Universal Minimum Standards of Intellectual Property Protection under the TRIPS Component of the WTO Agreement

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I. Preliminary Considerations

The absorption of classical intellectual property law into international economic law will gradually establish universal minimum standards governing the relations between innovators and second comers in an integrated world market. This author’s previous articles focused on the broader legal and economic implications of this trend. The object here is to convey a more detailed and comprehensive

1. For a perceptive analysis of the conditions favoring the growth of universal legal standards generally, see Jonathan I. Charney, Universal International Law, 87 AM. J. INT’L L. 529, 543-50 (1993) (stressing “central role” of multilateral forums “in the creation and shaping of contemporary international law” and the ability of these forums to “move the solutions substantially towards acquiring the status of international law”).


picture of all the important substantive provisions contained in the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement), as finalized at Marrakech, Morocco, on April 15, 1994.

A. LOGIC OF THE TRIPS AGREEMENT

Among the many causes of the drive to overcome preexisting territorial limitations on intellectual property rights, two merit attention here. First, the growing capacity of manufacturers in developing countries to penetrate distant markets for traditional industrial products has forced the developed countries to rely more heavily on their comparative advantages in the production of intellectual goods than in the past. Second, the rise of knowledge-based industries radically altered the nature of competition and disrupted the equilibrium that had resulted from more traditional comparative advantages. Not only is the cost of research and development often disproportionately higher than in the past, but the resulting innovation embodied in today's high-tech products has increasingly become more vulnerable to free-riding appropriators. Market access for developing countries thus constituted a bargaining chip to be exchanged for greater protection of intellectual goods within a restructured global marketplace.


In response to these challenges, the TRIPS Agreement mandates mostly time-tested, basic norms of international intellectual property law as enshrined in the Paris Convention for the Protection of Industrial Property, last revised in 1967, and the Berne Convention for the Protection of Literary and Artistic Works, last revised in 1971, or in certain domestic institutions, such as laws protecting confidential information, that all developed legal systems recognize in one form or another. It also leaves notable gaps and loopholes that will offset some of the gains accruing from the exercise, especially with respect to nontraditional objects of intellectual property protection. In this respect, “both the strengths and weaknesses of the TRIPS Agreement stem from its essentially backwards-looking character.”

To the extent that the TRIPS Agreement significantly elevates the level of protection beyond that found in existing conventions, as certainly occurs with respect to patents, for example, the developing countries are usually afforded safeguards that few would have predicted at the outset of the negotiations. Nevertheless, both developed and developing countries guarantee that detailed “enforcement procedures as specified in this [Agreement] are available under their national laws,” and they all become liable to dispute-settlement machinery for claims of nullification and impairment of benefits that can lead to cross-sectoral trade sanctions.

B. Basic Principles

Perhaps the most important “basic principle” that applies virtually across the board is that of national treatment of (that is, nondiscrimination against)

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Footnotes:


11. Cf., e.g., Hanns Ullrich, GATT: Industrial Property Protection, Fair Trade, and Development, in GATT or WIPO, supra note 2, at 187 (criticizing maximalist objectives of early initiatives); Reichman, GATT Connection, supra note 2, at 869-91 (defending the goal of harmonizing minimum—not maximum—standards that had achieved broad consensus).

12. See TRIPS Agreement, supra note 4, arts. 41-50; see also Monique L. Cordray, GATT v. WIPO, 76 J. PAT. TRADEMARK OFF. SOC'Y 121, 135 (1994) (stating that “[p]erhaps the most significant milestone in TRIPS is the enforcement provisions”).

13. See TRIPS Agreement, supra note 4, arts. 63-64. See further infra text accompanying notes 311-26.

14. See TRIPS Agreement, supra note 4, arts. 1-8, which collectively comprise “Part I—General Provisions and Basic Principles.”
foreign rights holders.15 This principle of equal treatment under the domestic laws is then carried over to relations between states in the most-favored-nation (MFN) provisions of article 4.16 The latter article ostensibly prevents one member country from offering a better intellectual property deal than is required by international law17 to nationals of a second member country and then denying similar advantages to the nationals of other member countries.

Taken together, the national treatment and MFN provisions attempt to rectify the damage that some states recently inflicted on the international intellectual property system by unilaterally asserting claims of material reciprocity with respect to hybrid legal regimes falling in the penumbra between the Paris and Berne Conventions.18 In practice, however, certain express limitations could diminish the effectiveness of these basic requirements. For example, while the national treatment and MFN clauses both apply "with regard to the protection of intellectual property,"19 it turns out that, for purposes of the TRIPS Agreement, the term "intellectual property" refers only to seven of the eight subject-matter categories enumerated in sections 1 through 7 of part II. These include (1) copyrights and related rights; (2) trademarks and (3) geographical indications; (4) industrial designs; (5) patents; (6) integrated circuit designs; and (7) trade secrets or confidential information.20 As regards neighboring rights covered by the International Convention for the Protection of Performers, Producers of Phonograms and Broadcasting Organizations (Rome Convention),21 national treatment and the

15. See id. art. 3(1) (requiring each member to accord the nationals of other member states "treatment no less favorable . . . with regard to the protection of intellectual property" than each state accords to its own nationals (emphasis supplied)). For this purpose (and that of the MFN clause as well, see infra note 16 and accompanying text), "protection" is broadly defined to include "matters affecting . . . availability, acquisition, scope, maintenance and enforcement of intellectual property rights as well as . . . matters affecting the use of [such] rights specifically addressed" in the TRIPS Agreement. Id. art. 3(1) n.3. However, the requirement of national treatment is expressly subject to exceptions already provided in the Paris and Berne Conventions, supra note 8, and to exceptions recognized in both the International Convention for the Protection of Performers, Producers of Phonograms and Broadcasting Organizations, adopted at Rome, Italy, Oct. 26, 1961, 496 U.N.T.S. 43 [hereinafter Rome Convention] and in the Treaty on Intellectual Property in Respect of Integrated Circuits, opened for signature at Washington, D.C., May 26, 1989, 28 I.L.M. 1477 [hereinafter IPIC Treaty]. See TRIPS Agreement, supra note 4, arts. 1(3) n.1, 3(1). The United States is not a party to the Rome Convention.

16. TRIPS Agreement, supra note 4, art. 4.

17. Cf. id. art. 1(1) (allowing member states to "implement in their [domestic] law more extensive protection than is required by this Agreement").

18. See, e.g., Thomas Dreier, National Treatment, Reciprocity and Retorsion—The Case of Computer Programs and Integrated Circuits, in GATT OR WIPO, supra note 2, at 63, 70-73; Reichman, Legal Hybrids, supra note 6, at 2448-55, 2500-04.

19. See TRIPS Agreement, supra note 4, arts. 3(1), 4.

20. See id. arts. 1(2), 9-40. The eighth (and presumably exempted) subject-matter category mentioned in Part II of the Agreement is entitled "Control of Anti-Competitive Practices in Contractual Licenses;" see infra text accompanying notes 264-77.

MFN clause apply only to those rights that the TRIPS Agreement selectively provides, but not to rights generally flowing from that Convention.\textsuperscript{22}

The precise mesh of these provisions remains to be seen, but the following overall framework seems plausible. First, international intellectual property treaties existing at the time that the TRIPS Agreement takes effect\textsuperscript{23} are generally immunized from the MFN clause (but not the national treatment clause except as expressly provided) under a grandfather provision within the TRIPS Agreement, which only this Agreement can override.\textsuperscript{24} Second, existing and future agreements establishing "customs unions and free-trade areas" of a regional character may, to varying degrees, be immunized from applying MFN treatment, and possibly national treatment, to some non-TRIPS-mandated intellectual property measures affecting intra-regional adherents, at least insofar as past practice under article XXIV of the General Agreement on Tariffs and Trade is carried over to the WTO Agreement and applied to intellectual property rights.\textsuperscript{25} Third, states otherwise contemplating unilateral measures to protect intellectual property rights in the future must generally weigh the costs and benefits of nonreciprocity\textsuperscript{26} with respect to other WTO member countries, unless the measures contemplated fall outside the seven categories of "intellectual property" recognized by the TRIPS Agreement\textsuperscript{27} and outside

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\item See TRIPS Agreement, supra note 4, arts. 3(1), 4(b).
\item See Final Act, supra note 4, para. 3 (setting Jan. 1, 1995, as target date for entry into force, if possible); WTO Agreement, supra note 4, arts. VIII, XIV; see also URAA, supra note 4, § 101(b) (authorizing President to implement WTO Agreement after determining that "a sufficient number of foreign countries are accepting the obligations of the Uruguay Round Agreements").
\item See TRIPS Agreement, supra note 4, art. 4(d) (with the proviso that immunized measures "not constitute an arbitrary or unjustifiable discrimination against nationals of other members"); see also id. art. 4(b) (exempting inconsistent provisions of Berne Convention, supra note 8, and Rome Convention, supra note 15).
\item See General Agreement on Tariffs and Trade (as amended through 1994) [hereinafter GATT 1947], art. XXIV, reprinted in RESULTS OF THE URUGUAY ROUND, supra note 4, at 485, 522-25; WTO Agreement, supra note 4, Annex IA: Multilateral Agreements on Trade in Goods—General Agreement on Tariffs and Trade 1947, art. 1, reprinted in RESULTS OF THE URUGUAY ROUND, supra note 4, at 20-21 [hereinafter GATT 1994] (incorporating by reference GATT 1947, supra, art. XXIV); see also GATT 1994, supra, Understanding on the Interpretation of Article XXIV of the General Agreement on Tariffs and Trade 1994, reprinted in RESULTS OF THE URUGUAY ROUND, supra note 4, at 31-34. An analysis of Article XXIV lies beyond the scope of this article. Nevertheless, it suggests the possibility that advantages created under the North American Free Trade Agreement [hereinafter NAFTA] ch. 17 (Intellectual Property), 32 I.L.M. 612, 670, that are not covered by TRIPS need not be granted to non-NAFTA countries that are parties of the WTO Agreement, supra note 4. See also RICHARD E. NEFF & FRAN SMALLSON, NAFTA—PROTECTING AND ENFORCING INTELLECTUAL PROPERTY RIGHTS IN NORTH AMERICA 1-16 (1994).
\item See Reichman, GATT Connection, supra note 2, at 844-48 ("functional implications of non-reciprocity").
\item See supra notes 19-22 and accompanying text. On this reading, the TRIPS Agreement would appear to override unilateral claims to material reciprocity like those incorporated into the United Kingdom's unregistered design right of 1988 (see Copyright, Designs and Patents Act, 1988, ch. 48, §§ 213-264 [hereinafter CDPA]; see also MICHAEL F. FLINT ET AL., INTELLECTUAL PROPERTY—THE NEW LAW 151 (1989) (construing CDPA, supra, § 256, to require material reciprocity) and into the United States' Semiconductor Chip Protection Act of 1984 (SCPA) (Pub. L. No. 98-620,
the residual national treatment clauses of the Paris and Berne Conventions. 28

Whether any specific measures that were arguably not cognizable under existing conventions, such as the European Union's proposed regime to protect electronic data bases 29 or certain levies for private copying of audio and visual recordings like those implemented in France, 30 may escape the MFN and national treatment clauses of the TRIPS Agreement will thus depend on a variety of factors. These include evolving state practice with respect to regional trade agreements and the extent to which decision makers interpret "intellectual property" as narrowly defining the seven categories of subject matter to be protected or as broadly defining certain modalities of protection. 31 It may also depend on who interprets these clauses, given the uncertain jurisdictional and substantive powers of the WTO panels to be established under binding dispute-resolution procedures set out in the TRIPS Agreement. 32 In any event, the drafters seem to have built in some incentives for states contemplating new protectionist measures to seek to address their needs within the framework of ongoing multilateral discussions affecting barriers to trade in general. 33


28. See TRIPS Agreement, supra note 4, arts. 2(1) and 9(1), respectively incorporating by reference Paris Convention, supra note 8, art. 2(1), and Berne Convention, supra note 8, art. 5(1); see also André Kerever, Le GATT et le droit d'auteur international, 47 REVUE TRIMESTRIELLE DE DROIT COMMERCIAL 629, 641 (1994).


30. See, e.g., NEFF & SMALLSON, supra note 25, at 16 (noting denial by France of royalties from audio and video levies, under 1985 Act, to producers and performers where the initial fixation of the production did not occur in France, subject to agreements on reciprocity).

31. The author is indebted to Paul Geller for this flexible reading of "intellectual property." See also Kerever, supra note 28, at 642 (arguing that royalties for private copies of audio and visual recordings fall outside the TRIPS Agreement, whatever their status under other conventions). For parallel tensions concerning application of the national treatment rule under the Paris Convention, compare Reichman, GATT Connection, supra note 2, at 848-54 (stressing broad definition of industrial property as key to application of national treatment under Paris Convention, supra note 8, arts. 1(3), 2(1)) with Hans Peter Kunz-Hallstein, The United States Proposal for a GATT Agreement on Intellectual Property and the Paris Convention for the Protection of Industrial Property, 22 VAND. J. TRANSNAT'L L. 265, 273-77 (arguing that national treatment is limited to modalities of industrial property specifically mentioned in Paris Convention, art. 1(2), and no others).

