

Trade Secrets in the United States and Japan: A Comparison and Prognosis

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Introduction

Trade secret law performs two vital functions: encouraging individual effort and investment in research and development¹ and helping maintain “standards of commercial ethics.”² In 1974, the U.S. Supreme Court upheld state trade secret law against a claim of preemption by federal patent law.³ As a result, protection for trade secrets has remained an integral part of the fabric of American intellectual property law.

Yet in some respects the importance of trade secret law remains unrecognized, both in the United States and abroad. Unlike the law governing patents, copyrights, and trademarks,⁴ American trade secret law lacks the dignity of a federal statute. Consequently, despite the adoption of a uniform statute by twenty-two states,⁵ the source of legal authority and

1. In this respect, the law of trade secrets complements patent law, whose primary purpose is to encourage technological progress through economic incentives. *See Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 480-81 (1974). Yet because the results of modern research and development are often unpatentable, trade secret law “encourage[s] invention in areas where patent law does not reach.” *Id.* at 485.

There is an important distinction between protection of trade secrets under common and statutory law, and contractual protection of secrets and other confidential information. In the United States, no agreement, nor even any private relationship, is required to create legal rights and impose legal obligations with respect to trade secrets. In contrast, protection of confidential information requires privity of contract, as well as some express or implied agreement. *See infra* Part II(A).

2. *Kewanee Oil Co.*, 416 U.S. at 481. While concepts of “commercial ethics” and “commercial morality” are culturally relative, and thus have no general international significance, a deeper economic rationale underlies the Court’s notion of “commercial ethics.” *See infra* Part I(D).

3. *Kewanee Oil Co.*, 416 U.S. at 491-93.

4. Patents and copyrights are creatures of federal statutes. *See* 35 U.S.C. §§ 100-376 (1982 & Supp. IV 1986) (patents); 17 U.S.C. §§ 101-810 (1982 & Supp. IV 1986) (copyrights). Although U.S. trademark law is an amalgam of federal and state principles, *see Int’l Order of Job’s Daughters v. Lindeburg & Co.*, 633 F.2d 912, 915-17 (9th Cir. 1980), *cert. denied*, 452 U.S. 941 (1981), it has largely been federalized by the Lanham Act, Trademark Act of 1946, Pub. L. No. 60-489, 60 Stat. 427 (codified as amended at 15 U.S.C. §§ 1051-1127) (1982 & Supp. IV 1986). Even semiconductor chip protection operates under a federal statute. *See* Semiconductor Chip Protection Act of 1984, Pub. L. No. 98-620, 98 Stat. 3347 (codified at 17 U.S.C. §§ 901-914 (Supp. IV 1986)).

In contrast, only state law governs trade secrets, although there is some mention of trade secrets in federal statutes. *See* 5 U.S.C. § 552(b)(4) (1982) (exemption for trade secrets from public access provisions of Freedom of Information Act); 18 U.S.C. § 1905 (1982) (criminal sanctions for unauthorized disclosure by federal employees of private trade secrets acquired in official capacity).

5. UNIF. TRADE SECRETS ACT, 14 U.L.A. 537 (1980), as amended in 1985, *id.*, (Supp. 1988) at 331. *See generally* Klitzke, *The Uniform Trade Secret Act*, 64 MARQ. L. REV. 277 (1980).

The state enactments are as follows: ARK. STAT. ANN. §§ 70-1001 to -1007 (Supp. 1979); CAL. CIV. CODE §§ 3426-3426.10 (West Supp. 1988); COLO. REV. STAT. 7-74-101 to -110 (1986); CONN. GEN. STAT. ANN. §§ 35-50 to -58 (West 1987); DEL. CODE ANN. tit 6, §§ 2000-2009 (Supp. 1986); IDAHO CODE §§ 48-801 to -807 (Supp. 1986); ILL. ANN. STAT., ch. 140, §§ 351-359 (Smith-Hurd Supp. 1988); IND. CODE §§ 24-2-3-1 to -8 (Supp. 1988); KAN. STAT. ANN. §§ 60-3320 to -3330 (1983); LA. REV. STAT. ANN. §§ 51:1431 to :1439

some details of trade secret law vary from state to state.⁶ Abroad, legal protection of trade secrets is usually weaker than in the United States.⁷ International conventions cover nearly all forms of intellectual property except trade secrets,⁸ and some developing nations place strict limits on the duration of trade secret protection for foreign technology.⁹ Conse-

(West 1987); ME. REV. STAT. ANN. tit. 10, §§ 1541-1548 (Supp. 1988); MINN. STAT. ANN. §§ 325C.01-325C.08 (West 1981); MONT. CODE ANN. §§ 30-14-401 to -409 (1985); NEV. REV. STAT. ANN. §§ 600A.010-600A.100 (Michie Supp. 1988); N.D. CENT. CODE §§ 47-25.1-.01 to -.08 (Supp. 1987); OKLA. STAT. ANN. tit. 78, §§ 85-95 (1987); OR. REV. STAT. §§ 646.461-646.475 (1987); R.I. GEN. LAWS, §§ 6-41-1 to -11 (Supp. 1988); VA. CODE ANN., §§ 59.1-336 to -343 (1987); WASH. REV. CODE §§ 19.108.010-19.108.940 (1989); W. VA. CODE §§ 47-22-1 to -10 (1986); WIS. STAT. ANN. § 134.90 (Supp. 1988).

6. Those American states that have not adopted the *Uniform Trade Secrets Act* protect trade secrets under the common law, generally along the lines of the RESTATEMENT OF TORTS §§ 757, 758 (1939). Klitzke, *supra* note 5, at 282 (*Restatement's* "principles became primary authority by adoption in virtually every reported case."). The second *Restatement* contains no discussion of trade secrets because its scope excludes business torts. RESTATEMENT (SECOND) OF TORTS, introductory note at 1-2 (1979).

Examples of cases applying the *Restatement* include *S.I. Handling Sys., Inc. v. Heisley*, 753 F.2d 1244, 1255 (3d Cir. 1985) (Pennsylvania law); *K-2 Ski Co. v. Head Ski Co.*, 506 F.2d 471, 473-74 (9th Cir. 1974) (Maryland law and, before adoption of *Uniform Trade Secrets Act*, Washington law); *E.I. duPont deNemours & Co. v. Christopher*, 431 F.2d 1012, 1014 (5th Cir. 1970) (Texas law), *cert. denied*, 400 U.S. 1024 (1971).

7. A U.S. government survey of American firms, including all Fortune 500 firms, cited 26 countries as having no trade secret protection, 29 as having short time limits on protection, and 31 as offering no trade secret protection against third party misappropriation. See U.S. INTERNATIONAL TRADE COMMISSION, FOREIGN PROTECTION OF INTELLECTUAL PROPERTY RIGHTS AND THE EFFECT ON U.S. INDUSTRY AND TRADE, REPORT TO THE UNITED STATES TRADE REPRESENTATIVE, INVESTIGATION NO. 332-245 UNDER SECTION 332(G) OF THE TARIFF ACT OF 1930 vii-xii, 3-9, 3-10 (1988) (declassified Feb. 26, 1988). See also Reuter Bus. Rep., June 24, 1988 (available on NEXIS) (U.S. Commerce Department's Commissioner of Patents and Trademarks, Donald Quigg, testifying before Subcommittee on Foreign Commerce of the Senate Committee on Commerce and Trade on U.S. proposal that other nations, including Japan, "extend adequate protection to trade secrets"); Reuter Libr. Rep., March 1, 1988 (available on NEXIS) (U.S. Undersecretary for Economic Affairs Allen Wallis asserts that many U.S. firms will not enter foreign nations' markets because trade secrets are often lost without legal recourse).

8. See, e.g., Paris Convention for the Protection of Industrial Property, July 14, 1967, 21 U.S.T. 1629, T.I.A.S. No. 6923, 828 U.N.T.S. 107, which attempts to internationalize patent law (art. 4), trademark law (art. 4), and the law of unfair competition (art. 10^{bis}); see generally *id.* art. 1(2). The "Berne Convention," formally named the Berne Convention for the Protection of Literary and Artistic Works, September 9, 1886, as amended (Paris text, July 24, 1971), reprinted in 4 NIMMER ON COPYRIGHT app. 27 (1988), and the Universal Copyright Convention, Sept. 6, 1952, 25 U.S.T. 1341, T.I.A.S. No. 7868, 216 U.N.T.S. 132, provide for international copyright protection. (On October 20, 1988, the Senate finally ratified the Berne Convention, see 134 CONG. REC. S16939-40 (daily ed. Oct. 20, 1988), and a statute implementing the Convention in the United States has been passed, see Berne Convention Implementation Act of 1988, Pub. L. No. 100-568, 102 Stat. 2853 (to be codified in scattered sections of title 17 U.S.C.), effective on March 1, 1989. See 53 Fed. Reg. 48,748 (Dec. 2, 1988). Thus, international conventions cover every major field of intellectual property except that of trade secrets.

9. For example, Brazil has no statutory protection of trade secrets, and the Brazilian National Industrial Property Institute generally limits the duration of contractual protection for imported technology to five years. Turner, *Brazil: A Practical Guide to Intellectual Property Protection*, 109 BUS. AMERICAN, Jan. 18, 1988, at 14. Apparently Brazil's leaders feel that

quently, the parameters of trade secret protection vary considerably from country to country.

This lack of uniformity may have been acceptable when most research and development were tied to domestic production for domestic consumption in each nation. Today, however, the internationalization of business and trade has led to multinational research, development, and manufacturing, and consequent transnational licensing and dissemination of manufacturing secrets. In a multinational environment lacking robust and uniform protection of trade secrets, technology transfers may receive no compensation or may languish for fear of piracy. The result of this state of affairs may be a reduced flow of technology between nations and therefore less efficient use of technology in the global marketplace.

To some extent, the lack of uniform worldwide trade secret protection reflects cultural differences and differing perceptions of national interests. Developing countries often perceive trade secret protection as an attempt on the part of developed countries to deny them the technology needed to complete their industrial development, or at least a means of demanding an unfair price.¹⁰ Developed countries, principally the United States, demand a minimum level of trade secret protection in business transactions abroad, and their industries often refuse to transfer technology without that protection. Because Japan is a recently developed country now engaged in significant technology export of its own, its approach to trade secrets merits study.

This article compares trade secret protection in the United States and Japan in light of the different economies and cultures of the two nations. Part I provides a background for comparison by describing the theory and purposes of trade secret protection in the United States and examining the legal, business, sociopolitical, and economic significance of that protection. Part II describes the crucial distinction in American law between the tort law of trade secrets and contractual protection of confidential information. It then outlines the role of criminal sanctions in protecting private trade secrets and the civil remedies available in the United States for their misappropriation, focusing on the role of the injunction in providing effective relief. Part III analyzes the status of trade secret protection in Japan by reviewing key decisions of the Japanese courts and the observations of leading Japanese commentators, and it

limitations on the use or disclosure of imported foreign technology might stifle domestic industrial development. *See* Xinhua Gen. Overseas News Service, July 4, 1988 (available on NEXIS) (Brazilian President Jose Sarney speaking to Chinese officials and scientists on need to achieve technological development).

10. This is apparently the reason for Brazil's stringent limitations on the protection of trade secrets. *See supra* note 9.

notes the practical effect of the remedies (and the lack thereof) in those decisions. Although Japanese case law is sparse, there are now enough decided cases and scholarly commentaries to suggest that Japanese law lacks a vital feature of American trade secret law: effective relief for third-party misappropriation. Finally, Part IV analyzes the cultural and political reasons for the weakness of trade secret protection in Japan, discusses the forces for change, and provides a prognosis for the future.

I. The Significance and Purposes of Trade Secret Protection in the United States

As the Supreme Court has said, legal protection of trade secrets serves the important purposes of encouraging innovation and maintaining a minimum level of "commercial ethics."¹¹ During the last century, trade secret protection has become part of the very fabric of innovation in the United States. This section explores the significance of trade secrets from several different perspectives, highlighting the commercial importance of American trade secret law in this era in which both businesses and societies must innovate constantly in order to survive.

A. *Legal Significance*

Between the twin pillars of American intellectual property law—patents and copyrights—is a large gap in protection. Patents are granted for inventions that the Patent and Trademark Office finds, upon examination, to be new, useful, and "nonobvious."¹² Yet some inventions that meet these three criteria do not qualify for patent protection because they fall outside the scope of patentable subject matter. For example, laws of nature and basic scientific discoveries,¹³ algorithms and mathematical formulas,¹⁴ and business ideas¹⁵ in general are not patentable. Although

11. *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 481 (1974). *See supra* notes 1-2 and accompanying text.

12. 35 U.S.C. §§ 101-103 (1982). The primary standard for patentable inventions is that they be "nonobvious" to a person of ordinary skill in the art to which the invention pertains. 35 U.S.C. § 103 (1982); *Graham v. John Deere Co.*, 383 U.S. 1, 10-17 (1966).

13. *See, e.g., Diamond v. Chakrabarty*, 447 U.S. 303, 309 (1980) (dictum); *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, 130 (1948) (combination of naturally-occurring strains of nitrogen-fixing bacteria for nurturing plants not patentable); *O'Reilly v. Morse*, 56 U.S. (15 How.) 62, 112-21 (1853) (principles of electromagnetism not patentable as applied to telecommunication in general).

14. *See, e.g., Diamond v. Diehr*, 450 U.S. 175, 185-86 (1981) (dictum); *Parker v. Flook*, 437 U.S. 584, 588-89 (1978) (use of algorithm to calculate "alarm limits" in petroleum refining process not patentable); *Gottschalk v. Benson*, 409 U.S. 63, 67-72 (1972) (algorithm for converting binary-coded decimal numbers into binary numbers not patentable). Patents have been obtained, however, for particular implementations of algorithms. *See infra* note 28.

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not explicit in the statute's language,¹⁶ these exclusions are well established.

The other pillar of intellectual property law, copyright, does not protect ideas or facts at all, but only the particular form in which they are expressed in a work of authorship.¹⁷ Thus the discoverer of a principle of nature, a useful mathematical algorithm or formula, or a new business idea cannot protect it against copying by describing it in a book, article or other work. By doing so she might protect the form of words used in the work, but not the underlying ideas. For the ideas, copyright provides no better protection than patents. As a result, many ideas of great commercial importance fall in the gap between patents and copyrights and lack protection under American federal law. They are protected, if at all, under state law, such as the law of trade secrets.¹⁸

15. *See, e.g.,* *Loew's Drive-In Theatres v. Park-In Theatres*, 174 F.2d 547, 551-52 (1st Cir.), *cert. denied*, 338 U.S. 822 (1949) (idea of open-air drive-in theater not patentable apart from particular apparatus for implementing it); *Guthrie v. Curlett*, 10 F.2d 725, 726 (2d Cir. 1926) (symbol system for consolidated freight tariff index not patentable).

16. The statutory description of patentable subject matter is broad. It includes "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof." 35 U.S.C. § 101 (1982). The courts have created and defined the exclusions from the scope of patentable subject matter discussed in the text.

17. This principle, known as the "idea/expression dichotomy," is a well-established feature of copyright law. *See, e.g.,* *Baker v. Selden*, 101 U.S. 99, 101-02, 107 (1880) (system of accounting forms not protected by copyright); *Hoehling v. Universal City Studios, Inc.*, 618 F.2d 972, 978 (2d Cir.) (facts and speculation regarding historical event not protected), *cert. denied*, 449 U.S. 841 (1980); *Rosemont Enters., Inc. v. Random House, Inc.*, 366 F.2d 303, 307-10 (2d Cir. 1966) (biographical facts not protected), *cert. denied*, 385 U.S. 1009 (1967); *Miller v. Universal City Studios, Inc.*, 650 F.2d 1365, 1368-72 (5th Cir. 1981) (research involved in obtaining facts not protected).

Though originally judge-made law, the idea/expression dichotomy is now codified as follows:

In no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work.

17 U.S.C. § 102(b) (1982). *See also* H.R. REP. NO. 1476, 94th Cong., 2d Sess. 56-57 (1976), *reprinted in* 1976 U.S. CODE CONG. & ADMIN. NEWS 5659, 5670.

18. Trademark principles also may help fill the gap, for example, by protecting unpatentable product configurations and novel marketing concepts under the rubric of "trade dress." *See, e.g.,* *Fuddrucker's, Inc. v. Doc's B.R. Others, Inc.*, 826 F.2d 837, 841 (9th Cir. 1987) (restaurant decor, menu, layout, and style of service); *Brunswick Corp. v. Spinit Reel Co.*, 832 F.2d 513, 524-25 (10th Cir. 1987) (design of spinning reel for fishing); *LeSportsac, Inc. v. K Mart Corp.*, 754 F.2d 71, 76-77, 79 (2d Cir. 1985) (luggage design); *Truck Equipment Serv. Co. v. Fruehauf Corp.*, 536 F.2d 1210, 1213, 1223 (8th Cir.) (ornamental design for twin-hopper semitrailer truck), *cert. denied*, 429 U.S. 861 (1976). Trademark principles, however, do not protect technological discoveries and cannot protect product ideas in the abstract, apart from commercial symbols and the products or services that they identify.

For a striking example of these principles, see *John H. Harland Co. v. Clarke Checks, Inc.*, 711 F.2d 966 (11th Cir. 1983). There a printer of standardized bank checks developed a very successful product—a desk checkbook with two stubs for each check. One of the two stubs could be detached with the corresponding check for use outside the office, completed along

B. *Business Significance*

Trade secrets have no general limitations on their subject matter. Virtually any information qualifies for trade secret protection as long as it has sufficient competitive value and is properly guarded.¹⁹ Thus trade secret law is eminently capable of filling the gap between patent and copyright protection. Indeed, perhaps its primary commercial value lies in helping to fill that gap.²⁰

Three examples illustrate the business significance of trade secret law in protecting innovations that patent and copyright law do not reach. First, consider the "sequencing" of the human genome.²¹ Determining the sequence of DNA building blocks in a substantial portion of the human genome would require expending massive resources in time, energy, and money.²² Yet a business that undertook the job could not rely on patent law to protect the sequence it discovered, for that sequence would constitute a "law of nature" just as much as Einstein's theory relating matter to energy.²³ Nor would copyright law protect the information in the sequence; courts undoubtedly would view that information as an "idea" or "discovery" excluded from protection by the express terms

with that check, and returned to the office to fill out the permanent stub. *Id.* at 969-70. This product apparently had no patent protection, and it could not be protected by copyright because the two-stub check was a blank form or "idea." *Id.* at 971-72. Claims of trade secrecy would have been unavailing because the checks' very sale disclosed their "secrets." Accordingly, the plaintiff sought protection under trademark principles. *Id.* at 970-71, 980-81. On appeal, the Eleventh Circuit upheld a finding that the two-stub feature was "functional" and therefore ineligible for trademark protection, but it remanded the case for a determination whether the defendant had copied nonfunctional design features of the checks. *Id.* at 982-84.

