deemed to be accessible. As stated by Professor Donald Chisum, a noted patent commentator, "the exclusion of unpublished foreign uses was based on a convenient presumption of inaccessibility just as the inclusion of published foreign sources was based on a convenient presumption of accessibility."⁷² The Court seemingly considered the ban on classifying foreign prior knowledge or use as prior art as a benefit to the people of the United States, providing them with access to profitable knowledge that they otherwise would not have had. This reasoning makes sense only to the extent foreign public knowledge or use was truly inaccessible to the interested public in 1836, since, as will be discussed, the Framers did not intend for "progress in useful arts" to come at the expense of taking information out of the public domain.⁷³

Professor Chisum agrees that the perceived inaccessibility of foreign uses to the U.S. public was a main justification for the 1836 geographical limitation.⁷⁴ He also adds one more: the avoidance of perceived evidentiary difficulties in proving foreign use. He notes,

There is no clear statement of the reason for excluding unpublished foreign uses either in the report accompanying the 1836 Act or in the subsequent codifications. The supposed evidentiary problems in proving prior foreign uses were undoubtedly influential. Also accessibility to the public in the United States was probably an

70. *Gayler v. Wilder*, 51 U.S. (10 How.) 477, 497 (1850).

71. *Id.*

72. *Id.*; Chisum, *supra* note 36, at 36.

73. *See infra* notes 86-99.

74. Chisum, *supra* note 36, at 36.

overriding principle.⁷⁵

The ban on foreign public knowledge or use as prior art remained in successive patent statutes, and was most recently codified in § 102 of the Patent Act of 1952, the current Act.⁷⁶ Its continued presence in U.S. patent law, however, has been controversial. In 1966, a Presidential Commission report recommended to Congress that the geographical limitation in § 102 be eliminated, to achieve the following results:

Foreign knowledge, use and sale would be included as prior art. Present arbitrary geographical distinctions would be eliminated. The same high standard of proof now required for showing domestic public knowledge, use or sale would also be applied to such foreign prior art.

The anomaly of excluding, from prior art, public knowledge, use or sale in a border town of Mexico or Canada, and including the same kind of disclosure in Alaska or Hawaii, would be eliminated.

This change would prevent the granting of valid U.S. patents on inventions that would be unpatentable abroad, because of long use or sale there. It would be another step toward conformity with European patent laws and would promote acceptance of a common definition of universal prior art.⁷⁷

As one can tell from looking at § 102, those recommendations were not adopted and the United States has continued to have a geographical limitation on foreign public knowledge or use as prior art.⁷⁸ A patent reform bill was introduced in both chambers of Congress in 1967 that would have eliminated the geographical limitation as proposed by the Commission Report, but the bill never became law.⁷⁹ The failure of the bill was

75. *Id.*

76. 35 U.S.C. § 102 (2000).

77. SUBCOMM. ON PATENTS, TRADEMARKS, AND COPYRIGHTS OF THE COMM. ON THE JUDICIARY, TO PROMOTE THE PROGRESS OF USEFUL ARTS, REPORT OF THE PRESIDENT'S COMMISSION ON THE PATENT SYSTEM, S. DOC. NO. 90-5, at 15 (1967).

78. Note, however, that amendments to § 102(g) in 1999 did remove a portion of the geographical limitation contained in that subsection by allowing evidence of prior invention in another country to be used in interference proceedings to the extent permitted in § 104. 35 U.S.C. § 102(g)(1).

80. Donald W. Banner, *The Recent Proposal to Change the United States Patent System*, 2 PAT. L. REV. 543, 551-52 (1970). See also *Hearings on H.R. 5924, H.R. 13951, and Related Bills for the General Revision of the Patent Laws Before Subcomm. No. 3 of the House Comm. on the Judiciary*, 90th Cong. 521 (1967) (testimony of Hon. John F. Kincaid, Assistant Secretary for Science and Technology, Dept. of Commerce) (concluding that "it is premature at the present time to incorporate this standard into the laws of this country"); William E. Schuyler, Jr., *Small Business and the Proposed Patent Reform Act of 1967*, 36 GEO WASH. L. REV. 122, 126 (1967) (arguing that "[b]y subjecting the validity of United States patents to proof of prior public use or sale

likely due to pressure from the small business lobby and other interest groups that succeeded in getting the Johnson administration to conclude that the nation was not yet ready for such a “universal prior art standard,” let alone for the first to file system and pre-grant patent opposition proceedings that were also part of the bill.⁸⁰ Yet the problems identified by the Presidential Commission have only increased in the years since publication of the report.

The Enola bean patent dispute provides a stunning example of the type of problems that might have been avoided had Congress implemented the changes recommended by the 1966 Presidential Commission’s report. In 1994, Larry Proctor, a Colorado seed company owner, purchased a bag of edible mixed beans in Sonora, Mexico, brought them back to the United States, selected out the yellow beans and planted them, allowing them to self-pollinate until he achieved a uniform population of yellow beans.⁸¹ In 1996, Proctor filed a patent application in the USPTO on the yellow “Enola” beans, as he named them.⁸² Three years later, the application issued as a U.S. patent covering any field bean having a particular yellow color.⁸³ Proctor then sued a company that was importing

anywhere in the world, the act introduces uncertainties concerning validity which will persist for the full term of the patent” (citation omitted)).

80. See sources cited *supra* note 79.

81. U.S. Patent No. 5,894,079, column 2, line 58-column 3, line 50 (issued Apr. 13, 1999).

82. See U.S. Patent No. 5,894,079 (issued Apr. 13, 1999) (stating that U.S. Patent Application No. 749,449 was filed Nov. 15, 1996). Mr. Proctor also applied for and obtained a Plant Variety Protection Certificate from the USDA for Enola under the Plant Variety Protection Act. “Enola” is the middle name of Mr. Proctor’s wife. Timothy Pratt, *Patent on Small Yellow Bean Provokes Cry of Biopiracy*, N.Y. TIMES, Mar. 20, 2001, at F5.

83. U.S. Patent No. 5,894,079 (issued Apr. 13, 1999). Claim 13 of the patent is for “[s]eed from a field bean variety of *Phaseolus vulgaris* that is completely yellow in color, wherein the yellow color is from about 7.5 Y 8.5/4 to about 7.5 Y 8.5/6 in the *Munsell Book of Color*.” Proctor’s claim to novelty is that the Enola variety, an “Azufrado-type” bean, is “unique because of its distinctive yellow color and also because it was not grown previously in the U.S.” RURAL ADVANCEMENT FOUNDATION INTERNATIONAL, MEXICAN BEAN BIOPIRACY 2 (2000), available at http://www.rafi.org/documents/geno_mexicanbean.pdf (last visited Oct. 8, 2002) [hereinafter MEXICAN BEAN BIOPIRACY] (citing personal conversation with Larry Proctor). Without the § 102(b) geographical limitation on prior art, the fact that the bean was not previously grown in the United States would be irrelevant as long as it was grown (and publicly known) anywhere. See *infra* notes 191-93 (describing the irrelevance of geographical distinctions under the EPC, which has no provision similar to § 102).

yellow Mexican beans into the United States. Using his patent, Proctor has been able to stop the importation of any beans in the particular color range claimed in the patent at the U.S. border, causing significant economic harm to Mexican farmers and exporters.⁸⁴

The importers and several international activist groups were understandably outraged by both the patent and the lawsuit, stating that what Mr. Proctor “had given a new name to and gotten rights over” was a bean that had been eaten for centuries by Mexicans and other Latin Americans and that had actually been involved in breeding programs in Mexico.⁸⁵

Nevertheless, because of § 102(b)’s geographical limitation on prior art, if information on the yellow Enola bean were not in printed form, it might be impossible to invalidate Proctor’s patent, despite the fact that the beans were in “public use” right across the border from the United States and the public had access to this knowledge.⁸⁶ This is because even if the

84. Pratt, *supra* note 82, at F5. According to Miguel Tachna Felix of the Agricultural Association of Rio Fuerte,

We had been exporting this yellow bean (Mayocaba) and others to the United States for over four years when [Podners, Proctor’s seed company] received their patent—based on erroneous claims. When they got the patent they sent a letter to all the importers of Mexican beans in the United States, warning that this bean was their property and that if they planned to sell it they would have to pay royalties to [Podners]. For us, this meant an immediate drop in export sales, over 90%, which affected us tremendously. And it wasn’t only one bean variety, but also others, because it created fear among bean importers Our farmers have suffered great economic losses.

Press Release, Rural Advancement Foundation International, *Enola Bean Patent Challenged*, http://www.rafi.org/documents/news_enolabean.pdf (Jan. 5, 2001).

85. Pratt, *supra* note 84; *see also* MEXICAN BEAN BIOPIRACY, *supra* note 83, at 2 (“Beans are the principal source of vegetable protein consumed by Mexicans Yellow ‘Azufrado’ beans are especially popular in the Northwest region of Mexico where 98% of surveyed Mexicans eat them.”) The importers counterclaimed that the patent was invalid, and the International Center for Tropical Agriculture (CIAT), an international plant breeding institute in Cali, Columbia, filed a request for reexamination of the patent with the USPTO in December 2000. The USPTO ordered a reexamination of the patent in February 2001. *See* Reexamination S.N. 90/005,892 of U.S. Patent No. 5,894,079, request published in Official Gazette, January 16, 2001. *See also* Press Release, ETC Group, Yellow Bean Patent Owner Sues 16 Farmers and Processors in US, at <http://www.organicconsumers.org/patent/yellowbean121801.cfm> (Dec. 17, 2001) (generally describing the issue and suggesting that consumers contact the USPTO to urge reexamination of Proctor’s patent).

86. The request for reexamination was supported by evidence from CIAT’s gene bank (the largest collection of beans in the world) that six bean accessions, or types, in the bank were “substantially identical” to beans

patented bean is identical to, or an obvious variant of, the bean Proctor purchased in Mexico, the evidence of those purchased beans is not admissible prior art in the United States.⁸⁷

Moreover, consumers in countries like Japan, Canada, and member countries of the EPC can eat these beans imported from Mexico at a fair price, but in the United States, consumers are either denied access to the imported Mexican beans and have access only to Proctor's beans, or have to pay higher prices because of Proctor's patent monopoly.⁸⁸ Mexican exporters have also lost a legitimate opportunity to expand the market

claimed in Proctor's patent, so invalidating "published" prior art may exist. See ETC Group, Press Release, *supra* note 85, at <http://www.organicconsumers.org/patent/yellowbean121801.cfm>. Rebecca Gilliland, owner of Tutulli Produce, one of the Mexican bean importers sued by Proctor, upon receiving notice of the patent and her company's alleged infringement, commented "I thought the whole thing was a joke. How are they going to tell me they invented a bean I've been eating for 40 years?" Pratt, *supra* note 84, at F5. Unfortunately, Ms. Gilliland, who started her bean import business in the early 1990's to supply the Mexican-American market in the United States with the yellow beans she loved to eat as a child, and who imported up to six million pounds of them per year, is no longer importing yellow beans. She stocks eggplant, cucumbers, and roma tomatoes instead. Sandy Tolan, *A Bean of a Different Color*, http://www.americanradioworks.org/features/food_politics/beans/3.html (last visited Oct. 12, 2002).

87. It could, perhaps, be used under 35 U.S.C. § 102(f) as evidence that Proctor was not himself the inventor of the claimed invention. There are no geographical limitations on the kinds of evidence that can be introduced under § 102(f). See 35 U.S.C. § 102(f).

88. Proctor's company, Podners, sought royalties of six cents per pound from importers. MEXICAN BEAN BIOPIRACY, *supra* note 83, at 2. When Proctor's attorneys filed forty-three new claims in a reissue application, however, the USPTO merged the two proceedings, thus delaying resolution of the issue of the Enola bean patent's validity. See Reissue Application No. 09/773,303; see also Press Release, ETC Group, *supra* note 85, at <http://www.organicconsumers.org/patent/yellowbean121801.cfm>.

Meanwhile, on November 30, 2001, Proctor filed a lawsuit against sixteen U.S. farmers and processors who he claims are infringing his patent by growing and selling "his" yellow Enola bean. See *id.* Podners has licensed the bean to eight processors and almost 80 growers. *Battle Brewing Over Enola Bean*, AG. J. ¶ 3 (Dec. 4, 2001), at http://www.agjournal.com/story.cfm?story_id=1641. According to Bob Brunner, President of Northern Feed & Bean and one of the defendants in the case: "We were shocked to be accused of infringing Proctor's intellectual property. . . . We've been growing yellow beans from Mexico since 1997 – and they are not Proctor's Enola beans." Press Release, ETC Group, *supra* note 85, at <http://www.organicconsumers.org/patent/yellowbean121801.cfm>. The 1997 date is of no help to the defendants because Proctor filed his patent application in 1996. See *supra* note 81.

for their beans to the United States.⁸⁹ This is precisely the kind of anomaly the 1966 Presidential Commission foresaw in its recommendation to eliminate geographical distinctions based on prior art.⁹⁰

Criticism of the § 102(b) geographical limitation did not end with the Presidential Commission's report. From time to time, commentators have made policy arguments for the elimination or modification of the geographical limitation on prior art.⁹¹ However, the arguments posed have not addressed the unconstitutionality of the limitation based on its violation of the constraints on Congressional power under the Intellectual Property Clause. Evaluating the limitation in light of constitutional requirements and policy goals reveals that, whether or not a geographical limitation on prior art made sense in 1836, it certainly is an unconstitutional rule now.

II. PRIOR ART AND THE INTELLECTUAL PROPERTY CLAUSE

Section 102(b)'s geographical limitation on foreign public knowledge or use currently conflicts with the constitutional objective of providing time-limited exclusive rights to inventors in order to promote the progress of the useful arts. The nature of this conflict can be gleaned from an analysis of the purposes underlying the constraints of the Intellectual Property Clause and changes in the public accessibility of foreign public knowledge or use.