32. See, e.g., Geller, TRIPS Dispute Settlement, supra note 5, at 104-07; infra text accompanying notes 313-15.

33. See TRIPS Agreement, supra note 4, arts. 68-69, 71(1); infra text accompanying notes 298-309. If so, this weakens the presumption that intellectual property protection was reserved for domestic law, as provided in GATT 1947, supra note 25, art. XX(d). See generally Reichman, GATT Connection, supra note 2, at 828-43 (interpreting ambiguities of GATT's art. XX(d)).
Beyond these equal-treatment obligations, states must accord to the nationals of other member states those international minimum standards of intellectual property protection that are comprised within "the treatment provided for in this [TRIPS] Agreement." One component of this "TRIPS treatment" consists of the basic substantive provisions of the Paris Convention for the Protection of Industrial Property, of the Berne Convention for the Protection of Literary and Artistic Works, and of the Treaty on Intellectual Property in Respect of Integrated Circuits (IPIC Treaty). The other component consists of minimum standards that the TRIPS Agreement applies irrespective of preexisting international norms and sometimes at the expense of those norms. In either case, the relevant standards "are integral parts of this WTO Agreement, binding on all members."

The member states have also agreed to recognize certain fundamental objectives and principles, such as the "promotion of technological innovation" and the legitimacy of public interest exceptions to intellectual property rights generally. These provisions, of capital importance for developing countries, are discussed below.

II. Primary Intellectual Property Regimes: Patents, Trademarks, Copyrights

A. PATENTS

In the course of multilateral negotiations to revise the Paris Convention that preceded the Uruguay Round, the developed countries sought to elevate its rudimentary standards concerning patentable inventions while the developing countries demanded preferential measures that would have weakened even the preexisting obligations that states owed foreign inventors under their domestic laws.

The TRIPS Agreement breaks this impasse and fills many of the gaps in the international patent system with uniform minimum standards of protection that reflect the practices of the developed countries. The TRIPS Agreement also establishes new rules governing permissible limitations on the foreign patentee's

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34. TRIPS Agreement, supra note 4, art. 1(3). Part II of the Agreement as a whole is entitled "Standards Concerning the Availability, Scope and Use of Intellectual Property Rights." See RESULTS OF THE URUGUAY ROUND, supra note 4, at 370.
35. See supra note 8.
36. See IPIC Treaty, supra note 15; TRIPS Agreement, supra note 4, art. 35.
37. See, e.g., TRIPS Agreement, supra note 4, arts. 1(3) (TRIPS treatment), 9(1) (mandating compliance with substantive provisions of Berne Convention, supra note 8, except for art. 6bis concerning moral rights).
38. WTO Agreement, supra note 4, art. II(2) (distinguishing "Multilateral Trade Agreements," including TRIPS, that are binding on all members from "Plurilateral Trade Agreements," see id. art. II(3), which create obligations only for members that have accepted them).
39. See TRIPS Agreement, supra note 4, arts. 7, 8(1).
40. See Reichman, GATT Connection, supra note 2, at 816-18, 817 n.315.
scope of protection, and these rules reflect compromise efforts by both sides to balance private and public interests.

1. Normative Structure

The developed countries scored major achievements in elevating and harmonizing minimum standards of patent protection, especially with regard to basic criteria of eligibility and duration, which the Paris Convention had not addressed. The following provisions are noteworthy:

(1) Member states may not exclude any field of technology from patentability as a whole, and they may not discriminate as to the place of invention when rights are granted.\(^4\)

(2) The domestic patent laws (including that of the United States) must provide a uniform term of twenty years of protection from the filing date, such protection must depend on uniform conditions of eligibility, and specified exclusive rights must be granted.\(^4\)

(3) The patentees' bundle of exclusive rights must include the right to supply the market with imports of the patented products.\(^4\)

(4) Logically, the obligation to work patents locally under article 5A of the Paris Convention appears overridden by the right to supply imports, at least in principle.\(^4\)

These achievements build on standards previously established by the Paris Convention, such as the rights of priority,\(^4\) which even WTO members who do

\(^4\) See TRIPS Agreement, supra note 4, art. 27(1) (providing that “patents shall be available ... without discrimination as to the place of invention, the field of technology and whether products are imported or locally produced”). This necessitated at least one change in U.S. law and practice under 35 U.S.C. § 104 (1988), which discriminates on the basis of the country of invention for purposes of establishing the date of invention and the first inventor. See URRA, supra note 4, § 531 (amending 35 U.S.C. § 104 (1988)); Craig P. Opperman, GATT, WIPO Herald Changes to U.S. Patent Law, 6 J. PROPRIETARY RIGHTS 8 (1994). Query whether 35 U.S.C. § 102(b) (1988) will also require modification.

Some exclusions from patentability remain permissible, for example “diagnostic, therapeutic and surgical methods for the treatment of humans or animals,” and inventions adversely affecting life, health, or the environment. See TRIPS Agreement, supra note 4, arts. 27(2), (3)(a). For permissible exclusions of inventions affecting animals and, to a lesser extent, plants, see infra text accompanying notes 82-97.

\(^4\) See TRIPS Agreement, supra note 4, arts. 27, 28, 33; see also URRA, supra note 4, § 532 (amending 35 U.S.C. § 154 (1988) to extend the duration of patents from 17 years to 20 years from the date of application) and § 533 (amending 35 U.S.C. § 271 (1988)) (clarifying that unauthorized imports and offers to sell constitute infringement); Opperman, supra note 41. To qualify, an invention must be “new, involve an inventive step,” and be “capable of industrial application”; the latter terms are made expressly equivalent to nonobviousness and utility. See TRIPS Agreement, supra note 4, art. 27(1) n.5.

\(^4\) See TRIPS Agreement, supra note 4, art. 28(1). Questions bearing on international exhaustion of patent rights are left unaddressed. See id. arts. 6, 28(8) n.6.

\(^4\) See id. arts. 27(1), 28(1); cf. Paris Convention, supra note 8, art. 5A; G.H.C. BODENHAUSEN, GUIDE TO THE APPLICATION OF THE PARIS CONVENTION FOR THE PROTECTION OF INDUSTRIAL PROPERTY AS REVISED AT STOCKHOLM IN 1967, at 67-73 (1968).

\(^4\) See Paris Convention, supra note 8, art. 4A(1).
not adhere to this Convention must now respect. Single countries may deviate from these universal patent-law standards only to the extent that they benefit from longer or shorter periods of transitional relief, which vary with the beneficiary’s status as either a “developing country” or a “least-developed country (LDC).”

For example, developing countries may postpone implementing most of the required standards for a period of at least five years, and even ten years with respect to fields of technology previously excluded under their domestic patent laws. LDCs obtain a reprieve for ten years, while a showing of hardship may qualify them for further delays and other concessions. Nevertheless, a pipeline provision, clarified at the last minute, safeguards existing pharmaceutical and agrochemical patents, which, if otherwise eligible, must obtain at least five years of exclusive marketing rights even in those developing countries that did not previously grant patents in these fields.

Because inventors in developed countries are eventually entitled to obtain and enforce patents everywhere, competitive pressures in developing countries ought to shift from subject-matter exclusions of patentability to scope of protection issues bearing on single patents, as occurs in developed countries. Firms in developing countries may thus exploit disclosed information in order to work around the claimed inventions as well as any unpatented know-how they fairly obtain, whether disclosed or not. The lack of international standards defining the doctrine of equivalents affords additional room in which to maneuver. Arguably,


47. See, e.g., TRIPS Agreement, supra note 4, arts. 65(1), (2), 66. However, all members must respect the national treatment and MFN requirements from the date that the WTO Agreement, supra note 4, enters into force. See TRIPS Agreement, supra note 4, arts. 65(1), (2), 66(1).

48. See id. arts. 65(1), (2), (4).

49. See id. art. 66(1) (allowing WTO's Council for TRIPS to authorize further extensions); see also WTO Agreement, supra note 4, art. XI(2) (requiring LDCs "only . . . to undertake commitments and concessions to the extent consistent with their individual development, financial and trade needs or their administrative and institutional capabilities."). The principle of differential and more favorable treatment for least-developed countries (as distinct from developing countries under United Nations practice) was thus reinforced at the last moment. Cf. Reichman, GATT Connection, supra note 2, at 816-22, 864-74.

50. See TRIPS Agreement, supra note 4, art. 70(8), (9); supra note 48 and accompanying text. Logically, these pipeline safeguards for existing pharmaceutical and agricultural patents would not apply to least developed countries, which are otherwise exempt from implementing the agreed patent standards for ten years. See supra note 49 and accompanying text.

51. However, laws protecting confidential information must now be respected. See infra text accompanying notes 250-52.

states may also apply a broad experimental use exception so long as the rights holders are notified.\textsuperscript{53} The extent to which developing countries will themselves benefit from stronger patent systems—as distinct from compensatory market access—depends in part on the willingness of firms in developed countries either to increase direct investments in developing countries or to license more of their advanced technology to local firms. Moreover, familiarization with the benefits of the patent system could stimulate greater investment in domestic research and development and should encourage the private sector to develop its own intellectual property.\textsuperscript{54} Nevertheless, the value of a patent system to developing countries remains controversial,\textsuperscript{55} and single developing countries could suffer hardship because of a growing dependence on foreign patents with few countervailing benefits. In such a case, one must acknowledge the achievements of the developing-country negotiators, who have built numerous safeguards and escape hatches into the TRIPS Agreement.

2. Limits of the Patentee's Exclusive Rights

Article 30 of the TRIPS Agreement declares that states should tolerate only "limited exceptions to the exclusive rights" that article 28 confers.\textsuperscript{56} But other articles permit exceptions to the exclusive rights when needed "to protect public health and nutrition, and to promote the public interest in sectors of vital importance" to economic development;\textsuperscript{57} to prevent "abuse of intellectual property rights," including the imposition of unreasonable commercial terms;\textsuperscript{58} and to counteract unreasonable trade restraints and practices that "adversely affect the international transfer of technology."\textsuperscript{59} Governments may also attempt to invoke language in article 7 that envisions the effective transfer and dissemination of

\textsuperscript{53} See TRIPS Agreement, supra note 4, arts. 30, 31(b), (c); cf. Rebecca S. Eisenberg, Patents and the Progress of Science; Exclusive Rights and Experimental Use, 56 U. CHI. L. REV. 1017 (1989).


\textsuperscript{56} See TRIPS Agreement, supra note 6, arts. 28, 30.

\textsuperscript{57} Id. art. 8(1).

\textsuperscript{58} Id. arts. 8(2), 31(b).

\textsuperscript{59} Id. arts. 8(2), 40.
technology among member countries and the maintenance of social and economic welfare as further grounds for regulatory action limiting grants of exclusive rights in appropriate circumstances. These and other articles thus preserve, and may even expand, preexisting grounds for limiting a patentee’s exclusive rights under article 5A of the Paris Convention, which some developed-country delegations had hoped to abrogate.

a. Compulsory Licenses in General

The standard form of remedial action remains compulsory licensing, as it was under article 5A of the Paris Convention, subject to important refinements and conditions that article 31 of the TRIPS Agreement attempts to introduce. In principle, both the public-interest exception and measures to prevent abuse, respectively stipulated in articles 8(1) and 8(2) of the TRIPS Agreement, could justify resort to compulsory licensing. In the past, however, arguments about the meaning of “abuse” engendered considerable controversy. A few developed countries, notably the United States, limited the concept to anticompetitive practices bordering on antitrust violations. Most other countries—and a leading commentator—considered the doctrine of abuse applicable if a patentee fails to work the patent locally in due course or “refuses to grant licenses on reasonable terms and thereby hampers industrial development, or does not supply the national market with sufficient quantities of the patented product, or demands excessive prices for such products.”

The TRIPS Agreement merges this broader concept of abuse with the public-interest exception for purposes of compulsory licensing under article 31. However, considerable effort has been made to discredit the nonworking of foreign patents locally as a sufficient basis for triggering such licenses. The TRIPS Agreement then subjects all nonexclusive compulsory licenses sound-
ing in any of the bases established by articles 8(1) and 8(2) to the conditions of article 31.