19. See RESTATEMENT OF TORTS § 757 comment b (1939); UNIF. TRADE SECRETS ACT § 1 & comment.

20. For a discussion of the "gap-filling" function of trade secret law in the field of computer software, see Dratler, *Trade Secret Law: An Impediment to Trade in Computer Software*, 1 SANTA CLARA COMPUTER & HIGH-TECH. L.J. 27, 44-45 (1985).

21. Each human chromosome consists of a long strand of deoxyribonucleic acid (DNA), divided into functional segments called "genes." S. PRENTIS, BIOTECHNOLOGY 26-29 (1985). Each gene is composed of a particular sequence of four basic building blocks, called nucleotides. *Id.* at 29. The particular sequence of these building blocks determines the function of the gene, which in turn determines the characteristics of the individual, such as eye color, inherited diseases, and the like. *Id.* The process by which scientists discover the sequence of these building blocks in a particular gene or gene segment is known as "sequencing."

Today biologists can "sequence" certain genes and portions of others, *id.* at 38-39, 57-58, but the genetic sequence for the vast majority of the human genome (the generic term for the human gene structure in the abstract) remains unknown.

22. Scientists have estimated that sequencing the entire human genome with current technology would cost more than \$1 billion, Roberts, *Human Genome: Questions of Cost*, SCIENCE, Sept. 18, 1987, at 1411, and would take up to 100 years without special government assistance. Inside Energy/with Federal Lands, June 15, 1987, at 2 (Department of Energy report) (available on NEXIS).

23. See *Diamond v. Chakrabarty*, 447 U.S. 303, 309 (1982) (dictum, Einstein's law $E = Mc^2$ not patentable).

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of the statute.²⁴ Trade secret law, however, could provide protection, as long as the business that discovered the sequence took appropriate steps to guard it.²⁵

As a second example, consider a hypothetical algorithm to be used for on-line automated scheduling of package pick-ups and deliveries in crowded cities in response to customer requests. Such an algorithm probably would not qualify for patent²⁶ or copyright²⁷ protection in its most abstract and general form, although particular implementations of it (for example, in a specific computer program) might be protected.²⁸

24. See *supra* note 17. Alternatively, the sequence of a *naturally occurring* gene (as distinguished from a synthetic or man-modified gene) would appear to lack the minimal originality required for copyright protection because the "author" who discovered it would have added nothing to it. Cf. *Financial Information, Inc. v. Moody's Investors Serv., Inc.*, 808 F.2d 204, 207-08 (2d Cir. 1986) (index cards containing information on callable investment bonds not copyrightable because "authors" added nothing original or creative to pre-existing information), *cert. denied*, 108 S.Ct. 79 (1987); *Miller v. Universal City Studios Inc.*, 650 F.2d 1365, 1368-69 (5th Cir. 1981) (facts not copyrightable because author who describes them does not originate them).

25. See *infra* note 68 and accompanying text. Because knowledge of the sequence would have obvious competitive value for firms in the medical field, the only remaining requirement for legal protection would be that reasonable steps be taken to prevent its unauthorized disclosure or use.

26. See *supra* note 14 and accompanying text.

27. Most algorithms are capable of implementation or "expression" in a variety of ways, for example, in different computer programming languages on different computers. To extend copyright protection for any single implementation to the organization and sequence of the algorithm's calculational steps in the abstract, divorced from their concrete expression in a particular computer program, would appear to transgress the boundary between idea and expression. See *supra* note 17. It therefore seems safe to say that copyright law cannot protect an algorithm in its abstract or general form.

28. In *Diamond v. Diehr*, 450 U.S. 175, 187, 191-92 (1981), the Supreme Court accepted a process for curing rubber in a mold as patentable subject matter, despite the fact that the sole novel element of the process was the use of a digital computer to calculate a well-known formula from chemistry, which determined when to open the mold. See *id.* at 188-89 & n.12. A would-be patentee of the hypothetical scheduling algorithm might attempt to invoke *Diehr* by claiming the entire computer scheduling system as a patentable product. A strategy of this sort appears to have been successful in patenting implementations of a powerful algorithm developed at AT&T Bell Laboratories. See *N.Y. Times*, Aug. 13, 1988, § 1 at 33 (three patents issued in May 1988). The validity of the patents, however, has not yet been tested.

Similarly, copyright might protect a particular implementation of an algorithm in a specific computer program, and that protection would extend beyond verbatim copying. See generally 3 NIMMER ON COPYRIGHT § 13.03[A][1][2] at 13-20 (1987) (describing two types of copyright infringement: "fragmented literal similarity" and "comprehensive nonliteral similarity"). Because copyright in a computer program covers the structure, sequence, and organization of the program, see *Whelan Associates, Inc. v. Jaslow Dental Laboratories, Inc.*, 797 F.2d 1222, 1224-25, 1238, 1240, 1242 (3d Cir. 1986), *cert. denied*, 107 S.Ct. 877 (1987), the copyright in a particular implementation of an algorithm would extend to the organization and sequence of the computational steps as implemented in a particular programming language on a particular machine. Without violating the idea/expression dichotomy, however, copyright could not protect the "idea" or "essence" of the algorithm in its abstract form. See *supra* note 27.

Although an algorithm developer thus may invoke worthwhile legal protection under patent or copyright law, the validity and extent of that protection are uncertain. Moreover, the expense and delay in obtaining and enforcing patent protection may make patent protection

New and improved algorithms of this sort are the lifeblood of the software and information industries, and many firms may seek comprehensive protection for such algorithms under trade secret law in lieu of the more elusive protection offered by patent or copyright law, whose scope and very existence is uncertain.

Finally, consider a useful business idea, such as a distributor's new method for efficiently matching customers' needs with suppliers' available products. Apart from any computer system or other apparatus for bringing it about,²⁹ such a system would not merit patent protection.³⁰ Moreover, abstracted from any computer program that might implement it, it would not merit copyright protection.³¹ Again, trade secret law could protect the concepts underlying this office system if they were properly guarded.

These examples illustrate the immense potential importance of trade secrets for modern commerce. In each, the hypothetical subject matter requires considerable expenditure of time, money, and human effort to develop. In the absence of trade secret protection, businesses incurring this expenditure would have little or no means to protect their investment, and therefore little incentive to make that investment in the first place. If they nevertheless made the investment, the risk of unauthorized and uncompensated use by others, in the absence of legal protection, would likely discourage these businesses from licensing their secrets to others.

Two long-term trends suggest that the commercial importance of trade secret protection can only increase in the future. First, the United States is undergoing a transition from a manufacturing economy to a so-called "information society."³² In this transition, the importance of service industries, one of whose primary functions is to collect, digest, organize, and disseminate information of various types, will eclipse that of manufacturing industries, the traditional domain of patent protection. As the transition proceeds, the value of information developed by service indus-

impracticable in many cases. For these reasons, trade secret protection may be the choice of many algorithm developers, particularly those who do not plan to market implementations of their algorithms broadly, for example, in computer software.

29. This system might be an "algorithm" if expressed in a mathematically abstract form, or it might be embodied in a computer program. For the moment, assume that it comprises simply a more efficient system of office procedures, carried out manually with the aid of paper files.

30. See *supra* note 15 and accompanying text.

31. See *supra* note 17 and accompanying text.

32. See H. CLEVELAND, *THE KNOWLEDGE EXECUTIVE* 20, 26-28 (1985) (jobs filled by "information workers" constitute more than half of all jobs now, and probably "something like two-thirds" by the year 2000).

tries, which is generally not protected by patents or copyrights, will become a larger proportion of the gross national product and eventually may exceed the value of manufactured products. Under these circumstances, trade secret law will protect—and will provide the incentive to produce—much of the value of American industrial output.³³

The second long-term trend increasing the importance of trade secret law is a change in the nature of industrial research. Over the last several decades, research and development in industrialized nations have become increasingly complex and costly, requiring the participation of many scientists and engineers in large research teams.³⁴ In large research laboratories, great breakthroughs occur rarely, and the process of research and development proceeds in little steps.³⁵ These little steps, however, are seldom sufficiently novel or nonobvious to qualify for patent protection.³⁶ Nevertheless, in the aggregate they are costly, and they may be the end product of intense international competition in research, development, and manufacturing. Lack of legal protection for these innumerable little steps may cause investment funds to flee, employees to be demoralized, and industrial espionage to increase.

33. The examples discussed in text—DNA sequences for human genes, optimization algorithms for package delivery, and a distributor's business system—illustrate this trend, for the heart of all of them is pure "information," which is usually ineligible for patent or copyright protection.

34. See generally Dratler, *Incentives for People: The Forgotten Purpose of the Patent System*, 16 HARV. J. ON LEGIS. 129, 130-31 & n.7 (1979).

35. Sequencing the human genome provides a good paradigm for the modern research process. It will require careful and painstaking investigation of hundreds of thousands of gene segments. Although there is hope for short-cuts as a result of advances in laboratory technique, the basic technology for this process is well known. The research will require no fundamental breakthrough, just a lot of hard work. See *supra* notes 21-22; Roberts, *supra* note 22, at 1411-12.

As another example, consider the much-ballyhooed discovery of high-temperature superconductors. Because these materials are ceramics, their practical application will require a great deal of development in rather pedestrian manufacturing processes. Heppenheimer, *1988's Hottest Superconductor Companies*, HIGH TECH. BUS., Jan. 1988, at 18, 26-27. Although some results of this development may be patentable, undoubtedly much of it will not. *Id.* Trade secret law, however, could protect the results of this development since the sale of materials like superconductors seldom discloses the processes by which they are made.

For a discussion of the same principle applied to computer programming, see Dratler, *supra* note 20, at 35 (patent protection usually inappropriate because most computer software reflects only minor, step-by-step advances).

36. Congress' recognition of this aspect of modern research and development was partially responsible for its admonition in 35 U.S.C. § 103 (1982) that "[p]atentability shall not be negated by the manner in which the invention was made." See 1952 U.S. CODE CONG. & ADMIN. NEWS 2394, 2411 ("immaterial whether [invention] resulted from long toil and experimentation or from a flash of genius"). Although this principle permits a nonobvious and novel result of series of little steps to be protected, it does not permit protection of the individual steps themselves. If the research project produces no major breakthrough, as is often the case, there may be no patent protection at all.

C. *Sociopolitical Significance*

Sociopolitical circumstances in the United States intensify the need to fill the gap between patent and copyright law. At the same time, sociopolitical differences between the United States and Japan help explain the differences in the two countries' approaches to trade secrets. Accordingly, a brief examination of the relevant social and political factors may be helpful at this point.

In the United States, hardly a month goes by without a new report of industrial espionage appearing in the press.³⁷ My experience working with clients in Silicon Valley suggests two causes for this high rate of industrial espionage in the United States: company fragmentation and high employee mobility.

Unlike Japanese industry, which is dominated by a few large industrial groups, the most innovative sectors of American industry are fragmented among many small firms. Indeed, some economists have estimated that 80 to 90 percent of product innovations in America come from small companies, rather than giant corporations.³⁸ Creative American employees often leave large organizations to form small firms, in which they seek both better opportunities to develop their ideas free from corporate bureaucracy and a greater share in the profits to be made from their efforts. As these innovative small companies form, grow, and become acquired by larger firms, they create new opportunities for unauthorized use of trade secrets.

Moreover, Americans move among these corporate fragments with relative ease. Compared to their counterparts in Japan, American technical and managerial employees are inveterate job hoppers.³⁹ The average American white collar employee changes jobs three times in a career,⁴⁰ while many Japanese white collar employees, at least in large

37. See generally Miles, *Information Thieves are now Corporate Enemy No.1*, BUS. WEEK, May 5, 1986, at 120 (discussing widespread danger of theft or misappropriation of trade secrets in the United States). For two recent cases, see Wall Street J., Aug. 24, 1988, at 4 (alleged attempt to sell Amgen's secret production processes for the drug erythropoietin); Wall Street J., Aug. 16, 1988, at 1 (alleged theft of General Electric's drawings and specifications for turbine parts).

38. See *Hearings on Federal Incentives for Innovation Before the Special Subcomm. on Science, Technology and Commerce of the Senate Comm. on Commerce*, 93d Cong., 1st Sess. 29 (1973) (remarks of Dr. Kenneth Arrow, Prof. of Economics, Harvard University). This does not contradict the fact that many innovations *begin* in large research laboratories. Although they may be *conceived* in large organizations, a process of corporate parturition is often necessary to give them birth. See Dratler, *supra* note 34, at 188 n.209.

39. See J. ABEGGLEN & G. STALK, *KAISHA, THE JAPANESE CORPORATION* 199-203 (1985) [hereinafter *KAISHA*].

40. See A. MORITA, *MADE IN JAPAN* 197 (1986).

companies, remain with the same company for life.⁴¹ Unlike the Japanese, Americans consider employee mobility a social good that promotes the efficient use of labor, individual self-realization, and entrepreneurship. Yet this high mobility that Americans value so much encourages misuse of trade secrets by giving job hoppers both the temptation and the opportunity to use their former employers' technology in new jobs.

The leading case of *Wexler v. Greenberg*⁴² illustrates both the personal motivations that lead to greater employee mobility and the tension between the goals of fostering that mobility and of encouraging innovation through trade secret protection. Greenberg, a chemist, worked for eight years as the sole researcher in a small company, analyzing competitors' products to develop formulas for maintenance and sanitation chemicals. Apparently dissatisfied with his prospects there, he left his employer and joined a former distributor, where he became a director, the treasurer, the chief chemist, and a 25 percent stockholder. Although his new employer thereafter began to use the formulas that Greenberg had developed while in his former job, the Supreme Court of Pennsylvania denied the former employer all relief.⁴³ It held that the formulas were part of Greenberg's general "technical knowledge and skill," that there had been no breach of confidence, and therefore that no trade secret misappropriation had occurred.⁴⁴ In arriving at this conclusion, the court articulated and carefully balanced the conflicting policies of fostering investment and encouraging innovation on the one hand, and promoting employee mo-

41. See J. WORONOFF, *JAPAN: THE COMING SOCIAL CRISIS* 162 (1982), quoted in M. ZIMMERMAN, *HOW TO DO BUSINESS WITH THE JAPANESE* 11 (1985) (ideal of lifetime employment "fully practiced in perhaps a third of the cases"). See also A. MORITA, *supra* note 40, at 199-200 ("Young [Japanese] managers can be expected to remain with the same company for twenty or thirty years . . ."); *id.* at 199-202 (contrasting Japanese and American management attitudes toward employee retention); Wall Street J., Oct. 11, 1988, at A1 (idea of "changing companies in mid-career is nothing less than revolutionary in Japan").

Zimmerman notes that Japanese technical personnel are ". . . subject to tight discipline. They cannot resign and join another company because they would universally be regarded as disloyal and untrustworthy; no one would hire them." M. ZIMMERMAN, *supra*, at 113. For other reasons for the low employee turnover in Japan's big companies, see *infra* text accompanying notes 185-90.

42. 399 Pa. 569, 160 A.2d 430 (1960).

43. *Id.* at 431-33.

44. *Id.* at 437. At one point, the court *assumed* that the chemical formulas were trade secrets and focused solely on the alleged breach of a confidential relationship. *Id.* at 434. However, it hinted that, had it reached the issue, it would have declined to find the formulas trade secrets:

[W]e hold that this information forms part of the technical knowledge and skill [Greenberg] has acquired by virtue of his employment . . . and which he has an unqualified privilege to use.

Id. at 437.

bility on the other. On the facts before it, the court came down on the side of employee mobility.⁴⁵

The *Wexler* court's concern with balancing the goals of employee mobility and protection of investment in research and development remains characteristic of American trade secret jurisprudence.⁴⁶ Yet while courts value employee mobility, they also recognize that a field of individualistic employees, free to move among fragmented and competing companies, cries out for legal restraint.⁴⁷ Without restraint, overzealous competition among fragmented companies can lead to bribery, misrepresentation, industrial espionage and breaches of trust—with unfortunate results for both “commercial ethics” and the economy.⁴⁸ The facts of *Wexler* illustrate the problem, for it was *Wexler*'s freedom to seek other employment that led to his use of the alleged trade secrets.

It is now almost three decades since *Wexler* was decided. In the interim, both employee mobility and the rate of corporate fragmentation appear to have increased.⁴⁹ Indeed, the trends toward increasing company fragmentation and increasing employee mobility appear to be reinforcing each other. Company fragmentation motivates increased job hopping by providing the lure of attractive new job opportunities with higher pay, stock options, more responsibility, or more interesting work.

45. *Id.* at 433-35. The balance the court reached turned on the particular facts of the case. The chemist had signed no covenant against competition, *id.* at 432, and he had developed the formulas at issue virtually on his own, “without any appreciable assistance by way of information or great expense or supervision” of the former employer. *Id.* at 433 n.3, 436.