A. CONSTITUTIONAL CONSTRAINTS

The Intellectual Property Clause is unique among constitutional provisions in being the only grant of authority to Congress expressing the precise way in which Congress was to exercise that authority.⁹² This unique aspect of the Clause is

89. See *supra* note 84 and accompanying text.

90. S. DOC. NO. 90-5, at 15 (1967).

91. For a sampling of policy arguments against § 102(b)'s geographical limitation, see Chisum, *supra* note 36, at 35 (recommending that the foreign-activity prior art distinctions in § 102 be eliminated); Kadidal, *supra* note 44, at 377-78 (same); Bliss, *supra* note 44, at 67 (same); Pecteau, *supra* note 43, at 72 (same). For arguments advocating a modification of the § 102(b) limitation, see William LaMarca, *supra* note 43, at 52.

92. See *In re Shao Wen Yuan*, 188 F.2d 377, 380 (C.C.P.A. 1951) ("It is interesting to note that this particular grant is the only one of the several powers conferred upon the Congress that is accompanied by a specific statement of the reason for it."); see also Joseph Story, *Commentaries on the*

important because it establishes that the Intellectual Property Clause is not just an express grant of power, it also contains limitations on that power.⁹³ Congress may grant exclusive rights, but the grants must be for limited times, they must be to inventors, they must be for discoveries, and they must tend to promote the progress of useful arts.⁹⁴ These are constitutional constraints, and at least one of them, the requirement that the patent system promote the progress of useful arts, is violated by the § 102(b) limitation on foreign public knowledge or use.⁹⁵

In drafting the Intellectual Property Clause, the Framers were well aware of both the potential promise and peril of patents from experience with the English patent system.⁹⁶ In pre- and post-Statute of Monopolies England, exclusive rights, were granted on staples of trade such as salt, sulfur, metal and

Constitution, in 3 THE FOUNDER'S CONSTITUTION 43-44 (Philip B. Kurland and Ralph Lerner, eds., 1987) (noting that the Framers initially contemplated extending the reach of the current Intellectual Property Clause "to establish public institutions, rewards, and immunities for the promotion of agriculture, commerce and manufactures" but ultimately abandoned that expansive proposition); Edward C. Walterscheid, *To Promote the Progress of Science and Useful Arts: The Background and Origin of the Intellectual Property Clause of the United States Constitution*, 2 J. INTELL. PROP. L. 1, 32 (1994).

93. As noted by the Supreme Court in *Graham v. John Deere Co.*: "The [Intellectual Property] [C]ause is both a grant of power and a limitation. This qualified authority, unlike the power often exercised in the sixteenth and seventeenth centuries by the English Crown, is limited to the promotion of advances in the "useful arts." 383 U.S. 1, 5-6 (1966); see also Merges & Reynolds *supra* note 27, at 46 ("[T]here are limits on Congress's power to create and extend intellectual property interests. Such limits are 'internal' in the sense that they are the result of the very same constitutional provision giving rise to Congress's power in the first place, the [Intellectual Property] Clause of the Constitution. . . .").

94. See *Graham*, 383 U.S. at 5-6.

95. The limitation may also aid violations of another requirement: that patents be awarded to true inventors. Although the statutory provision implementing that requirement, § 102(f), contains no geographical limitation, the limitation present in § 102(b) may cast a cloud over evidence of foreign knowledge or use, making it less likely to be invoked for § 102(f) purposes, or to be decisive in resolving a § 102(f) dispute. 35 U.S.C. § 102 (2000).

By "discoveries," the Framers clearly did not mean to include foreign public knowledge and use since the clause requires a person to be a true inventor. Additionally, as previously discussed, patents of importation were believed to be unconstitutional. See sources cited *supra* note 65.

96. As the Supreme Court further noted in *Graham v. John Deere Co.*, the Intellectual Property Clause "was written against the backdrop of the practices—eventually curtailed by the Statute of Monopolies—of the Crown in granting monopolies to court favorites in goods or businesses which had long before been enjoyed by the public." 383 U.S. at 5.

ore mining, alum, ovens, vinegar, and iron, allowing the holder to both practice and exclude others from practicing.⁹⁷ The idea that granting limited monopolies to inventors could act as a spur to innovation was certainly important to the Framers.⁹⁸ Their desire to protect the public domain from the abuses practiced by the English Crown in granting monopolies on old industries also was a key concern, however, and informed the nature of the constraints on the patent power.⁹⁹

Accordingly, the Framers created within the Clause a balance between two competing needs: "the need to encourage innovation and the [need to] avoid[] . . . monopolies which stifle competition without any concomitant advance in the 'Progress of Science and useful Arts.'"¹⁰⁰ To comply with this intent, Congress, from the earliest patent acts, limited the term of a patent to 14 years, required the applicant to attest to a belief that she is the first and true inventor of the claimed invention, and required that an invention be novel (not before known or used) and useful.¹⁰¹ Congress later made express the implied requirement that a patentable invention be more than the mere work of a skilled mechanic, i.e., that it be nonobvious to a person of ordinary skill in the art.¹⁰² Requiring novelty and

97. See, e.g., HAROLD G. FOX, *MONOPOLIES AND PATENTS* 71, 178-84 (1947); William Rawle, *A View of the Constitution of the United States*, in 3 *THE FOUNDER'S CONSTITUTION* 43 (Philip B. Kurland & Ralph Lerner eds., 1987); Heald & Sherry, *supra* note 26, at 1143. The Statute of Monopolies voided all such grants but carved out various exceptions such as one allowing patents for "new manufactures within this realm, to the true and first inventor and inventors of such manufactures." Statute of Monopolies, 1623, 21 Jam, 1, c. 3, § 6 (Eng.); see also *Hearings*, *supra* note 26, at 840; Walterscheid, *supra* note 64, at 450. Interestingly, the phrase "true and first inventor" in the Statute of Monopolies included the first person to *import* a new manufacture into the realm. *Id.* at 840-41. Of course, the statute itself contained a geographical limitation to "within this realm." Statute of Monopolies § 6. The founding fathers chose not to adopt this language in drafting the Intellectual Property Clause of the Constitution.

98. See Heald & Sherry, *supra* note 26, at 1149.

99. See *id.* at 1143; Walterscheid, *supra* note 92, at 55-56 (discussing the fairly widespread aversion to monopolies at that time, as evidenced by requests by the ratifying conventions of Massachusetts, New Hampshire, New York, and North Carolina, for amendments that made clear Congress could not grant exclusive monopolies of commerce to merchants).

100. *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 146 (1989). No records detail any debate about the Clause; it apparently elicited little controversy and was adopted unanimously. See Walterscheid, *supra* note 92, at 50-51.

101. See *supra* note 49.

102. *Graham v. John Deere Co.*, 383 U.S. 1, 11 (1966); see also *Hotchkiss v.*

nonobviousness in patentable inventions was a way of ensuring that "old" technologies and industries could not be removed from the public domain by a patent grant.

Evidence that the Framers intended for patented inventions to be novel over publicly accessible prior art from anywhere, in any form, comes from the Patent Act of 1790. As discussed in Part I, the bill that ultimately became the Act of 1790 originally contained a geographical prior use limitation to "in the United States." That provision was deleted after debate, and the bill passed without any geographical limitation on prior art. As noted by the Supreme Court, the fact that the First Congress rejected a proposal to insert a provision into an enactment, and the fact that the proposal was made "suggests its proponents thought it necessary, and the fact that it was rejected suggests we should give weight to the views of those who opposed the proposal."¹⁰³ The First Congress considered including the geographical limitation and rejected the provision. This is compelling because the Court has spoken, on a number of occasions, of the importance of actions of the First Congress as providing "contemporaneous and weighty evidence" of the Constitution's meaning since many of the members of Congress 'had taken part in framing that instrument.'¹⁰⁴ Thus the § 102 geographical limitation is

Greenwood, 52 U.S. (11 How.) 248, 267 (1850).

104. *Cook v. Gralike*, 531 U.S. 510, 521 (2001) (referring to a rejected proposal at the time of the First Congress to insert a right into the First Amendment).

105. *Bowsher v. Synar*, 478 U.S. 714, 723-24 (1986) (citing *Marsh v. Chambers*, 463 U.S. 783, 790 (1983); see also *Lynch v. Donnelly*, 465 U.S. 668, 674 (1984) (referring to the Court's emphasis that the First Congress "was a Congress whose constitutional decisions have always been regarded, as they should be regarded, as of the greatest weight in the interpretation of that fundamental instrument" (citing *Myers v. U.S.*, 272 U.S. 52, 174-75 (1926))).

The Court's elaboration in *Myers v. United States* is illustrative:

We have first a construction of the Constitution made by a Congress which was to provide by legislation for the organization of the Government in accord with the Constitution which had just then been adopted, and in which there were, as representatives and senators, a considerable number of those who had been members of the Convention that framed the Constitution and presented it for ratification. It was the Congress that launched the Government. . . . It was a Congress whose constitutional decisions have always been regarded, as they should be regarded, as of the greatest weight in the interpretation of that fundamental instrument.

Myers, 272 U.S. at 174-75. Accord *Wisconsin v. Pelican Ins. Co.*, 127 U.S. 265, 297 (1888) (stating that an Act "passed by the First Congress assembled under the Constitution, many of whose members had taken part in framing that

unlike a practice unbroken from the time of Constitutional enactment, which "is not something to be lightly cast aside."¹⁰⁵ Rather, it is more like a long-lived aberration, inconsistent with the intent of the Framers and the strictures inherent in the Constitutional text.

The novelty requirement, originally unlimited by geography in the first two patent acts, was limited by the Patent Act of 1836 to barring inventions, publicly known, used, or sold in the United States, or described in foreign patents or printed publications anywhere in the world.¹⁰⁶ This distinction apparently arose, at least in part, from a perception that foreign knowledge or use was not sufficiently accessible to the interested public in the United States for it to be deemed to be in the global public domain.¹⁰⁷ On the other hand, the description of an invention in a patent or printed publication, existing anywhere, was deemed to destroy novelty as long as the reference was accessible to the interested public.¹⁰⁸ While this dichotomy may have made sense in 1836, in the twenty-first century, judicial interpretations of "public accessibility", combined with changes in the accessibility of foreign public knowledge or use, cause the geographical limitation to violate the novelty and nonobviousness requirements implicit in the Intellectual Property Clause.

B. PUBLIC ACCESSIBILITY

If the Constitution requires patentable inventions to be novel and nonobvious over what is "available" to the public, there must be criteria to define what information can be considered in that analysis. Consistent with the statutes that preceded it, § 102(b) places no geographical limitation on prior art if it is in the form of a patent or a printed publication.¹⁰⁹ In terms of what constitutes a "printed publication," the phrase "has been interpreted to give effect to ongoing advances in the technologies of data storage, retrieval, and dissemination."¹¹⁰

instrument, . . . is contemporaneous and weighty evidence of its true meaning"); *Ames v. Kansas*, 111 U.S. 449, 463-64 (1884).

108. *Walz v. Comm'r*, 397 U.S. 664, 678 (1970).

106. See Patent Act of 1836, ch. 357, 5 Stat. 117, 119.

107. See Chisum, *supra* note 36, at 36.

108. See *Gayler v. Wilder*, 51 U.S. (10 How.) 477, 497 (1850).

109. 35 U.S.C. § 102(b) (2000). As noted previously, the same analysis applies for § 102(a). See *supra* note 60.

110. *In re Hall*, 781 F.2d 897, 898 (Fed. Cir. 1986). Changing the reading

Consequently, information on microfilm, videotape, or even the Internet can be a "printed publication" within the meaning of § 102(b) if it meets the key requirement of public accessibility.¹¹¹ Printed publications are prior art if they are publicly accessible. As noted by the Court of Appeals for the Federal Circuit (CAFC): "Because there are many ways in which a reference may be disseminated to the interested public, 'public accessibility' has been called the touchstone in determining whether a reference constitutes a 'printed publication' bar under 35 U.S.C. § 102(b)."¹¹²

Just what level of public accessibility is required for a printed publication to qualify as prior art? Apparently, the bar is quite low. In *In re Hall*, the CAFC held that a single copy of a doctoral thesis, in German, indexed and listed in a card catalogue in a German library at the edge of the Black Forest, and only available there, is prior art here in the United States, despite the difficulty of access or improbability of knowing that the thesis existed.¹¹³ The court made its position quite clear: "[W]e reject appellant's legal argument that a single cataloged thesis in one university library does not constitute sufficient accessibility to those interested in the art exercising reasonable diligence."¹¹⁴

The rule regarding the meaning of "patented" in § 102(b) is similar. Information is "patented" within the meaning of § 102(b) if it is "available to the public" and the rights granted are both "substantial and exclusive."¹¹⁵ Thus, a German design patent, or *Geschmackmuster*, available for viewing only by traveling to the particular city courthouse in Germany where

of "printed publication" to give it an expanded meaning reflecting the relevance of new technologies is consistent with Professor Lessig's theory regarding changed readings of the Constitution: "What the lawyer or court does is find a *reading* of a legal text in a new context, so as to preserve the meaning of an earlier reading of the legal text in an earlier context." Lessig, *Changed Readings*, *supra* note 29, at 402 (emphasis omitted).

111. *Hall*, 781 F.2d at 899.

112. *Id.* at 898-99.

113. *Id.* at 900; *see also* *Titanium Metals Corp. of Am. v. Banner*, 778 F.2d 775, 783 (Fed. Cir. 1985) (denying a patent of a compound since it was represented by a point on a graph in a Russian article). *But see In re Cronyn*, 890 F.2d 1158, 1161 (Fed. Cir. 1989) (holding that student theses that were neither catalogued or indexed in a meaningful way were not accessible to the public and thus not printed publications). Thus prior art, as a practical matter, includes much information that the public cannot easily find.