So long as the grounds for triggering a nonexclusive compulsory license are rooted in the broad notion of "abuse" under article 8(1), say, because of public-interest considerations or because the patentee refused to authorize the desired use "on reasonable commercial terms and conditions,"68 article 31 requires the would-be licensee to seek a negotiated license from the right holder, and failing this, to pay equitable compensation.69 The victorious licensee could not normally export the products resulting from use of the patent under such a compulsory license.70 Nor could the licensee exclude the foreign patentee from subsequently working the patent locally—in direct competition with the former—once the latter had rectified any grievances that might have justified issuance of a compulsory license in the first place.71

In contrast, a complainant who seeks a compulsory license under article 8(2) to rectify abuse of a patent in the narrow, technical sense familiar from United States law will remain exempt from both the duty to negotiate and restrictions on exports, provided that some judicial or administrative authority deems the patentee's conduct anticompetitive.72 In such a case, "the need to correct anticompetitive practices may be taken into account in determining the amount of remuneration" the patentee will receive.73

The sole exception to the compulsory licensing scheme available under article 31 is for patented "semi-conductor technology." Article 31(c), as revised at the last minute, now limits the granting of compulsory licenses for "other use" of such technology to instances of "public non-commercial use" or to situations in which the compulsory license obviates judicially determined "anti-competitive practices."74 Whether unpatented semiconductor layout designs subject to integrated circuit laws are also immunized from compulsory licenses for "other use" remains to be clarified, as discussed below.75 In any event, these provisions

68. TRIPS Agreement, supra note 4, art. 31(b); see also id. art. 8(1).
69. Id. art. 31(b)-(j) (also requiring judicial review and nonassignability).
70. Id. art. 31(f).
71. Id. art. 31(d). This was a bone of contention in pre-GATT negotiations.
72. See TRIPS Agreement, supra note 4, art. 31(k). Whether these exemptions will apply to any given compulsory license, however, could still depend on unsound distinctions between "public interest" and "abuse," on the one hand, and "anti-competitive practices" on the other. For example, if a government authorizes a compulsory license because the patentee refused to rectify exorbitant prices, is this either a public interest exception under art. 8(1) or the type of abuse otherwise subject to all the limitations of art. 31(b)-(j), or is this an anticompetitive practice within the less restrictive regime of art. 31(k)? To complicate matters further, article 8(2) empowers developing countries to adopt appropriate measures to deal with abusive licensing practices that "adversely affect the international transfer of technology." See further infra text accompanying notes 263-77.
73. TRIPS Agreement, supra note 4, art. 31(k). The use of compulsory licenses for the exploitation of dependent patents is also regulated. See id. art. 31(l).
74. Id. art. 31(c).
75. See id. arts. 35, 37(2); infra text accompanying notes 227-31.
make it harder for interested parties in developing countries to start up local semiconductor industries by persuading their governments to seize foreign semiconductor technologies in the name of overriding public interest.\textsuperscript{76}

On balance, article 31 helps to insulate foreign patentees from confiscatory practices that earlier proposals to reform article 5A of the Paris Convention appeared to tolerate, while it affords the developing countries broad grounds for curbing conduct that seriously compromises their national development strategies. Apart from semiconductor technologies, the requirement that would-be compulsory licensees negotiate seriously with rights holders to obtain exclusive licenses on reasonable terms should increase the pressure on foreign patentees to accommodate pricing and other strategies to local market conditions. This, in turn, should lessen the need for governments to seek compulsory licensing in the first instance.

b. New Dimensions of the Public-Interest Exception

Beyond traditional notions of "public interest" and "abuse," the TRIPS Agreement introduces new and more expansive concepts whose outer limits have yet to be delineated at the international level. In particular, article 7 stresses the "promotion of technological innovation and . . . the transfer and dissemination of technology . . . in a manner conducive to social and economic welfare." Article 8(1) expands potential public-interest exceptions to sectors other than public health and nutrition that are "of vital importance to . . . socio-economic and technological development," and article 8(2) seeks to ensure "the international transfer of technology."\textsuperscript{77} In addition, article 66 underscores the LDCs' "need for flexibility to create a viable technological base," and it must be read in conjunction with the other provisions favoring this group of countries.\textsuperscript{78}

All these provisions arm developing and least-developed countries with legal grounds for maintaining a considerable degree of domestic control over intellectual property policies in a post-TRIPS environment, including the imposition of compulsory licenses within article 31 of the TRIPS Agreement and article 5A of the Paris Convention.\textsuperscript{79} While the meaning of any particular clause must emerge from evolving state practice, taken together they clearly sanction public-interest exceptions of importance to the developing countries while rejecting the more extreme measures these countries proposed during the Paris Revision process.\textsuperscript{80}


\textsuperscript{77} See TRIPS Agreement, supra note 4, arts. 7, 8(1), (2); see also infra text accompanying notes 322-27 (correlation with dispute resolution procedures).

\textsuperscript{78} See TRIPS Agreement, supra note 4, art. 66(1); supra note 49 (quoting WTO Agreement, supra note 4, art. XI(2)).

\textsuperscript{79} Until a WTO dispute-settlement panel, see infra text accompanying notes 313-15, determines the extent, if any, to which Paris Convention art. 5A remains outside the purview of TRIPS Agreement art. 31, states seeking to impose compulsory licenses on patentees without respecting the safeguards of art. 31 bear a heavy and risky burden.

\textsuperscript{80} See Reichman, \textit{GATT Connection}, supra note 2, at 817 n.315 (citing authorities).
Eventually, specific public-interest safeguards essential to national economic development will have to be worked out on a case-by-case basis, in order to deal with particular complaints about the socially harmful effects of technological dependency that are not offset by enhanced market access, and the resulting compromises are likely to give both sides less than they want.

3. Nontraditional Subject Matters

The principle weakness of the TRIPS Agreement stems from "the drafters' technical inability and political reluctance to address the problems facing innovators and investors at work on important new technologies in an Age of Information." This shortcoming particularly affects biotechnology and computer programs.

a. Biotechnology and Plant Varieties

In establishing the patentability of biogenetically engineered products, article 27(3)(b) of the TRIPS Agreement follows the European Patent Convention of 1973 and not the more protectionist approach of U.S. law. As a result, adherents to TRIPS must generally provide patent protection for microorganisms and for "nonbiological and microbiological processes," on the doubtful premise that the patenting of microorganisms and microbiological processes does not entail the protection of life forms. In the same vein, states need not allow the patenting of higher organisms, whether plant or animal, nor must they protect "essentially biological processes for the production of plants or animals."

However, a state that excludes plants from its domestic patent law must protect plant varieties under a *sui generis* legal regime, such as the United States Plant Variety Protection Act. This Act, as adopted in 1970, was modeled on the

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83. TRIPS Agreement, supra note 4, art. 27(3)(b).

84. Id.

85. Id. (requiring protection of plant varieties "either by patents or by an effective *sui generis* system or by any combination thereof").

International Convention for the Protection of New Varieties of Plants (UPOV Convention), and the implication of the relevant TRIPS provision is that states unwilling to recognize plant patents should at least conform to UPOV Convention standards. Meanwhile, a 1991 revision of the UPOV Convention elevated these standards of protection from a modified copyright model to a modified patent model, and developed countries, including the United States, have taken steps to implement these changes in their domestic laws. Whether developing countries will adhere to the latest version of UPOV remains to be seen.

In general, the line of demarcation between micro and macrobiological advances is technically unsound, and the application of standard patent-law doctrines to biogenetic engineering has proved unsatisfactory. Even when patents become formally available, the scope of protection remains uncertain, while the now universal standard of nonobviousness could leave investors in the most innovative and commercially valuable applications of scientific know-how to industry unprotected and increasingly vulnerable to free-riding appropriators. Yet, given the lack of consensus concerning remedial action in either patent law or sui generis regimes, the TRIPS Agreement leaves the field pretty much as it stands, with a built-in promise to revisit this topic in four years’ time.

These ambiguities allow states to exclude the most controversial biogenetic subject matter, if they so desire, and also to opt for sui generis protection of plant varieties. At the same time, firms in both developed and developing countries may seek to patent biogenetic innovations abroad that would not be patentable at home, owing to the lack of agreed international standards. Even determining

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88. See supra note 85 (quoting TRIPS language requiring “an effective sui generis system”).
89. See UPOV 1991, supra note 87; see also Reichman, Legal Hybrids, supra note 6, at 2467-70.
90. See supra note 86.
93. See TRIPS Agreement, supra note 4, art. 27(1) n.5.
94. See generally Reichman, Legal Hybrids, supra note 6, at 2471-72, 2511-19; see also infra text accompanying notes 216-18.
95. See TRIPS Agreement, supra note 4, art. 27(3)(b).
96. See, e.g., Martin & Amster, supra note 81 (noting complaints that TRIPS refusal to address these issues effectively removed “many biotechnical products from the required umbrella of international patent protection”).
which strategy best suits particular developing countries will raise hard questions, especially in view of other incentives that developed country firms may make available through negotiated arrangements.97

b. Computer Programs

As regards information technologies, the TRIPS Agreement opts for copyright (and trade secret) protection of computer programs,98 not patent protection, the availability of which remains unsettled and controversial in most developed countries.99 Because the TRIPS provisions do prohibit field-specific exclusions of patentable subject-matter,100 one can nonetheless argue that the domestic patent laws must recognize some program-related inventions if they meet other criteria of eligibility, including the nonobviousness standard.101 There is, however, even less consensus concerning the proper application of patent-law doctrines to computer programs than exists with respect to biogenetic engineering.102 Hence, any developed or developing country that disfavors patent protection of computer software may allow its judicial or administrative authorities to emulate the many restrictive doctrines and practices recognized by developed legal systems, without running afoul of its TRIPS obligations.103

Perhaps the most accurate conclusion is that the TRIPS Agreement "leaves both developed and developing countries free to determine the level of patent protection to be afforded program-related inventions within their domestic jurisdictions, but not free to impose their . . . [respective] decisions on other member countries."104 This lack of reciprocity, in turn, creates unusual strategic opportunities for alert entrepreneurs. For example, the growing reliance on software-related patents in a few developed countries, notably the United States and Ja-

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97. See further Reichman, TRIPS and Developing Countries, supra note 3, at 10-11.
98. See TRIPS Agreement, supra note 4, arts. 10(1), 39; infra text accompanying notes 191-218, 250-262.
100. See supra note 41 and accompanying text.
102. Specifically, there is no consensus with respect to judicial exclusions for laws of nature and naturally occurring phenomena; scientific principles or mathematical formulas; abstract ideas, such as methods for doing business; mental processes as such; and, in the European Union, for "presentations of information." Equally unsettled are judicial applications of the novelty and nonobviousness criteria as well as issues pertaining to scope of protection. See, e.g., Samuelson et al., Manifesto, supra note 99, at 2343-47 (citing authorities); Hanneman, supra note 99, at 70-85 (citing European Patents Convention, supra note 82, art. 52(2)); see also Pamela Samuelson, Benson Revisited: The Case Against Patent Protection for Algorithms and Other Computer Program-Related Inventions, 39 EMORY L.J. 1025, 1032-40, 1083-92, 1122-33 (1990).
103. See supra note 102. See generally Reichman, Know-How Gap in TRIPS, supra note 10, pt. I.A. ("Computer Program-Related Interventions").
104. Reichman, TRIPS Component, supra note 2, at 202.
means that patentees in those countries may only succeed in excluding other countries’ programs as infringing imports on their own territories. They cannot stop firms in other countries, including developing-country firms, from ignoring foreign software patents at home or in third-country markets where such patents are not recognized. By the same token, producers may opt to patent software inventions in countries where program-related patents are issued, even if they could not obtain similar protection at home, under the principles of national treatment and independence of patents that the Paris Convention imposes on all TRIPS signatories. 106

B. TRADEMARKS, GEOGRAPHICAL INDICATIONS OF ORIGIN, AND ANTICOUNTERFEITING MEASURES

From the international legal standpoint, a formal consensus to regulate both trademarks and geographical indications has long existed under the Paris Convention. 107 For example, this Convention established basic international minimum standards governing priority rights 108 and the imposition of compulsory licenses, 109 and it mandated the independence of marks for purposes of domestic adjudication. 110 In addition, the Paris Convention sets out general provisions concerning the protection of well-known marks; 111 the assignment of marks; 112 the duty of all member countries to protect the integrity of marks registered as such in other member countries; 113 the duty to protect service marks, 114 collective marks, 115 and trade names, 116 and it purports to recognize even a duty to seize imported goods unlawfully bearing trademarks or other false indications of source. 117

In retrospect, the weakness of the international regime governing trademark protection derived only in part from the failure of key developing countries to adhere to the Paris Convention (or to its later versions), 118 and mainly from the

105. See supra note 102.
106. See TRIPS Agreement, supra note 4, arts. 2(1), 3, 4; Paris Convention, supra note 8, arts. 2(1), 4(bis)(1).
107. See, e.g., Paris Convention, supra note 8, art. 1(2), which provides: “The protection of industrial property has as its object patents, utility models, industrial designs, trademarks, service marks, trade names, indications of source or appellations of origin, and the repression of unfair competition.”
108. See id. art. 4(A)(1), (C)(1) (period of priority for registration of trademarks to be six months).
109. See id. art. 5(C)(1).
110. See id. art. 6.
111. See id. art. 6bis.
112. See id. art. 6quater.
113. See id. art. 6quinquies.
114. See id. art. 6sexies.
115. See id. art. 7bis.
116. See id. art. 8.
117. See id. arts. 9, 10, 10ter.
118. See, e.g., Piatti, Measures to Combat International Piracy, 11 E.I.P.R. 239, 242 (1989) (nonmembers include key developing countries in Southeast Asia, notably India, Latin America, and the Middle East, plus countries such as Brazil, that adhere to less protective versions of the Paris Convention).
lax enforcement of existing norms that state practice tolerated.  