46. *See, e.g., American Can Co. v. Mansukhani*, 742 F.2d 314, 329 (7th Cir. 1984); *S.I. Handling Sys., Inc. v. Heisley*, 753 F.2d 1244, 1266-69 (3d Cir. 1985) (Adams, J., concurring); *ILG Indus., Inc. v. Scott*, 49 Ill. 2d 88, 93, 273 N.E.2d 393, 396 (1971); *Winston Research Corp. v. Minnesota Mining & Mfg. Co.*, 350 F.2d 134, 137-38 (9th Cir. 1965). *See generally* Note, *Trade Secrets: How Long Should an Injunction Last?*, 26 U.C.L.A. L. REV. 203, 208 & n.19, 214-15 (1978) (discussing balance of policies in determining duration of injunctive relief for trade secret misappropriation); Hutter, *Drafting Enforceable Employee Non-Competition Agreements to Protect Confidential Business Information: A Lawyer's Practical Approach to the Case Law*, 45 ALB. L. REV. 311, 317-20 & nn.48, 54 (1981) (discussing employee mobility as a goal of decisions that refuse to enforce certain covenants not to compete).

47. *See, e.g., Kubik, Inc. v. Hull*, 56 Mich. App. 335, 361-62, 224 N.W.2d 80, 93 (Mich. Ct. App. 1974); *ILG Indus., Inc.*, 49 Ill. 2d at 93, 273 N.E.2d at 396; *Winston Research Corp.*, 350 F.2d at 138; Note, *supra* note 46, at 208, 209-12.

48. Morita argues that, where mobility is the rule and there is no long-term relationship between employer and employee, there can be no trust and no reliable preservation of secrecy. *See infra* note 190.

49. This observation is based largely upon my experience as an attorney advising high-technology companies in California's Silicon Valley. However, the facts of recent trade secret cases amply illustrate the phenomenon. *See, e.g., American Can Co. v. Mansukhani*, 742 F.2d 314, 317 (7th Cir. 1984) (ink chemist started own business after corporate laboratory in which he worked had been sold, resold, and returned to the original owner within three-year period); *Litton Sys., Inc. v. Sundstrand Corp.*, 750 F.2d 952, 957 n.2 (Fed. Cir. 1984) (describing peregrinations of twelve employees who worked on similar technological projects for various competitors, then for Litton, and then, in several cases, for other competitors).

Conversely, greater employee mobility (and the business culture of transience that it creates) facilitates the formation of new ventures and thereby promotes increasing company fragmentation.

The result is a vast game of corporate musical chairs, in which the tempo of the music appears to be ever-increasing. High-technology employees playing this game have a great temptation to steal trade secrets, or at least to forget who owns them, as they move from job to job and company to company. By providing rules for the game, trade secret law seeks to preserve incentives for innovation and prevent one firm from enjoying the fruits of another's labor, while at the same time assuring an acceptable level of employee mobility.

D. *Economic Significance*

A significant issue in trade secret law is the relationship between practical and legal protection of secrets. If a firm that uses a secret in its business can keep the secret to itself, legal protection is unnecessary. The need for legal protection arises only when the secret leaks out and is used by someone else without authorization. But in that case why should the law provide protection, when the owner of the secret has failed to guard it successfully against unauthorized use?

The case of *E.I. duPont deNemours & Co. v. Christopher*⁵⁰ helps to provide an answer. There the Christopher brothers were commissioned by an unnamed third party to fly over duPont's unfinished methanol plant and take photographs of its construction—a patent act of industrial espionage.⁵¹ On appeal, the court upheld a cause of action against the Christophers for misappropriation of duPont's trade secrets, an order to disclose the third party's identity, and (by implication) a cause of action against the third party, even though the third party's identity was unknown to duPont, and even though the Christopher brothers had no contractual or other relationship with duPont whatsoever.⁵²

Besides serving as a classic example of the application of American trade secret law in the absence of privity of contract,⁵³ the decision is notable for its economic rationale. The court reasoned that denying duPont relief would in effect encourage duPont (and presumably others in similar situations) to build enclosures over unfinished chemical plants to

50. 431 F.2d 1012 (5th Cir. 1970), *cert. denied*, 400 U.S. 1024 (1971).

51. *Id.* at 1013. The purpose of the aerial photography was to determine the chemical processes that duPont intended to use.

52. *Id.* at 1016-17.

53. In their comments to section 1 of the *Uniform Trade Secrets Act*, the Commissioners on Uniform State Laws cite the case as an example of "improper means" of obtaining a trade secret.

conceal their construction from industrial espionage—an expensive and wasteful proposition.⁵⁴ The court wrote, “[T]o require duPont to put a roof over the unfinished plant would impose an enormous expense to prevent nothing more than a school boy’s trick.”⁵⁵

This analysis appears correct. Any investment by duPont in building an enclosure around its unfinished chemical plant, or in other similarly extreme protective measures, would neither improve duPont’s products nor benefit consumers. Absent legal protection, however, duPont might incur the expense, thereby reducing its economic efficiency.

In general, business firms might take a number of inefficient practical steps to protect their valuable technology if the law did not do so. For example, they might restrict the travel or activities of employees having access to important secrets, or they might limit the number and the level of employees given access. These measures probably would reduce efficiency by impeding the optimal flow and use of information within the firms’ own organizations. Moreover, to avoid defection of their key employees, firms might bind them with economic ties (such as higher salaries or benefits) or legal restraints (such as covenants not to compete). These measures probably would impair economic efficiency by raising the price of labor above the value of the employees’ abilities, skill, and experience, as well as reducing employee mobility. The end result would be greater expense and inconvenience in research and development, overinvestment in labor, and restricted employee mobility, all leading to decreases in the efficiency of research, development, and production.

The same analysis applies to technology transfers between firms. Without legal protection for trade secrets, firms having secret information probably would be reluctant to license that information to others for fear of piracy. For particularly important technology, firms might refuse to license their secrets at all. As a result, unpatentable technology would no longer be available to the highest bidder, presumably the firm best able to exploit it.⁵⁶ Even if owners of secrets did grant licenses, they might impose inefficient restrictions on the operations of their licensees. For example, they might restrict dissemination of the secret within the licensee’s organization or require stringent physical security measures, thereby raising the licensee’s cost of using the secret. The result would

54. *Christopher*, 431 F.2d at 1016. (“Our tolerance of the espionage game must cease when the protections required to prevent another’s spying cost so much that the spirit of inventiveness is dampened.”).

55. *Id.*

56. In a hypothetical freely competitive marketplace, where every company can bid for a license of every other company’s technology and transaction costs are minimal, the highest bidder presumably will be the company that can exploit the technology most efficiently.

be a more restricted marketplace of technology, fewer technology licenses, and less efficient use of licensed technology.

These effects seem particularly pronounced in international transactions. Technology is generally less secure in the international than the domestic context due to the distances involved, language barriers, and differing customs, laws, and standards of commercial practice. To protect themselves from the increased risk of losing their secrets, firms licensing abroad often take even more severe security measures. For example, some limit disclosure of their trade secrets to their domestic nationals in foreign management positions, thereby creating a perception of favoritism or prejudice. Some require special physical or contractual security precautions in foreign transactions.⁵⁷ In addition, some flatly refuse to license their most modern technology to firms in certain countries.⁵⁸

Although limiting its encapsulation of trade secret policies to innovation and “commercial ethics,”⁵⁹ the U.S. Supreme Court has strongly endorsed this economic rationale for trade secret protection.⁶⁰ It recognized that abrogation of legal protection for trade secrets likely would lead to costly security measures, increased costs of employee compensation (to retain employee loyalty), greater restrictions on licensing, and reduced efficiency in exploiting new technology.⁶¹ With today’s ever-increasing international trade, practical arguments for trade secret protection based upon economic efficiency⁶² are surely as important as the goals of encouraging investment and discouraging “immorality”—whatever the latter may mean in an international context.

57. Cautious lawyers often advise exporters of American technology to do so. See Coffey & Michael, *Securing Patents, Trading Secrets Overseas can be Complex*, 6 INDIANAPOLIS BUS. J., Mar. 10, 1986, § 1 at 14A.

58. For example, before the adoption of the Korean Computer Program Protection Act of 1987, one of my clients refused to license certain software technology to a Korean firm due in part to the lack of effective protection for trade secrets there.

59. See *supra* notes 1-2 and accompanying text.

60. See *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 485-87 (1974). The Court stressed this rationale in discussing trade secrets that are unpatentable or of doubtful patentability, not those that are clearly patentable, but the rationale appears to apply more broadly.

61. *Id.* at 486. In the absence of trade secret protection, the Court reasoned, technology would no longer be available to the party most efficiently able to exploit it.

62. It is unfortunate that the Court omitted this rationale from its short list of policies underlying trade secret protection, for it seems as important as “commercial ethics.” Indeed, the economic rationale itself may underlie ethical norms prohibiting such things as industrial espionage and subversion of employees.

II. Approaches to Trade Secret Protection: Contracts, Criminal Sanctions, and Civil Remedies in Tort

Before comparing the principles of trade secret law in the United States and Japan, it is useful to distinguish three branches of American law that may be used to protect trade secrets: contractual protection of confidential information, criminal sanctions for trade secret misappropriation, and civil remedies in tort. The analysis reveals that tort law has certain advantages for the trade secret owner; it provides relief where there is no privity of contract, and it offers remedies that criminal sanctions cannot provide.

A. *Contractual Protection of Information*

Both Japan and the United States recognize nondisclosure agreements.⁶³ If a party to a contract agrees to keep certain information confidential and fails to do so, both countries' laws will treat that failure as a breach of contract.⁶⁴ Thus, if a nondisclosure agreement covers a trade secret, contract law will help protect the secret in both countries.

In the United States, however, protection under contract is quite distinct from protection under tort law. In *Boeing Co. v. Sierracin Corp.*,⁶⁵ for example, the Washington Supreme Court ruled that a claim for breach of a confidentiality agreement does not require the information to be a trade secret, and that the tort of misappropriation of trade secrets is a separate and independent cause of action.⁶⁶ It then affirmed the trial court's doubling of the jury's damage award for willful misappropriation of trade secrets and upheld a permanent injunction.⁶⁷

63. See *infra* text accompanying notes 65-67 (United States); note 70 and accompanying text (same); text accompanying notes 129-41 (Japan).

64. There is some question, however, whether Japanese courts require the information to have some objective economic value. See *infra* notes 131-41 and accompanying text.

65. 108 Wash. 2d 38, 738 P.2d 665 (1987).

66. The court relied upon the language and legislative history of the *Uniform Trade Secrets Act* as adopted in the State of Washington. 108 Wash. 2d at 48, 738 P.2d at 673-74.

Boeing had supplied Sierracin with confidential specifications for airplane windows, 108 Wash. 2d at 40, 738 P.2d at 671, under contracts that required Sierracin to keep the specifications confidential and to use them only to supply windows to Boeing, 108 Wash. 2d at 47, 738 P.2d at 673. Sierracin nevertheless used Boeing's confidential specifications in an attempt to obtain government certification for its windows for the spare parts market. 108 Wash. 2d at 42-43, 738 P.2d at 671. At trial, the jury found that Sierracin had breached a contractual and confidential relationship and had misappropriated Boeing's trade secrets. On appeal, Sierracin argued that the lower court had erred in not consolidating these causes of action into a single claim for misappropriation of trade secrets, but the Washington Supreme Court rejected its argument. 108 Wash. 2d at 48, 738 P.2d at 673-74.

67. See *Sierracin*, 108 Wash. 2d at 61-62, 68, 738 P.2d at 680-681, 683-84. The *Uniform Trade Secrets Act* permits courts in their discretion to increase an award of damages by up to

As a distinct cause of action, a contract claim covers a broader range of information than a tort claim. Tort law requires that the information at issue qualify as a "trade secret." To do so, it must have competitive value and its owner must make "reasonable efforts" to keep it secret.⁶⁸ If an alleged secret becomes known or available to the public, or at least to those competitors or the industry that could profit by it, it loses protection as a trade secret under tort law,⁶⁹ although contract law still may protect it.⁷⁰

Nevertheless, contract law has a critical disadvantage: it cannot protect trade secrets where there is no contract. For example, a nondisclosure agreement might preclude an employee or licensee from misusing or disclosing a trade secret in breach of the agreement; but it cannot provide relief against a third party who learns of the secret from the employee or licensee and has no contractual relationship with the trade secret owner.

Tort law, however, can and does provide that relief. As a branch of tort law, U.S. trade secret law defines legal rights and imposes legal obligations without requiring any contractual relationship.⁷¹ For example,

100% in cases of "willful and malicious misappropriation." UNIF. TRADE SECRETS ACT § 3(b).

68. See RESTATEMENT OF TORTS § 757 comment b (1939); UNIF. TRADE SECRETS ACT § 1 & comment.

69. See, e.g., *Aronson v. Quick Point Pencil Co.*, 440 U.S. 257, 263-64 (1979) (construction of simple novelty item disclosed by its sale); *Defiance Button Mach. Co. v. C & C Metal Prod. Corp.*, 759 F.2d 1053, 1063-64 (2d Cir. 1985) (customer lists left in memory of computer sold to defendant, which had ready access to source books containing file names and passwords) (citing *Restatement and general law*), cert. denied, 474 U.S. 844 (1985); *Jostens, Inc. v. National Computer Sys., Inc.*, 318 N.W.2d 691, 700-01 (Minn. 1982) (computer software documents and tapes not marked confidential, some employees not bound by nondisclosure agreements, and some details disclosed in technical publications); *Kubik, Inc. v. Hull*, 56 Mich. App. 336, 369, 224 N.W.2d 80, 97 (Mich. Ct. App. 1974) (formula for speed of conveyer system not secret as employee disclosed it to customers, despite prohibition, with plaintiff's knowledge).

70. Thus, contract law covers a broader range of information. See, e.g., *Structural Dynamics Research Corp. v. Eng. Mechanics Research Corp.*, 401 F.Supp. 1102, 1114, 1116 (E.D. Mich. 1975) (contractual protection, but no trade secret protection, against use of secret by employees who helped develop it) (applying Ohio law); *Boeing Co. v. Sierracin Corp.*, 108 Wash. 2d 38, 48, 738 P.2d 665, 673-74 (1987). *Packaging House, Inc. v. Hoffman*, 114 Ill. App. 3d 284, 448 N.E.2d 947, 949 (1983) (no trade secrets required to protect customer list under nonsolicitation covenant); *Island Air, Inc. v. LaBar*, 18 Wash. App. 129, 566 P.2d 972, 977-78 (1977) (enforcing oral agreement not to compete using confidential information disclosed in abortive attempt to sell business).

If the information becomes fully known to the general public, then the party agreeing to keep it confidential arguably may use it from a publicly available source without a breach of contract. However, there are many cases in which information has sufficiently restricted availability to qualify for contractual protection but nevertheless may fail to qualify as a trade secret because its owner has not taken reasonable steps to keep it confidential. Under these circumstances, contractual protection may succeed where trade secret protection fails.

71. Both the RESTATEMENT OF TORTS § 757 comments f, h, j, (1939) and the UNIF. TRADE SECRETS ACT § 1 comment, define misappropriation of a trade secret as the use of "improper means" to obtain it. While the term "improper means" includes breach of agree-

the *Christopher* court⁷² approved injunctive relief against the brothers who took unauthorized aerial photographs of duPont's unfinished chemical plant, as well as against the third party who hired them to do so, even though the very identities of the Christophers and the third party had been unknown to duPont at the time the photographs had been taken.⁷³ Similarly, in the classic case of *Tabor v. Hoffman*,⁷⁴ the court held the defendant liable for obtaining secret information through the plaintiff's independent contractor, despite the absence of any contractual relationship between the plaintiff and defendant.⁷⁵

Even when a trade secret action is based upon the breach of an alleged confidential relationship, it requires no contract under American law, because a confidential relationship cognizable under tort law may arise out of business negotiations that fall short of agreement.⁷⁶ In cases of this sort, tort law recognizes both the confidential relationship and the legal duties arising from it.

Thus, unlike contracts, tort law protects trade secrets against misappropriation by, or disclosure to, a broad class of persons who have no agreement with the trade secret owner. From the trade secret owner's point of view, these may be the most dangerous potential misappropriators. When a firm's own employee, supplier, or customer misuses its trade secrets, it may have some economic leverage, by virtue of a continuing relationship, that it can bring to bear on the culprit. Or at least the firm may know where to find him. But when the firm is the victim of

ment, it also includes a number of acts that have nothing to do with contracts, such as theft, bribery, and industrial espionage. The existence of obligations independent of contractual relationships is precisely the protection that may be missing in foreign countries and therefore, to Americans, is the most important issue in trade secret protection abroad.

72. *E.I. duPont deNemours & Co. v. Christopher*, 431 F.2d 1012, 1014 (5th Cir. 1970), *cert. denied*, 400 U.S. 1024 (1971). *See supra* text accompanying notes 50-52.

73. *See Christopher*, 431 F.2d at 1013, 1017.

74. 118 N.Y. 30, 23 N.E. 12 (1889).

75. *See* 23 N.E. at 13 (Follett, C.J., dissenting) (arguing there was no legal duty because no contractual relationship existed). The plaintiff had hired the contractor to repair patterns for parts of the plaintiff's proprietary pump, and the contractor had surreptitiously made copies of the patterns for the defendant. *See* 23 N.E. at 12.

76. *See, e.g., Metallurgical Indus., Inc. v. Fourtek, Inc.*, 790 F.2d 1195, 1203-04 (5th Cir. 1986) (abortive arrangement for supplying custom furnaces); *Timely Prod. Corp. v. Arron*, 523 F.2d 288, 302-03 (2d Cir. 1975) (implied obligation of confidence between co-venturers developing and marketing electrically heated sock) (citing *Restatement*); *Tri-Tron Int'l v. Velto*, 525 F.2d 432, 435-36 (9th Cir. 1975) (disclosure to prospective purchaser to induce purchase of plaintiff's business) (applying California law and *Restatement* for Montana); *Heyman v. Ar. Winarick, Inc.*, 325 F.2d 584, 587 (2d Cir. 1963) (applying general law; no relief granted); *Smith v. Dravo Corp.*, 203 F.2d 369, 376-77 (7th Cir. 1953) (disclosure of designs for cargo containers to prospective purchaser of business) (applying Pennsylvania law); *Schreyer v. Casco Prod. Corp.*, 190 F.2d 921, 924 (2d Cir. 1951) (confidential relationship created in course of abortive negotiations to license electric steam iron technology), *cert. denied*, 342 U.S. 913 (1952).

an unknown party's industrial espionage or subversion of its employees, or where the firm's employee, supplier, or customer divulges the secret to a competitor, the firm has no practical recourse and must rely on the law for protection. In such cases only tort law, not contract law, can provide effective relief.