114. *Hall*, 781 F.2d at 900.

115. *In re Carlson*, 983 F.2d 1032, 1035-37 (Fed. Cir. 1992).

the registered design is deposited, is prior art under § 102.¹¹⁶ The reasoning employed by the CAFC in reaching this conclusion is telling:

We recognize that Geschmacksmuster on display for public view in remote cities in a far-away land may create a burden of discovery for one without the time, desire, or resources to journey there in person or by agent to observe that which was registered and protected under German law. Such a burden, however, is by law imposed upon the hypothetical person of ordinary skill in the art who is charged with knowledge of all the contents of the relevant prior art.¹¹⁷

Thus, for both patents and printed publications, the § 102 requirements of public accessibility and public availability have been broadly construed in the context of foreign art despite the burden such a requirement may impose on patent applicants.

Furthermore, even the § 102(b) concept of "public use"¹¹⁸ in this country, another category of relevant prior art, has been interpreted expansively. In *Baxter International, Inc. v. Cobe Laboratories, Inc.*, use of a novel centrifuge in a private laboratory in a National Institutes of Health (NIH) building was deemed a prior art "public use" under § 102(b).¹¹⁹ The court reasoned from the policies underlying the public use bar

116. *Id.* at 1037.

117. *Id.* A general written description of the design, location of the model available for viewing, and other particulars was provided in the German Federal Gazette, or Bundesanzeiger. *See id.* The court asserted that this entry "alert[s] the public to potentially relevant designs and directs the notified reader to proceed to Coburg to obtain the actual design." *Id.*

118. Although the word "public" does not appear in § 102(a), it has been judicially determined that only "public" knowledge or use are barred by the statute. *See, e.g.,* *Carella v. Starlight Archery & Pro Line Co.*, 804 F.2d 135, 139 (Fed. Cir. 1986) ("The statutory language 'known or used by others in this country' . . . , means knowledge or use which is accessible to the public."); *W.L. Gore & Assoc. v. Garlock, Inc.*, 721 F.2d 1540, 1549 (Fed. Cir. 1983) (holding claims invalid under section 102(a) for public use of the invention before the asserted invention date); *see also* *3M Unitek Corp. v. Ormco Co.*, 96 F. Supp. 2d 1042, 1046 (C.D. Cal. 2000). The *Ormco* court stated,

Under § 102(a) prior art anticipates the patented invention where the prior art is "known or used by others" prior to the date of invention. . . . This phrase necessitates a finding that the *public* must have access to the knowledge of the prior art. . . . Generally, any "non-secret use" of the process or invention "in its natural and intended way is public use." . . . Furthermore, a court may find public use where there is non-secret use of a claimed process in the usual course of producing articles for commercial use.

Id. (citations omitted) (emphasis added). Consequently, the analysis for public use under § 102(b) is also relevant to the analysis for "known or used" in § 102(a).

119. 88 F.3d 1054, 1061 (Fed. Cir. 1996).

that because there was no control over the invention by the inventor, and because the laboratory was in a public building, anyone “who saw the centrifuge in operation would have reasonably believed [it] was publicly available.”¹²⁰ Judge Newman, in dissent, commented on the breadth of this ruling, noting that “[t]his new category of internal laboratory use is immune to the most painstaking documentary search.”¹²¹

The public accessibility standard enunciated in these decisions seems to be one of “constructive” accessibility, and is determined on a case-by-case basis.¹²² Under this standard, the only types of information that should not qualify as prior art would be secret information or information unavailable because of a political or other extraordinary barrier.¹²³ For example, if a country did not allow U.S. citizens to enter its borders freely, then public knowledge or use in that country might be considered not publicly accessible.¹²⁴

The reasoning behind these expansive judicial constructions is simple. The Constitution prohibits Congress from granting exclusive patent rights over subject matter in the public domain: “Congress in the exercise of the patent power may not overreach the restraints imposed by the stated constitutional purpose. . . . Moreover, Congress may not 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.”¹²⁵ The prohibition is

120. *Id.* at 1058.

121. *Id.* at 1062 (Newman, J. dissenting).

122. *See id.* at 1058 (“In considering whether a particular use was a public use within the meaning of § 102(b), we consider the totality of the circumstances in conjunction with the policies underlying the public use bar.”).

123. Information maintained as a trade secret is not considered invalidating prior art except as to the trade secret owner who tries to patent it after benefiting from it for more than the one-year grace period provided by § 102(b). *W.L. Gore & Assoc.*, 721 F.2d 1540, 1550 (noting that commercialization of tape produced by a secret process for more than one year before filing a patent application would forfeit the applicant’s patent rights). Other examples of secret information are shaman or tribal healer secrets, or the traditional knowledge of an indigenous group that is not shared with outsiders.

124. *See* *Badowski v. United States*, 164 F. Supp. 252, 255-56 (Ct. Cl. 1958) (finding Russian document obtained only with difficulty through diplomatic channels not available as prior art). *But see In re Ward*, 236 F.2d 428, 430-31 (C.C.P.A. 1956) (affirming the availability as a prior art reference of a Swiss patent even though the reference was unavailable to U.S. residents due to Switzerland’s being surrounded by the enemy during WWII).

125. *Graham v. John Deere Co.*, 383 U.S. 1, 6 (1966). *See also* *Aronson v.*

particularly applicable to § 102(b) because “[t]he novelty and nonobviousness requirements express a congressional determination that the purposes behind the [Intellectual Property] Clause are best served by free competition and exploitation of either that which is already available to the public or that which may be readily discerned from publicly available material.”¹²⁶

Congress’s wisdom in making foreign patents and printed publications prior art from the earliest patent act, when they were surely difficult for inventors and other interested persons to obtain, is clearly evident today. Inventors (and the general public) now have fingertip access to millions of foreign patents and printed publications through the Internet and commercial databases, as well as easy access by mail, library, and even cheap international travel opportunities.¹²⁷ Thus, Congress’s “hard” decision for inventors in 1790 was consistent with the constitutional directive to promote progress of the useful arts by not awarding patents for old inventions.¹²⁸ Today, a similar hard decision is required now that foreign public knowledge or use is “publicly accessible.”

C. TECHNOLOGICAL CHANGE AND “NEW LIBRARIES”

In exploring the constitutionality of a statute or decision, it is appropriate to consider changes in factual circumstances in addition to indications of the original intent of the

Quick Point Pencil Co., 440 U.S. 257, 262 (1979) (“[T]he stringent requirements for patent protection seek to assure that ideas in the public domain remain there for the free use of the public.” (discussing *Kewanee Oil Co. v. Bieron Corp.*, 416 U.S. 470, 480-81 (1974))).

126. *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 150 (1989).

127. See, e.g., www.micropatent.com (last visited Oct. 4, 2002), www.patenthunter.com (last visited Oct. 4, 2002), www.uspto.gov/patents/ (last visited Oct. 4, 2002), www.orbitz.com (last visited Oct. 4, 2002), www.expedia.com (last visited Oct. 4, 2002), www.skyauction.com (last visited Oct. 4, 2002).

128. In fact, the decision was likely not very difficult for inventors in 1790 since the three person U.S. Patent Board, composed of the Secretary of State (at that time Thomas Jefferson), the Secretary for the Department of War, and the Attorney General, was unable, and probably uninclined, to make any extensive search of foreign art. Nevertheless, the rule was established, even if the implementation was weak. See Michael D. Davis, *The Patenting of Products of Nature*, 21 RUTGERS COMPUTER & TECH. L.J. 293, 300 (1995) (noting “neither Jefferson nor the Patent Commission had the time to deal with the daily rigors of patent examination”).

Constitution's Framers.¹²⁹ The world has grown considerably smaller since the passage of the 1836 Patent Act with its geographical limitation on prior art. The development of technology enabling global travel and information transfer at increasing rates of speed have played a role in creating the global village in which we now live.¹³⁰

As long ago as 1960, the District Court for the District of Columbia noted the impact changes in the world might have on the need for a geographical limitation on prior art:

No doubt the present rule originated in the days when the only means of travel between continents was by sailing ships, and the sole means of communication was by slow mail. Conceivably, under those conditions, an invention made abroad might have never become known in the United States. Today, with modern means of travel and communication, information may be transmitted from Europe to the United States as rapidly as from the eastern seaboard to Honolulu and Alaska. With the great increase in the volume of travel between countries, as well as the constant utilization of new means of communication, it might well be argued that the reason for the rule no longer exists.¹³¹

129. See *Planned Parenthood v. Casey*, 505 U.S. 833, 862-64 (1992); Michael Abramowicz, *Constitutional Circularity*, 49 UCLA L. REV. 1, 23 (2001) (discussing "changed facts" as the "fourth stare decisis factor" in the *Casey* Court's discussion, the other factors being workability, reliance, and remnant of abandoned doctrine); see also Michael Stokes Paulsen, *Abrogating Stare Decisis by Statute: May Congress Remove the Precedential Effect of Roe and Casey?*, 109 YALE L.J. 1535, 1562 (2000) (same). Technically, stare decisis is not implicated in elimination of the geographical limitation because the Supreme Court has not relied on the geographical limitation in any of its holdings, it has only been mentioned in dicta. See *supra* note 34 and accompanying text. Nevertheless, factors that are useful in determining whether stare decisis is appropriate should also inform the Court's statutory analysis when conflict with binding precedent is not at issue.

130. See *Mark*, *supra* note 3, at 1181 ("The dynamic ongoing process of globalization involves 'the inexorable integration of markets, nation states and technologies to a degree never witnessed before—in a way that is enabling individuals, corporations and nation-states to reach around the world farther, faster, deeper and cheaper than ever before.'" (citing THOMAS FRIEDMAN, *THE LEXUS AND THE OLIVE TREE* 9 (Revised ed. 2000))).

Statistics indicate that between 1945 and 1999, the number of revenue passenger miles flown on domestic and international flights increased from 450 million to 651.6 billion. Compare BUREAU OF THE CENSUS, DEP'T OF COMMERCE, HISTORICAL STATISTICS OF THE UNITED STATES: COLONIAL TIMES TO 1970, at 77 tbl. Q577-Q590 (1976) with BUREAU OF THE CENSUS, DEP'T OF COMMERCE, STATISTICAL ABSTRACT OF THE UNITED STATES: 2001, at 667, tbl.1057 (2001) [hereinafter STATISTICAL ABSTRACT]. A similar analysis was made in *World-Wide Volkswagen Corp. v. Woodson*, 444 U.S. 286, 309 n.13 (1980) (Brennan, J. dissenting).

131. *Monaco v. Hoffman*, 189 F. Supp. 474, 482 (D.D.C. 1960) (deciding case under the "in this country" limitation of 35 U.S.C. § 199 of the Patent

This changing landscape is also evident in the practices of multinational corporations, which have an established presence in multiple geographic regions of the world.¹³² These companies are well positioned to access knowledge or use in the foreign countries where they operate.¹³³

For example, over the past few decades the pharmaceutical industry has enormously increased research-related travel and ethnobiological research of indigenous groups.¹³⁴ Ethnobiological research refers to studying the knowledge of "indigenous peoples about the utility, diversity and chemical characteristics of plants found in their environment."¹³⁵ In 1989, the worldwide market value for

Act), *aff'd* 293 F.2d 883 (D.C. Cir. 1961). The court concluded, however, that "Congress alone may afford the remedy" because "patent law is entirely statutory." *Id.* Of course, if the statute is unconstitutional, Congress is not the only body with authority to remedy the situation.

132. Between 1990 and 1999 alone, U.S. direct investment abroad increased from over \$430 billion to over \$1.1 trillion. STATISTICAL ABSTRACT, *supra* note at 130, at 794, tbl. 1291. United States direct investment abroad is "the ownership or control by one U.S. person of 10% or more of the voting securities of an incorporated foreign business enterprise or an equivalent interest in an unincorporated foreign business enterprise." *Id.* Likewise, between 1990 and 1998, foreign direct investment in the United States increased from \$552.9 billion to \$922.9 billion. *Id.* at tbl. 1288. W.R. Grace is a prime example of such a multinational corporation. *See supra* notes 3-13 and accompanying text.

133. *See, e.g.,* Seaelectro Corp. v. L.V.C. Indus., 271 F. Supp. 835, 838 (E.D.N.Y. 1967) (finding that employees of multinational company jointly made invention, while one inventor was in Great Britain and the other was in the United States). Today such joint invention situations are common.

134. *See, e.g.,* Anthony Faiola, *supra* note 30, at A21 (discussing efforts by the Brazilian government to get countries to ratify the Convention on Biological Diversity to prevent biopiracy); William K. Stevens, *Shamans and Scientists Seek Cures in Plants*, N.Y. TIMES, Jan. 28, 1992, at C1 (detailing the processes scientists use to find drugs in the rainforest).

135. Yano, *Ethnobiological Knowledge*, *supra* note 43, at 443 n.1. Patents derived from ethnobiological research may be especially problematic as they are more likely to involve issues of invention derivation, in whole or in part. Under § 102(f) a person is not entitled to a patent if he did not himself invent the claimed subject matter. 35 U.S.C. § 102(f) (2000). Section 102(f) is a modern day incarnation of the prohibition against patents of importation, which prevented rewarding an applicant for going to another country and bringing back to the United States new technology that had been invented by someone else. *See supra* note 64 and accompanying text. While § 102(f), alone or in combination with § 103, provides an independent, geographically neutral basis for denying patent protection to a claimed invention, derivation may be difficult to establish where a particular claim limitation can only be established by evidence of prior foreign knowledge or use. *See also* Hedgewick v. Akers, 497 F.2d 905, 907 (C.C.P.A. 1974) ("[E]vidence of activity, knowledge or use concerning an invention in a foreign country is not precluded . . . in

drugs derived from medicinal plant knowledge of indigenous peoples was approximately \$43 billion.¹³⁶ Another study found that 57% of the top 150 prescription drugs contained at least one major active compound now or at one time derived from biological sources.¹³⁷ Also, in a different survey of 119 known useful plant-derived drugs, 74% had "the same or related use as the plants from which they were derived."¹³⁸ In other words, indigenous groups were using the plants from which the drug was derived to cure the same ailments for which the patented drug is now being prescribed.