For example, states could usually discharge their obligations by enacting the pertinent legislation, without regard to the level of protection actually provided, so long as they respected national treatment. Nor would a state whose judicial or administrative apparatus failed to repress traffic in goods bearing counterfeit marks necessarily violate the Convention, notwithstanding formal commitments to the contrary in articles 9(1) and 10ter.

The TRIPS Agreement breaks with this tradition. It augments the minimum standards of protection for trademarks generally and initiates action to establish tough standards for geographic indications of origin. Above all, this Agreement appears to mandate strict enforcement of both old and new substantive norms, and it establishes the necessary legal machinery for this purpose.

1. Trademarks

Besides requiring all WTO member countries to comply with the relevant international minimum standards already set out in the Paris Convention, the TRIPS Agreement establishes a universally valid legal definition of a trademark. It then invests owners of registered marks with the exclusive right to prevent third parties from using similar marks for goods or services when such use would produce a "likelihood of confusion." The trademark owner's exclusive right must last at least seven years after initial registration or after each renewal of registration, and the principle of indefinitely renewable registrations is established for trademarks, but not apparently for service marks.

While states may continue to condition registration—but not the filing of an application for registration—on actual use of a given trademark, cancellation requires "an uninterrupted period of at least three years of non-use," and government actions that hinder such use will not constitute legally valid excuses. Member states can no longer require foreign trademark owners to couple their

119. See, e.g., Reichman, GATT Connection, supra note 2, at 770-75 (citing authorities).
120. See, e.g., Paris Convention, supra note 8, art. 2(1); Kunz-Hallstein, supra note 31, at 268, 278; Piatti, supra note 118, at 242-43.
121. See, e.g., Paris Convention, supra note 8, art. 9(6) (postponing sine die the obligation to enact laws permitting seizure of counterfeit goods); Bodenhausen, supra note 44, at 136, 139; see also 2 Stephen P. Ladans, Patents, Trademarks, and Related Rights: National and International Protection 1284 (1975).
122. See TRIPS Agreement, supra note 4, art. 2(1); supra notes 107-17 and accompanying text.
123. See TRIPS Agreement, supra note 4, art. 15(1).
124. See id. art. 16(1). For the view that strengthened international protection of trademarks should benefit even the developing countries over time, see Reichman, TRIPS and Developing Countries, supra note 3, at 18-20.
125. See TRIPS Agreement, supra note 4, art. 18; see also Cordray, supra note 12, at 127-28.
126. See TRIPS Agreement, supra note 4, art. 15(3); cf. Lanham Act, 15 U.S.C. § 1051 (1988). States must afford petitioners a reasonable opportunity to cancel registration, but opposition proceedings are not mandated. TRIPS Agreement, supra note 4, art. 15(5).
127. See TRIPS Agreement, supra note 4, art. 19(1).
marks with the indigenous marks of local firms. Nor can they impose compulsory licenses or deny the principle of free assignability of marks with, or without, the business to which they pertain.

Finally, the protection of well-known marks under article 6bis of the Paris Convention has been strengthened in at least two ways. First, that article now applies expressly to services. Second, the same provision extends even to dissimilar goods or services when use of a registered mark would likely indicate a harmful connection between those dissimilar goods or services and the owner of the registered mark. Whether U.S. compliance with this provision will require the enactment of a federal dilution statute remains to be seen. In any event, owners of well-known marks will benefit more from the anticounterfeiting measures discussed below than from this back-handed foray into the still controversial theory of dilution.

2. Geographical Indications of Source

Geographical indications identify a good as originating in a particular region, locality, or territory "where a given quality, reputation or other characteristic of the good is essentially attributable to its geographical origin." Article 22 of the TRIPS Agreement appears to institute relatively strong protection against misleading and certain unfair uses of such indications, and article 23 appears to confer even stronger protection for geographical indications pertaining to wines and spirits, which are exempted from the likelihood of confusion test. However, three grandfather clauses retard the attainment of these goals. One such clause exempts those who have already used geographical indications of wines

128. Id. art. 20.
129. Id. art. 21.
130. See Paris Convention, supra note 8, art. 6bis.
131. See TRIPS Agreement, supra note 4, art. 16(2).
132. See id. art. 16(3).
133. The dilution doctrine protects strong marks against a material reduction in value through use by third parties even where there is no competition between them or even a likelihood of confusion between the marks. See, e.g., J. Thomas McCarthy, 2 McCarthy Trademarks and Unfair Competition § 24.13 (3d ed. 1992); Jerome Gilson, A Federal Dilution Statute: Is It Time?, 83 Trademark Rep. 107 (1993). About half the states in the United States have adopted dilution statutes, while courts in the remaining states can reach similar results by a variety of doctrines. See generally Gilson, supra.
134. TRIPS Agreement, supra note 4, art. 22(1).
135. See id. arts. 22-23. The TRIPS Agreement thus incorporates principles set out in the Lisbon Arrangement for the Protection of Appellations of Origin and Their International Registration, adopted on October 31, 1958, and revised at Stockholm, July 14, 1967 [hereinafter Lisbon Agreement], reprinted in 3 Ladas, supra note 121, at 1954-57, which had attracted only sixteen signatories. See, e.g., 2 Ladas, supra note 121, at 1602-11; Cordray, supra note 12, at 128.
136. See TRIPS Agreement, supra note 4, art. 23(1); cf. Lisbon Arrangement, supra note 135, art. 3.
137. "The grandfather rights are most likely a compromise between the French wineries, . . . and the U.S. wineries who are also using French geographic indications, such as burgundy, to identify their wines." Cordray, supra note 12, at 128-29.
and spirits for at least ten years.\textsuperscript{138} A second and broader grandfather clause exempts acquired rights pertaining to trademarks already "applied for or registered in good faith" or to marks "acquired through use in good faith."\textsuperscript{139} A third clause exempts geographical indications that have become generic or customary terms in the territories of member states.\textsuperscript{140}

The stage has, therefore, been set for mandatory future negotiations "aimed at increasing the protection of individual geographical indications."\textsuperscript{141} Given the economic logic of trade negotiations, further progress in this area will probably require offsetting forms of trade compensation for the adversely affected states.

3. Anticounterfeiting Measures

The TRIPS Agreement requires members to provide detailed enforcement procedures,\textsuperscript{142} and these procedures must afford rights holders the possibility of obtaining injunctions and provisional measures to prevent infringements.\textsuperscript{143} The Agreement also fulfills an earlier goal of the Paris Convention by instituting "Special Requirements Related to Border Control Measures."\textsuperscript{144} These provisions enable rights holders to take legal action to require the domestic customs authorities to suspend the release of imported goods into free circulation whenever the complainants have valid grounds for suspecting that the items in question are "counterfeit trademark or pirated copyright goods."\textsuperscript{145} For this purpose, "counterfeit trademark goods" are defined as goods or packaging that bear unauthorized trademarks identical or similar to registered marks for such goods; and "pirated copyright goods" are defined as "unauthorized direct copies of protected Articles the making of which would have infringed either copyright law or related rights laws in the country of importation."\textsuperscript{146} The seizure provisions would thus apply to sound recordings protected only under a neighboring rights law\textsuperscript{147} as well as to more traditional literary and artistic works.

The imposition of border controls to repress imports of counterfeit goods represents one of the most overdue and promising results of the TRIPS exercise, provided that states implement these measures in a genuinely nondiscriminatory

\textsuperscript{138} See TRIPS Agreement, supra note 4, art. 24(4).
\textsuperscript{139} See id. art. 24(5).
\textsuperscript{140} See id. art. 24(6).
\textsuperscript{141} See id. art. 24(1); see also id. art. 24(2) (mandatory review by council for TRIPS within two years from the time that the WTO Agreement enters into force).
\textsuperscript{142} TRIPS Agreement, supra note 4, arts. 41(1), 42-50; see infra text accompanying notes 310-11.
\textsuperscript{143} Id. arts. 44, 50; see also Cordray, supra note 12, at 135-37 (stressing importance of enforcement provisions, including border controls and both civil and criminal penalties).
\textsuperscript{144} See TRIPS Agreement, supra note 4, Title to Part III, Sec. 4; id. arts. 51-60; see also Paris Convention, supra note 8, arts. 9, 10, 10ter, 10bis; supra note 121 and accompanying text.
\textsuperscript{145} TRIPS Agreement, supra note 4, art. 51.
\textsuperscript{146} Id. art. 51 n.14.
\textsuperscript{147} Id.; see infra text accompanying notes 153-57, 177-80.
fashion and do not erect disguised barriers to trade. However, such measures will succeed only so long as the participating states enforce them vigilantly, and no weak links appear in the chain. To this end, both developed and developing countries will have to curb powerful vested interests.

C. COPYRIGHTS AND NEIGHBORING RIGHTS

Unlike the Paris Convention with its rudimentary framework of transnational protection for patentable inventions, the Berne Convention for the Protection of Literary and Artistic Works, as revised in 1971, provides relatively high and uniform standards of protection for authors and artists in more than eighty countries. The Berne Convention also contains an appendix of preferential measures, adopted in 1971, which enable nationals of developing countries to secure nonexclusive compulsory licenses on favorable terms. These licenses facilitate local efforts to translate or otherwise reproduce foreign literary, scientific, and artistic works that are needed for teaching, scholarship, or research purposes. At the same time, the appendix forbids exports of works published under these compulsory licenses, and it recognizes a graduation principle applicable to states that attain higher levels of development.

Against this background, progress in international copyright protection under the TRIPS Agreement depended initially on the adherence of the United States to preexisting minimum standards. This occurred in 1989, when this country joined the Berne Union. However, the United States did not adhere to the Rome Convention of 1961, which extended an experimentally protective mantle to certain related or "neighboring" productions not covered by the Berne Convention, including sound recordings, run-of-the-mill radio and television broadcasts, and performing artists' renditions of otherwise copyrightable works. Although a


149. See Berne Convention, supra note 8.


151. See Berne Convention, supra note 8, art. 21, app. arts. I-VI; Ricketson, supra note 150, at 632-64.

152. See Reichman, GATT Connection, supra note 2, at 823-26.


154. See Rome Convention, supra note 15.

A growing number of states now protect some of these productions in their copyright laws, 156 international protection of so-called neighboring rights often leaves foreign rights holders to the vagaries of domestic laws and at the mercy of residual conditions of material reciprocity. 157 Other borderline subject matters of recent vintage, especially computer programs and electronic information tools, have further strained international intellectual property relations. 158

The TRIPS Agreement incorporates most (but not all) of the minimum standards set out in the Berne Convention, and it begins the task of harmonizing the protection of neighboring rights. It also addresses some of the problems that computer programs and electronic information tools have raised, but the make-weight solutions adopted in this context will prove less than satisfactory in the end.

1. Traditional Literary and Artistic Works

The TRIPS Agreement applies minimum standards contained in the Berne Convention to all WTO member countries, whether or not members of the Berne Union, except that moral rights under article 6bis are excluded. 159 The Agreement also provides rental rights to owners of copyrighted cinematographic works, at least in principle, 160 and, in a roundabout way, to the producers of sound recordings, which are otherwise treated as related or neighboring rights. 161 These rental rights are not absolute, however. For example, a member state can exempt cinematographic works from this obligation by showing that commercial rental activity has not led to widespread copying that is "materially impairing the exclusive right of reproduction ... conferred on authors," 162 an exception that presumably applies to the

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156. See, e.g., 17 U.S.C. §§ 101 (definitions of audiovisual works, motion pictures, and sound recordings), 102(a)(6) (eligibility of motion pictures and other audiovisual works), 102(a)(7), 114 (sound recordings) (1988); see also Stewart & Hamilton, supra note 155, at 196-97.

157. See, e.g., Rome Convention, supra note 15, art. 16; GUIDE TO THE ROME CONVENTION, supra note 155, at 60-61.

158. See, e.g., Reichman, Legal Hybrids, supra note 6, at 2480-88, 2490-98; see also J.H. Reichman, Electronic Information Tools—The Outer Edge of World Intellectual Property Law, 24 I.I.C. 446 (1993) [hereinafter Reichman, Electronic Information Tools].

159. See TRIPS Agreement, supra note 4, art. 9(1).

160. See id. art. 11, which mandates rental rights for both cinematographic works and computer programs. For copyright protection of the latter, see infra text accompanying notes 191-210.

161. Although sound recordings are not mentioned in art. 11, which deals with rental rights, art. 14(4), which deals with the neighboring rights generally, states that the "provisions of Article 11 in respect of computer programs shall apply mutatis mutandis to producers of phonograms and any other rights holders in phonograms as determined in a Member's law." Since art. 14(2) mandates the right of producers to "authorize or prohibit ... reproduction of their phonograms," these producers' corresponding rental rights seem assured. See TRIPS Agreement, supra note 4, arts. 11, 14(2), (4).