B. *Criminal Sanctions*

Statutes in several American states make unauthorized use of trade secrets a criminal offense.⁷⁷ For a number of reasons, however, these statutes fail to provide adequate protection for the trade secret owner. First, because they are criminal laws, they require proof of culpability on the part of the misappropriator.⁷⁸ Second, these laws require proof of that culpability beyond a reasonable doubt. Thus, successful prosecution of a criminal case requires both proving more and bearing a heavier burden of proof than in a civil case. At a minimum, the prosecution must show that specific information qualified as a trade secret, and that the defendant knew or should have known the information was a trade secret. Proving this beyond a reasonable doubt, when the information at issue is poorly understood technical data still under development, is no mean feat.

Third, criminal sanctions for trade secret misappropriation can be ineffective because they fail to cover the elusive third party.⁷⁹ To reach her,

77. See, e.g., CAL. PENAL CODE § 499c (West 1988); ILL. REV. STAT. Ch. 38, paras. 15-1, 16-1 (1981) (definitions of "property" and "theft"); MINN. STAT. ANN. § 609.52, subdvs. 1(1), 1(2), 1(6), 2(1), 2(8) (West 1988) (same); N.Y. PENAL LAW § 155.00(6) (definition of "secret scientific material"), § 155.30(3) (stealing same is grand larceny in third degree), § 165.07 (unlawful use of same is class E felony) (Consol. 1987).

78. Some statutes require culpability at the level of deliberation or actual knowledge. That is, the defendant must intend to steal a trade secret or at least know that the information she appropriates is a trade secret. See, e.g., ILL. REV. STAT. ANN. ch. 38, para. 16-1 (1981) (use of trade secret "knowingly"); MINN. STAT. ANN. § 609.52 (West 1988) (use "intentionally and without claim of right," "knowing" item to be trade secret).

Some statutes, however, permit prosecution if the defendant is merely negligent regarding the information's trade secret status. See N.Y. PENAL LAW ANN. § 165.07 (Consol. 1987) (use "with intent to appropriate to himself or another . . . having no right to do so and no reasonable ground to believe that he has such right").

California's law on its face imposes no particular level of culpability. See CAL. PENAL CODE § 499c(b) (West 1987) (use "without authorization"). But constitutional guarantees of due process probably impose at least a negligence standard, as it would seem unfair to hold a defendant criminally liable for using information that he did not know and should not have known was a trade secret. See also CAL. PENAL CODE § 20 (West 1987) (every crime or public offense requires "joint operation of act and intent, or criminal negligence").

79. Many criminal laws cover misappropriation for the benefit of the misappropriator or another, but they impose sanctions only upon the misappropriator, not on the third party receiving the benefit. See ILL. REV. STAT. ch. 38, paras. 15-1, 16-1 (1981); MINN. STAT. ANN. § 609.52, subdvs. 1(1), 1(2), 1(6), 2(1), 2(8) (West 1988); N.Y. PENAL LAW § 155.00(6) (Consol. 1987).

the trade secret owner must invoke laws governing the use, possession, or receipt of stolen property, unless she has committed a form of criminal complicity, such as soliciting, aiding and abetting, or actually participating in the criminal misappropriation. Yet since the laws governing use, possession and receipt of stolen property also require proof of criminal culpability,⁸⁰ a prosecutor faces the same difficulties of proof that arise in convicting the original misappropriator.⁸¹

In addition to these problems of proof and scope, criminal sanctions for trade secret misappropriation have practical disadvantages. Criminal liability may not deter the use or disclosure of a trade secret, particularly if the secret is of great competitive value.⁸² Moreover, in a criminal action the trade secret owner must depend upon the state's machinery to investigate the "crime," produce evidence, and prosecute the case. An

80. See, e.g., ILL. REV. STAT. ch. 38, para. 16-1(d) (1981) ("knowing the property to have been stolen by another or under such circumstances as would reasonably induce him to believe that the property was stolen"); MINN. STAT. ANN. § 609.53 (West 1988) ("knowing or having reason to know the property was stolen"); N.Y. PENAL LAW § 165.40 ("knowingly possesses stolen property;" third degree felony); § 165.45 (same; second degree); § 165.50 (same; first degree) (Consol. 1987).

In New York, one who "makes a tangible reproduction or representation" of "secret scientific material" commits a crime, apparently without regard to culpability. N.Y. PENAL LAW § 165.07 (Consol. 1987). Principles of fundamental fairness and due process, however, probably demand that a requirement of culpability, at least amounting to negligence, be inferred. See *supra* note 78.

81. A prosecutor might show criminal culpability, for example, if she could prove that one firm had induced another's employees to leave for the purpose of gaining access to its trade secrets, or that a departing employee had used his former employer's trade secrets as a lever to bargain for salary or other benefits. Such situations, however, are likely to be rare, and even where they occur, are difficult to prove. Few employers or employees having such intentions are prone to leave records of them, and their self-serving statements may create the "reasonable doubt" needed to withstand criminal prosecution. Indeed, even in civil cases it is difficult to establish the requisite culpability on the part of an employee's new firm, see *Conmar Prod. Corp. v. Universal Slide Fastener Co.*, 172 F.2d 150, 151-52 (2d Cir. 1949) (L. Hand, J.) (employee's knowledge of own restrictive covenant not attributable to new employer), or to find direct evidence of that firm's use of the trade secret, see *Hutter, supra* note 46, at 314 & n.18.

It is far more common for employees and licensees to use their former employers' and licensors' trade secrets unwittingly in the course of doing their jobs, without intending to transgress the boundaries of confidential relationships and fair play. In these situations, even civil courts have a difficult time distinguishing legitimate use of an employee's general knowledge, skill, and experience from illicit use of another's trade secrets. See, e.g., *American Can Co. v. Mansukhani*, 742 F.2d 314, 329-31 (7th Cir. 1984) (case remanded to distinguish former employee's use of secret ink formulas from use of nonsecret patent disclosures and own experience and skill); *AMP, Inc. v. Fleischhacker*, 823 F.2d 1199, 1203-04 (7th Cir. 1987) (citing and discussing Illinois cases). In such ambiguous cases, a jury is unlikely to conclude that the new employer or customer was negligent, let alone knowingly culpable as required by most criminal stolen property statutes.

82. Criminal liability for a corporation may involve only a fine, and that fine may be much smaller than the gain realized from exploiting the trade secret. *But see* CAL. PENAL CODE § 496(4) (West 1988) ("Any person who has been injured" by another's receipt of stolen property may recover *treble damages* plus costs and reasonable attorney's fees in civil action.).

action that appears vital to the trade secret owner's competitive health may have low priority in law enforcement and may perish in the exercise of the prosecutor's discretion. Finally, criminal prosecution often cannot stop a competitor's use of the misappropriated secret to the rightful owner's continuing disadvantage or provide compensation for that use. Yet that continued use may ruin the trade secret owner's business.

In sum, criminal sanctions have high standards of culpability and proof, provide only weak restraints on third-party use of misappropriated trade secrets, and fail to offer effective deterrents in many cases and effective remedies in most. For these reasons, criminal laws are no substitute for tort laws that can act against remote third parties and can provide effective relief.

C. *Civil Remedies in Tort*

Perhaps the chief defect of criminal sanctions is that they offer no real remedy to the victim of trade secret misappropriation. They do not compensate for the victim's loss of the power to control the secret's use; nor do they stop unauthorized use of the secret in most cases.⁸³ Moreover, civil remedies for breach of contract are equally ineffective when the misappropriator has no contractual relationship with the victim.⁸⁴ Contract law can give the victim no relief, for example, when a stranger acquires the secret through industrial espionage, theft, or subversion of employees, or indirectly as a result of others' misappropriation. Because the victim's competitors are usually contractual strangers, contract law cannot offer the victim protection against his greatest fear: unauthorized use of his secrets by competitors. Only tort law can provide general protection of this sort. Therefore, civil remedies in tort—and injunctive relief in particular—are the critical features of American trade secret protection.

Like most remedies, the remedies for trade secret misappropriation depend upon the precise nature of the rights protected. There has been some confusion, however, regarding the nature of those rights, and that confusion has infected the law governing remedies for trade secret misappropriation. Although U.S. courts appear to be in the process of resolving this confusion, the issue is worthy of brief attention because parallel doctrinal difficulties affect trade secret law in Japan.

The source of confusion is best expressed in a single rhetorical question: are the rights protected by trade secret law "property" rights or

83. *See supra* Part II(B).

84. *See supra* Part II(A).

just the right to be free from breaches of confidence and other misconduct? Some courts have viewed trade secrets as property, similar to a patent or copyright.⁸⁵ Others, reasoning that tort law protects trade secrets only against acquisition by "improper means,"⁸⁶ have doubted that trade secrets are property and instead have viewed the gist of a trade secret action as unlawful breach of trust or other wrongful conduct.⁸⁷ Sometimes the nature of relief seems to turn on these somewhat metaphysical distinctions.⁸⁸ Consequently, the law governing remedies for trade secret misappropriation in the United States is unsettled.⁸⁹

85. With the advent of federal disclosure statutes such as the Freedom of Information Act, 5 U.S.C. § 552 (1982), the "property" aspect of trade secrets has taken on a new dimension, as litigants have argued that unauthorized government disclosure of trade secrets constitutes a taking of property without due process of law. *See, e.g., Ruckelshaus v. Monsanto Co.*, 467 U.S. 986, 1000-04 (1984) (to the extent cognizable as such under state law, trade secret can be property for purposes of fifth amendment's "taking" clause); Comment, *Federal Disclosure Statutes and the Fifth Amendment: The New Status of Trade Secrets*, 54 U. CHI. L. REV. 334, 351-54 (1987) (arguing trade secrets are "core common law rights" and therefore property for purposes of the fifth amendment).

The "property" view of trade secrets, however, is not of recent vintage and has other ramifications. *See, e.g., Michel Cosmetics, Inc. v. Tsirkas*, 282 N.Y. 195, 200, 26 N.E.2d 16, 17 (1940) (dictum, constructive trust may be imposed upon defendant, who may be compelled to give up profits in favor of "true owner" of secrets); *Peabody v. Norfolk*, 98 Mass. 452, 458 (1868) (inventor of unpatentable process of manufacture "has a property in it," which a court "will protect against . . . violation of contract and breach of confidence" by use or disclosure). Like other forms of property, trade secrets can be assigned or licensed and can constitute the corpus of a trust or part of a bankruptcy estate. *Ruckelshaus*, 467 U.S. at 1002; Note, *All the King's Horses—Irreparable Harm in Trade Secret Litigation*, 52 FORDHAM L. REV. 804, 809-10 nn.32-35 (1984) [hereinafter Note, *All the King's Horses*]. *See also* Note, *Inevitable Disclosure Trade Secret Disputes: Dissolutions of Concurrent Property Interests*, 40 STAN. L. REV. 519, 540-41 (1988) [hereinafter Note, *Inevitable Disclosure*] (in disputes between employers and departing employees who helped develop trade secrets, secrets should be treated like joint property in dissolution of marriage).

86. *See supra* note 71.

87. *See, e.g., E.I. duPont de Nemours Powder Co. v. Masland*, 244 U.S. 100, 102 (1917) (Holmes, J.) ("The word 'property' as applied to . . . trade secrets is an unanalyzed expression of certain secondary consequences of the primary fact that the law makes some rudimentary requirements of good faith."); *Northern Petrochemical Co. v. Tomlinson*, 484 F.2d 1057, 1060 (7th Cir. 1973) ("[A] trade secret, unlike a patent or a copyright, has no proprietary dimension."); *Franke v. Wiltschek*, 209 F.2d 493, 495 (2d Cir. 1953) (essence of trade secret action "is not infringement, but breach of faith"). *See generally* Note, *All the King's Horses, supra* note 85, at 810-11 nn.36-38 (summarizing commentators and cases).

88. A few courts have upheld permanent, perpetual injunctions on a "breach of faith" theory although the secrets had largely become public through patent disclosures by the time of trial. *See, e.g., Hyde Corp. v. Huffines*, 158 Tex. 566, 314 S.W.2d 763, 778, 780-81 (1958); *Franke*, 209 F.2d at 496, 499-500; *Shellmar Prod. Co. v. Allen Qualley Co.*, 87 F.2d 104, 107-08, 110 (7th Cir. 1936), *cert. denied*, 301 U.S. 695 (1937). In contrast, the courts in *Forest Laboratories, Inc. v. Pillsbury Co.*, 452 F.2d 621, 624 (7th Cir. 1971), and *Conmar Prod. Corp. v. Universal Slide Fastener Co.*, 172 F.2d 150, 156 (2d Cir. 1949), applied intellectual property theories and refused any relief after the secrets had become public.

89. *See* Note, *Inevitable Disclosure, supra* note 85, at 528 ("The combination of fact-bound decisions and irreconcilable policy conflicts leads to inconsistent trade secret common law where cases with very similar fact situations have divergent results."); Johnson, *Remedies in*

Viewed from a modern perspective, however, the debate between the “property” and the “breach of confidence” schools of trade secret jurisprudence appears to miss the point. Although trade secrets do not enjoy the same strong protection as patented inventions,⁹⁰ this does not mean they are not “property.” A leasehold is no less “property” because its duration is limited; nor is a life tenancy less than “property” because its duration is uncertain.⁹¹ Similarly, a trade secret is a form of “property” as long as its availability is restricted, because an unauthorized user can legally “take” the secret only through honest labor and legitimately obtained information, not through prohibited “improper means” like breach of confidence, industrial espionage, or subversion of employees. If property is defined as the right to exclude, trade secrets fall within that definition: the law gives their owners the right to exclude others from taking illegitimate shortcuts to their acquisition or use.⁹² Viewed in this light, trade secrets appear as a proprietary right to prohibit breaches of confidence and other “improper means” to acquire them, and the “prop-

Trade Secret Litigation, 72 Nw. U. L. REV. 1004, 1009 (1978) (“The law [in the area of damages] is in a jumble.”).

90. Unlike patented inventions, a trade secret receives no protection against discovery by independent development or reverse engineering, which are “proper means” of gaining the secret and therefore are not proscribed by law. See UNIF. TRADE SECRETS ACT § 1 (1980); RESTATEMENT OF TORTS § 757 comment a (1939); *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 476 (1973).

91. These observations alone should refute the notion that “[i]t is . . . a strange form of ‘property’ that disappears when the information it embraces becomes public.” Stedman, *Trade Secrets*, 23 OHIO ST. L.J. 4, 21 (1962). If finite duration belied “property” status, then, by constitutional command, neither patents nor copyrights would qualify, and the term “intellectual property” would be meaningless. See U.S. CONST. art. I, sec. 8, cl. 8 (the “Copyright Clause,” requiring patent and copyright protection to be “for limited Times”). If certain duration were required, then life tenancies, tenancies at will, and most reversionary interests would also fail to qualify.

92. Even if the labor of legitimate discovery would have been modest, the defendant may not take shortcuts rather than perform that labor, unless the alleged secret lies entirely in the public domain. See, e.g., *Franke v. Wiltschek*, 209 F.2d 493, 495 (2d Cir. 1953) (process for making compressed face cloths that expand in water protected, though “heart” of process was revealed in expired patent and improvements were pedestrian); *Smith v. Dravo Corp.*, 203 F.2d 369, 375 (7th Cir. 1953) (“[T]he mere fact that . . . lawful acquisition is available does not mean that [the defendant] may, through a breach of confidence, gain the information in usable form and escape the efforts of inspection and analysis.”); *ILG Indus., Inc. v. Scott*, 49 Ill.2d 88, 94-98, 273 N.E.2d 393, 396-98 (1971) (specifications for fan blades and retaining rings protected, although fans had been sold publicly, in part because determining specifications from measurement alone would require statistical analysis and take 18 months); *Kubik, Inc. v. Hull*, 56 Mich. App. 335, 351, 360, 363-64, 224 N.W.2d 80, 88, 93, 94-95, 97 (1974) (awarding damages but no injunction where unrestricted product marketing disclosed secret but products would have been difficult to obtain for inspection, and reverse engineering would have taken from 30 hours to four months). Cf. *American Can Co. v. Mansukhani*, 814 F.2d 421, 424-26 (7th Cir. 1987), *on appeal after remand*, (permanent injunction awarded against manufacture and sale of inks shown to have been derived from plaintiff’s formulas, though formulas were very close to formulas disclosed in published patent).

erty" and "breach of confidence" branches of trademark doctrine coalesce.⁹³

In any event, despite the divergence between the "property" and "breach of confidence" schools of thought, there appears to be some agreement on the proper objective of trade secret relief in the United States. Courts should seek to put the plaintiff in the position he would have occupied had the defendant never misappropriated the secret⁹⁴—the status quo ante misappropriation.⁹⁵ Many modern courts have endorsed this objective.⁹⁶

In granting injunctive relief, courts address this goal by tailoring the injunction's duration to the putative ability of the defendant to rediscover the secret by proper means. Where the secret can be discovered by reverse engineering of a product sold or leased freely in the marketplace, courts often limit the injunction's duration to the period required for reverse engineering—the so-called "head start" period.⁹⁷ Some courts, sus-

93. Although this theoretical synthesis seems to work in the United States, in Japan a reluctance to find solid property interests in trade secrets appears to remain a significant obstacle to protection under tort law. See *infra* text accompanying notes 161-62, 167, 177.

94. This goal is independent of one's school of thought on the nature of trade secret protection. From the "property" perspective, the goal is to restore to the plaintiff the limited "property" right—the right to be protected from others taking illicit shortcuts to obtain the secret. From the "breach of confidence" perspective, the goal is to put the plaintiff in the position he would have occupied had the breach of confidence never occurred. In substance, the two goals are the same.