In a related development, the past decade has witnessed the formation of several bioprospector contracts between developing countries and transnational corporations. Examples include agreements between the pharmaceutical giant Merck and the Costa Rican government;¹³⁹ Bristol-Myers

establishing derivation. . . . in a case where an applicant for a patent . . . is trying to show that the adverse party was not an inventor at all but derived the invention from him, the fact that the events took place in a foreign country would be immaterial." (citations omitted)).

136. Darrell Posey, *Intellectual Property Rights: And Just Compensation for Indigenous Knowledge*, ANTHROPOLOGY TODAY, 13, 15 (Aug. 1990).

137. Glen M. Wiser & David R. Downes, *Comments on Improving Identification of Prior Art: Recommendations on Traditional Knowledge Relating to Biological Diversity*, Center for International Environmental Law, at <http://www.ciel.org/Publications/IdentificationofPriorArt.pdf> (last modified Aug. 2, 1999); see also Yano, *Ethnobiological Knowledge*, *supra* note 43, at 450 n.29. Yano notes,

[E]xamples of beneficial drugs that have recently been discovered by reliance on the native use of plants include: artemisinin, a sesquiterpene oxide isolated after intensive study of traditional medicine in China; . . . the postherpetic neuralgia treatment capsaicin derived from peppers; . . . the hormone in the first birth control pills derived from wild yams; . . . the hypertension treatment reserpine derived from herbs; . . . the muscle relaxant d-tubocurarine, derived from the Amazonian indian poison curare; . . . the antiarrhythmic drug quinidine, derived from Cinchona tree bark; . . . the emetic drug emetine, derived from the roots of a plant used by indigenous people of Brazil to treat dysentery; . . . a compound that shows promise of reducing cholesterol; . . . a drug that shows promise of attacking lung and ovarian cancers found using a 2500-year-old Sanskrit text; . . . the glaucoma treatment from the jaburandi plant.

Id. (citations omitted).

138. Norman R. Farnsworth, *Screening Plants for New Medicines*, in BIODIVERSITY 83, 95 (E.O. Wilson ed., 1988).

139. McManis, *supra* note 3, at 270.; Stevens, *supra* note 134, at C1. Not all of these relationships have proven successful, however. An agreement between the University of Georgia and Mexico's Chiapas Indians, funded by a \$2.5 million dollar NIH grant ended abruptly based on fears by some Chiapas groups that their plants would be patented and their culture and knowledge

Squibb and the governments of Suriname and Costa Rica;¹⁴⁰ an agreement between Shaman Pharmaceuticals and the Aguaruna Indians of Peru;¹⁴¹ the launching of a biodiversity research program in Micronesia by Japan; and NIH sponsored initiatives between Monsanto and the Cayetano Peruvian University to study plants from the Andean rain forest.¹⁴² The money invested in such ventures by these companies may be a fairly insignificant portion of their total research and development budget, but that is consistent with a view of ethnobiological research as simply another “library” in which researchers can explore leads for new inventions.¹⁴³

The changes in research patterns represented by these statistics and agreements implicate a basic concept in patent

exploited by the agreement. Global Exchange, *Mexican Indians Attack Biopiracy*, at <http://www.globalexchange.org/campaigns/mexico/news/ventures.html> (last modified Feb. 7, 2001).

140. McManis, *supra* note 3, at 272.

141. *Id.* at 275.

142. *Id.* at 270; Stevens, *supra* note 134, at C1.

143. Merck agreed to pay \$1 million plus royalties on resulting commercial products for a two-year, renewable research program that would provide the company with chemical extracts from wild plants, insects and microorganisms. See McManis, *supra* note 3, at 270 (citing John Vidal, *The Gene Rush*, TORONTO STAR, Jul. 10, 1993, at D4). By 1999, Merck had invested \$3.5 million in bioprospecting. See *Bioprospecting: Exploring Nature's Pharmacy—or Raiding It?*, at www.imshealth.com/public/structure/discontent/1,2779,1037-143402,00.html, (last visited Nov. 8, 2002) (discussing Costa Ricas' National Biodiversity Institute (InBio) agreement in which InBio, in exchange for the \$3.5. billion Merck investment in bioprospecting, agreed to share half of its share of royalties with the Costa Rican government for conservation purposes). Apparently, the agreement has not yielded the expected results. Sylvia Rodriguez, *Bioprospecting Has Failed—What Next?* SEEDLING, ¶3 (Oct. 2002), at <http://www.grain.org/seedling/seed-02-10-7-en.cfm> (last visited Nov. 8, 2002) (“Ten years on in the Merck-InBio agreement, there have been no pharmaceutical ‘hits’ and therefore no royalties”). However, other agreements have met with significant success and new agreements are still being created. See Missouri Botanical Gardens, *Bioprospecting—The Search for New Pharmaceutical, Agricultural, and Nutritional Products*, at http://www.mobot.org/MOBOT/research/applied_research/bioprospecting.shtml (last visited Nov. 14, 2002) (discussing the success of bioprospecting agreements between the Missouri Botanical Gardens (MBG), Sequoia Sciences and Gabon; MGB, the National Cancer Institute (NCI) and a research center in Madagascar; and between MGB, Virginia Polytechnic University, Bristol-Myers Squibb and two organizations in Suriname). MBG has one of the most active bioprospecting agendas in the world, having collected over 40,000 plant samples since 1986. *Id.* Several bioactive compounds have been isolated from these samples as part of the NCI agreement and show promise in anti-HIV and other treatments. *Id.*

law: "Libraries before laboratories."¹⁴⁴ In other words, inventors are encouraged to seek out knowledge of the pertinent art instead of reinventing the wheel in their laboratories.¹⁴⁵ There is, of course, no requirement that an inventor make a search of the prior art before beginning inventive activity or filing a patent application, but if her invention is disclosed in the prior art, no patent will be forthcoming and the time and resources invested in the project (with expectations of monopoly profits at the end) may be lost.

The definition of "library" has evolved over at least the past several decades, so that researchers now know to search out indigenous groups, for example, to find out about medicinal plants and traditional treatments that may yield patentable advances.¹⁴⁶ Recognizing that foreign public knowledge or use is included in the concept of "library" requires eliminating the § 102(b) geographical limitation, because such information is as publicly accessible as geographically unlimited documentary evidence and evidence of public knowledge, use, and sale in the United States.

In the spirit of pragmatism, it must be noted that, for some

144. MARTIN J. ADELMAN ET AL., A TEACHER'S MANUAL TO ACCOMPANY CASES AND MATERIALS ON PATENT LAW 117 (1998) ("Through its prior art definitions, the patent law arguably encourages technological actors to embark upon a search for existing technologies before embarking on their own inventive efforts.").

145. See Chisum, *supra* note 36, at 35. Chisum states,

[A] basic policy consideration [is] the encouragement of broad and thorough searches of all secondary sources for a solution to a technical problem prior to engaging in primary innovative work, which is generally more costly. This is the same policy consideration which supports the use of any publication or patent as prior art, however old and whether or not in fact known to practitioners with ordinary skill in the pertinent art.

Id.

146. More than twenty years ago, Professor Chisum suggested that "[d]omestic practitioners faced with technological problems should be encouraged to study foreign solutions." *Id.* at 37. Apparently, many people have taken his advice. According to Mr. Yano, "More drugs should be forthcoming as more ethnopharmaceutical information is developed. During the last 50 years, as ethnopharmacological information has begun to appear, the data has been scattered throughout a diverse literature making it difficult to gather. . . . However, efforts are being made to compile the information." Yano, *supra* note 43, at 450 n.2 (citing RICHARD E. SCHULTES & REOBER F. RAFFAUT, THE HEALING FOREST 9 (Theodore R. Dudley ed., 1990)) and their ethnobotanical study that "identified 1516 plants with medicinal uses during approximately 30 years of research in the northwest Amazon, [and] recognized that this was only a limited part of the ethnopharmacological wealth of the indigenous peoples in the area". *Id.*

people at least, the § 102 geographical limitation does serve a useful purpose: The limitation benefits anyone whose main market is the United States.¹⁴⁷ It is therefore not surprising that interest groups have at times lobbied to keep the limitation in place.¹⁴⁸ Also, while there is likely a monopoly-pricing disadvantage to U.S. consumers relative to consumers in countries without such a limitation, it is possible that some very useful products, e.g., some pharmaceuticals, would not be available to the U.S. market as quickly, absent the incentive the patent system provides to appropriate foreign public knowledge or use, particularly indigenous knowledge and genetic resources.¹⁴⁹ Section 102(b) enables this result because the potentially invalidating foreign knowledge or use, while publicly accessible from a patent jurisprudence standpoint, may not be available to consumers in the form of a product for purchase in the United States.¹⁵⁰

The critical fact is that any novelty or nonobviousness limitation on patentability, including the traditional limitations relating to patents and printed publications, prevents an entity from patenting public domain information. The Framers had good reasons for denying monopoly protection to such information and there is no legitimate reason any longer for treating foreign public knowledge or use differently from foreign patents, printed publications, and public use in the

147. Because foreign public knowledge or use is not patentable in European countries, Japan, Canada, and many other major market countries, the geographical limitation, by allowing the patenting of such information in the United States., benefits anyone whose main market is the United States. The limitation allows them to gain exclusive rights over something that could be competitively available in many other countries. *See supra* notes 3-17 and accompanying text (discussing the neem tree controversy).

148. *See* Schuyler, *supra* note 79, at 126.

149. However, as noted by one commentator,

We can dismiss outright the nineteenth-century fears, cited frequently in the years since, that . . . such a broad definition of prior art will mean that many foreign inventions will never reach the U.S., now the world's largest consumer market. In a worldwide free trade system, open ports assure that products will benefit U.S. consumers even without 'introduction' of the manufacturing processes. In fact, today the majority of United States patents are issued to foreign inventors; accused American infringers of these United States patents, unable to cite to many types of foreign prior activity, ironically have less prior art to defend themselves with.

Kadidal, *supra* note 44, at 397 (citation omitted).

150. For example, before the early 1990's there was no significant importation of Mexican yellow beans, although they were known and used in Mexico for centuries. *See supra* notes 85-86 and accompanying text.

United States.

Importantly, eliminating the § 102(b) geographical limitation will not prevent foreign public knowledge or use from being used in the invention process. Rather, eliminating the limitation will simply mean that the invention that is ultimately patented must be novel and nonobvious in view of that foreign prior art. Pharmaceutical companies, for example, can still deliver new drugs based on traditional knowledge and genetic resources to U.S. citizens as long as the advance over the known art is truly novel and nonobvious, and thus worthy of protection.¹⁵¹

Congress and the courts must recognize that foreign public knowledge or use is as much a part of the global public domain as are foreign patents, printed publications, and public use in

151. Under current U.S. law a purified naturally occurring compound that does not exist in nature in the purified or synthesized form can be patented even if the process for isolating and purifying it is obvious. *See, e.g., In re Krantz*, 592 F.2d 1169, 1175 (C.C.P.A. 1979); *Parke-Davis v. E.K. Mulford Co.*, 189 F. 95 (S.D.N.Y. 1911), *aff'd* in part, *reversed* in part, 196 F. 496 (2d Cir. 1913). *But see In re Burt*, 356 F.2d 115, 119 (C.C.P.A. 1966) (noting that the manner of making a compound may be relevant in determining the obviousness of the compound); Davis, *supra* note 128, at 316 n.148 (citing JAMES E. BAILEY & DAVID F. OLLIS, *BIOCHEMICAL ENGINEERING FUNDAMENTALS* 340-41 (2d ed. 1983) for the proposition that modifications of human proteins which previously seemed impossible to perform, are now considered relatively trivial exercises). The judicial decisions that enable this result are controversial, and may provide too low a patentability standard for inventions. This is the law, for now, however, and a critique of its merits is beyond the scope of this Article.

Further, overprotecting pharmaceutical inventors, by not holding them to the same novelty and nonobviousness standards as other inventors, conflicts with the policy of ensuring low cost access to medicines. Overprotection is problematic for other reasons as well. As outlined by Professor Maureen O'Rourke,

[P]olicymakers should concentrate on preventing over rather than underprotection. While some information likely does suffer from less than the optimal level of exclusive rights under the public law, the industries affected by errors in this direction seem quite capable of correcting the problem, either through the legislative process or the mechanism of private contract. [citing electronic media and biotech industry examples] . . . In contrast, the diffuse public that primarily bears the costs of overprotection may be unable to overcome collective action problems to form a coalition to argue for correcting such errors.

Maureen A. O'Rourke, *Toward a Doctrine of Fair Use in Patent Law*, 100 COLUM. L. REV. 1177, 1184 n.17 (2000). This collective action problem is likely to be particularly acute in the area of foreign knowledge or use. This is because affected parties such as foreign traditional knowledge holders or foreign goods importers will likely have more difficulty forming a coalition in another country (the United States) and maneuvering through the U.S. judicial and legislative systems.

private government laboratories in the United States¹⁵² All of these types of evidence are “publicly accessible” information and thus must serve, consistent with the strictures of the Intellectual Property Clause, as patent-defeating prior art. It is time now to remove the geographical limitation that excludes foreign public knowledge or use from prior art, creating a boundary where none should exist.