162. Id. art. 11.

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United States. Similarly, states that already subject the rental of sound recordings to a system of equitable remuneration may continue this practice, so long as it does not entail "material impairment of the exclusive right of reproduction of right holders," but other states are not obliged to follow suit. Current U.S. copyright law, which covers both cinematographic works and sound recordings, appears consistent with these provisions, although the introduction of the "material impairment" concept, drawn from trade law, could raise new questions later on.

The TRIPS Agreement requires minimum terms of protection for certain categories of works, with which U.S. copyright law is generally consistent. It also mandates retroactive respect for existing literary and artistic works falling within article 18 of the Berne Convention and for existing sound recordings that are bootstrapped into the same article of that Convention. Arguably, these provisions do conflict with the approach that Congress took in 1989, when the United States joined the Berne Convention. In response, the Uruguay Round Agreements Act of 1994 largely restores the rights of foreign (but not national) copyright owners, including producers of sound recordings, whose copyrights were technically forfeited under specified conditions of prior law. This Act also recognizes limited reliance rights of third parties who acted in the belief that the works in question had irrevocably entered the public domain. These provisions fulfill—and some would say overfulfill—the relevant mandate of the TRIPS Agreement.

163. See, e.g., David Nimmer, Copyright's Trade Status: GATT and NAFTA [hereinafter Nimmer, GATT and NAFTA] in MELVILLE B. NIMMER & DAVID NIMMER ON COPYRIGHT 22 (1994) [hereinafter M. & D. NIMMER] (arguing that commercial rentals, as distinct from free television and cable telecasts, could hardly be singled out as the cause of "material impairment" as matters stand).

164. See TRIPS Agreement, supra note 4, art. 14(4).


166. See TRIPS Agreement, supra note 4, art. 12 (requiring minimum term of 50 years when protection is not calculated on the basis of an author's natural life, except in the case of photographic works and works of applied art).


168. See TRIPS Agreement, supra note 4, art. 70(2), (3).

169. Id. art. 14(6).


171. See URAA, supra note 4, § 514, amending 17 U.S.C. § 104(A) (1988); M. & D. Nimmer, supra note 163, ch. 9A ("Copyrights Restored from the Public Domain") (forthcoming 1995); PAUL GOLDSMITH, COPYRIGHT: PRINCIPLES, LAW AND PRACTICE § 2.5.4.3 (2d ed. forthcoming 1995). In effect, restoration can flow from the loss of copyright protection due to noncompliance with formalities, including failure of renewal, lack of proper notice, or failure to comply with any manufacturing requirements; to a lack of national eligibility; and to the lack of subject-matter eligibility with respect to sound recordings fixed before Feb. 15, 1972. See 17 U.S.C. § 104A; M. & D. Nimmer, supra note 163, § 9A.04[A], [B]; see also Berne Convention, supra note 8, art. 5(2) ("The enjoyment and exercise of these rights shall not be subject to any formality").

172. See Berne Convention, supra note 8, art. 18(3); 17 U.S.C. § 104A; M. & D. Nimmer, supra note 163, § 9.04[c].

173. See, e.g., M. & D. Nimmer, supra note 163, § 9A.01 (statute confers "greater benefits on foreigners than Berne . . . requires").
Finally, that Agreement indirectly addresses the scope of copyright protection by echoing article 9(2) of the Berne Convention.\(^{174}\) It thus authorizes limitations on and exceptions to the specified exclusive rights for "certain special cases which do not conflict with a normal exploitation of the work" and which do not "unreasonably prejudice" the rights holders' interests.\(^{175}\) This double-barreled filter, though subject to state practice, is potentially more restrictive than the broad fair-use doctrine fashionable in the United States.\(^{176}\) Whether the elevation of the Berne criteria to a TRIPS standard will constrain domestic courts or merely allow their antiprotectionist bias to infiltrate foreign law remains to be seen.

2. Neighboring Rights

In a bold move, the TRIPS Agreement recognizes some minimum standards of protection for phonogram producers, broadcast organizations, and performing artists, as derived from the Rome Convention, and it makes these rights universally applicable while, perhaps, discouraging further development of this Convention.\(^{177}\) For example, producers of sound recordings must now obtain exclusive reproduction rights in their recordings, in keeping with article 10 of the Rome Convention,\(^{178}\) and broadcasting organizations may prohibit unauthorized fixation, reproduction, retransmission, and communication to the public of their broadcasts.\(^{179}\) However, the TRIPS Agreement does not provide producers of sound recordings with an exclusive right to publicly perform or broadcast their recordings, nor does it mandate even a right to equitable compensation for secondary uses of commercial recordings, which the Rome Convention tries to establish.\(^{180}\)

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\(^{174}\) See Berne Convention, supra note 8, art. 9(2); see also CLAUDE MASOUYE, GUIDE TO THE BERNE CONVENTION FOR THE PROTECTION OF LITERARY AND ARTISTIC WORKS (PARIS ACT 1971) 55-57 (W.I.P.O. ed., 1978); RICKETSON, supra note 150, at 479-89.

\(^{175}\) See TRIPS Agreement, supra note 4, art. 13.


\(^{177}\) See TRIPS Agreement, supra note 4, art. 14; cf. Rome Convention, supra note 15, arts. 2 (defining national treatment), 7 (minimum protection for performers), 10 (reproduction right for producers of phonograms), 13 (minimum rights for broadcasting organizations); see also David Vaver, Tripping Through TRIPS: Canada and Copyright, 22 CANADIAN L. NEWSL. 53, 55-58 (1994); Kerever, supra note 28, at 635-36 (complaining that TRIPS marginalizes the Rome Convention).

\(^{178}\) See TRIPS Agreement, supra note 4, art. 14(2); cf. Rome Convention, supra note 15, art. 10; GUIDE TO THE ROME CONVENTION, supra note 155, at 43 (noting absence of exclusive importation or distribution rights under this provision).

\(^{179}\) See TRIPS Agreement, supra note 4, art. 14(3) (stating condition that the relevant domestic laws also grant these rights); cf. Rome Convention, supra note 15, art. 13 (which is broader in certain respects than the TRIPS standard).

\(^{180}\) See Rome Convention, supra note 15, art. 12; GUIDE TO THE ROME CONVENTION, supra note 155, at 46 (Rome Convention "does not offer, as an alternative to [equitable] remuneration, the grant of an exclusive right" to so-called secondary uses of sound recordings); cf. 17 U.S.C. §§ 106(4), 114(2) (1988). Moreover, the Rome Convention allows states broad latitude in determining
These neighboring rights provisions presented no serious difficulties for the United States, whose copyright law already treats both sound recordings and broadcasts as "works of authorship" if they are original and fixed in a tangible medium of expression. For this same reason, domestic law was also consistent with article 14(5) of the TRIPS Agreement, which requires that the rights conferred on phonogram producers and broadcasting organizations last at least fifty and twenty years, respectively.

In contrast, article 14(1) of the TRIPS Agreement obliges member states to allow performing artists the "legal possibility" of preventing the unauthorized fixation of their unfixed performances on a sound recording and the reproduction of such fixations, and also the legal possibility of preventing broadcasting organizations from transmitting their live, unrecorded performances without permission. The performers' rights, but not the corresponding broadcasters' rights, must last for a minimum term of fifty years and not just the twenty-year term that the Rome Convention guarantees.

The protection that the TRIPS Agreement thus affords performing artists, which is more limited (except for duration) than the corresponding provisions of the Rome Convention on which it is based, does not mandate any exclusive rights at all and does not deal with authorized fixations as such. Rather, the TRIPS regime applies its flexible obligations to unauthorized fixations of live performances, as might occur, for example, with bootleg recordings, and also to unauthorized broadcasts of live performances. Even so, the lack of any uniform federal law regulating rights in unfixed works of any kind, let alone performers' renditions, raised sufficient doubts about the consistency of U.S. law with these provisions as to elicit a

who receives compensation for direct secondary uses of commercial phonograms, see generally GUIDE TO THE ROME CONVENTION, supra note 155, at 46-52; and its signatories may opt not to apply art. 12 at all, or even to apply it on a reciprocal basis, without national treatment, see Rome Convention, supra note 15, art. 16, an option preserved under TRIPS Agreement, supra note 4, art. 14(6). Hence, Rome signatories that apply the equitable compensation principle of art. 12 to public performances of commercial sound recordings still labor under no binding international obligation to share these royalties with U.S. record producers and performing artists.

See supra note 156; 17 U.S.C. § 102(a).

See TRIPS Agreement, supra note 4, art. 14(5); supra note 167 and accompanying text. With respect to phonogram producers, the TRIPS Agreement thus enlarges the twenty-year term guaranteed by Rome Convention, supra note 15, art. 14.

See TRIPS Agreement, supra note 4, art. 14(1); cf. Rome Convention, supra note 15, art. 3(a) (defining "performers" to mean "actors, singers, musicians, dancers, and other persons who act, sing, deliver, declaim, play in, or otherwise perform literary or artistic works").


See Rome Convention, supra note 15, art. 7(1); Vaver, supra note 177, at 55-56.

Cf. GUIDE TO THE ROME CONVENTION, supra note 155, at 34-36 (allowing flexible implementation under unfair competition law, employment law, or personality rights).

See, e.g., Vaver, supra note 177, at 56, 58 n.21 (noting that performers' authorized, fixed performances are left to contractual negotiations with producers); Nimmer, GATT & NAFTA, supra note 163, at 24.
broad but poorly drafted antibootlegging statute for live musical performances in the Uruguay Round Agreements Act of 1994.188

The neighboring rights provisions of the TRIPS Agreement are, to some extent, encumbered by the ability of member states to invoke the "conditions, limitations, exceptions and reservations" recognized by the Rome Convention.189 Among other things, this opens the door to demands for reciprocity, rather than national treatment, with respect to payments of equitable compensation for public performances of sound recordings in countries that adopt such a system.190

3. Computer Programs and Electronic Information Tools

The TRIPS Agreement adopts a "Berne plus" formula that requires member states to protect computer programs "whether in source or object code... as literary works under the Berne Convention (1971)"191 and to protect compilations, including data bases, to the extent they are "intellectual creations."192 These provisions raise more questions than they answer.

For example, the TRIPS Agreement expressly incorporates the exclusion of "ideas, procedures, methods of operation or mathematical concepts as such" into international copyright law for the first time.193 Yet, the application of this principle to computer programs remains extremely controversial,194 and its domestic counterpart has led the U.S. federal appellate courts to limit copyright protection to wholesale duplication of computer programs lest they inadvertently protect functional components as such.195

Even the obligation to treat computer programs "as literary works" remains inherently ambiguous because, in actual practice, no state or group of states has simply applied the mature copyright paradigm to computer programs without


189. TRIPS Agreement, supra note 4, art. 14(6); see also Rome Convention, supra note 15, art. 16.

190. See Rome Convention, supra note 15, arts. 12, 16(1)(a); supra note 180.

191. See TRIPS Agreement, supra note 4, art. 10(1).


193. See id. art. 9(2). State practice has universally recognized the idea-expression dichotomy in one form or another. See, e.g., GUIDE TO THE BERNE CONVENTION, supra note 155, at 12.


tailor-made adjustments of considerable significance.\textsuperscript{196} The TRIPS provision can thus be read to permit domestic variants on eligibility and scope of protection like those adopted at various times in the developed countries.\textsuperscript{197} This, in turn, could eventually give rise to a subcategory of “applied literature” parallel to that of applied art.\textsuperscript{198} However, states inclined to move in this direction must take pains to respect the fifty-year minimum term and the rental rights that the TRIPS Agreement guarantees.\textsuperscript{199}

The most valuable aspect of a computer program resides in the dynamic behavioral impact it achieves by means of a functionally determined combination of subprograms.\textsuperscript{200} Yet, copyright laws cannot protect functionally determined combinations of data structures or functional components of user interfaces without granting patent-like protection,\textsuperscript{201} nor do copyright laws protect the technical know-how and industrial design responsible for program behavior.\textsuperscript{202} For these reasons, the U.S. federal appellate courts have recently applied a successive filtering test that, in effect, gives only “thin” protection to external expressive features, especially the code, in both applications programs and operating systems programs.\textsuperscript{203} These decisions decline to treat a second comer’s attainment of functional equivalence as infringement merely because of nonliteral similarities in “structure, sequence and organization,” without proof that nonfunctional expressive features were copied rather than independently created.\textsuperscript{204} Still other U.S. copyright decisions reinforce trade secret law by permitting second comers to decompile an origi-


\textsuperscript{197} See, e.g., Michael Lehmann, The European Directive on the Protection of Computer Programs, in A HANDBOOK OF EUROPEAN SOFTWARE LAW, supra note 193, at 163, 166 n.2, 167 n.3 and accompanying text (discussing high eligibility requirements in early German decisions); Reichman, Legal Hybrids, supra note 6, at 2480-83 (case of France); Vinje, supra note 193, at 79-81 (case of European Union); see also Mitsuo Matsushita, A Japanese Perspective on Intellectual Property Rights and the GATT, 1992 COLUM. BUS. L. REV. 81, 94 (extent of software protection under TRIPS Agreement art. 10 “unsettled”).