95. The longer phrase "status quo ante misappropriation" is preferable to "status quo ante" because the latter is commonly used to describe the goal of preliminary relief—preserving the status quo prior to the litigation. *Atlas Powder Co. v. Ireco Chem.*, 773 F.2d 1230, 1231 (Fed. Cir. 1985) (patent case). The objective described here differs in timing; it refers to the status quo not before litigation, but before the cause of action arose.

96. See, e.g., *S.I. Handling Sys., Inc. v. Heisley*, 753 F.2d 1244, 1266 (3rd Cir. 1985) ("We endorse the current trend toward so-called 'lead time' injunctions, whereby the trade secret injunction lasts only so long as is necessary to negate the advantage the misappropriator would otherwise obtain by foregoing independent development."); *Bryan v. Kershaw*, 366 F.2d 497, 501-02 (5th Cir. 1966) ("Indeed, it can be said that the unfair advantage gained is the damage that the injunction is designed to cure."), *cert. denied*, 386 U.S. 959 (1967). More generally, see *Kubik, Inc. v. Hull*, 56 Mich. App. 335, 224 N.W.2d 80, 93-95 (awarding damages but not injunction because unrestricted product marketing disclosed secret) (citing *Conmar Prod. Corp. v. Universal Slide Fastener Co.*, 172 F.2d 150, 155-56 (2d Cir. 1949)); see also *Johnson, supra* note 89, at 1025, 1029-30 (recovery of defendant's profits should be limited to portion of gain attributable to improperly obtained information, and injunctive relief should last only until "some approximation of when the defendant would have obtained the secret by lawful means").

97. See, e.g., *K-2 Ski Co. v. Head Ski Co.*, 506 F.2d 471, 474-75 (9th Cir. 1974) (case remanded to determine whether 27-month preliminary injunction "ate up" one- and two-year head-start periods for specified trade secrets); *Bryan v. Kershaw*, 366 F.2d at 499 (court enjoined "duplicating, using and selling" of railroad track undercutter "for the time found necessary to remove the competitive advantage gained through the illegally used trade secrets"); *Winston Research Corp. v. Minnesota Mining & Mfg. Co.*, 350 F.2d 134, 141, 142-43 (9th Cir. 1965) (Where plaintiff's sales of its precision tape recorder disclosed trade secrets in its construction, "appropriate injunctive period is that which competitors would require after public disclosure to develop a competitive machine."); *Schulenburg v. Signatrol, Inc.*, 33 Ill. 2d 379,

pecting that a secret is independently discoverable, even have estimated the time required for that discovery and have correspondingly limited the injunction.⁹⁸ On the other hand, courts have awarded permanent injunctions⁹⁹ of indefinite duration when the defendant himself wrongfully caused the public disclosure on which he relied to defeat the plaintiff's claim,¹⁰⁰ or when there was a danger of misuse of a number of trade secrets over a significant period of time.¹⁰¹

388, 212 N.E.2d 865, 869-70 (1965) (duration of injunction limited to time it would take to reverse engineer product), *cert. denied*, 383 U.S. 959 (1966). The *Uniform Trade Secrets Act* encourages "head start" injunctions. UNIF. TRADE SECRETS ACT § 2 Commissioners' Comment. The *Restatement* describes trade secret remedies only in vague and general terms. See RESTATEMENT OF TORTS § 757 comment e (1939).

98. See *Sigma Chem. Co. v. Harris*, 794 F.2d 371, 375 (8th Cir. 1986); *S.I. Handling Sys., Inc. v. Heisley*, 753 F.2d at 1266; *Syntex Ophthalmics, Inc. v. Novicky*, 745 F.2d 1423, 1435-37 & n.23 (Fed. Cir. 1984), vacated on other grounds, 470 U.S. 1047 (1985).

There is considerable danger, however, in allowing courts to speculate upon the time required for independent development of trade secrets. Some trade secrets may last a long time. See *Carson Prod. Co. v. Califano*, 594 F.2d 453, 456 n.3 (5th Cir. 1979) (ingredients of depilatory "not readily ascertainable by quantitative and qualitative chemical analysis"); *Hutter*, *supra* note 46, at 333 n.140 (citing Coca-Cola formula and other trade secrets more than 100 years old). Therefore, before depriving a plaintiff of the true longevity of its secret, courts should require defendants to provide convincing proof of imminent independent development. See *American Can Co. v. Mansukhani*, 814 F.2d 421, 426 (7th Cir. 1987) (granting permanent injunction of indefinite duration and noting that injunction may be modified "should facts appear that suggest that its present indeterminate length no longer reflects that status of [the] trade secrets."); *cf. Brunswick Corp. v. Outboard Marine Corp.*, 79 Ill. 2d 475, 479-80, 404 N.E.2d 205, 207-08 (1980) (upholding reversal of summary judgment for defendant, which had been based on expiration of "head start" period, because trade secret had never been disclosed through sale of product or otherwise).

99. The term "permanent" can be misleading. Here it connotes procedural posture, not duration. A "permanent" injunction, granted after a full trial on the merits, is distinguished from a "preliminary" injunction, granted after a preliminary hearing but before trial. To avoid confusion, it is customary to use the term "perpetual" to refer to injunctions having potentially unlimited duration. See *Johnson*, *supra* note 89, at 1027 n.100.

100. See *Syntex Ophthalmics, Inc. v. Tsuetaki*, 701 F.2d 677, 683 (7th Cir. 1983) (defendant filed patent application on invention that belonged to plaintiff and relied on published patent to defeat plaintiff's trade secret claim).

101. See, e.g., *Data General Corp. v. Digital Computer Controls, Inc.*, 357 A.2d 105, 114 (Del. Ch. 1975) (competitor permanently enjoined from using plaintiff's confidential maintenance drawings and documentation to make computer products of its own); *B.F. Goodrich Co. v. Wohlgemuth*, 117 Ohio App. 493, 494, 500-01, 192 N.E.2d 99, 101, 105 (Ct. App. 1963) (employee enjoined from using, for new employer, trade secrets acquired over several years of senior management of spacesuit research for former employer). The threat of a former employee's use or disclosure of trade secrets is also a basis for awarding preliminary injunctive relief. See, e.g., *Union Carbide Corp. v. UGI Corp.*, 731 F.2d 1186, 1191-92 (5th Cir. 1984) (threat of disclosure, and probable past disclosure, of plaintiff's minimum price and other strategic planning information); *FMC Corp. v. Varco Int'l, Inc.*, 677 F.2d 500, 504-05 (5th Cir. 1982) (manufacturing secrets).

There is also a line of cases, based on a "breach of faith" rationale, awarding injunctive relief of indefinite duration where the trade secret has been disclosed to the public by an issued patent or unrestricted marketing of products. See *generally* Note, *supra* note 46, at 207-12; *Johnson*, *supra* note 89, at 1027-28 & n.105 (collecting cases). This line of cases, however, appears to run against the current trend toward "head start" injunctions and is unlikely to be followed in the future. See Note, *supra* note 46, at 215-16; *supra* note 97.

Courts also award monetary relief in trade secret cases. For example, where the defendant manufactures and sells products using a misappropriated trade secret before the case comes to court, courts may award the defendant's illicit profits to the plaintiff.¹⁰² Where the plaintiff can prove actual damages, including her own lost profits, she may recover them.¹⁰³ And in some cases the courts award a "reasonable royalty" as damages.¹⁰⁴

However, in the United States an award of damages without injunctive relief is not a favored remedy. In the vast majority of trade secret misappropriation cases, injunctive relief is granted if requested. Courts may deny injunctions if they doubt that a trade secret actually exists,¹⁰⁵ or if public disclosure has dissipated the trade secret;¹⁰⁶ and they may deny preliminary injunctions if the plaintiff cannot establish a threat of irreparable harm,¹⁰⁷ or if the balance of hardship tips in the defendant's

102. See *Franke v. Wiltschek*, 209 F.2d 493, 496-99 (2d Cir. 1953); *USM Corp. v. Marson Fastener Corp.*, 392 Mass. 334, 339-40, 467 N.E.2d 1271, 1277 (1984) ("The guiding principle is to order the wrongdoing defendant to give up all gain attributable to the misuse of the trade secret and to measure that gain as accurately as possible."); *Jet Spray Cooler, Inc. v. Crampton*, 377 Mass. 159, 170-72, 385 N.E.2d 1349, 1356-58 (1979) (plaintiff may recover defendant's profits or plaintiff's losses, but, to the extent there is overlap, not both). See also *University Computing Co. v. Lykes-Youngstown Corp.*, 504 F.2d 518, 536 (5th Cir. 1974) (dictum, award of "benefits, profits, or advantages gained by defendant" appropriate where "the secret has not been destroyed and where the plaintiff is unable to prove specific injury"). See generally UNIF. TRADE SECRETS ACT § 3(a) (damages may include "the unjust enrichment caused by misappropriation that is not taken into account in computing damages for actual loss"); RESTATEMENT OF TORTS, § 757, comment e (1939).

103. See, e.g., *Kubik, Inc. v. Hull*, 56 Mich. App. 335, 364, 224 N.W.2d 80, 95 (Ct. App. 1974) (case remanded for assessment of damages in lieu of injunctive relief). There can be no double counting, however. If the plaintiff recovers the defendant's profits, he can recover lost sales to the same customers only to the extent he can prove his profits on those sales would have exceeded the defendant's. See *Jet Spray Cooler, Inc. v. Crampton*, 377 Mass. at 170-92, 385 N.E. 2d at 1356-58; UNIF. TRADE SECRETS ACT § 3(a).

104. See, e.g., *University Computing Co. v. Lykes-Youngstown Corp.*, 504 F.2d at 536-37 (reasonable royalty method used by agreement between parties); *Forest Laboratories, Inc. v. Pillsbury Co.*, 452 F.2d 621, 627-28 (7th Cir. 1971) (same).

105. See, e.g., *AMP, Inc. v. Fleischhacker*, 823 F.2d 1199, 1203, 1204-06 (7th Cir. 1987) (former employer failed to identify specific secrets taken by employee); *Litton Sys., Inc. v. Sundstrand Corp.*, 750 F.2d 952, 956-59 (Fed. Cir. 1984) (failure to identify specific trade secrets goes both to likelihood of success on merits and showing of irreparable harm).

106. See, *Kubik, Inc.*, 56 Mich. App. at 363-64, 224 N.W.2d at 94-95 (damages but not injunction awarded where secret could be divined by inspection of publicly marketed products); *Schreyer v. Casco Prod. Corp.*, 190 F.2d 921, 923-24 (2d Cir. 1951) (where all claims of patent found invalid, injunction on trade secret grounds denied because published patent specification disclosed secrets), *cert. denied*, 342 U.S. 913 (1952); cf. *Forest Laboratories, Inc.*, 452 F.2d at 624 & n.4, 627-28 (\$75,000 damages awarded, but only for improper use of trade secret prior to its disclosure in a patent).

107. See *Imperial Chem. Indus. Ltd. v. National Distillers & Chem. Corp.*, 354 F.2d 459, 461 (2d Cir. 1965) (plaintiff offered "little or no" evidence of irreparable harm despite repeated requests by trial judge); *Rapco Foam, Inc. v. Scientific Applications, Inc.*, 479 F. Supp. 1027, 1031-32 (S.D.N.Y. 1979) (plaintiff provided no evidence of likely effect of competition by de-

favor.¹⁰⁸ Rarely, however, will courts deny even preliminary injunctions for clear misappropriation of well-established trade secrets.¹⁰⁹ I know of only one fully tried case in which a court found clear misappropriation of a trade secret then in use and yet denied permanent injunctive relief¹¹⁰— and that denial was based on an overriding public interest.¹¹¹

defendant, and plaintiff's vice president conceded that plaintiff no longer used trade secret formula).

108. See, e.g., *Litton Systems, Inc.*, 750 F.2d at 960 (preliminary injunction sought by plaintiff would be "catastrophic" to defendant, "would result in breach of existing sale contracts and loss of \$12,000,000 investment, would directly impact 350 jobs, and would cause the loss of over \$60,000,000 in projected sales over the next five years").

109. One Note cites five cases for the proposition that courts are less likely to find irreparable harm, and therefore less likely to award preliminary injunctions, "when a licensing or secrecy agreement is involved." See Note, *All the King's Horses*, *supra* note 85, at 822-23 & n.80. However, close analysis of these cases does not support this general proposition. See *CPG Prod. Corp. v. Mego Corp.*, 214 U.S.P.Q. 206, 207, 211-12, 214 (S.D. Ohio 1981) (exporting secret technology enjoined to avoid risk of disclosure abroad; preliminary injunction inside U.S. denied because both plaintiff and defendant had ceased marketing products of secret technology); *Rapco Foam, Inc.*, 479 F. Supp. at 1031-32 & n.6 (plaintiff's vice president conceded plaintiff was no longer using secret formula, and president admitted it had lost no business); *Newman v. Holobeam, Inc.*, 319 F. Supp. 1389, 1390-91 & nn.3, 4 (S.D.N.Y. 1970) (in action to enforce right of first refusal and enjoin trade secret misappropriation, preliminary injunction denied due to vigorous dispute over facts, failure to prove that damages would be inadequate remedy, and risk that injunction would give plaintiff "monopoly on an unpatented product"); *Imperial Chem. Indus. Ltd. v. National Distillers & Chem. Corp.*, 354 F.2d 459, 462-64 (2d Cir. 1965) (finding of no trade secrets upheld on appeal; case remanded to determine whether defendant had complied with contractual procedures permitting use of confidential information); *Foundry Serv., Ltd. v. Beneflux Corp.*, 206 F.2d 214, 214-16 (2d Cir. 1953) (in action to enforce exclusivity covenant in license agreement, injunctive relief denied for failure to show irreparable harm); *id.* at 216 (L. Hand, J., concurring on antitrust grounds but doubting remedies at law would be adequate).

Insofar as they involve actual trade secret misappropriation, and not contract actions, these decisions appear to support two much narrower propositions. Preliminary injunctive relief may be denied when: (1) there is significant doubt whether any trade secrets exist (*Holobeam, Imperial Chemical*) or (2) the plaintiff no longer uses the alleged trade secrets (*CPG Products, Rapco Foam*).

110. In *Structural Dynamics Research Corp. v. Engineering Mechanics Research Corp.*, 401 F. Supp. 1102, 1114, 1116 (E.D. Mich. 1975), the court denied a permanent injunction in favor of damages, but the relief was explicitly based on breach of contract, not trade secrecy.

In 1953, the Second Circuit came to a similar conclusion regarding the availability of injunctive relief in trade secret cases. Reviewing a "lengthy" American Law Reports annotation, Annotation, 170 A.L.R. 449, 488-91 (1947), it noted only "two insignificant or inapposite cases" denying injunctive relief and stated, "We have found no case authority to throw doubt on this law." *Franke v. Wiltschek*, 209 F.2d 493, 498 (2d Cir. 1953). The passage of twenty-five years has done little to disturb this conclusion.

111. *Republic Aviation Corp. v. Schenk*, 152 U.S.P.Q. 830, 834-35 (N.Y. Sup. Ct. 1967) (enjoining misappropriator from manufacturing and supplying the United States with aircraft weapons control system would "unduly hinder the prosecution of the war in Viet Nam and jeopardize the safety" of U.S. personnel involved in the war). See also UNIF. TRADE SECRETS ACT § 2 Commissioners' Comment, as amended (citing *Republic Aviation* and approving "overriding public interest" standard as one means of showing "exceptional circumstances" required under 1985 amendments to justify denying injunction).

Under the 1985 amendments, "exceptional circumstance" justifying an award of a "reasonable royalty" in lieu of an injunction also can occur when a defendant has innocently acquired a misappropriated trade secret in good faith, without knowing it was misappropriated, and has

Reflection on the goal of trade secret remedies provides ample justification for courts favoring injunctive relief. That goal, as discussed earlier, is to restore the status quo ante misappropriation. Yet trade secret damage remedies are usually inadequate to restore that status for two reasons. First, they do not accurately measure the plaintiff's losses in practice. Second, they ignore a host of intangible but very real advantages that accrue to a trade secret owner, many of which are lost when the secret is misappropriated. As a result of these deficiencies, legal doctrine that relies on damages to restore the status quo ante misappropriation will ignore business realities in many cases. Since this point applies in both the United States and Japan, it is worthy of brief elaboration.

When a plaintiff claims her lost profits, she may find proof of causation difficult,¹¹² especially in markets in which the plaintiff and defendant have no direct competition.¹¹³ Yet an award limited to areas of current competition does not restore the status quo ante misappropriation, under which the plaintiff would have been free to enter *any* market where the trade secret might be used without the burden of competition facilitated by "improper means."¹¹⁴ Nor will an award of the defendant's illicit profits necessarily provide complete relief. The defendant may have made little profit due to his own poor business practices,¹¹⁵ but the de-

undergone a "material and prejudicial change of position prior to acquiring knowledge or reason to know of misappropriation that renders a prohibitive injunction inequitable." *See* UNIF. TRADE SECRETS ACT § 2(b), as amended.

112. Principles of causation require a trade secret plaintiff claiming actual damages to prove that sales she did not actually make would have occurred but for the defendant's misappropriation. *See* Michael Cosmetics, Inc. v. Tsrkas, 282 N.Y. 195, 202-03, 26 N.E.2d 16, 18-19 (1940).

113. *Id.* Because some of the defendant's sales had been in countries in which the plaintiff had done no marketing, the court reversed and remanded a damage award, with instructions to find a "reasonable basis" for concluding that the plaintiff would have made sales but for the misappropriation.

114. Johnson, *supra* note 89, at 1018, 1025.

115. The defendant might have failed to put the secret to its most profitable use, or its success might have been impaired by high costs of production, poor marketing practices, lack of complementary products, or a bad reputation. *Cf.* Omega Importing Corp. v. Petri-Kine Camera Co., Inc., 451 F.2d 1190, 1195 (2d Cir. 1971) (same principle applied in trademark infringement case).