While the above discussion explored the constitutional deficiency of the geographical limitation, a counterpoint militating in favor of constitutionality is, most simply, the advanced age of the provision. As noted by Professors Heald and Sherry, the Supreme Court has on occasion cited the existence of early or longstanding congressional action as evidence of the constitutionality of the action.¹⁵³ The geographical limitation on prior art has been in U.S. law, in one form or another, since 1836; Congress and the Supreme Court are aware of it; Congress codified it in the 1952 Patent Act and it has been mentioned in various Court decisions.¹⁵⁴ Moreover, it was allowed to remain in U.S. patent law when other geographical limitations were removed in 1993 and 1996 due to passage of the North American Free Trade Agreement (NAFTA) and the Agreement on Trade Related Aspects of Intellectual Property (TRIPS), respectively.¹⁵⁵ Yet to keep a

152. See, e.g., *Baxter Int'l, Inc. v. Cobe Labs., Inc.*, 88 F.3d 1054, 1058 (Fed. Cir. 1996) (holding that use of an invention in an NIH government laboratory was a public use); *In re Carlson*, 983 F.2d 1032, 1035-37 (Fed. Cir. 1992) (finding a German Geschmacksmuster registration as relevant prior art in an obviousness analysis); *In re Hall*, 781 F.2d 897, 899-900 (Fed. Cir. 1986) (holding a dissertation available in only one German university raised a “prima facie case of unpatentability” under § 102 (b)).

153. See Heald & Sherry, *supra* note 26, at 1137 n.139, and cases cited therein.

154. As noted earlier, the mention of geographic limitation by the Court has generally merely been as part of the recitation of a subsection of 35 U.S.C. § 102 that the Court was called upon to address. See, e.g., *Pfaff v. Wells Elec., Inc.*, 525 U.S. 55, 57 (1998); *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 148 (1989); *Gandy v. Main Belting Co.*, 143 U.S. 587, 593 (1892); *Gayler v. Wilder*, 51 U.S. (10 How.) 477, 497 (1850).

155. 35 U.S.C. § 104 (2000). As amended, § 104 now allows inventors in NAFTA and WTO countries to prove an earlier date of invention in a foreign country for U.S. patent applications. See also North American Free Trade Agreement Implementation Act, Pub. L. 103-182, 107 Stat. 2057-2225 (1993), codified at 19 U.S.C. § 3301-3473 (2000); 37 C.F.R. § 1.131 (2001); General Agreement on Tariffs and Trade—Multilateral Trade Negotiations (The Uruguay Round): Agreement on Trade-Related Aspects of Intellectual Property Rights, Including Trade in Counterfeit Goods, Dec. 15, 1993, 33 I.L.M. 81 (1994) [*hereinafter* TRIPS].

bad rule for no better reason than that it has been around since the time of Andrew Jackson, to paraphrase a well-known quote,¹⁵⁶ is not much of a reason at all.

Furthermore, the § 102(b) geographical limitation, while now unconstitutional, probably did not start out that way, but became unconstitutional over time.¹⁵⁷ Such an occurrence is not without precedent in constitutional law. Take, for example, *Taylor v. Louisiana*, where the Court held that the exclusion of women from juries is a violation of a criminal defendant's rights under the Sixth Amendment.¹⁵⁸ Also, the Court's Eighth Amendment jurisprudence asserting that the Cruel and Unusual Punishment Clause "must draw its meaning from the evolving standards of decency that mark the progress of a maturing society," is a tacit acknowledgement of the need, in some cases, to depart from long held interpretational

156. See Oliver W. Holmes, *The Path of the Law*, 10 HARV. L. REV. 457, 469 (1897) ("It is revolting to have no better reason for a rule of law than that it was laid down in the time of Henry IV. It is still more revolting if the grounds upon which it was laid down have vanished long since, and the rule simply persists from blind imitation of the past."); see also Kadidal, *supra* note 44, at 402-03 ("While a certain degree of reverence for provisions that have escaped revision since 1836 may be in order, there is no time like the present to change them.").

157. For other examples of statutes or practices of long duration ultimately deemed unconstitutional by the Court, see, e.g., *State Oil Co. v. Khan*, 522 U.S. 3, 21-22 (1997) ("Although the rule of *Albrecht* [holding that vertical maximum price fixing was illegal] has been in effect for some time, the inquiry we must undertake requires considering 'the effect of the antitrust laws . . . in the American economy today. . . . Now that we confront *Albrecht* directly, we find its conceptual foundations gravely weakened." (citations omitted)); *Shaffer v. Heitner*, 433 U.S. 186, 212 (1977) ("[T]raditional notions of fair play and substantial justice' can be as readily offended by the perpetuation of ancient forms that are no longer justified as by the adoption of new procedures that are inconsistent with the basic values of our constitutional heritage."); *Brown v. Board of Educ.*, 347 U.S. 483, 490-91, 495 (1954) (rejecting the fifty-eight year-old "separate but equal" doctrine and concluding that mandated segregated schooling was inherently unequal in violation of the Equal Protection Clause of the Fourteenth Amendment.).

158. *Taylor v. Louisiana*, 419 U.S. 522, 532-36 (1975). In tracing the history of the exclusion of women from juries, the Court noted,

[W]e think it is no longer tenable to hold that women as a class may be excluded . . . based solely on sex *If it was ever the case* that women were unqualified to sit on juries or were so situated that none of them should be required to perform jury service, *that time has long since passed*. . . . Communities differ at different times and places. What is a fair cross section at one time or place is not necessarily a fair cross section at another time or a different place.

Id. at 537 (emphasis added).

traditions.¹⁵⁹ Likewise, in patent law, the time when a geographical prior art limitation may have been constitutional has long since passed.

Patent law is a discipline where changes in technology force the consideration of changes in the law. The Supreme Court's decision in *J.E.M. Agricultural Supply, Inc. v. Pioneer Hi-Bred International, Inc.*, confirming that sexually reproducible plants are patentable subject matter under 35 U.S.C. § 101, implicitly recognizes that changes in technology and the world can void longheld assumptions in this area.¹⁶⁰ Refuting the argument that sexually reproducible plants were not eligible for utility patent protection because they were not covered by the utility patent statute prior to 1930 (when the Plant Patent Act was passed), the Court stated,

[I]n 1930 Congress believed that plants were not patentable under § 101, both because they were living things and because in practice they could not meet the stringent description requirement. Yet these premises were disproved over time. . . . '[T]he relevant distinction' . . . is not between 'living and inanimate things, but between products of nature . . . and human-made inventions.' . . . [A]dvances in biological knowledge and breeding expertise have allowed plant breeders to satisfy § 101's demanding description requirement. . . .

Petitioners essentially ask us to deny utility patent protection for sexually reproduced plants because it was unforeseen in 1930 that such plants could receive protection under § 101. Denying patent protection . . . simply because such coverage was thought technologically infeasible in 1930, however, would be inconsistent with the forward-looking perspective of the utility patent statute.¹⁶¹

This same reasoning applies to the § 102(b) geographical limitation. It is possible that at the time of the 1836 Patent Act the geographical limitation was not unconstitutional because foreign knowledge or use as a category may have been more akin to the uncataloged student theses in shoeboxes in *In re Cronyn*¹⁶² than to the indexed, cataloged thesis in *In re Hall*.¹⁶³ In any event, even if accessing foreign public knowledge or use of an invention may have been infeasible in 1836, no current justification exists to continue excluding it from the definition

159. *Trop v. Dulles*, 356 U.S. 86, 101 (1958); see also Abramowicz, *supra* note 129, at 23-26 (discussing the theory that perceptions of constitutional law, which may evolve over time, affect constitutional meaning).

160. *J.E.M. Ag. Supply, Inc. v. Pioneer Hi-Bred Int'l, Inc.*, 122 S. Ct. 593, 600 (2001).

161. *Id.* (quoting *Diamond v. Chakrabarty*, 447 U.S. 303, 313 (1980)).

162. *In re Cronyn*, 890 F.2d 1158, 1161 (Fed. Cir. 1989).

163. *In re Hall*, 781 F.2d 897, 898 (Fed. Cir. 1986).

of prior art.¹⁶⁴

Arguably, foreign public knowledge or use is today, and probably has been for quite some time, as accessible “to the public interested in the art”¹⁶⁵ as printed publications were in 1836.¹⁶⁶ Moreover, the evidentiary concerns regarding “proving and verifying foreign acts” that justified the geographical limitation in 1836 are of little consequence in this age of multinational litigation.¹⁶⁷ Both the Federal Rules of Civil Procedure and the rules of the USPTO provide for the taking of testimony in a foreign country for use in a U.S. proceeding.¹⁶⁸ The U.S. courts have also given foreign patent judgments and findings of fact preclusive effect in some cases.¹⁶⁹

What is more, arguments regarding the evidentiary difficulties associated with proving and verifying foreign use and inventive acts were vociferously pressed by opponents to U.S. modification of 35 U.S.C. § 104 to comply with NAFTA and TRIPS almost a decade ago.¹⁷⁰ Despite those protests, § 104 was amended to allow U.S. patent applicants to prove a date of invention in a foreign country earlier than their effective filing date using foreign evidence.¹⁷¹ The “significant difficulties” for American inventors that such commentators suggested would attend the amendment¹⁷² never materialized, suggesting that

164. See Walterscheid, *supra* note 65, at 877 (noting difficulty of obtaining specifications of English patents).

165. *Hall*, 781 F.2d at 899.

166. See Walterscheid, *supra* note 65, at 877 n.77. Walterscheid notes,

In principle at least, English specifications could be obtained during the term of the patent, but this was easier said than done. They were not published, and were enrolled randomly in any of three separate offices. It was necessary to know the name of the patentee in order to have a search conducted. . . . There was no mechanism for searching by topic or technology, although a caveat could be entered . . . permitting one to be informed of the existence of patent applications involving a particular topic.

167. See Chisum, *supra* note 36, at 31.

168. FED R. CIV. P. 28(b); 37 C.F.R. § 1.671 (2002).

169. See, e.g., *Cochran Consulting v. Uwattec*, 102 F.3d 1224, 1229 (Fed. Cir. 1996) (applying preclusion to a Swiss court's decision on ownership of ROM code); *Oneac Corp. v. Raychem Corp.*, 20 F. Supp. 2d 1233, 1242-45 (N.D. Ill. 1998) (giving preclusive effect to findings of fact decided in a United Kingdom litigation involving related patents); *Northlake Mktg. & Supply, Inc. v. Glaverbel*, 986 F. Supp. 471, 479 (N.D. Ill. 1997) (giving preclusive effect to findings of fact decided in a Belgian litigation involving related patents), *aff'd*, 178 F.3d 1308 (Fed. Cir. 1998).

170. See LaMarca, *supra* note 43, at 52.

171. 35 U.S.C. § 104 (2000).

172. See Robert A. Armitage, *The Uruguay Round & IP: Great or*

eliminating the § 102(b) limitation should be equally uneventful. A geographical limitation on prior art evidence may or may not be a more "convenient" rule for trials and other proceedings,¹⁷³ but as it is constitutionally indefensible, convenience is irrelevant.

The Constitution requires that any patent system created by Congress must promote the progress of useful arts. The Supreme Court has interpreted this phrase as providing a clear limitation on Congressional power in this area:

Congress may not 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. Innovation, advancement, and things which add to the sum of useful knowledge are inherent requisites in a patent system which by constitutional command must "promote the Progress of . . . useful Arts." This is the standard expressed in the Constitution and it may not be ignored.¹⁷⁴

As described above, foreign public knowledge or use, as a class of information, is now as "publicly accessible" as foreign patents and printed publications were in 1836. By explicitly allowing the patenting of such publicly accessible information, the § 102(b) geographical limitation does not promote the progress of the useful arts and thus violates the "standard expressed in the Constitution."¹⁷⁵ Consequently, it must be eliminated.

III. OTHER REASONS FOR REVISING THE DEFINITION OF PRIOR ART: "PIRACY," POLICY, AND HARMONY

In addition to constitutional arguments, policy arguments support the elimination of § 102(b)'s geographical limitation. Changes in sources of invention inspiration, a move toward global harmonization of patent laws, and the U.S. government's own stance towards piracy, all militate in favor of a global definition of prior art.

A. PIRACY AND BIOPIRACY

While the changes in research habits noted in Part II are

GATTastrophic for the United States Patent System – or Both?, AIPLA BULL., Jan.-Feb. 1995, at 196-200.

173. H.R. REP. NO. 79-1498, at 7 (1946) (concluding that the exclusion "is the greater convenience in trials and other proceedings held in this country"). *microformed on* CIS No. 11022 (Cong. Info. Serv.).

174. *Graham v. John Deere Co.*, 365 U.S. 1, 6 (1966).

175. *Id.*

yielding beneficial discoveries, they are also, in some cases, causing considerable problems. Where the research culminates in the patenting of information derived from the traditional knowledge or genetic resources of indigenous peoples in developing countries, it is often labeled "biopiracy." The term biopiracy has been defined as "the patenting of plants, genes, and other biological products that are indigenous to a foreign country"¹⁷⁶ without compensating the keepers of those resources and the holders of knowledge appropriated during the ethnobiological research process.¹⁷⁷ This is in contrast to the word "piracy" which is defined as "the unauthorized use of copyrighted or patented work."¹⁷⁸ As explained by one commentator: "What developing tropical nations are saying is that if the West cries foul over piracy of intellectual property, [such as] computer software, then biopiracy in Western labs of jungle extracts should also be considered a high economic crime."¹⁷⁹

The geographical limitation contained in § 102(b) facilitates biopiracy by preventing evidence of foreign knowledge or use from being considered in patentability and patent validity proceedings.¹⁸⁰ This is problematic for the United States because, among other things, it is hypocritical of the United States to fight intellectual property piracy in developing countries but to allow piracy against developing countries at home (thus potentially increasing pirating of U.S. intellectual property). Also, to the extent biopiracy decimates

176. *The Word Spy*, at <http://www.wordspy.com/words/biopiracy.asp> (last visited Oct. 6, 2002). The question of how to compensate indigenous groups and sovereign nations for the patenting of even novel and nonobvious inventions that may have been developed with the aid of ethnobiological research is a troublesome issue that is beyond the scope of this Article. The focus here is more narrow and is directed to the problems the § 102(b) geographical limitation creates, including when it intersects biopiracy concerns.