\textsuperscript{198} Cf. Berne Convention, supra note 8, arts. 2(1), (7), 7(4); J.H. Reichman, Design Protection in Domestic and Foreign Copyright Law: From the Berne Revision of 1948 to the Copyright Act of 1976, 1983 DUKE L.J. 1143, 1153-67; see further Reichman, Know-How Gap in TRIPS, supra note 10, pt. I.B. But see Kerever, supra note 28, at 634-35.

\textsuperscript{199} See TRIPS Agreement, supra note 4, arts. 11 (rental rights), 12 (fifty-year minimum term except for photographic works and applied art); URRA, supra note 4, § 511, amending 17 U.S.C. § 109 (rental rights in computer programs).

\textsuperscript{200} See generally Samuelson et al., Manifesto, supra note 99, at 2316-30.


\textsuperscript{202} See Samuelson et al., Manifesto, supra note 99, at 2347-61.

\textsuperscript{203} See supra note 195.

inator's object code for purposes of reverse-engineering noncopyrightable ideas or components that second comers cannot reasonably discover by other means, so long as they independently create their own end products without embodying the originators' protectable expression.205 These solutions appear more or less consistent with foreign law206 and the Berne Convention.207

In short, the TRIPS solution can effectively impede wholesale duplication of computer software, and especially code, much like unfair competition law did in some European countries prior to the European Union's Directive on Computer programs.208 But neither copyright laws nor trade secret laws as reinforced by the TRIPS Agreement209 prevent reimplemention of functionally equivalent behavior. Nor do these laws impede second comers in developed or developing countries from using components that are functionally determined or that constitute either standards of efficiency in the trade or market-determined standards that consumers require. Moreover, because article 10 of the TRIPS Agreement expressly requires computer programs to be protected "as literary works," it allows the developing countries to invoke the compulsory license provisions set out in the appendix to the Berne Convention for certain educational and research purposes.210

The decision to entrust the protection of computer programs to copyright law as literary works, with no corresponding prohibition against the copying of unprotectable functional components, may thus boomerang against its proponents at the international level. In effect, it endows competitors everywhere who are willing to master lawful techniques of reverse-engineering with promising prospects, indeed.

Attempts to deal with databases by requiring WTO member states to protect compilations whose selection and arrangements amount to original intellectual creations211 will prove equally futile, for the reason that many, if not most, electronic data bases are so functionally organized that they could fail to meet this standard.212 Even when a database satisfies the eligibility requirements, the United States Supreme Court holds that third parties may extract the compiler's

207. See, e.g., William Cornish, Computer Program Copyright and the Berne Convention, 4 E.I.P.R. 129 (1990) (reverse analysis consistent with Berne Convention so long as fruits of analysis are not used to reproduce substantially the expression of the analyzed program).
208. See supra note 206.
209. See infra text accompanying notes 250-62 (international protection of undisclosed information).
210. See supra notes 151-52 and accompanying text.
211. See TRIPS Agreement, supra note 4, art. 10(2); supra notes 191-92 and accompanying text.
disparate data without normally infringing a copyright based on selection and arrangement. For these and other reasons, the Commission of the European Communities has proposed a council directive on the legal protection of electronic databases, which would protect the compiler’s data under a sui generis regime related to copyright law that the TRIPS Agreement would appear not to cover.

The hard truth these developments confirm is that, as currently constituted, the world’s intellectual property system is simply not equipped to deal with the real problem of twenty-first century technological development, which is how to protect “incremental innovation bearing know-how on its face.” This “know-how gap in TRIPS” thus parallels a similar gap in the domestic intellectual property laws. Until these make-weight solutions are reinforced or displaced at the domestic and international levels by an integrated liability regime capable of protecting embodiments of technical know-how that do not qualify for classical trade secret protection, the long-term benefits of the TRIPS Agreement will fall well below present expectations.

III. Ancillary Proprietary Regimes and Trade Regulation

The TRIPS Agreement, unlike the Paris Convention, disregards utility models, and it also ignores newer sui generis regimes that protect unpatented functional designs on modified copyright principles. The Agreement nonetheless singles out one class of functional designs—integrated circuit designs (also known as “mask works,” “lay-out designs,” and “semiconductor chip topogra-

213. See, e.g., id. at 1296. See generally Reichman, TRIPS Component, supra note 2, at 225-29.
215. See supra notes 29-31 and accompanying text.
216. See Reichman, Legal Hybrids, supra note 6, at 2506-19; see also Samuelson et al., Manifesto, supra note 99, at 2333-41.
217. See supra notes 193-94, 200-05 and accompanying text; see generally Reichman, Know-How Gap in TRIPS, supra note 10, pt. II.
218. For the theory that such a regime should follow modified liability principles loosely derived from trade secret law, and not the exclusive rights model of modified patent and copyright regimes, see generally Reichman, Legal Hybrids, supra note 6, at 2519-44 (discussing “A Default Liability Regime for Applied Know-How”).
phies”)—for detailed regulation. It also protects confidential information at the international level for the first time, and it begins the arduous task of reconciling the domestic competition laws insofar as they bear on enforcement of intellectual property rights.

A. INTEGRATED CIRCUIT DESIGNS

In effect, the TRIPS Agreement mandates compliance with core substantive provisions of the Treaty on Intellectual Property in Respect of Integrated Circuits of 1989 (IPIC Treaty), which, not surprisingly, embody the spirit if not always the practice of the U.S. Semiconductor Chip Protection Act of 1984 (SCPA). Among other provisions, the TRIPS Agreement obliges WTO members to prohibit unauthorized imports, sales or commercial distribution of a protected layout design, of an integrated circuit embodying such a design, or of an article incorporating an integrated circuit, for at least ten years, subject to a good faith exception. These provisions, once implemented within the TRIPS framework, should moot the unilateral reciprocity requirement in the SCPA, which arguably violated the Paris Convention and certainly introduced a dangerous precedent into international intellectual property law.

Because the IPIC Treaty, as put forward in 1989, afforded fairly broad opportunities to invoke compulsory licenses, most developed countries refused to sign it in the end. Fearing that the developing countries or former socialist countries might use such licenses to overcome currently high barriers to entry, the semiconductor industries persuaded the drafters to override these provisions in the TRIPS Agreement. Article 35 thus excludes the compulsory license provisions of the IPIC Treaty from the list of mandatory international minimum standards, while article 37(2) refers states contemplating the imposition of compulsory li-

221. See TRIPS Agreement, supra note 4, Part I, Section 6 ("Layout-designs (topographies) of Integrated Circuits").
222. See TRIPS Agreement, supra note 4, art. 35 (mandating compliance with arts. 2-7 (except for art. 6(3)), 12, 16(3) of IPIC Treaty, supra note 15).
224. See TRIPS Agreement, supra note 4, arts. 36-38.
226. See supra note 18 and accompanying text.
227. See IPIC Treaty, supra note 15, art. 6(3) ("Measures Concerning Use Without the Consent of the Holder of the Right").
228. On the formidable barriers to entry that favor semiconductor chip industries in developed countries, see, e.g., John G. Rauch, The Realities of Our Times: The Semiconductor Chip Protection Act of 1984 and the Evolution of the Semiconductor Industry, 75 J. PAT. & TRADEMARK OFF. SOC'Y 93, 121 (1993); Correa, supra note 76, at 84-86.
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censes to article 31, which regulates these licenses in regard to patentable inventions in general.\textsuperscript{229} As noted, however, a last-minute amendment to article 31(c) denied private or public commercial use of compulsory licenses "in the case of semiconductor technology," even though compulsory licenses remain available for "public non-commercial use" of such technology and for public or private uses that remedy judicially determined anticompetitive practices.\textsuperscript{230}

It is unclear from this language whether article 31(c) applies only to patented semiconductor technologies, as at least one commentator believes,\textsuperscript{231} or also to unpatented semiconductor chip designs covered by articles 35-38, as the drafters probably intended. If the exemption for "semiconductor chip technologies" inserted into article 31(c) is read broadly to include even unpatented semiconductor chip designs, then it would make "semiconductor technology" into a sacred cow, which member states could not normally subject to commercial, nonexclusive compulsory licenses under the rules applicable to other forms of industrial property.

B. INDUSTRIAL DESIGNS

Given the continued lack of international consensus concerning the proper means of protecting industrial designs,\textsuperscript{232} the TRIPS Agreement leaves participating states relatively free to draft domestic design protection laws with local objectives in mind. Although members must provide some form of design protection to satisfy both the TRIPS provisions and article 5quinquies of the Paris Convention, on which the TRIPS Agreement builds,\textsuperscript{233} states may resort either to an industrial property law or to copyright law for these purposes, and they need not protect functionally determined designs at all.\textsuperscript{234} Members must protect textile designs, however, either in a design law or in copyright law,\textsuperscript{235} and their sui generis laws must protect appearance designs against copying for at least a ten-year period.\textsuperscript{236}

\textsuperscript{229} See TRIPS Agreement, supra note 4, arts. 31, 35, 37(2); supra text accompanying notes 62-76.

\textsuperscript{230} See TRIPS Agreement, supra note 4, art. 31(c); supra text accompanying notes 74-76.

\textsuperscript{231} See Nimmer, GATT & NAFTA, supra note 163, at 27; see also TRIPS Agreement, supra note 4, art. 31 ("where the law of a Member allows for other use of the subject matter of a patent without the authorization of the right holder" (emphasis supplied)).


\textsuperscript{233} See TRIPS Agreement, supra note 4, arts. 25-26; Paris Convention, supra note 8, art. 5quinquies.

\textsuperscript{234} See TRIPS Agreement, supra note 4, art. 25(1), (2).

\textsuperscript{235} See id. art. 25(2).

\textsuperscript{236} See id. art. 26(1), (3).
Current U.S. law appears to accommodate all of these requirements. However, article 25(1) of the TRIPS Agreement obliges members to "provide for the protection of independently created industrial designs that are new or original," whereas U.S. design patent law requires candidate designs to meet both a novelty and a true nonobviousness standard. The TRIPS drafters clearly intended "originality" to entail more of a creative contribution than mere independent creation because they used the two terms to convey different meanings in the same provision. Yet, given the drafters' emphasis on the criterion of "nonobviousness" in the patent provisions of the TRIPS Agreement and on "originality" in its design protection provisions, the latter criterion appears to conflict with the eligibility requirements of the U.S. design patent law.

Article 25 thus appears to represent a backhanded attempt to oblige Congress to align the legal protection of industrial designs in this country with more protectionist trends abroad, despite the failure of sectoral lobbyists to achieve a similar result in recent years. In this connection, current efforts to harmonize the design laws of the European Union could influence the direction of reform in the
United States if it became necessary to enact a *sui generis* regime by dint of article 25. Moreover, recent proposals for a European Union Directive concerning utility models, if acted upon, could logically reinforce trends favoring the protection of functional designs that fail to meet the nonobviousness standard of patent law, despite the anticompetitive effects of such regimes.

Meanwhile, exporters in both developed and developing countries should note that compliance with the requirements of domestic design laws provides no guarantees against infringements of foreign design rights based on different criteria. For example, designs legally created or copied under current U.S. law, if exported, could sometimes violate the United Kingdom's unregistered design right, which protects both functional and appearance designs, as well as, say, the French copyright law, or the new Japanese unfair competition law. Conversely, designs legally created abroad could, if imported into the United States, sometimes violate section 43(a) of the Lanham Act, under which the federal appellate courts routinely protect unregistered three-dimensional product configurations as "appearance trade dress."

C. TRADE SECRETS AND CONFIDENTIAL INFORMATION

The TRIPS Agreement is the first international convention expressly to require member countries to protect undisclosed information. A systematic failure to provide either trade secret protection or equivalent laws governing confidential disclosures should thus become actionable as a distinct component of the international regime of unfair competition law that article 10bis of the Paris Convention

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244. *See supra* note 219.  
247. *See supra* note 245 and accompanying text.  
248. *See Reichman, Legal Hybrids, supra* note 6, at 2459-65, 2475-76.  
250. *See TRIPS Agreement, supra* note 4, Part I, Section 7 ('Protection of Undisclosed Information'); *id.* art. 39(1) (incorporating by reference Paris Convention, *supra* note 8, art. 10bis (concerning protection against unfair competition)).

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already covers. 251 Violations of article 10bis, in turn, become subject to the enforcement procedures and improved dispute-settlement machinery of the WTO Agreement as a whole. 252

The language that article 39(2) of the TRIPS Agreement uses to mandate the protection of undisclosed information resembles that of the Uniform Trade Secrets Act, which is widely adopted at the local level in the United States. 253 However, there is no express provision that guarantees third parties the right to reverse-engineer products made from secret processes by proper means. 254 While the United States Supreme Court has invested this right with constitutional underpinnings, 255 article 39(2) merely invokes article 10bis of the Paris Convention, which would require third parties not to acquire undisclosed information “in a manner contrary to honest commercial practices.” 256 A footnote to article 39(2) precludes “at least practices such as breach of contract, breach of confidence and inducements to breach,” 257 but does not affirmatively endorse reverse-analysis as such.