On the other hand, if the defendant is successful in using the misappropriated secret, then recovery of the defendant's profits may give the plaintiff a windfall. *See* USM Corp. v. Marson Fastener Corp., 392 Mass. 334, 339-40, 467 N.E. 2d 1271, 1277 (1984) (award of profits creates possible windfall); Jet Spray Cooler, Inc. v. Crampton, 377 Mass. 159, 182-83, 385 N.E.2d 1349, 1363 (1979) (affirming award of defendant's entire corporate net profits for 11 years, although recognizing award as windfall, because plaintiff would have made no profit without using secret).

Some might justify a windfall as punishing the defendant or deterring future tortious behavior, but that justification is weak. *See, e.g.,* Northern Petrochem. Co. v. Tomlinson, 484 F.2d 1057, 1060 (7th Cir. 1973). In any event, under the *Uniform Trade Secrets Act* additional punitive or deterrent measures may be unnecessary because the statute permits courts to increase damage awards up to double the amount proven in the event of "willful and malicious

defendant's profitless attempts to market products based on the misappropriated secret may have poisoned the market for the plaintiff¹¹⁶—a source of indirect damage that would be difficult to prove and that would not be counted as part of the defendant's profits. As for damages based upon a hypothetical "reasonable royalty," they flow from the fiction of a "willing buyer" and a "willing seller,"¹¹⁷ which is far from the reality of the garden-variety trade secret dispute.¹¹⁸ There is therefore little principled basis for calculating them,¹¹⁹ and a "reasonable royalty" award may

misappropriation." See UNIF. TRADE SECRETS ACT § 3(b). Both awards of profits and increases in damages under the *Uniform Trade Secrets Act* lie within a court's discretion, see *id.* §§ 3(a) & (3)(b), so there seems to be little reason for courts to award profits in windfall amounts—for purposes of deterrence or otherwise—unless the defendant is specially culpable and the defendant's profits are out of proportion to any provable damages that the court might double. The primary goal of trade secret remedies—restoring the status quo ante misappropriation—is satisfied by the plaintiff's recovery of that portion of the defendant's profits which would have belonged to the plaintiff but for the misappropriation. While the wrongdoer fairly should bear a reasonable risk of uncertainty in calculating damages, see *University Computing Co. v. Lykes-Youngstown Corp.*, 504 F.2d 518, 544 (5th Cir. 1974), allowing the plaintiff to recover a windfall seems unnecessary to the purposes of trade secret protection, absent egregious circumstances.

116. For example, the defendant's marketing activities may have convinced potential customers that products based on the secret are unreliable, poor in quality, or sold by charlatans. The resulting ill will then may spread to geographic or product markets which neither the plaintiff nor the defendant has entered.

117. In fixing a "reasonable royalty," the court tries to determine what royalty a hypothetical trade secret owner would demand from a hypothetical licensee, assuming both are willing to make a deal but neither is under a compulsion to agree. See *University Computing Co.*, 504 F.2d at 539-40.

118. The typical trade secret plaintiff is in court precisely because it is *not* willing to cede use and control of its trade secret to the defendant, but would prefer that the defendant stop using the secret in illicit competition. See Johnson, *supra* note 89, at 1026.

119. If a plaintiff has licensed her secret for a specific royalty in the past, she may argue that she would have had the same royalty rate if the defendant had taken a proper license, or if she had licensed a third party to make the same sales that defendant made. In that case she may be entitled to an award of *actual* damages based on the historical royalty rate as applied to the defendant's sales revenue, but there is no need to resort to measures of damages based on a hypothetical "reasonable royalty." See *Vitro Corp. v. Hall Chem. Co.*, 292 F.2d 678, 680, 682-83 (6th Cir. 1961) (affirming use of abortive "agreement in principle" as measure of damages for breach of nondisclosure agreement and holding that "reasonable royalty" measure of damages should be last resort). Cf. *Organic Chem., Inc. v. Carroll Prod., Inc.*, 211 U.S.P.Q. 628, 631-33 (W.D. Mich. 1981) (awarding 30% of defendant seller's gross revenues for breach of exclusive sales and nondisclosure agreements where exclusive sales agreement provided 30% royalty for sales to third parties).

Courts must resort to a hypothetical measure of damages only when there is no historical royalty rate (and therefore no basis for determining what is reasonable), or when there is no record of the defendant's sales (and therefore no principled basis for applying the hypothetical rate). Thus the concept of "reasonable royalty" is inadequate in precisely those cases in which courts must resort to it.

Perhaps for this reason, the *Restatement* fails to mention a "reasonable royalty" measure of damages. In 1985, however, the Commissioners on Uniform State Laws amended the *Uniform Trade Secrets Act* to permit courts to award damages measured by such a standard at the request of the plaintiff, or in lieu of injunctive relief in certain "exceptional circumstances." See UNIF. TRADE SECRETS ACT §§ 2(b), 3(a); *supra* note 111. The Commissioners would give the plaintiff a "general option" to select this measure of damages, as long as there is "compe-

be nothing more than judicially sanctioned speculation.¹²⁰ Finally, whatever its measure, an award of damages is inherently inadequate to restore the status quo ante misappropriation if the plaintiff or defendant still uses the misappropriated secret at the time of trial, for a damage remedy alone might require repeated trips to the courthouse—a classic reason for awarding injunctive relief.¹²¹

Not only do damage remedies fail to measure accurately the extent of the plaintiff's loss; they also ignore a number of intangible but very real effects of trade secret misappropriation. First, if a trade secret is commercially important, misappropriation may deprive its owner of the power to dominate an entire field of technology for a significant period of time.¹²² Second, by duplicating a significant advance, even at the price of responding in damages, a misappropriator may wrest control of the direction of technology from the innovator's hands.¹²³ Third, misappropriation may deprive a trade secret owner of the marketing and promotional advantages of being first in the market, including a "head start" in building public awareness, customer loyalty, and a reputation for creativity and innovation. Indeed, if not enjoined, a misappropriator may unfairly claim the status of innovator in the public mind. Fourth, by using a misappropriated secret, or even simply by having dominion over it, a misappropriator can put the secret at risk of disclosure, shortening its probable life and placing the innovator's investment in research and de-

tent evidence of the amount of a reasonable royalty." UNIF. TRADE SECRETS ACT § 3 comment, as amended. Yet when there is such evidence, there should be no need to resort to this measure of damages.

120. See *University Computing Co.*, 504 F.2d at 536, 542-46 (affirming jury's award of \$220,000 in damages based on fictional offering price of unrestricted software license, hypothesized by plaintiff's executive in the absence of historical data, despite defendant's protests that unaccepted offers are not competent evidence and that defendant had made no sales).

121. See 1 C. BEACH, COMMENTARIES ON THE LAW OF INJUNCTIONS § 35, at 43-44 (1895); J. EATON, HANDBOOK OF EQUITY JURISPRUDENCE § 288, at 530 (2d ed. 1923). Even if the defendant has stopped using the secret, the plaintiff would have to bear the burden of returning to court if the defendant resumed its illicit activities—an event over which the plaintiff would have no control.

122. Like a pioneering patent, a substantial trade secret may have application to a number of products, not simply the ones to which it is first applied. A misappropriator may usurp the innovator's head start in using the secret, thereby depriving her of the right to introduce a whole range of products or services to the market.

123. Normally there is more than one way to solve a technological problem. By being the first to offer a successful solution or approach, an innovator seizes the initiative and the power to shape later developments in the same field to his advantage, for example, by optimizing the use of his complementary products, related technology, plant, materials, marketing resources, and relationships with other firms. A misappropriator can usurp these advantages by taking the secret and exploiting it first, using it more successfully, or improving it. Although not a case of misappropriation, the recent success of Japanese firms in dominating the worldwide market for semiconductor memory chips through improvements in products and production processes provides ample evidence of a second-comer's ability to control markets based on technology introduced by others.

velopment at risk.¹²⁴ Finally, misappropriation may deprive the trade secret owner of a number of other business and financial advantages that ordinarily accrue to an innovator, including the interest and respect of investors, prospective licensees, and suppliers.¹²⁵ Without resort to a level of speculation normally impermissible in court, an award of monetary relief would be unlikely to account for these intangible but very real losses.

In Anglo-American equity jurisprudence, the injunction arose as a means to provide effective relief where “remedies at law,” that is, damages, would be inadequate to put the plaintiff in the position in which she formerly stood.¹²⁶ Since the goal of trade secret protection is to do exactly that, and since damages are in general inadequate to do so, the injunction serves as a vital linchpin in American law’s scheme of relief.

III. “Trade Secrets” in the Japanese Courts

Keeping in mind the distinction between tort law and contractual protection of information, as well as the general inadequacy of criminal and damage remedies, one can begin to compare trade secret protection in Japan¹²⁷ and the United States. Because Japan is a civil law country, its law derives from its “codes” or statutes, as interpreted by scholars, and

124. See *University Computing Co.*, 504 F.2d at 542 (display of source code for computer software system to third-party expert in unsuccessful attempt to market stolen software “exposed the secrets of the system to a competitor” and therefore constituted “commercial use”); *CPG Prod. Corp. v. Mego Corp.*, 214 U.S.P.Q. 206, 211-12, 214 (S.D. Ohio 1981) (granting preliminary injunction against export of secret technology and production equipment that used secrets in order to avoid disclosure abroad).

125. The *Winston Research* court explicitly recognized these intangibles in awarding injunctive relief:

[Plaintiff] argues that [defendant] gained a wide variety of advantages from the improper use of [plaintiff’s] trade secrets—such as obtaining financing for its development program, securing a government contract, shortening its development program, and reducing its development costs. There is an obvious difficulty in assigning a dollar value to such matters.

Winston Research Corp. v. Minnesota Mining & Mfg. Co., 350 F.2d 134, 144 (9th Cir. 1965).

126. See W. WALSH, A TREATISE ON EQUITY § 25, at 134 (1930); J. HIGH, 1 A TREATISE ON THE LAW OF INJUNCTIONS § 30, at 48 (4th ed. 1905). Courts usually hold that damages are inadequate when they cannot readily be calculated. As one court put it in the context of trade secrets,

If too few facts exist to permit the trier of fact to calculate proper damages, then a reasonable remedy in law is unavailable. In that instance, a permanent injunction is a proper remedy for the breach of a confidential relationship.

Metallurgical Indus., Inc. v. Fourtek, Inc., 790 F.2d 1195, 1208 (5th Cir. 1986).

127. Although the Japanese are beginning to use the term “trade secrets,” see generally INDUSTRIAL RESEARCH CENTER FOUNDATION, INVESTIGATION AND RESEARCH ON AMERICAN TRADE SECRET LAW (1988) (Comparative Law Research Center, in Japanese), in the past they have preferred the term “know-how,” especially when referring to trade secret licenses of a technological nature. See, e.g., Amemiya & Guttman, *Know-How*, in 4 DOING

its judicial decisions have considerably less precedential value than those in common law countries like the United States. Moreover, Japan is not as litigious a society as the United States, so its case law on trade secrets is sparse.¹²⁸ Nevertheless, several interesting cases and some scholarly comment reveal the scope and nature of Japanese protection of trade secrets or "know-how."

A. *Contractual Protection of Information*

Japanese law appears to provide adequate protection against direct misappropriation of a trade secret by an individual in contractual privity with the trade secret owner. The leading decision is *Yugen Kaisha Foseco Japan Ltd.*¹²⁹ Upon beginning employment, two employees had been paid a special allowance and had signed a special nondisclosure and non-competition agreement with their employer, which was to last for two years after termination of employment. Both worked for the company

BUSINESS IN JAPAN ch. 5 (Z. Kitagawa ed. 1987) [hereinafter *Know-How*]; Osumi, *Know-How and its Investment*, 1 LAW IN JAPAN: AN ANNUAL 92, 102 (1967) (in English).

In American practice, "trade secret" is a legal term of art, while "know-how" is primarily a business term that lacks precise legal meaning. "Know-how" also appears to focus narrowly on information having technical application, while "trade secrets" may include financial and business information, such as customer lists, at least under American law. Nevertheless, since there is considerable overlap between the subjects covered by the two terms, this article treats them as roughly synonymous.

128. I received summaries of the cases discussed here from Japanese scholars engaged in a recent comprehensive, comparative study on trade secrets for the Japanese Ministry of International Trade and Industry in connection with current and forthcoming international trade talks, see *supra* INDUSTRIAL RESEARCH CENTER FOUNDATION, note 127. These cases, I believe, are all of the Japanese trade secret cases to which those scholars devoted serious study in preparing their report. Since Japanese civil law does not value precedent highly, the very fact that scholars in Japan selected these cases makes them especially important.

Nevertheless, to American scholars and legal practitioners, the number of Japanese judicial decisions discussed in this section may seem small. Perhaps the paucity of Japanese "precedent" in this field derives from the fact that Japan, as a civil law country, values judicial decisionmaking less than common law countries such as the United States do. A more fundamental reason may be the antipathy to litigation that permeates all levels of Japanese society. "[R]ecent scholarship argues persuasively that self-interest has led the Japanese elite to take deliberate steps to discourage litigation." F. UPHAM, LAW AND SOCIAL CHANGE IN POST-WAR JAPAN 16 (1987) (citations omitted). See also *id.* at 39 (Even among ordinary people poisoned by mercury pollution, "litigation was often unacceptable and individual action extremely painful."). Indeed, among the Japanese firms that might have been involved in trade secret disputes, until recently litigation to resolve commercial differences would have been almost unthinkable.

129. 624 HANJI 78 (Nara Dist. Ct. Oct. 23, 1970). This case is also discussed in Professor Kitagawa's treatise on doing business in Japan. See *Know-How*, *supra* note 127, § 5.05[4] at VI5-7 to -8.

I am indebted to Professor Junichi Eguchi, of Osaka University, for providing English summaries of all the Japanese cases discussed in this article. A native Japanese speaker also checked case discussions in this article against reports of the decisions in Japanese periodicals.

for more than ten years.¹³⁰ After their retirement, they became directors of a newly-established company, which began manufacturing and marketing the same products as their former employer and soliciting the former employer's customers. When the former employer sued, the court awarded it a provisional injunction prohibiting the two employees from manufacturing or marketing products similar to their former employer's products for the duration of the two-year term of the agreement.

In awarding injunctive relief to prevent direct misappropriation of information received and used in violation of special nondisclosure and noncompetition agreements, this decision is unremarkable.¹³¹ But its reasoning is more interesting than its result.¹³² In enforcing the special agreements, the Nara District Court relied in part upon the defendants' receipt of specific technical information, or "property with objective value," as the court described it, that was not generally available.¹³³ By concluding that the employees' knowledge of this information rendered the special agreement enforceable, the court appeared to imply that the contract might *not* be fully enforceable if the information did not have "objective value."

If this interpretation is correct, the Nara District Court in effect imposed a requirement that the information at issue satisfy the first of the two prerequisites of trade secrecy under American law¹³⁴ before it would enforce the nondisclosure agreement. This is in stark contrast to the American rule,¹³⁵ under which a nondisclosure agreement is enforceable as to virtually *any* information that is not generally available, while trade secrets may be protected in the absence of any agreement. The Nara District Court apparently did not state whether or not it would have granted the injunction if the information had "objective value" based solely upon the confidential relationship between the long-term employees and their company, even in the absence of a special agreement.¹³⁶

130. The company manufactured and marketed metallurgical products used in foundries. One of the men worked in the research and development division, and the other worked in the research and marketing divisions.

131. See *Know-How*, *supra* note 127, § 5.04 at VI5-5 (Japanese law recognizes both express and implied agreements to keep "know-how" confidential).

132. Professor Kitagawa's treatise focuses on the court's analysis of the noncompetition covenant, noting that the court upheld it, despite its lack of territorial limitation, because the defendants were specially-paid key employees working "in a limited technical specialty engaged in throughout the country." *Id.* § 5.05[4] at VI5-8. The discussion in the text focuses on the court's analysis of the nondisclosure covenant.

133. 624 HANJI at 78.

134. See *supra* text accompanying note 68.

135. See *supra* text accompanying notes 67-76.

136. Professor Kitagawa's treatise notes two facets of Japanese law that might provide grounds for such relief: (1) the possibility that nondisclosure covenants may be implied in

A second relevant decision involved the copying and sale of a confidential customer list while in the possession of a subcontractor.¹³⁷ In an action against the subcontractor, the Tokyo District Court found that the information in the list was useful and had competitive value.¹³⁸ It also found that the terms of the subcontract required the subcontractor, upon completion of its work, to return the list to the contractor. The court ruled that the subcontractor had a duty as a bailee not only to preserve the list from physical loss or destruction, but also to maintain information in the list in confidence and to avoid reducing the value of that information as a trade secret. Finding that the subcontractor had violated that duty, the court awarded "consolation money" in an amount greater than the plaintiff's claim, although it refused to award direct damages for lost profits due to failure of proof.

Three points about this case are worth noting. First, the actual misappropriator (apparently an unknown employee) was not before the court. Second, the third party that purchased and used the information also was not before the court. Finally, in noting that the information in the tape had competitive value, the Tokyo District Court appeared to be applying the same "objective value" theory as the court in the *Foseco* case.¹³⁹

Although of doctrinal interest, the apparent requirement that information have objective economic value in order to enjoy contractual protection in Japan is unlikely to have great practical effect. Most information worth fighting about probably will satisfy this test. Thus, unless the Japanese impose a higher standard of objective economic value than American courts do,¹⁴⁰ one can conclude that Japanese contractual protection

employment and other agreements, see *Know-How*, *supra* note 127, § 5.04 at VI5-5, and conflict-of-interest statutes governing corporate directors and managers. *Id.* § 5.05[2] at VI5-6.

137. Japan Reader's Digest, 713 HANJI 83 (Tokyo Dist. Ct. Feb. 19, 1973). A contractor had agreed to deliver a magazine in Japan using a list of information about the magazine's subscribers. It hired a subcontractor to assist it, and a copy of the list was made and sold to a third party while the list was in the subcontractor's possession.