177. Faiola, *supra* note 30, at A21 (explaining that tropical nations are pushing for legislation aimed at preventing biopiracy by requiring foreign nations to pay royalties for biomaterials used abroad).

178. WEBSTER'S NEW WORLD DICTIONARY AND THESAURUS 468 (Macmillan 1996).

179. Faiola, *supra* note 30, at A21.

180. Eliminating the § 102(b) geographical limitation will not, however, end claims of biopiracy by indigenous groups and others since inventions based on traditional knowledge and genetic resources will still be patentable as long as they are novel and nonobvious in view of the prior art. There would still be no requirement in patent law that inventors compensate traditional knowledge holders for sharing that knowledge.

or prevents the creation of foreign industries (e.g., the impact of the Enola bean patent on Mexican bean farmers and exporters), it may increase the need for continuing U.S. aid to developing countries as opposed to helping those countries move towards self-sufficiency.¹⁸¹

Under section 301 of the Trade Act of 1974, the United States Trade Representative (USTR) is authorized to take action against foreign countries that deny what the United States perceives as adequate and effective intellectual property protection and equitable market access to U.S. intellectual property owners.¹⁸² Countries failing to meet U.S. standards are placed on “watch lists” and failure to make significant progress on stopping piracy and enforcing intellectual property laws can result in U.S. trade sanctions.¹⁸³ Although the TRIPS agreement mandates substantive protections, an amendment to the TRIPS implementing legislation allows the USTR to pursue action against a country under section 301 even if the country is in compliance with its TRIPS obligations. Not surprisingly, this aggressive stance on piracy has generated significant ill will against the United States, especially when U.S. inventors and multinational corporations are committing what some developing countries see as “biopiracy” in the very countries the USTR is chastising.¹⁸⁴

181. See, e.g., Kadidal, *supra* note 44, at 377-88 (noting that W.R. Grace's U.S. neem oil patent “may deny indigenous Indian companies access to the U.S. market, which may be the largest and most lucrative one”). But see Marden, *supra* note 48, at 285 (noting that an argument had been made that Indian farmers may benefit from the Grace patent by making neem a new cash crop).

182. 19 U.S.C. § 2411(b), (d)(3)(B)(i)(II-III) (2002).

183. See United States Trade Representative, *2000 Special 301 Report*, at <http://www.ustr.gov/html/special.html> (last visited Oct. 13, 2002) (reporting detailed examination of the adequacy and effectiveness of intellectual property protection in seventy countries, identifying fifty-nine trading partners for various levels of watch list status and noting that “[w]hile progress also has been made on improving enforcement in many countries, the unacceptably high rates of piracy and counterfeiting of U.S. intellectual property around the world require on-going vigilance”).

184. According to Indian scientist and activist Dr. Vandana Shiva, When [the] US was introducing Intellectual Property Rights in the Uruguay Round, as a new issue, the US had accused the Third World of “piracy”. The estimates provided for royalties lost in agricultural chemicals are USD 202 million and USD 2,545 million for pharmaceuticals. However, as the team at RAFI, the Rural Advancement Foundation International, in Canada has shown, if the contribution of Third World peasants and tribals is taken into account, the roles are dramatically reversed: the US owes USD 302

The Mexican Enola bean controversy illustrates how § 102(b) can serve as a barrier to U.S. trade for foreigners. There, Mexican bean importers (at least one of whom had started her business to capitalize on the free trade opportunities created by NAFTA) and the farmers they represent, were effectively barred from the U.S. yellow bean import business by the grant of a patent whose acquisition appears to have been facilitated by § 102(b)'s geographical limitation.¹⁸⁵ This is unfortunate in many respects. It negatively impacts the farmers, importers, and their families, as well as the communities in which they operate and, perhaps only marginally, Mexico's ability to increase its gross domestic product, exports, and employed labor force.¹⁸⁶ Since many developing countries that receive aid from the United States and other developed countries are also rich in genetic resources and traditional knowledge, U.S. patent policies and practices that close the U.S. market to burgeoning industries in those countries may retard the ability of those countries to become fully self-sufficient and independent of foreign aid.¹⁸⁷

B. POLICIES UNDERLYING SECTION 102(B)

In addition to facilitating biopiracy, the geographical limitation undermines at least the first and fourth of the four well-established policies that justify §102(b)'s existence. These policies are:

- (1) discouraging the removal, from the public domain, of inventions

million in royalties for agriculture and 5,097 million for pharmaceuticals to Third World countries, according to these latter estimates. In other words, in these two biological industry sectors alone, the US owes 2.7 billion dollars to the "Third World".

Vandana Shiva, *The Turmeric Patent Is Just the First Step in Stopping Biopiracy*, <http://www.sodepaz.org/cooperacion/agricultura/shiva.htm> (last visited Oct. 11, 2002). Again, revising § 102(b) to include foreign public knowledge or use as prior art alone will not end accusations of biopiracy against the United States, see discussion *supra* note 180, but it is a step in the right direction.

185. See discussion *supra* notes 81-88.

186. In terms of NAFTA countries, Mexico's Gross Domestic Product (GDP) in 2000 was \$574 billion, Canada's was \$689 billion, and the United States' was \$9.896 trillion. STATISTICAL ABSTRACT, *supra* note 130, at 841 tbl. 1340. Note also the percentages of persons ages 20-24 years old not in education or at work: Mexico, 26.2%; Canada, 11.7%; U.S., 14.4%. *Id.* at 847 tbl. 1352.

187. U.S. foreign aid disbursements are increasing. See *id.* at 797 tbl. 1293. In 1980, the United States provided \$9.695 billion in economic and military aid programs to foreign countries. By 1999, that number had increased to \$15.987 billion. *Id.*

that the public reasonably has come to believe are freely available; (2) favoring the prompt and widespread disclosure of inventions; (3) allowing the inventor a reasonable amount of time following sales activity to determine the potential economic value of a patent; and (4) prohibiting the inventor from commercially exploiting the invention for a period greater than the statutorily prescribed time.¹⁸⁸

The geographical limitation is problematic from the first policy standpoint in three different scenarios. First, it allows third parties to patent information publicly known or used in a foreign country even though they were not aware of the earlier knowledge or use. Second, it facilitates violations of § 102(f) by making it easier for third parties to patent derived information from foreign sources that they did not themselves invent. Lastly, it allows inventors to make and use their inventions in foreign countries for a potentially unlimited period of time before filing for a U.S. application as long as the inventions are not otherwise patented or described in a printed publication.¹⁸⁹

All three scenarios thus violate the first § 102(b) policy of protecting public reliance on information in the public domain. One might argue that the U.S. public has not relied on having access to inventions known or used in foreign countries, but the same could be said for foreign patents and printed publications such as those discussed in *In re Hall* and *In re Carlson*.¹⁹⁰ Foreign public knowledge or use should be treated the same as these traditional sources of prior art.

Moreover, the third scenario violates the fourth 102(b) policy of not allowing an inventor to commercialize her

188. *Baxter Int'l, Inc. v. Cobe Labs., Inc.*, 88 F.3d 1054, 1058 (Fed. Cir. 1996).

189. Of course, not all applicants for U.S. patents are U.S. citizens or residents. In fact, nearly half the U.S. patents granted by the USPTO each year go to foreign inventors. *U.S. Patent Statistics, Calendar Years 1963-2001*, available at http://www.uspto.gov/web/offices/ac/ido/oeip/taf/us_stat.pdf (last visited Nov. 15, 2002). Thus, the § 102 limitation allows foreign (or U.S.) inventors to sell and practice their invention in foreign countries for years and then decide to come to the United States and get a patent, as long as that use is not described in a patent or printed publication. On the other hand, once an inventor sells or publicly uses her invention in the United States, § 102(b) gives her just a year within which to file a patent application. So, in theory at least, the geographical limitation appears to disadvantage U.S. patent applicants that reside in the United States as opposed to those who reside in a foreign country. This distinction violates the policies of encouraging prompt disclosure of inventions and the non-commercialization of inventions beyond the patent term without justification because § 102(b) does not differentiate between acts of inventors and acts of third parties.

190. See *In re Carlson*, 983 F.2d 1032, 1035-37 (Fed. Cir. 1992); *In re Hall*, 781 F.2d 897, 898-99 (Fed. Cir. 1986).

invention for more than the one-year grace period provided in the statute before seeking patent protection. Because the patent laws of most countries bar patents on inventions publicly known or used in that country, if not the world, few inventors are likely to rely on this loophole in U.S. law because they would void their right to obtain a patent in other countries.¹⁹¹ Nevertheless, the loophole is real and eliminating § 102(b)'s geographical limitation would close it and better effectuate the policies underlying the statute.

Thus, constitutional constraints, biopiracy, and policy conflicts are all implicated by the § 102(b) geographical limitation. One more issue deserves a brief mention: § 102(b)'s geographical limitation is at odds with the laws of the three other major patent granting institutions on the global scene.

C. HARMONIZATION: THE URGE TO MERGE

An additional consequence of an even smaller world is an increase in efforts by nations to harmonize their laws and enter treaties to facilitate world trade. Patent law has historically been territorial in nature, with sovereign states granting patents and providing means for patentees to enforce their rights only within their borders.¹⁹² Consequently, if a person wanted to obtain patent protection for an invention in multiple countries, she would have to apply for a patent in each country of interest because the exclusionary rights provided would not extend beyond the state's borders.

While this territorial model is still in effect, it is slowly changing. A variety of treaties streamline the process of a multi-country patent application and reduce associated costs. More of such treaties are in development.¹⁹³ Several regional

191. See, e.g., EPC, art. 54, *supra* note 15, 13 I.L.M. at 286; Japan Patent Law, ch. 2, art. 29 (1998), *reprinted* in 2 F. JOHN P. SINNOTT ET AL., *WORLD PATENT LAW AND PRACTICE*, Japan-153, Japan-172 (2002).

192. See, e.g., 35 U.S.C. 271(a) (2000) (defining a person liable for patent infringement when that person "without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention"); Curtis A. Bradley, *Territorial Intellectual Property Rights in an Age of Globalism*, 37 VA. J. INT'L L. 505, 520-26 (1997) (discussing the territoriality of U.S. patent law).

193. E.g., Patent Law Treaty, June 1, 2000, at <http://www.wipo.int/clea/docs/en/wo/wo038en.htm> (last visited Oct. 12, 2002) [hereinafter PLT]; Patent Cooperation Treaty, June 19, 1970, 28 U.S.T. 7645, 1160 U.N.T.S. 231, available at <http://www.wipo.int/pct/en/index.html> (last visited Oct. 12, 2002); Paris Convention for the Protection of Industrial Property, July 14, 1967, 21 U.S.T. 1583, 828 U.N.T.S. 302, available at 1970 WL 104436; see also Gerald

treaties already exist that allow an applicant to file one application with a central office and obtain patent protection in multiple countries, although the patent must be enforced (in cases of infringement) in each individual country.¹⁹⁴

Probably the most significant regional treaty is the Convention on the Grant of European Patents (EPC), signed in 1973 by a group of countries seeking to create a uniform European patent system.¹⁹⁵ The EPC, which currently has twenty-four contracting members, and six extension states,¹⁹⁶ established the European Patent Office (EPO) and contains substantive and procedural requirements for obtaining a European patent (valid in all member countries) with only a single application.¹⁹⁷ Unlike the U.S. Patent Act, the EPC has

J. Mossinghoff & Vivian S. Kuo, *World Patent System Circa 20XX, A.D.*, 38 IDEA 529 (1998) (discussing various patent treaties).

194. EPC, *supra* note 15, 13 I.L.M. at 269; Eurasian Patent Convention, 36 Indus. Prop. & Copyright 30 (1997).

195. See, e.g., *What is the European Patent Office?*, at http://www.european-patent-office.org/epo/pubs/brochure/general/e/epo_general.htm (last updated Oct. 18, 2002). The EPC went into effect in 1977. *Id.*

196. *Id.* at http://www.european-patent-office.org/epo/pubs/brochure/general/e/contractstates_e.htm (last updated Oct. 18, 2002). Current contracting states are: Austria, Belgium, Bulgaria, Switzerland, Cyprus, Czech Republic, Germany, Denmark, Estonia, Finland, France, United Kingdom, Greece, Ireland, Italy, Liechtenstein, Luxembourg, Monaco, Netherlands, Portugal, Spain, Slovak Republic, Sweden, and Turkey. Current Extension states are: Albania, Lithuania, Latvia, Former Yugoslav Republic of Macedonia, Romania, and Slovenia. *Id.* Membership in the organization is not limited to European Union (EU) countries although all EU countries are members. *Id.* "Extension states" are expected to become members in due course and patent applicants can currently designate them on a European patent application. *What is the European Patent Office?*, at http://www.european-patent-office.org/epo/pubs/brochure/general/e/epo_general.htm (last updated Oct. 18, 2002).