Whether a duly appointed WTO panel would regard a competitor’s right to reverse-engineer by proper means as inherent in the “honest commercial practices” standard for purposes of dispute-settlement proceedings remains to be seen. 258 A failure to do so would compromise both the economic functions of trade secret laws 259 and a long-standing constitutional tradition concerning the rights and duties of competitors under U.S. trade regulation law. 260 It also remains to be seen whether a federal trade secret law is needed to comply with the United States’ obligations under the TRIPS Agreement.

To operate successfully under article 39, entrepreneurs in both developed and developing countries may legitimately acquire unlicensed technology through

251. TRIPS Agreement, supra note 4, art. 39(1), (2); Bodenhausen, supra note 44, at 142-46.
252. See supra notes 12-13 and accompanying text; infra text accompanying notes 310-15.
254. See, e.g., UTSA, supra note 253, § 1(2), (4); Restatement (Third) of Unfair Competition Law, supra note 253, § 43 & cmt. b.
256. See TRIPS Agreement, supra note 4, art. 39(2); Paris Convention, supra note 8, art. 10bis(2); Bodenhausen, supra note 44, at 142-46.
257. TRIPS Agreement, supra note 4, art. 39(2) n.10.
258. Cf. Restatement (Third) of Unfair Competition Law, supra note 253, cmt. b, at 493 (stating that “others remain free to analyze products publicly marketed by the trade secret owner and, absent . . . a patent or copyright, to exploit any information acquired through such ‘reverse engineering’ ”).
259. See infra text accompanying notes 328-29; cf. Geller, TRIPS Dispute Settlement, supra note 5, at 313-15.
261. See supra note 255 and accompanying text.
self-help methods of reverse-engineering even when copycat duplication that avoids any contribution to the global costs of research and development might otherwise violate copyright or unfair competition laws. This task, facilitated by the availability of technical engineering skills in the global labor market, tends to root the technology in the local culture and to provide a basis for future research and development as well as export potential. Trade secret protection should thus benefit innovators everywhere, and it could stimulate the licensing of more advanced foreign technologies to developing countries by reducing both risk aversion and transaction costs.\textsuperscript{262}

D. Trade Regulation Measures

One of the general principles established in article 8(2) of the TRIPS Agreement is the right of states to adopt appropriate measures "to prevent the abuse of intellectual property rights by right holders or the resort to practices which unreasonably restrain trade or adversely affect the international transfer of technology."\textsuperscript{263} The Agreement also reinforces general principles of unfair competition law falling within the purview of the Paris Convention.

1. Constraints on Licensing

The general right of states to prevent abuse initially acquires greater specificity in the rules on the compulsory licensing of patents that were previously discussed.\textsuperscript{264} As regards trademarks, in contrast, states "may determine conditions on the licensing and assignment of trademarks," but they may no longer impose compulsory licenses on trademark proprietors.\textsuperscript{265}

Beyond these provisions, article 40 of the TRIPS Agreement reiterates the legitimacy of controlling anticompetitive practices in contractual licenses affecting intellectual property rights generally.\textsuperscript{266} However, article 40(1) acknowledges the lack of consensus in this area\textsuperscript{267} by conceding that states agree only "that some licensing practices or conditions pertaining to intellectual property rights


\textsuperscript{263.} See TRIPS Agreement, supra note 4, art. 8(2) (emphasis added).

\textsuperscript{264.} See supra text accompanying notes 56-80.

\textsuperscript{265.} See supra text accompanying notes 128-29; TRIPS Agreement, supra note 4, art. 21.

\textsuperscript{266.} See TRIPS Agreement, supra note 4, art. 40 and title to Part II, Section 8 ("Control of Anti-Competitive Practices in Contractual Licenses").

restrain competition” and “may have adverse effects on trade and may impedethe transfer and dissemination of technology.” Article 40(2) then authorizes single states to legislate against “licensing practices or conditions that may in particular cases constitute an abuse of intellectual property rights having an adverse effect on competition in the relevant market.” Evidently, this provision attempts to address the kinds of abuse sounding in antitrust principles that developed countries normally recognize, without necessarily impeding the developing countries from proceeding on other grounds either under the formulation of article 8 or under broader principles inherent in the objectives set out in article 7 and in the public interest exception set out in article 8(1). Even so, the negotiators could only agree to name “exclusive grantback conditions, conditions preventing challenges to validity and coercive package licensing” as examples of practices that states may clearly legislate against under article 40(2).

Given this lack of consensus and its attendant soft-law approach, the logical solution was to require consultations when conflicts occur. In this respect, article 40(3) cuts two ways. It allows developing countries in particular cases to request information from developed countries that bears on alleged violations of local regulations, which could embarrass the alleged violator before his own government. But it also allows developed countries to demand consultations when they view the local action or regulations as exceeding the mandate of article 40.

The likely consequence of these provisions is a further round of talks in which both sides try to establish a greater consensus regarding actions to restrain misuse of intellectual property rights. Indeed, the express legitimization of a demand for consultations to deal with questionable regulatory acts appears to mandate further negotiations along these lines, even if the uncertain applications of antitrust

268. See TRIPS Agreement, supra note 4, art. 40(1).
269. Id. art. 40(2); see also id. art. 8.
270. See supra notes 64, 72-73 and accompanying text.
272. TRIPS Agreement, supra note 4, art. 40(2). Among topics not mentioned were exclusive dealing, restrictions on research and adaptation, exclusive sales or representation agreements, tying arrangements, patent pooling or cross-licensing arrangements, restrictions on publicity, obligations to pay royalties after the expiration of intellectual property rights, and post-contractual restrictions. See, e.g., Matsushita, supra note 197, at 92 n.42.
273. See TRIPS Agreement, supra note 4, art. 40(3). (4).
274. Id. art. 40(3).
275. Id. art. 40(3), (4).
principles to intellectual property rights in the developed countries themselves cast doubt on the efficacy of such negotiations.\textsuperscript{277}

2. Unfair Competition

Meanwhile, with specific regard to unfair competition law as distinct from antitrust in general and misuse in particular, one should emphasize that the TRIPS Agreement incorporates article 10bis of the Paris Convention by reference.\textsuperscript{278} Article 10bis proscribes acts “contrary to honest practices in industrial commercial matters” as established in international trade.\textsuperscript{279} A consensus exists regarding traditional acts of passing off and related activities that tend to deceive or confuse consumers, which matters are addressed at the federal level in the United States by Lanham Act section 43(a).\textsuperscript{280} The outer limits of article 10bis remain to be clarified,\textsuperscript{281} and some scholars fear that unfair competition law in general is not yet ripe for harmonization.\textsuperscript{282} Nevertheless, states that continue to tolerate practices that blatantly deceive or confuse consumers with regard to foreign products could find themselves embroiled in the dispute-settlement procedures established in the Uruguay Round.\textsuperscript{283}

IV. Ongoing Trade Based Initiatives

If one steps back from the details of the TRIPS Agreement, the overall effect is arguably to vitiate the obsolete historical tradition that required states to respect only tangible forms of alien property under their jurisdiction while leaving intangible creations to the whims of territorial law.\textsuperscript{284} Intellectual creations unquestionably present a formidable “public good” problem owing to their intangibility, inexhaustibility, and ubiquitous character.\textsuperscript{285} Yet, now that intangible intellectual creations have become the most valuable source of wealth for twenty-first century


\textsuperscript{278} See TRIPS Agreement, supra note 4, arts. 2(1) (generally incorporating minimum standards of Paris Convention, supra note 8, including art. 10bis), 39(1) (specifically applying Paris Convention, art. 10bis, to undisclosed information).

\textsuperscript{279} See Paris Convention, supra note 8, art. 10bis(2); Bodenhausen, supra note 44, at 144.

\textsuperscript{280} See Paris Convention, supra note 8, art. 10bis(1), (2), (3); Lanham Act § 43(a), 15 U.S.C. § 1125(a) (1988).

\textsuperscript{281} See generally 3 LADAS, supra note 121, at 1685-91, 1705-06.


\textsuperscript{283} See infra text accompanying notes 313-15; see also Geller, \textit{TRIPS Dispute Settlement}, supra note 5, at 106-12.

\textsuperscript{284} See generally Reichman, \textit{GATT Connection}, supra note 2, at 796-814 (citing authorities).

economic development, the preservation of comity between nations requires that the international community cease to pretend that such creations become any the less alien property merely because they easily cross national frontiers. This principle applies with particular force to a rapidly integrating world market whose operations depend on the reciprocal willingness of states to recognize comparative advantages under neutral and relatively efficient rules of international trade.

Modern post-industrial economies are organized around the interplay between competition and monopoly that intellectual property systems mediate, and the continued growth of these economies appears tied to the technical and cultural development such systems seek to foster. This, in turn, renders each national subsystem increasingly vulnerable to the countervailing policies of other national systems and to the regulatory dispositions affecting intellectual property rights in the world market as a whole. The legitimate economic policies pursued by different groups of states with respect to intellectual property rights are thus bound to overlap and conflict for the foreseeable future. The resulting tensions can only be lessened through good faith negotiation and cooperation between states, in a manner that “takes into account the interests of . . . [the developed] countries . . . [without] prejudicing the interests of developing countries.”

A. COMPENSATION AS THE KEY TO FUTURE CONCESSIONS

The process of integrating intellectual property law into international economic law necessarily imposes short and medium-term social costs on the developing countries. These costs are, to varying degrees, offset by the prospects of enhanced market access, of technical cooperation to implement the TRIPS

286. To pretend that aliens have no legal claims arising from wholesale, unauthorized uses of their most valuable property while respecting laws that protect less valuable alien property only because it is tangible rather than intangible is to exalt form over substance. Sooner or later, both private and public international law must assimilate intellectual property rights to the general international minimum standards that preserve comity by dissuading states from authorizing uncompensated uses of intangible alien property on their national territories. Reichman, GATT Connection, supra note 2, at 810-11.

287. See, e.g., Hartridge & Subramanian, supra note 7, at 895-96.


291. See, e.g., Primo Braga, supra note 54, at 255-58.

Agreement, 293 and of relief from unilateral trade sanctions in future discussions of intellectual property protection. 294 The developing countries may also invoke the transitional provisions previously mentioned, while LDCs may benefit from longer transitional periods, 295 special incentives favoring the transfer of technology, 296 and the prospect of future waivers to alleviate hardships stemming from their obligations under the WTO Agreement as a whole. 297

Meanwhile, the developed countries are unlikely to relax their efforts to elevate international minimum standards of intellectual property protection even after the TRIPS Agreement takes effect. 298 In particular, they will press the developing countries with regard to scope of protection issues not expressly covered in the TRIPS Agreement, under the theory that both nonviolatory state actions and changing circumstances can nullify and impair benefits otherwise conferred. 299 Moreover, higher international minimum standards that developed countries espouse in the course of harmonization exercises in other forums 300 will add to the pressure on developing countries, on the grounds that emerging new standards make it necessary further to reduce trade-distorting intellectual property practices. These and other pressures concerning matters not yet covered by the TRIPS Agreement, especially sui generis modes of protecting new technologies likely to arise over time, 301 could be exerted under article 71, which authorizes the Council for TRIPS, established in article 68, 302 "to undertake reviews in the

293. See TRIPS Agreement, supra note 4, art. 67.
295. See TRIPS Agreement, supra note 4, arts. 65, 66(1); supra notes 47-50 and accompanying text.
296. See TRIPS Agreement, supra note 4, arts. 66(2), 67.
297. See supra note 49 (quoting WTO Agreement, supra note 4, art. XI(2)).
298. See, e.g., Doane, supra note 294, at 483-94; see also Judith H. Bello & Alan F. Holmer, GATT Dispute Settlement Agreement: Internationalization or Elimination of Section 301?, 26 INT’L LAW. 795, 800-01 (1992); Robert E. Hudec, Dispute Settlement, in COMPLETING THE URUGUAY ROUND, supra note 54, at 180, 197-203.
299. See TRIPS Agreement, supra note 4, art. 64(1) (invoking GATT 1994, supra note 25, arts. XXII and XXIII); Settlement of Disputes, supra note 294, arts. 3(1), 26; see also ROBERT E. HUDEC, ENFORCING INTERNATIONAL TRADE LAW: THE EVOLUTION OF THE MODERN GATT LEGAL SYSTEM 6-7, 144, 156-57, 160-61, 269 (1993); Victoria Curzon Price, New Institutional Developments in GATT, 1 MINN. J. GLOBAL TRADE 87, 92 (1992) (noting distinction between "violation" and "nonviolation" disputes, which allows panel procedures "to apply to disputes arising from measures which do not formally violate GATT, but which do injure the trading interests" of member countries).
301. See, e.g., Doane, supra note 294, at 485-91; Samuelson et al., Manifesto, supra note 99, at 2426-29. See generally Reichman, Legal Hybrids, supra note 6, at 2504-58.
302. See TRIPS Agreement, supra note 4, arts. 68 (Council for TRIPS to monitor implementation), 69 (international cooperation), 71 (review and amendment).
light of any new developments which might warrant modification or amendment of the Agreement. 303