138. The list contained information about management level personnel and middle managers in various companies.

139. See *supra* text accompanying notes 132-36.

140. Under U.S. law it is rare for an alleged trade secret to fail to have "economic value." U.S. courts may deny trade secret protection in odd cases, for example, if the information has only religious value, see *Religious Technology Center v. Wollersheim*, 796 F.2d 1076, 1090-91 (9th Cir. 1986) ("higher level materials" describing "auditing" practices of Church of Scientology), or if it is "vague and obvious," *Walker v. University Books, Inc.* 602 F.2d 859, 865 (9th Cir. 1979) (suggestions that "I Ching" cards be made with "higher quality stock . . . brighter colors, rounded corners, wide red borders, larger hexagrams . . . and a higher quality box"). Unlike the information in these examples, most alleged trade secrets worth the cost of litigation satisfy the "economic value" criterion of American law.

of trade secrets is substantially congruent with that in the United States.¹⁴¹

B. *Criminal Sanctions*

Reported Japanese cases also indicate that Japan has useful criminal sanctions for willful misappropriation of trade secrets. In several such cases, Japanese courts have imposed criminal sanctions under theories of embezzlement, breach of trust, larceny, and receiving stolen property.

Perhaps the most comprehensive decision of this kind is *Toyo Rayon Co.*¹⁴² There an engineer, who was vice-chief of the manufacturing technology division of a chemical plant, received confidential documents relating to his company's new products and sold them to a competitor through two brokers.¹⁴³ He and the two brokers were convicted on charges of embezzlement in the performance of business,¹⁴⁴ and the competitor's employees who received the stolen documents were convicted of purchasing stolen property.¹⁴⁵ The court sentenced all the defendants to penal servitude with stay of execution, but the criminal sanctions reached only the named defendants. There is no record of any complaint or sanction against the competitor that received the trade secrets.¹⁴⁶

141. The brief discussion by Amemiya and Guttman in Professor Kitagawa's treatise states that secrecy is essential for protecting "know-how," and suggests that secrecy may be required even where there is an express or implied contractual obligation to keep the know-how in confidence. See *Know-How*, *supra* note 127, §§ 5.03[1], 5.03[2], at VI5-4, 5.04 at VI5-5. Nevertheless, the Japanese courts, in the decisions discussed in this article, do not appear to have analyzed the efforts taken by the owners of information to maintain secrecy, as American courts would in trade secret cases. Thus, it appears that information may qualify for contractual protection in Japan if it satisfies the weaker of the prerequisites for trade secret protection under American law (economic value), but not the stronger (reasonable steps to keep the secret).

142. 1012 HANJI 35 (Kobe Dist. Ct. Mar. 27, 1981).

143. The engineer also copied other documents under the control of other employees and tried to sell them to another competitor without success.

144. See Japanese Penal Code (KEIHŌ), art. 253 (Law No. 45 of 1907):

A person who wrongfully appropriates another's property which the first said person is keeping in his or her custody in the performance of his or her business shall be punished with penal servitude for a period not exceeding ten years.

reprinted in 4 DOING BUSINESS IN JAPAN, *supra* note 127, app. 11A-63.

Both the engineer and the brokers also were accused of breach of trust and attempt to commit breach of trust under articles 247 and 250 of the Japanese Penal Code, respectively. They were acquitted of these charges on the ground that the engineer had not been entrusted with keeping the documents and therefore had committed no breach of trust.

145. See Japanese Penal Code (KEIHŌ), art. 256, (Law No. 45 of 1907), *reprinted in* 4 DOING BUSINESS IN JAPAN, *supra* note 127, app. 11A-64.

146. Other decisions have found Japanese employees guilty of embezzlement in connection with trade secret theft. See Niigata Tekko, 1190 HANJI 143 (Tokyo High Ct. Dec. 4, 1985) (convicting data processing division manager of embezzlement or conspiracy to embezzle for conspiring with the head of trading company to misappropriate company software for new business); Kanegafuji-Kagaku-Kogyo, 494 HANJI 74 (Osaka Dist. Ct. May 31, 1967) (convicting deputy technical manager of embezzlement for taking materials, documents, and small

Embezzlement convictions are not the only criminal sanctions for trade secret misappropriation in Japan. In *Dainippon Insattsu*,¹⁴⁷ a manager hired a private investigator to determine whether his company's trade secret had been disclosed to a competitor, but the private investigator attempted to play both ends against the middle by intimidating executives of the competitor. Among other things, he claimed he had been hired to spy on the competitor, tried to extort money from the competitor, and induced an employee of the competitor to give him the competitor's secret documents, which he then sold to the manager at the company that had hired him. The employee supplying the documents was convicted of larceny, and both the private investigator and the manager who had hired him were convicted of receiving stolen property.

These criminal cases all have one thing in common: they involve sanctions against individuals, not against the firms for which they worked. As in the United States, these criminal sanctions have practical disadvantages, such as the requirement of proof of criminal culpability and dependence on the prosecutorial machinery of the state.¹⁴⁸ More important, however effective these sanctions may be against individuals,¹⁴⁹ they do not operate directly on the firm that obtains the benefit of the misappropriation, nor do they prevent use of the misappropriated trade secret by that firm.¹⁵⁰ It is the unique province of tort law to provide effective relief against use of a secret by a third party that benefits from the misappropriation.¹⁵¹ Therefore, in Japan as in the United States, it is tort law to which a trade secret owner must turn for complete relief.

C. *Civil Remedies in Tort*

In theory, Japanese tort law is broad enough to support legal protection for trade secrets or know-how. Article 709 of the Japanese Civil

amount of catalyzer relating to chemical manufacturing process and selling them to competitors seven months after his retirement; court found value of materials taken high enough to invoke criminal sanctions even though amount of catalyzer taken was small).

147. 419 HANJI 14 (Tokyo Dist. Ct. June 26, 1965).

148. See *supra* Part II(B).

149. Criminal sanctions may have particular significance to the individual in a culture in which criminal conviction means lifelong disgrace. For example, Morita asserts that it would be impossible for an executive in Japan's "closed-circle society," once having betrayed a trust, to take a comparable position in another company, as happens more than occasionally in the United States. See *infra* note 192.

150. There appears to be no basis in the cited provisions of the Japanese criminal code for criminal sanctions against legal entities. Indeed, nothing reported in the criminal decisions discussed here indicates that the firms receiving the purloined trade secrets were prevented from using those secrets to competitive advantage, even though the individuals who delivered them were convicted as criminals.

151. This assumes that the third party is not in contractual privity with the trade secret owner—an assumption usually satisfied in practice. See *supra* Part II(A).

Code contains a very general definition of the concept of tort, translated into English as follows:

A person who intentionally or negligently violates the rights of another is obligated to compensate for damages arising therefrom.¹⁵²

In practice, however, there is some doubt whether trade secrets and know-how are the sort of “rights” that this provision seeks to protect. The question is reminiscent of the dispute between the “property” and “breach of confidence” schools of thought in the United States¹⁵³ and flows from the same source, the weakness of trade secret protection, which makes courts in all nations uncomfortable comparing rights in trade secrets with those in patents and copyrights.

Three leading Japanese scholars have addressed this question. In 1967, Justice Kenichiro Osumi¹⁵⁴ opined that Japanese law “should recognize” a tort for “infringements of know-how” under Article 709.¹⁵⁵ He viewed know-how as a matter of “independent property value” without “specific rights,” seemingly foreclosing application of Article 709. Nevertheless, he endorsed a tort cause of action based upon “modern theories” of Japanese tort law, which focus on the infliction of damage “by an illegal act regardless of whether or not a specific right has been infringed.”¹⁵⁶ Justice Osumi also noted that questions regarding the calculation of damages and the appropriateness of an award of defendant’s profits have been resolved in patent law, and that Japanese courts could apply the same solutions to know-how without difficulty.¹⁵⁷ However, he stated flatly that Japanese law does not recognize the right to an injunction to protect know-how.¹⁵⁸

152. 4 DOING BUSINESS IN JAPAN, *supra* note 127, app. 4A-167.

153. *See supra* text accompanying notes 84-93.

154. At that time, he was described as an Associate Justice of the Supreme Court and sometime Professor of Law at Kyoto University. Osumi, *supra* note 127, at 92.

155. *See id.* at 102.

156. *Id.* If one interprets “specific right” as referring to a property right, this reasoning tracks the reasoning of American courts that found the gist of trade secret misappropriation in breaches of confidence, not property rights. *See supra* note 87 and accompanying text.

157. Osumi, *supra* note 127, at 102-03. Both logic and American courts’ experience suggest, however, that the “reasonable royalty” theory of patent damages should not be so applied. *See supra* notes 117-20 and accompanying text.

158. Osumi, *supra* note 127, at 102. Justice Osumi compared know-how to the subject matter of a pending patent application. He pointed out that the latter is not protected by injunctive relief, even though in Japan a pending patent application, once published, entitles the owner to the same sort of damage remedy as an issued patent.

Since Justice Osumi’s observation, however, the Japanese patent statute appears to have been amended to provide injunctive relief to enforce the exclusive rights that pertain to published patent applications. *See* The Patent Law, Law No. 121, Apr. 13, 1959 (as amended through June 1, 1987), arts. 52, 100, 101, *reprinted in* J. SINNOTT, 2F WORLD PATENT LAW AND PRACTICE Japan-27, Japan-44 (1987) (English trans.).

In 1971, Professor Teruo Doi¹⁵⁹ made a similar analysis. He compared the "strict interpretation" of Article 709, which requires proof of a right and infringement of it, with the "liberal theory" that uses the existence of "illegality" in the defendant's conduct as a surrogate for "injury of right."¹⁶⁰ Unlike Justice Osumi, however, he declined to offer a prediction or recommendation regarding adoption of this "liberal theory." Turning to the question of injunctive relief, Prof. Doi observed,

Commentators' reluctance to conclude that an injunctive remedy is available under the existing law . . . is based on the fact that there is no specific provision granting such remedy and that the existing law cannot be construed to give exclusive control to the owner of know-how.¹⁶¹

Thus Prof. Doi was reluctant to take the step that had long troubled American courts—accepting trade secrets as a type of property.¹⁶² Nevertheless, Prof. Doi opined that "the end of justice will fail" if courts do not award injunctive relief "to the owner of know-how in case[s] of acquisition of secret information by some unlawful means such as those provided under the Criminal Code."¹⁶³ If accepted by Japanese courts, this suggestion of Prof. Doi's might provide injunctive relief in cases of theft of trade secrets or receipt of the stolen "property," but it would be unlikely to provide relief for trade secret owners in cases of industrial espionage.¹⁶⁴ More important, it would appear to incorporate the higher standards of criminal culpability and increased burden of proof into the realm of civil remedies, thereby reducing considerably a civil plaintiff's chances of prevailing.¹⁶⁵

Perhaps the latest Japanese scholarly comment appears in Professor Kitagawa's treatise, in a chapter authored by Sandano Amemiya and David Guttman.¹⁶⁶ After recognizing that the term "right" in Article

159. Professor of Law, Waseda University.

160. See T. DOI, DIGEST OF JAPANESE COURT DECISIONS IN TRADEMARKS AND UNFAIR COMPETITION CASES 104-05 (American Chamber of Commerce in Japan 1971) (English trans.).

161. *Id.* at 105. Article 709 speaks only of damages, and not injunctive relief, so Professor Doi looked to article 198 of the Civil Code, which provides that:

If a possessor is disturbed in his possession, he may by an action for maintenance of possession demand discontinuance of the disturbance as well as reparation in damages.

Id. Since know-how rights are not exclusive, as are patent rights, but are protected only against breach of a duty under contract or tort law, Professor Doi apparently concluded that Japanese courts will not view them as property rights of the sort that article 198 protects.

162. See *supra* notes 85-89 and accompanying text.

163. T. DOI, *supra* note 160, at 105.

164. For example, under this standard the Christopher brothers hardly would have been criminally culpable for, and therefore no injunction would result from, their aerial photography of duPont's unfinished chemical plant. See *supra* text accompanying notes 50-52.

165. See *supra* text accompanying notes 78, 80-81.

166. *Know-How*, *supra* note 127.

709 is “interpreted very broadly,” this comment sums up the current state of Japanese law as follows:

Unfortunately, a “know-how right” has never been specifically defined and created by law in the same manner as the “patent right” or the “trademark right.” Therefore, courts appear to be reluctant to find that know-how is the kind of “right” or “interest” to be protected from violation by a third party [under Article 709].¹⁶⁷

In making this statement, Professor Kitagawa and his colleagues appear to be saying that the admonitions of commentators have had little effect in the absence of an appropriate amendment of the Japanese Civil Code.

One decision suggests that Japanese tort law may provide a *damage* remedy against a third party, at least where the third party is a legal entity set up by the actual misappropriators. The case involved defections from Sanrei-Yamako, a mail-order firm.¹⁶⁸ Toyama, a director of the firm, induced an employee of the firm to take its customer list and other secret materials for use in starting a similar mail-order business under the name of Colm Trading Co.¹⁶⁹ Toyama had established Colm while still a director of Sanrei-Yamako, but he resigned before engaging in competitive business. Colm then produced imitations of Sanrei-Yamako’s catalogues and sent them to customers on the stolen mailing list.

Upon suit by Sanrei-Yamako, the Kobe District Court held both Toyama and Colm liable for damages for violation of Articles 1.1 and 1.2 of the Unfair Competition Prevention Law,¹⁷⁰ and for tort.¹⁷¹ On appeal, the Osaka High Court upheld the judgments against Toyama and Colm on both theories, noting that Toyama had carried on a business based on an improperly obtained customer list. It upheld an award of damages in an amount it deemed to be a reasonable license fee for use of the customer list and other secret materials taken.¹⁷² Apparently there was no claim for injunctive relief.

167. *Id.* § 5.06 at VI5-9.

168. Sanrei-Yamako, 1084 HANJI 122 (Osaka High Ct. Mar. 3, 1983).

169. The customer list contained about 20,000 names, which Sanrei-Yamako had acquired over many years of direct mailing to high-income individuals and members of civic clubs and professional organizations. Both the list and the other secret documents had been kept confidential.

170. *Reprinted in* T. DOI, *supra* note 160, at 155-56. The cited sections deal with infringement of trademarks, false designations of origin, and misrepresentations in advertising. The Osaka High Court’s opinion makes clear that this aspect of the case was based upon the use of the look-alike catalogues.

171. It also found Toyama liable for breach of his fiduciary duty as a director, but apparently no appeal was taken on this issue.

172. The damage award was substantial, more than 14 million yen, or more than \$107,000 at an exchange rate of 130 yen per dollar.

The *Sanrei-Yamako* decision suggests that a third-party may be liable in damages under a tort theory for misappropriation of trade secrets in Japan. Yet for two reasons the case provides only weak authority for this proposition. First, the Osaka High Court mentioned the tort theory only in passing, but did not discuss it. The claim for unfair competition appeared more substantial, occupied more of the court's attention, and undoubtedly was sufficient by itself to support the award of damages.¹⁷³ Second, the "third party" in this case—Colm Trading Co.—was in fact an alter ego of the individual defendants. Had the defendant been a truly "arm's length" third party, the result might have been different.¹⁷⁴

As for injunctive relief, the only reported case directly on point casts great doubt on the practical availability of injunctions for misappropriation of trade secrets in Japan. That case is *Deutsche Werft A.G. v. Waukesha Chuetsu Yugengaisha*.¹⁷⁵ The plaintiff, a German company, had granted an American company a know-how license for the manufacture and sale of propeller-shaft bearing seals for ships. The agreement restricted the manufacture and sale of licensed seals to the United States and Canada and required the licensee to keep the know-how secret. To avoid these territorial restrictions, the American company established a joint venture company in Japan with a Japanese company. It purchased 45% of the shares of the joint venture and, in violation of its own license agreement, sublicensed the joint venture to manufacture the seals in Japan.

The German company sued for a provisional injunction, but the petition was dismissed, and the dismissal was upheld on appeal. Reviewing the dismissal, the Tokyo High Court acknowledged that the American know-how licensee had breached its contractual obligations and would be liable for damages. But the licensee was not the respondent in the action, apparently because the German plaintiff wanted to stop the unauthorized competition in Japan. The plaintiff argued strenuously that the joint venture was only an alter ego of the licensee and therefore should

173. Were it an American decision, one might label its reference to the trade secret claim "dictum." The term has little meaning, however, in a civil law legal system not based upon principles of *stare decisis*.

174. Indeed, in the leading judicial decision on third-party misappropriation, a Japanese court respected the separate corporate status of one defendant *despite* the fact that it had been organized and was 45%-owned by the misappropriator. *See infra* text accompanying notes 176-78.

175. 464 HANJI 34 (Tokyo High Ct. Sept. 5, 1966). Both Professor Doi and Professor Kitagawa's treatises summarize and discuss this case in the course of their analyses of remedies for third-party misappropriation. *See* T. DOI, *supra* note 160, at 102-05; *Know-How*, *supra* note 127, § 5.06 at VI5-9 to -10. The summary in this article is a composite of these and Professor Eguchi's translated summary. *See supra* note 129.

have been subject to injunctive relief on both contract and tort theories.¹⁷⁶ Nevertheless, the Tokyo High Court denied the appeal, reasoning as follows:

[I]f a third person who is not the contracting party is communicated the said know-how from the licensee or obtains the knowledge of it accidentally . . . the claimant is not entitled to an injunction, since there is no specific provision under the present statutes. Although know-how has property value, it cannot be considered, at the present moment, that the law recognizes such right (whether it is an incorporeal right or a right of obligation) as enforceable against a third party. Protection of know-how can only be achieved through the efforts of its owner to maintain it as an industrial secret and prevent disclosure to others.¹⁷⁷

As for the plaintiff's "alter ego" argument, the court rejected it, finding the joint venture "a third person, in a legal sense, to the license contract."¹⁷⁸

The *Waukesha* decision is a strong statement of the limits of trade secret protection in Japan. The court denied injunctive relief despite the fact that the direct misappropriator itself had established the "third party"—the joint venture company—and had given it the technology without authorization. It is difficult to imagine a more sympathetic case for injunctive relief. Nevertheless, although Japanese legal scholars have criticized the opinion,¹⁷⁹ it remains the leading decision in the field.