197. The European patent is treated as a national patent in each member country. EPC, art. 64, *supra* note 15, 13 I.L.M. at 287. Applicants can still seek patent protection in individual EPC member countries exclusively or concurrently; however, because the European patent is treated as a national patent, only one patent (national or European) will generally be maintained. See Citizen Watch Co., 1993 R.P.C. 1, Aug. 17, 1992 (Eng. Royal Patent Office), LEXIS, Nexis, United Kingdom File (revoking United Kingdom patent no. 2,176,660 because a European Community patent had been granted to the same inventor for the same invention). The laws of all member states must be in harmony with the EPC on patentability standards so those laws do not geographically limit sources of prior art either. EPC, art. 1, 2, & 54. *supra* note 15, 13 I.L.M. at 276, 277, & 286. Unfortunately, there is no central means for enforcing a European patent. *The Community Patent Frequently Asked Questions*, at http://europa.eu.int/comm/internal_market/en/indprop/patent/2k-4.htm (last updated July 5, 2000). A patentee must still (in most

never contained a geographical limitation on prior art. Article 54 of the EPC, which defines novelty, states in pertinent part,

1. An invention shall be considered to be new if it does not form part of the state of the art. 2. The state of the art shall be held to comprise everything made available to the public by means of a written or oral description, by use, or in any other way, before the date of filing of the European patent application.¹⁹⁸

The determination of the nonobviousness of the invention, or the presence of an “inventive step” as denoted in the EPC, is also made with reference to the state of the art as defined in Article 54.¹⁹⁹ Consequently, evidence of foreign public knowledge or use has been admissible in EPO proceedings and infringement litigation for over two decades. In fact, this broad, geographically neutral definition of prior art is what enabled evidence of foreign public use in India to be used to revoke Grace’s European patent on neem.²⁰⁰ While it can be difficult for proponents of non-patent, non-published prior art, foreign or domestic, to meet the strict standards of proof and credibility required by the EPO, the inclusive definition is clearly workable and in use in EPO decisions.²⁰¹

The EPO and its contracting and extension states, as a group, grant the highest number of patents annually, followed by the United States and Japan.²⁰² Over 80% of the world’s patents are granted by the EPO, USPTO, and the Japanese Patent Office (JPO) combined. Thus, it was not a complete

circumstances) bring suit in each country where the patent is being infringed. *Id.* Efforts are underway to create a Community patent that would be a “true” European patent, enforceable in a single court with community-wide effect. See *Proposal for a Council Regulation on the Community Patent*, at http://europa.eu.int/eur-lex/en/com/pdf/2000/en_500PC0412.pdf (Aug. 8, 2001).

198. EPC, art 54, *supra* note 15, 13 I.L.M. at 286.

199. EPC, art. 56, *supra* note 15, 13 I.L.M. at 286.

200. See Decision Revoking the European Patent No. EP-B-0436257, EPO, Ref. No. 30159, at 1-4 (Feb. 13, 2001) (available from European Patent Office; on file with the author).

201. See, e.g., *Hercules Inc. v. BASF Ag.*, Doc. T 0739/92, LEXIS EPOBOA (European Patent Office Board of Appeal) file (1996); *Thorn EMI v. E.G.O. Elektro-GerCte Blanc*, Doc.T 0326/93, LEXIS EPOBOA file (1994); *Genentech v. Boehringer*, Doc. T 0455/91, LEXIS EPOBOA file (1994).

202. Over 350,000 patents were granted by the EPO and its contracting and extension states in 1999 (35,358 by the EPO itself); 153,487 were granted by the USPTO, and 150,059 granted by the Japanese Patent Office. See IP/STAT/1999/B, *Patents/Brevets: Patent applications filed and patents granted during 1999*, at <http://www.wipo.org/ipstats/en/publications/b/index.html> (last visited Oct. 6, 2002). The numbers drop off considerably after that, with the next highest number being the Republic of Korea with 62,635, followed by Canada with 13,778 patents granted in 1999. *Id.*

surprise when, in 1983, these three organizations got together and formed a trilateral co-operation effort, with the goal of increasing efficiency in the processing of applications through exchanging information on automation, comparative practices, and database creation.²⁰³

Until recently, Japan's definition of prior art mirrored 35 U.S.C. §102 in that the Japanese Patent Act limited the geographical scope of relevant non-patent, non-published public knowledge or use to Japan. However, in 1999, Japan took a major step forward in implementing its twenty-first century "pro-patent" policy when the Japanese Diet made several significant amendments to the Japan Patent Law.²⁰⁴ One of the amendments eliminated geographical prior art distinctions. Now in Japan, applicants cannot patent,

[i]nventions which were publicly known in Japan or elsewhere; . . . inventions which were publicly worked in Japan or elsewhere; . . . inventions which were described in a distributed publication or made available to the public through electric telecommunication lines in Japan or elsewhere prior to the filing of the patent application.²⁰⁵

A 1998 report prepared by the Planning Subcommittee of Japan's Industrial Property Council identified three key

203. See *Trilateral Website*, <http://www.jpo.go.jp/saikine/tws/gen-1.htm> (last visited Oct. 6, 2002).

204. Japan Patent Law No. 220 art. 29 (1999) (entering into force Jan. 6, 2001) (amending Japan Patent Law No. 121 (1959)), <http://www.jpo.go.jp/shoukaie/patent.htm> (last updated July 27, 2001). Japan has a long history of importing foreign technology and diffusing it throughout Japanese industry. See Robert J. Girouard, *U.S. Trade Policy and the Japanese Patent System*, Berkeley Roundtable on the Int'l Econ. Working Paper 89 (Aug. 1996), <http://brie.berkeley.edu/pubs/wp/index.html> (noting that because of Japan's late-developer status, it "favor[s] the importation, indigenization, and diffusion of foreign technology" as opposed to a focus on technical superiority through basic research). Japan's approach, however, resulted in a substantial technological trade imbalance with the United States, which Japan has been working to eliminate through implementation of pro-patent policies such as the 1999 legislation. *Report of the Planning Subcommittee of the Industrial Property Council: To the Better Understanding of Pro-Patent Policy*, Japanese Patent Office, 5, 8, <http://www.jpo.go.jp/saikine/report.pdf> (Nov. 1998). These changes are designed to allow Japan "to shift from emphasis on the development of improvement technology to the development of highly creative technology having added value." *Id.* at 5. It is ironic that Japan sees eliminating geographical prior art limitations as allowing it to be more technologically competitive with the United States, which still has such limitations. See 35 U.S.C. § 102.

205. Japan Patent Law No. 220 art. 29, <http://www.jpo.go.jp/shoukaie/patent.htm>. "Working" an invention means to put it into practice commercially, similar to the U.S. concept of "using" an invention.

reasons for revising the definition of novelty-destroying information: (1) a perception that granting patents in Japan on technology in the global public domain would delay the development of Japanese industry since Japanese inventors and companies would be unable to use the technology; (2) allowing the patenting of technology in the global public domain gives the impression that Japan is an imitator, not a pioneer in technology development; and (3) while "surveying" (i.e., accessing) foreign known and worked inventions was difficult at the time the old law was enacted in 1959, it has now become relatively easy to access such information so the rule should be "expanded to include the entire world."²⁰⁶

Apparently, the Industrial Property Council, which recommended the revision to the JPO for drafting and passage by the Japanese Diet, was concerned that if the JPO granted patents on inventions that were publicly known in foreign countries, Japan would fall behind those countries in research and development because Japanese inventors would not be able to use inventions which are freely usable in other countries.²⁰⁷ That leaves the United States as the only trilateral member to retain geographical limitation on prior art. Harmonizing the definition of prior art among these three entities seems appropriate, not just for the benefits to trilateral cooperation projects such as the sharing of prior art search results, but also for the benefits to consumers and inventors in the United States.²⁰⁸

206. See *Report of the Planning Subcommittee of the Industrial Property Council*, *supra* note 204, at 85-86. The report states,

[I]f patents are granted . . . in Japan for inventions known or worked overseas (public domain), . . . technology able to be freely used overseas cannot be used in Japan, thereby causing a delay in the development of technology. In addition, this may also give the impression of encouraging the imitation of technology . . . resulting in a system that . . . run[s] contrary to the direction in which Japan is heading of shifting from catch-up-type to frontier-type research and development. In addition, since it has become relatively easy to conduct surveys about facts relating to known or worked inventions overseas . . . due to the progress of transportation means in recent years, the formation of a border-less economy and the progress of means of providing information . . . there is no longer any reason to establish regional standards for known or worked inventions in Japan.

Id.

207. *Id.* at 85.

208. Even Canada, the fifth highest patent granter on the list, see *supra* note 202 and accompanying text, eliminated its section 102(b)-like geographical limitation on prior art in 1989. See Patent Act, R.S.C. 1985, ch..

Ironically, the geographical limitation that the Court in *Gayler v. Wilder* perceived as a benefit to U.S. consumers may actually disadvantage U.S. consumers because so many other countries' patent laws do not contain similar geographical prior art limitations.²⁰⁹ Section 102(b) thus promotes and allows monopoly prices here on goods that could possibly be purchased more cheaply in other countries where the subject matter is not patentable and competition is thus available.²¹⁰

Patent law harmonization has long been an elusive goal for many countries and probably will remain out of reach for some time to come.²¹¹ However, new harmonization efforts are actively underway under the auspices of the World Intellectual Property Organization (WIPO). Following the successful conclusion of the Patent Law Treaty (PLT) negotiations in 2000, WIPO member states agreed to move forward with efforts to achieve harmonization on substantive patent law issues with the objectives of reducing the costs of obtaining patent protection worldwide, and achieving mutual recognition/full

33 §27 (1985) (Can.); see also Michel H. Goulet, *Novelty Under Canada's Patent Act—A European Accent*, 13 INTELL. PROP. J. 83, 84 (1999).

Of course, the United States, members of the EPC, and Japan lack agreement on other provisions, most notably the issue of whether a patent should be awarded to the first inventor (i.e., the U.S. approach) or the first person to file a patent application covering the invention. While ultimately the United States will likely join the rest of the world in adopting a first-to-file regime, there are arguably better justifications for retaining that distinction in U.S. law than can possibly be mustered for retaining the § 102 geographical limitation.

209. See *Gayler v. Wilder*, 51 U.S. 477, 497 (1850).

210. See *supra* note 208 (discussing the benefits of patent law harmonization).

211. Intellectual property treaties, most dealing with procedural aspects of patent obtainment, have been around since the late nineteenth century. See Stockholm Convention for Multilateral Protection of Industrial Property, and the Paris Convention, July 14, 1967, 21 U.S.T. 1583, 828 U.N.T.S. 302, available at 1970 WL 104436 (revising Paris Convention for Protection of Industrial Property, March 20, 1883). A treaty with substantive provisions, TRIPS seems to be the pattern of the future for achieving patent law harmonization: tying intellectual property protection to trade. See Rochelle Cooper Dreyfuss & Andreas F. Lowenfeld, *Two Achievements of the Uruguay Round: Putting TRIPS and Dispute Settlement Together*, 37 VA. J. INT'L L. 275, 276-77 (1997). While patent law harmonization among developed countries seems to offer significant benefits, it is not at all clear that requiring developing countries to bring their patent laws into compliance with those of developed countries, as is required by many TRIPS provisions, is beneficial to those developing economies. That discussion, however, is for another day and another article.

faith and credit for the results of substantive examination.²¹² Five topics were selected for the WIPO Standing Committee on the Law of Patents (SCP) to begin work on immediately, with work on stickier issues delayed for a second stage.²¹³ One of the five topics is defining a global definition of prior art, without any geographical limitations.²¹⁴ While the U.S. representative to the WIPO SCP has agreed in principle to such a definition, there still very well could be a “slip twixt the cup and the lip.”²¹⁵ In other words, while agreement may be reached at WIPO (still probably two or more years away), getting countries to sign such a treaty probably will await its incorporation into a trade-related agreement like TRIP’s, and the likelihood of continued special interest group pressure in the United States may hinder Congressional action on such a treaty.

The bigger problem with waiting for § 102(b) to be fixed via WIPO or TRIPS is that the provision, in the WIPO negotiations, is apparently being used by the United States as a bargaining chip, to achieve other concessions from negotiating parties. However, as discussed above,²¹⁶ elimination of § 102(b)’s geographical limitation is a constitutional imperative to be accomplished either by the Supreme Court, if an appropriate case is presented to it, or Congress by legislative amendment of § 102. It is incumbent on the Supreme Court to police patent statutes for compliance with constitutional constraints. Congress is also obligated to conform its legislation to the Intellectual Property Clause from which its legislative patent power emanates.²¹⁷

For all of the above reasons, a move by the United States to a definition of prior art inclusive of foreign knowledge or use

212. See *Issues Considered by the Standing Committee on the Law of Patents*, World Intellectual Property Organization, <http://www.wipo.org/ip/en/ip1-01.htm> (discussed at the Sixth Session, Nov. 5-9, 2001).

213. *Id.* “Stickier” issues include the first to file versus first to invent and post-grant opposition proceedings. *Id.*

214. *Id.* Those five topics are definitions of prior art, novelty, nonobviousness (i.e. inventive step), and industrial applicability; sufficiency of disclosure of patent applications; and the structure and interpretation of claims.

215. EBENEZER COBHAM BREWER, *BREWER’S DICTIONARY OF PHRASE & FABLE*, 839 (11th ed., Harper & Row 1968) (1870), available at <http://www.bartleby.com/81/15519.html> (last visited Oct. 9, 2002) (“Many a slip ‘twixt the cup and the lip. Everything is uncertain until you possess it.”)

216. See discussion *supra* notes 25- 39.

217. U.S. CONST. art. 1, §8, cl. 8.

must be a question of “when,” not “if.” Moreover, as discussed below, there are meaningful benefits to be reaped from the change that could actually improve the quality of patents issuing from the USPTO.

D. PRIOR ART UNLIMITED BY GEOGRAPHY: APPLICATIONS

Revising § 102(b) to eliminate the geographical limitation on prior art could result in a provision like the following:

A person shall be entitled to a patent unless-

The invention was part of the prior art more than one year prior to the date of the application for patent. The prior art with respect to an invention shall consist of all information that has been made available to the public anywhere in the world.²¹⁸

Such a definition would retain the beneficial one-year grace period allowing inventors time to assess the commercial potential of their invention and prepare a patent application to cover it, while eliminating artificial and outdated limitations on sources of prior art. Would adopting such a definition really impact the “quality” of U.S. patents? In some cases, yes.