In this context, the periodic reviews of the Council for TRIPS 304 should, in principle, substitute for the unilateral policy reviews currently undertaken by the trade representatives of leading developed countries. 305 However, the extent to which developed countries are truly prepared to forgo unilateral pressures under provisions such as section 301 of the U.S. Trade Act of 1974 remains to be seen. 306 For example, the Uruguay Round Agreements Act of 1994, which amends section 301 ostensibly to conform to the WTO Agreement, continues to regard a failure to provide adequate and effective protection of intellectual property rights as an unreasonable act, policy, or practice "notwithstanding the fact that the foreign country may be in compliance with the specific obligations of the [TRIPS] Agreement." 307

To limit these pressures, the developing countries have obtained a moratorium on complaints of nullification or impairment due to nonvoluntary acts or changing circumstances for a period of five years. 308 In the long run, moreover, developed countries pressing for higher standards of protection should expect the developing countries to present counterclaims for the higher social costs that such standards would entail. In other words, by shifting international

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303. TRIPS Agreement, supra note 4, arts. 68, 71(1); see also id. art 69 (requiring parties "to cooperate with a view to eliminating international trade in goods infringing intellectual property rights"). For the ambiguities inherent in this use of the term "infringing," see Reichman, GATT Connection, supra note 2, at 769-96. Formal amendments (but not necessarily modifications) appear to require a consensus proposal from the Council for TRIPS, for action by a Ministerial Conference. See TRIPS Agreement, supra note 4, art. 71(2); WTO Agreement, supra note 4, art. X(2),(3),(6) (allowing less formal procedures for proposals under TRIPS Agreement, art. 71(2), but still subjecting substantive amendments to acceptance of members); see also infra note 315.

304. See TRIPS Agreement, supra note 4, art. 71(2) (providing for two-year reviews of the implementation of the TRIPS Agreement); WTO Agreement, supra note 4, art. IV(5) (establishing Council for TRIPS).


307. See URAA, supra note 4, § 314(c)(1) (amending Trade Act of 1974, supra note 306, § 301(d)(3)).

308. See TRIPS Agreement, supra note 4, art. 64(2) (suspending application of GATT 1994, supra note 25, art. XXIII(1)(b), (c) to the settlement of TRIPS-related disputes for five years from entry into force of the WTO Agreement, supra note 4). See also Settlement of Disputes, supra note 294, art. 26. But cf. Geller, TRIPS Dispute Settlement, supra note 5, at 109-10 (contending that broad provisions of Paris and Berne Conventions, supra note 8, may sometimes be used to override this moratorium).
intellectual property protection to the framework of multilateral trade negotiations, developed countries have implicitly acknowledged that compensation has become the new master principle. By the same token, offers of still greater market access in the future could make it harder for developing countries to resist an emerging consensus in favor of higher world standards of intellectual property protection.

B. UNCERTAINTIES OF THE DISPUTE-SETTLEMENT PROCESS

Because trade concessions provided developing countries were partly exchanged for their acceptance of the TRIPS Agreement, the developed countries want strict compliance with its standards (except, perhaps, when these standards pinch their own feet). They also expect developing countries to implement its obligations concerning domestic judicial and administrative enforcement of foreigners' intellectual property rights, including detailed provisions governing the discovery of evidence, rights to counsel, injunctions, damages, and temporary restraining orders.

These provisions mean business. For the first time, they make it likely that states will lodge actions against other states before duly constituted international bodies, with a view to vindicating the privately owned intellectual property rights of their citizens against unauthorized uses that occur outside the domestic territorial jurisdictions. If the appropriate WTO panels ultimately uphold such complaints, and the offending state fails to remove their underlying causes after exhausting the new appeals procedure, the successful litigant will become entitled to apply cross-sectoral retaliatory sanctions to offset the economic loss resulting from nullification or impairment of the benefits to which that state was entitled. Moreover, the defendant state, after losing on appeal, cannot block implementation of the panel’s adverse decision, as


310. See TRIPS Agreement, supra note 4, Part III, sec. 1, art. 41(1) (“Members shall ensure that enforcement procedures as specified . . . are available . . . so as to permit effective action against any act of infringement of intellectual property rights covered by this Agreement”); supra note 143 and accompanying text.

311. See TRIPS Agreement, supra note 4, arts. 42-50 (civil matters), 61 (criminal procedures for willful commercial trademark counterfeiting or “copyright piracy”). See also supra notes 144-48 and accompanying text (border control measures).

312. See, e.g., Doane, supra note 294, at 481-84; Geller, Introduction, supra note 150, § 5[5][b] (stressing attempt “to make the private international law of copyright and the public international law of trade work together”).

313. See TRIPS Agreement, supra note 4, arts. 64, 68; Settlement of Disputes, supra note 294, arts. 6-21. For U.S. implementation, see URAA, supra note 4, §§ 121-130 (“Uruguay Round Implementation and Dispute Settlement”).

314. See supra note 313; Settlement of Disputes, supra note 294, arts. 3(7), 6-16 (panels), 17-20 (appellate review), 22 (“Compensation and the Suspension of Concessions”).
it could have done prior to the reformed dispute-settlement procedures adopted in the WTO Agreement.\textsuperscript{315}

Before intellectual property owners begin dancing in the streets, however, several negative factors must enter into the calculus of social costs and benefits deriving from these provisions. To begin with, LDCs continue to enjoy differential and more favorable treatment, both within the TRIPS Agreement and within the larger context of the Uruguay Round's Final Act as a whole,\textsuperscript{316} even though such treatment was ostensibly denied to developing countries (and former socialist countries) except as specifically provided by the TRIPS Agreement itself.\textsuperscript{317} In this respect, the TRIPS Agreement envisions at least a two-tiered regime, if not a three-tiered regime,\textsuperscript{318} given the favorable list of objectives and exceptions—discussed below—that the developing countries may themselves still continue to invoke.

LDCs may, of course, graduate to the less favorable status of developing countries over time.\textsuperscript{319} Moreover, single LDCs can fully benefit from differential and more favorable treatment only so long as they go about their domestic affairs without engaging in wholesale appropriation of foreign intellectual creations, especially acts of counterfeiting or copycat duplication that systematically violate international minimum standards and affect trade on export markets. In other words, LDCs that do not engage in wholesale piracy that distorts international trade need not incur the social costs of higher intellectual property regimes until they can objectively afford them.\textsuperscript{320} But LDCs that tolerate aggressive piratical practices affecting international trade risk eliciting complaints of nonviolatory

\textsuperscript{315. See Settlement of Disputes, supra note 294, art. 22(6), (7) (failing other measures, including negotiated settlement, panel (or duly appointed substitute) becomes arbitrator, and arbitrator's decision becomes binding, including "authorization to suspend concessions or other obligations . . . unless the DSB [Dispute Settlement Body] decides by consensus to reject the request"). While WTO Agreement, supra note 4, art. IX(1), reaffirms the principle of decision making by consensus, as does URAA, supra note 4, § 122(a), this pertains to matters before the Ministerial Conference and the General Council, see WTO Agreement, supra note 4, art. IV(1), (2), but not to the provisions of the dispute settlement machinery as such. See also URAA, supra note 4, § 123(e)(f) (requiring consultation with congressional committees before changing U.S. act or regulation found inconsistent with WTO Agreement; but any committee vote "shall not be binding on the department or agency . . . implementing the [changed] rule or other modification" § 213(f)(1)(3)).

\textsuperscript{316. See, e.g., TRIPS Agreement, supra note 4, art. 66(1); Settlement of Disputes, supra note 294, art. 24; see also WTO Agreement, supra note 4, art. XI(2) (quoted supra note 49); Ministerial Decisions and Declarations, Decision on Measures in Favour of Least-Developed Countries, adopted by Trade Negotiations Committee, Dec. 15, 1993, in RESULTS OF THE URUGUAY ROUND, supra note 4, at 440-41.

\textsuperscript{317. See Reichman, TRIPS Component, supra note 2, at 259-61.

\textsuperscript{318. See, e.g., Reichman, GATT Connection, supra note 2, at 861-83 (predicting that ultimate solution would require a two- or three-tiered regime).

\textsuperscript{319. See WTO Agreement, supra note 4, art. XI(2) (benefitting only LDCs "recognized as such by the United Nations").

\textsuperscript{320. See supra note 316.

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acts of nullification and impairment, once the five-year moratorium against such complaints expires within the framework of article 64.3\textsuperscript{21}

With respect to actions for nullification or impairment lodged against developing countries (and former socialist countries), as distinct from LDCs, they are supposedly immune from demands for differential and more favorable treatment not grounded in specific provisions of the TRIPS Agreement itself or in the new rules concerning settlement of disputes.3\textsuperscript{22} In reality, the developing countries will have ample opportunity to show excusing circumstances that require consideration of their particular economic problems,3\textsuperscript{23} especially within the framework of the objectives set out in article 7 and of the public-interest exceptions set out in article 8.3\textsuperscript{24} As noted, article 7 declares that the "protection and enforcement of intellectual property rights should contribute to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations."3\textsuperscript{25} Article 8(1) further specifies that parties may defend "the public interest in sectors of vital importance to their socio-economic and technological development."3\textsuperscript{26}

Predicting the outcome of litigation between a developed and a developing country would be risky under the best of circumstances, and the likelihood that WTO panels would in fact ignore the special circumstances of any developing country (other than newly industrialized countries that had graduated to a higher level) seems speculative, indeed. For this and other reasons, the path of wisdom for all sides is to settle disputes arising under the TRIPS Agreement by negotiated compromises that take a developing country's good-faith efforts to implement its TRIPS obligations into account.

From a long-term perspective, the integration of private intellectual property rights into international economic law should stimulate governments in developing countries to formulate strategies of competition that are consistent with the new legal order and to foster and reward entrepreneurship in general.3\textsuperscript{27} Similarly, entrepreneurs operating from developing countries must learn to

3\textsuperscript{21} See supra notes 299 & 308 and accompanying text.
3\textsuperscript{22} See supra note 316; Settlement of Disputes, supra note 294, art. 12(11) (requiring panel reports, when at least one party to the dispute is a developing country, to "explicitly indicate the form in which account has been taken of relevant provisions on differential and more-favorable treatment . . . that form part of the covered agreements which have been raised by the developing country . . . in the course of the dispute settlement procedures" (emphasis supplied)).
3\textsuperscript{23} See generally Reichman, TRIPS Component, supra note 2, at 258-61.
3\textsuperscript{24} See TRIPS Agreement, supra note 4, arts. 7, 8.
3\textsuperscript{25} Id. art. 7.
3\textsuperscript{26} Id. art 8(1).
3\textsuperscript{27} While "the developing countries will have to work harder to compete in general, and to acquire technological improvements in particular, under a post-TRIPS regime, . . . any competitive efforts that yield a foothold in the world market, and any effective transfer of technology . . ., should yield greater potential returns than at present." Reichman, TRIPS Component, supra note 2, at 264.
emulate the practices of small- and medium-sized firms in the developed countries that routinely compete with giant transnational corporations. Over time, the affinities between small- and medium-sized firms in both developed and developing countries are likely to outweigh the affinities between small and large firms operating within any single national territory, and this commonality of interests should strengthen the role of developing counties in future multilateral negotiations.

Meanwhile, if past practice is a reliable indicator, many protracted disputes under the TRIPS Agreement will pit developed countries against other developed countries, and in such cases no defenses sounding in hardship or the need for preferential treatment will lie. In this respect, the developed countries seem to have embarked upon a bold new journey of discovery without any clear idea of where it will carry them in the end. For example, policy makers in states traditionally allergic to even the loose constraints of public international law seem unaware of the extent to which their trade negotiators have exposed them to decisions about intellectual property matters by beefed-up WTO panels, decisions that "could become binding internationally, whether or not consistent with the domestic laws of the litigating states, and whether or not palatable to their respective Chambers of Commerce or to their legislative and administrative authorities."328 There is reason to fear (or hope, depending on one's perspective) that these WTO panels will find it necessary (or merely tempting) to fill well-known gaps in international intellectual property law that could affect the domestic systems in ways that local legislatures and administrators might regret.329

Given the protectionist bias currently driving international intellectual property relations and the ability of oligopolists to capture their respective trade agencies, one has little confidence that the WTO panels summoned to adjudicate intellectual property disputes will overly concern themselves with the public interest of the international community as a whole in limiting barriers to entry and other anticompetitive effects likely to flow from the TRIPS Agreement. The evolution of this revised dispute resolution machinery through case-by-case decisions will thus merit constant attention by all those economic actors—in developed and developing countries alike—whose long-term fortunes depend on a proper balance between incentives to create and free competition.


329. See, e.g., Geller, TRIPS Dispute Settlement, supra note 5, at 107-14.