The patentability of an invention is generally assessed at two different points and places: 1) during prosecution of the patent application in the USPTO, and 2) after the patent issues, either in a USPTO post-grant proceeding or in district court litigation. The change in definition of prior art that will come from eliminating the geographical limitation concerns evidence in a form not traditionally considered to any meaningful extent during the examination of patent applications: non-patent, non-printed publication prior art. Consequently, the change will not impact the quality of most patents issuing from the USPTO unless such prior art is asserted in district court litigation involving the patent.²¹⁹

²¹⁸ This language is a variation of an alternative proposed by the WIPO SCP. See Draft Substantive Patent Law Treaty, Sept. 24, 2001, World Intellectual Property Organization, art. 8, para. 1, http://www.wipo.org/scp/en/documents/session_6/pdf/scp6_2.pdf (last visited Nov. 22, 2001) (proposed at Sixth Session, Nov. 5-9, 2001).

²¹⁹ Having to wait until after a patent is issued to attack it is ill-timed because issued patents have a presumption of validity that can only be overcome with a showing of clear and convincing evidence. See 35 U.S.C. § 282 (2000); see also Julie E. Cohen & Mark A. Lemley, *Patent Scope and Innovation in the Software Industry*, 89 CAL. L. REV. 1, 44 (2001) (“To invalidate an issued patent, an infringement defendant must overcome a strong presumption of validity. If an infringement defendant loses a validity

Despite this fact, a new USPTO rule offers a glimmer of hope for improving the quality of patents during prosecution along with a statutory revision of § 102(b) eliminating the geographical limitation on prior art.

Rule 37 C.F.R. § 1.105, entitled *Requirement for Information*, grants USPTO patent examiners broad discretion to require a patent applicant to provide information that is deemed “reasonably necessary” to properly examine the application.²²⁰ This rule, in conjunction with the elimination of the prior art geographical limitation, could go a long way towards eliminating bad patents that cover foreign public knowledge or use while maintaining an applicant’s ability to patent worthy inventions of proper scope and novelty.²²¹

Although the USPTO gives numerous examples of the types of information that can be required from an applicant, an examiner is not limited to those examples.²²² Consequently, the rule should extend to requiring applicants to disclose known uses of a claimed invention (here or abroad), information used in the invention process, country and exact geographical location from which information about the invention was obtained (to aid in prior art searches), any searches of traditional knowledge sources conducted by the applicant, orally transmitted traditional knowledge, and information accessed or believed to be accessible in commercial databases (including depositories).²²³ Properly used by examiners, section 1.105 should result in applicants being more forthcoming with relevant information and thus should allow for improved examination of applications and higher quality

challenge, as most do, the infringement analysis leaves little room for consideration of relevant but uncited prior art.”).

220. 37 C.F.R. § 1.105(a)(1) (2001) provides in relevant part,

In the course of examining or treating a matter in a pending or abandoned application filed under 35 U.S.C. § 111 or 371 (including a reissue application), in a patent, or in a reexamination proceeding, the examiner or other Office employee may require the submission, from individuals identified under § 1.56(c), or any assignee, of such information as may be reasonably necessary to properly examine or treat the matter

221. For example, foreign knowledge or use that is not secret, such as a shaman’s “trade” secrets, would not be deemed publicly accessible and would not constitute relevant prior art. Also, products that are isolated or purified so that they are neither identical to nor obvious in view of a product of nature still would be patentable, though whether the latter category of products *should* be patentable remains a debatable topic.

222. 37 C.F.R. § 1.105 (2001).

223. See Wiser & Downes, *supra* note 137, at 8.

patents.²²⁴

If a patent issues that is not novel or is obvious in view of prior foreign public knowledge or use, a party seeking relief can try to obtain correction of the patent in the USPTO or seek to have the patent invalidated in federal district court litigation. There is currently little chance that it could be corrected in the USPTO by a complaining indigenous group or other third party. This is because reexamination is the only patent correction procedure currently available in the USPTO that may be instigated by a party other than the patentee, and the limitations associated with reexaminations are significant.²²⁵

The current USPTO *ex parte* and *inter partes* reexamination procedures are, in theory, designed to allow for the correction of bad patents that may have slipped through the examination process.²²⁶ In fact, patents on the use of turmeric

224. One could ask whether improving patent quality is even a worthwhile objective. In his essay *Rational Ignorance at the Patent Office*, Professor Mark Lemley posits that because very few patents are actually litigated or licensed, strengthening the USPTO examination process is not cost-effective. Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495, 1497 (2001) (noting that under this reasoning, the USPTO is “rationally ignorant” of the objective validity of patents it issues). He states that instead “society ought to resign itself to the fact that bad patents will issue and [should] attempt to deal with the problem *ex post*, if the patent is asserted in litigation.” *Id.* at 1511.

This position certainly has merit and, of course, litigation still will be the forum where many bad patents will be corrected. Yet changing the definition of prior art to include foreign knowledge or use will not necessarily increase the PTO’s cost of examination (although the cost to the applicant could certainly be expected to increase somewhat). Certainly, to the extent examiners are not familiar with analyzing this type of prior art, more time for examination might be required in the short term. In the longer term, however, eliminating the geographical limitation on prior art need not meaningfully increase the amount of time an examiner spends on a file, but it should improve the quality of his or her examination by allowing more relevant prior art to be reviewed. The USPTO instituted a similar approach for the examination of business method patents, allocating more time for examination where the sources and types of prior art are non-traditional. See UNITED STATES PATENT AND TRADEMARK OFFICE, WHITE PAPER: AUTOMATED FINANCIAL OR MANAGEMENT DATA PROCESSING METHODS (BUSINESS METHODS), <http://www.uspto.gov/web/menu/busmethp/index.html> (March 20, 2000).

225. Reissues and disclaimers, the two other main patent correction measures, may only be initiated by the patentee. 35 USC §§ 251, 253 (2000). While 35 U.S.C. § 301 allows third parties to have copies of prior art patents and printed publications placed in the file of a patent, prior art in other forms is excluded.

226. 35 U.S.C. §§ 302-307, 311-318 (2000).

as a healing aid²²⁷ and on the Ecuadorian ayahuasca plant were both revoked in reexamination proceedings based on prior art printed publications.²²⁸ Yet both reexamination options are deeply flawed and provide even less opportunity for the correction of patents covering foreign public knowledge or use patents than for other types of patents because the “substantial new question of patentability” required for initiation of a reexamination proceeding currently can only be based on prior art patents or printed publications.²²⁹ Consequently, even if the § 102(a) and (b) definitions of prior art are amended to eliminate the geographical “in this country” limitation evidence of prior foreign knowledge or use would not be usable to obtain reexamination of this type of patent. To make reexamination a meaningful alternative to litigation would require legislation allowing evidence of public knowledge or use to provide a basis for instituting a reexamination.²³⁰

Short of new such legislation revamping the patent reexamination system, parties desiring to contest a bad patent on the basis of prior foreign knowledge or use still will be forced to seek relief through federal district court patent invalidity litigation even if the geographical limitation on prior art is eliminated. In this situation, another benefit of the 37 C.F.R. § 1.105 requirement for information becomes apparent. A patent applicant's response to the PTO under 37 C.F.R. § 1.105 must comply with the 37 C.F.R. § 1.56 duty of disclosure and candor imposed on everyone associated with the filing of an application

227. See Kumar, *supra* note 23, at 724.

228. See Fecteau, *supra* note 43, at 85-86.

229. 35 U.S.C. §§ 303, 312.

230. Despite this seemingly bleak situation, there is hope in the form of several pieces of pending legislation. On June 19, 2001, Rep. Zoe Lofgren (D-Calif.) introduced a bill, H.R. 2231, that would expand the types of prior art usable as a basis for inter partes reexamination of an issued patent. Under the bill, anyone, within one year of a patent's issuance, could request reexamination based on “evidence of subject matter described in section 102(a) or (b) [including prior sale, knowledge, or public use], alone or in combination with prior art that may be cited under section 301 [patents and printed publications].” H.R. 2231, 17th Cong. (2001) (latest major action referred to the House Committee on the Judiciary, June 19, 2001, *available at* <http://thomas.loc.gov/home/thomas.html>). Allowing prior foreign knowledge or use to be used in a reexamination could be decisive in determining whether a patent should be revoked. For example, as noted earlier, none of the challenges to U.S. patents related to neem oil have as yet been successful. Unfortunately, both the timing and likelihood of passage of any such legislation—to change the definition of prior art or to improve reexamination proceedings—is uncertain.

for patent.²³¹ Consequently, if a party attacking a patent is able to show that the patentee intentionally withheld information material to patentability, especially in response to a requirement for information from the PTO, the patent could be rendered unenforceable for inequitable conduct.²³² Such a possibility should encourage applicants to be forthcoming in providing evidence of use, even non-published use, that could be material to patentability and certainly information that is specifically requested by the examiner.²³³

Eliminating the geographical limitation on prior art is not a fix-all for the patent system. Even with the change bad patents will still issue. This is not to suggest that eliminating the geographical limitation is pointless. It is an important first step in the task of making patent law more robust and just.

CONCLUSION

It is past time for the United States, through Congress or the Supreme Court, to comply with the Constitution and acknowledge that the world is too small for the continued exclusion of evidence of foreign public knowledge or use from patentability analyses. Public knowledge or use of an invention anywhere in the world is something that we all share as part of

231. 37 C.F.R. § 1.56(a) (2001).

232. *GFI, Inc. v. Franklin Corp.*, 265 F.3d 1268, 1272-75 (Fed. Cir. 2001)(holding patent unenforceable for inequitable conduct where patentee failed to disclose material prior art references).

233. See *Critikon, Inc. v. Becton-Dickinson Vascular Access, Inc.*, 120 F.3d 1253, 1257 (Fed. Cir. 1997) (noting that “[i]t is axiomatic that ‘[c]lose cases should be resolved by disclosure, not unilaterally by applicants’” (quoting *LaBounty Mfg., Inc. v. United States Int’l Trade Comm’n*, 958 F.2d 1066, 1076 (Fed. Cir. 1992))). The court also noted that

[n]o single factor or combination of factors can be said always to require an inference of intent to mislead; yet a patentee facing a high level of materiality and clear proof that it knew or should have known of that materiality, can expect to find it difficult to establish “subjective good faith” sufficient to prevent the drawing of an inference of intent to mislead. A mere denial of intent to mislead (which would defeat every effort to establish inequitable conduct) will not suffice in such circumstances.

Id.

Another ramification of eliminating the geographical limitation is that the hypothetical person of ordinary skill in the art would be charged with foreign public knowledge or use in the same way that this hypothetical person is charged with knowledge of public use in private laboratories and of doctoral theses in far away libraries. This change may not result in many findings that an invention is anticipated, but, if properly applied, could be quite relevant in obviousness determinations.

the global public domain.

Over the past twenty years we have witnessed the ever-expanding scope of subject matter deemed eligible for utility patent protection under 35 U.S.C. § 101. Living organisms,²³⁴ computer software,²³⁵ business methods,²³⁶ and most recently, sexually reproduced plants²³⁷ have all been identified as clearly appropriate subject matter under U.S. patent law. As the Supreme Court and Congress have made clear, “anything under the sun that is made by man” is patent-eligible, regardless of geographic origin.²³⁸ If that is indeed the case, then certainly the prior art against which the patentability of that subject matter will be measured must be equally as inclusive without regard to the geographical origin of the information.

The Intellectual Property Clause of the Constitution only authorizes Congress to secure exclusive rights to inventors for the purpose of advancing the progress of the useful arts. “The [Intellectual Property Clause] itself reflects a balance between the need to encourage innovation and the avoidance of monopolies which stifle competition without any concomitant advance in the ‘Progress of Science and useful Arts.’”²³⁹ To the extent § 102’s geographical limitation allows for the reward of patent rights without the requisite concomitant advance in the useful arts, it is unconstitutional.

Elimination of the “in this country” limitation on non-patent or published prior art in U.S. patent law is long overdue.

234. See, e.g., *Diamond v. Chakrabarty*, 447 U.S. 303, 313 (1980) (holding that genetically engineered micro-organisms qualify as “patentable subject matter under § 101”).

235. See, e.g., *AT&T Corp. v. Excel Communications*, 172 F.3d 1352, 1361 (Fed. Cir. 1999) (holding that a patent claim to a computer program is in “the broad scope of patentable subject matter under § 101”); *In re Alappat*, 33 F.3d 1526, 1545 (Fed. Cir. 1994) (en banc) (concluding that “a computer operating system pursuant to software may represent patentable subject matter” if it “meets all of the other requirements of Title 35”).

236. See, e.g., *State Street Bank & Trust v. Signature Fin. Group, Inc.*, 149 F.3d 1368, 1375 (Fed. Cir. 1998) (noting, in dicta, that there is no exception to the patentability of business methods under § 101).

237. See, e.g., *J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred Int’l, Inc.*, 122 S. Ct. 593, 606 (2001) (holding that “newly developed plant breeds fall within the terms of § 101”).

238. *Diamond*, 447 U.S. at 309 (quoting S. REP. NO. 82-19709, at 5 (1952) and H.R. REP. NO. 82-1923, at 6 (1952)).

239. *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 146 (1989).

The U.S. Constitution requires it, and the benefits from harmonization, improved patent quality, and reduced prices due to healthy competition for subject matter in the global public domain, are significant. Elimination of the hypocritical and imperialistic practice of denying the value and legitimacy of foreign knowledge or use simply because it did not occur within U.S. borders is also long overdue. Changing the definition of prior art is not a complete solution to the problems engendered by patents covering foreign knowledge or use; however, it is a necessary action for the United States to take in this small, small world.