Together, the scholars' commentary and the *Sanrei-Yamako* and *Waukesha* decisions paint a bleak landscape for the Japanese trade secret owner seeking protection under tort law. At the outset, it is doubtful whether trade secrets and know-how are the types of "rights" that Article 709 protects. Two scholars' commentary and the *Sanrei-Yamako* decision raise the hope of a damage remedy, but substantial doubt persists whether damages may be recovered from a third party. More important, the damage remedy applied in these cases—a reasonable licensing fee—is a far cry from restoring the status quo ante misappropriation, which is the goal of American trade secret law.¹⁸⁰

As for injunctive relief against a third party, both the scholars' commentary and the leading decision hold out no hope whatsoever, absent an appropriate amendment of the Japanese Civil Code. Yet without injunc-

176. This point is stressed in Professor Doi's summary. See T. DOI, *supra* note 160, at 103.

177. *Id.* at 103-04.

178. *Id.*

179. See *id.* at 104-05; *Know-How*, *supra* note 127, § 5.06 at VI5-10.

180. Indeed, by definition a "reasonable royalty" fails to provide restitution of the defendant's profits, let alone compensation for any of the trade secret owner's intangible advantages that the misappropriator usurps. See *supra* Part II(C).

tive relief trade secret protection is often but a hollow shell. Damages—especially those based on a “reasonable royalty”—are inadequate because they are hard to prove, often do not compensate for the plaintiff’s full monetary losses, and, in addition, fail to compensate for all the unquantifiable advantages lost in a case of misappropriation.¹⁸¹ For example, damage remedies fail to compensate for the plaintiff’s loss of control over the direction and marketing of a new technology, unfettered use of the secret in additional fields, the right to be the first to market, the reputation for innovation, customer loyalty, and the interest and respect of investors, licensees, and suppliers. This is not to mention the age-old justification for injunctive relief—avoiding the need to return to the courthouse repeatedly to seek new damages for continuing injury. Given the absence of injunctive relief and the doubt that surrounds the damage remedy, Japanese tort law as applied to trade secrets may well illustrate the common law principle that a right without an effective remedy is no right at all.

IV. Analysis and Prognosis

Recent commentators have noted that Japan’s industrial environment is one of the world’s most competitive.¹⁸² The goal of every company, and of every employee, is to be “number one”—the largest company with the largest market share.¹⁸³ As a result, competition in Japan is fierce, and the bankruptcy rate in Japan is one of the world’s highest.¹⁸⁴ Given this ultra-competitive environment, one wonders why the Japanese have not found it necessary to provide effective legal remedies for trade secret misappropriation by third parties.

A. *Present Sociocultural Factors*

The answer appears to lie in three interrelated cultural factors. First, Japanese business traditionally has been built upon the foundation of extreme individual loyalty to the group. This loyalty derives in part from practical considerations—the promise of lifetime employment, accumulated seniority, and large pension payments that might be lost through

181. *See id.*

182. *See, e.g.,* A. MORITA, *supra* note 40, at 203-07; M. ZIMMERMAN, *supra* note 41, at 140-42, 148-50 (“To the Japanese, competition from the local companies in the foreign markets they have penetrated is usually tame and fairly easy to handle.”). *See generally* KAISHA, *supra* note 39, at 3-16 (general background); *id.* at 42-54 (specific examples).

183. *See* M. ZIMMERMAN, *supra* note 41, at 141.

184. *See* A. MORITA, *supra* note 40, at 203 (18,000 business bankruptcies per year in Japan).

defection.¹⁸⁵ But it also rests upon other factors: mutual respect and a corporate environment that attempts to nurture healthy human relations for the long term. These relations are maintained, for example, through shared activity and shared after-work entertainment, often at company expense.¹⁸⁶ Once companies have established these relations, they nurture them carefully and create a delicate web of duties and obligations that binds each individual strongly to the group and causes each employee to identify his or her own personal interests with those of the group.¹⁸⁷ These psychological factors, as much as the oft-cited guarantee of lifetime employment, have been responsible for an extraordinary spirit of loyalty and self-sacrifice among Japanese managerial and technical personnel.¹⁸⁸

The second important cultural factor is a corollary of the first: Japanese generally disapprove of employee mobility. Because of the intense loyalty that Japanese employees display (and are expected to display) toward their employers, most of them view job-hoppers with mistrust and contempt.¹⁸⁹ Employers echo this disdain, for they fear that an increase in employee turnover might destroy the fierce loyalty on which Japanese companies depend, leading to greater misuse of trade secrets.¹⁹⁰

The third important cultural factor is the notion of "face," or personal reputation. In Japan an individual's self respect is closely tied to his or her position in society. Both self respect and the individual's status depend upon such things as employment and a reputation for honesty, integrity, and loyalty to co-workers and family.¹⁹¹ Thus an employee who

185. M. ZIMMERMAN, *supra* note 41, at 11-12.

186. See generally *id.* at 75-87 (describing how Japanese management fosters and relies upon *ningen kankai*, or personal relations); A. MORITA, *supra* note 40, at 130 ("The most important mission for a Japanese manager is to develop a healthy relationship with his employees, to create a family-like feeling within the corporation, a feeling that employees and managers share the same fate."); *id.* at 135, 181-82 (Japanese management support for worker comfort and disapproval of executive privileges); *id.* at 182-84 (motivating effect of company clothing); *id.* at 212 (private company social club for all workers).

187. See M. ZIMMERMAN, *supra* note 41, at 71-74.

188. See Wall Street J., Oct. 11, 1988, at A1 ("Japanese workers so thoroughly identify their fates with their companies' that they give up their vacations, accept unwanted transfers and work overtime (sometimes without pay), all the while peppering their bosses with suggestions on how to run the business better.").

189. See A. MORITA, *supra* note 40, at 175 (when a colleague today can become a competitor tomorrow, "mutual trust and confidence are lost all across the board"); M. ZIMMERMAN, *supra* note 41, at 71 (*gairo*, or "roving employee of foreign firm," is viewed as "somewhat contemptible" by Japanese salaried workers working for large companies).

190. See A. MORITA, *supra* note 40, at 212 ("Without the loyalty that comes with long-term employment, it seems to me impossible to ever stop the kinds of leaks and thefts that American business suffers every day through disloyalty and dishonesty.").

191. See generally M. ZIMMERMAN, *supra* note 41, at 65-70 (describing complex relationship between "face" and performing social duties and obligations).

misappropriates trade secrets in Japan may face not only criminal sanctions, but also disgrace in the eyes of family and friends, even those not associated with the company. As a result of this cultural environment, it would be almost impossible for any employee convicted of embezzlement in Japan to have the opportunity to repeat the transgression at another company.¹⁹²

Due to these cultural factors, a Japanese contemplating misappropriation of trade secrets faces severe economic and social disincentives. He would exchange a guarantee of life-time employment, as well as the comfort and security of an interlocking web of good personal relations and cross-loyalties with coworkers, for a very uncertain future. Although there might be some immediate monetary advantage from the misappropriation, the employee would face suspicion and distrust even from his new coworkers and managers, both for the apostasy of leaving the womb of permanent employment and for the contemptible breach of former managers' trust and former coworkers' loyalty.¹⁹³ Moreover, if caught, he might well face criminal sanctions, with resulting exposure and personal disgrace.

Even this might be worthwhile if the employee could use the stolen trade secret to start a new business as a principal. Until recently, however, the opportunities to do so in Japan have been quite limited. Venture capital traditionally has been scarce,¹⁹⁴ and banks "are still reluctant to lend money to unknowns."¹⁹⁵ A budding entrepreneur therefore might have no place to go. Based on these extensive economic and cultural disincentives for misappropriation of trade secrets, the Japanese can argue with some force that the need for comprehensive legal protection of trade secrets is not overwhelming.

B. *Changes in Japan*

Yet however much industrial and cultural forces in Japan may have combined to discourage misappropriation of trade secrets in the past, present-day Japan is buffeted by winds of change. As a result, both the business and economic environments in which Japanese firms operate are in flux.

192. See A. MORITA, *supra* note 40 at 179 ("In Japan a person who holds an executive position of trust and who violates it is really disgraced, and because of our closed-circle society, it would be impossible for him to continue to do damage to company after company, as some have done in the U.S. and even in Europe.").

193. See M. ZIMMERMAN, *supra* note 41, at 11.

194. See A. MORITA, *supra* note 40, at 213-14. Cf. M. ZIMMERMAN, *supra* note 41, at 143-44 (explaining tax disincentives for venture capital investment in Japan).

195. A. MORITA, *supra* note 40, at 214.

Trade Secrets in the U.S. and Japan

1. *Changes in Business Conditions*

As foreign firms enter the Japanese market, they provide alternative jobs for renegade Japanese employees, thereby weakening the social forces that in the past effectively ostracized the job-hopper and trade-secret thief. Moreover, as Japanese firms continue to open facilities abroad, they create opportunities for Japanese employees to improve their standards of living by working in foreign countries.¹⁹⁶

As more foreign firms enter the Japanese market, and as Japanese firms expand abroad, this process is likely to accelerate, exposing more and more Japanese to alternative models of acceptable behavior. Japanese employees who find these foreign models more in their self interest may well adopt them, even though they differ from Japanese norms, for the human mind often rationalizes steps taken in the interest of self or loved ones. Moreover, as Japanese firms employ more foreign workers, both at home and abroad, Japanese business will have to contend with employees acclimated from birth to foreign norms of work and play. For these reasons, it would not be surprising if, as Japanese business becomes more internationalized, the norm of lifelong loyalty to one company soon deteriorates in the face of economic and social pressures.¹⁹⁷

196. For a long time, Japanese have successfully marketed their products in the United States and other foreign countries through their giant trading companies. *See generally* M. ZIMMERMAN, *supra* note 41, at 168-75. More recently, under the pressure of threatened trade restraints, and as a result of conscious industrial policy, the Japanese have been shifting their manufacturing abroad, particularly to Asia. *See* KAISHA, *supra* note 39, at 258-68. This trend is likely to accelerate for a number of reasons, including protectionism on the part of foreign nations and the need to reduce labor costs based on Japan's high wage rates. *Id.* at 282-83, 286. The consequent development of Japanese-owned and Japanese-managed factories in America and other more entrepreneurial societies may offer Japanese technical and scientific personnel, as well as marketing and sales personnel, the chance to work abroad.

197. A recent report suggests that the process of deterioration already has begun, *see* Wall Street J., Oct. 11, 1988, at A1 (reporting 4.4% of Japanese work force having changed jobs in 1986, up 80% from five years earlier), and may accelerate in the future, *id.* at A16 (60% of recent Japanese college graduates surveyed "might job-hop"). Indeed, 79% of surveyed Japanese companies reported hiring "experienced workers" in 1986, up from 36% in 1984. *Id.* Among the factors cited as causes for this change are labor shortages, a desire to improve company creativity and flexibility with new blood, the "lure [of] job satisfaction," and the reduction in opportunity for promotion as the Japanese postwar baby boom reaches higher management levels. *Id.* at A1, A16.

In any event, Morita believes that the "norm" of lifelong employee loyalty in Japan has only a short history. In his view, it is not a holdover from feudal times, ingrained in the Japanese character over hundreds of years, but rather a creature of post-war labor regulations imposed by the United States during the Occupation, coupled with post-war insecurity. *See* A. MORITA, *supra* note 40, at 132-35, 180-81. *See also* NIPPON: A CHARTERED SURVEY OF JAPAN 54 (Tsuneta Yano Memorial Society ed. 1987/88) ("These systems [lifetime employment, seniority, seniority-based pay, and company unions] had already been adopted by some employers before the end of World War II . . . but it was after the war that companies began in earnest to introduce them."). Now that the post-war era has come to an end and Japan has become the second largest economic power of the free world, the reasons for this "tradition" and the insecurity have vanished, and with it perhaps the basis for the "traditional" Japanese

As for industrial concentration, that, too, is changing in Japan. As Japanese technology has increased in sophistication, Japanese firms have become more entrepreneurial, and spin-offs have become more common.¹⁹⁸ Moreover, as American and other foreign companies have entered the Japanese market, either directly or through local distributors, they have provided alternatives for financing, employment, and business support. Finally, in an effort to duplicate the tremendous success of American high-technology start-ups in such places as California's "Silicon Valley" and Boston's Route 128, Japanese banks and other financing agencies have begun to develop an indigenous venture capital industry.¹⁹⁹ These trends may fragment the traditional monolithic Japanese industries and create a more entrepreneurial spirit.

As a result of these changes, a Japanese employee leaving a large company soon may feel no loss of "face." The departure may occasion increases in salary and benefits, a more interesting job, and more responsibility.²⁰⁰ Moreover, if the new employment opportunity involves an entrepreneurial or foreign company that does not adhere to the rigid standards of "traditional" Japanese industrial morality, there will be no mistrust and no ostracism. In short, the departing employee may enter not only a new job environment, but perhaps a new social support structure as well. Based on non-Japanese norms, that structure might provide substantial encouragement despite the employee's indiscretion (in Japanese terms) of leaving the former job. Thus, in the future the departing Japanese employee may find a brave new world.

Under these circumstances, the future may bring not only increased job mobility, but increased risk of trade secret misappropriation, whether intended or inadvertent. Of all the social forces mentioned above, perhaps the only effective counterforce would be the employee's own subjec-

employee loyalty. See KAISHA, *supra* note 39, at 210-13 ("Changes in attitudes and values may well erode the system over time, but are likely to work slowly."); NIPPON: A CHARTERED SURVEY OF JAPAN, *supra*, at 54-55 ("The way that employees look at their company is also being changed, although very slowly."). But see M. ZIMMERMAN, *supra* note 41, at 7-9 (arguing that Japanese group loyalty has much deeper cultural roots).

198. See, e.g., A. MORITA, *supra* note 40, at 166.

199. See *America's Hottest New Export*, U.S. NEWS AND WORLD REP., July 27, 1987, at 39 (annual formation of new ventures in Japan jumped from near zero to 70,000-80,000 in ten years; number of Japanese venture capital firms jumped from 10 to 81 in five years).

200. In Japan, disgrace is not limited to job hoppers, but can affect even lifetime employees in a large Japanese company. Many unsuccessful lifetime employees are not fired, but are made "window people" (*mado no hito*), with a desk by the window and no responsibility. See M. ZIMMERMAN, *supra* note 41, at 113 n.*. Such a fate is a great disgrace. Cf. *id.* at 12 ("It is still considered somewhat shameful for a husband to be home before ten o'clock at night on a work day. The neighbors will make his wife miserable by 'sympathizing' with her that her husband is not needed at the office."). For those with an entrepreneurial spirit and a desire to succeed, the ostracism that comes with leaving a large company for another, better opportunity might well be preferable.

tive feelings of loyalty to his or her former group, coupled with feelings of guilt. For the employee who has the courage to take the initial step, however, these feelings may soon dissipate in a new environment with new moral values and new emotional support structures. Although this behavior undoubtedly will not become the norm in Japan for some time, if ever, there can be little doubt that it will occur often enough to merit recognition in the law. In the face of these changing forces, the traditional view that employee loyalty in Japan precludes the need for strong protection of trade secrets soon may evaporate.

2. *Economic Changes*

There is yet another trend that argues for stronger protection of trade secrets in Japan. For some time Japan has built thriving industries by licensing technology from other nations.²⁰¹ Recently, however, Japan has increasingly become a licensor of technology, especially to rapidly industrializing areas of the world.²⁰² As Japanese companies license more of their unpatentable technology to firms in other countries, they will need to protect that technology from unauthorized copying. In many cases, they will have to resort to trade secret protection to do so.²⁰³ If Japan itself has no trade secret protection, however, it cannot expect its licensees to respect its trade secrets, and it may have difficulty pressing foreign governments to adopt trade secret protection. To avoid trade friction and maintain the economic benefits of its technological progress, Japan may need to strengthen its own trade secret protection to serve as an example for developing nations.

201. See KAISHA, *supra* note 39, at 127-31. Between 1951 and March 1984, for example, Japanese companies entered into 42,000 licensing arrangements for foreign technology. *Id.* at 126. "It was a historic make-or-buy decision, and the Japanese decision to buy was carried out with historic success." *Id.* at 128.

202. For example, in the year ended March 31, 1987, the value of Japan's imports and exports of technology, in millions of dollars, were as follows:

<u>Trade Area</u>	<u>Exports</u>	<u>Imports</u>	<u>Export/Import Ratio</u>
North America	479.2	1,343.1	35.7%
Europe and Soviet Union	335.4	654.6	51.2%
Asia	746.2	*	*
Oceania and Africa	123.8	*	*
South America	40.0	*	*

* Total technology imports from Asia, Oceania, Africa and South America were \$ 5.4 million.

Wall Street J., Nov. 14, 1988, § 4 (special supplement on technology) at R35.

203. In many cases trade secret protection may be the only form of protection potentially available. See generally *supra* Part I.

Conclusion

Many valuable results of modern-day research and development are not covered by patent or copyright. Important business ideas, new scientific discoveries, applied mathematics and algorithms in their abstract forms, and many aspects of computer software fall in this category. In the absence of strong legal protection for trade secrets, a firm's investment in research of this kind remains insecure. Moreover, fear that such secret technologies will leak out may lead firms to take inefficient and unproductive measures to maintain secrecy, or to keep secret technologies from their most efficient use. Trade secret law seeks to avoid these unfortunate results by providing legal protection for such technologies.

Japan has trade secret protection of a sort. It protects trade secrets against direct misappropriation by a party to a contract through damage awards and injunctive relief, and it deters certain employee defections and trade secret thefts through criminal sanctions. In addition, there is some weak authority for compensation, in the form of a "reasonable royalty," for misappropriation of trade secrets by a third party. But, even if generally available, that compensation fails to achieve the central goal of relief in trade secret cases—restoring the status quo ante misappropriation. More important, a crucial feature of American trade secret law is missing in Japan: injunctive relief for third-party misappropriation.

Perhaps in the past this feature of Japanese law has been unimportant. "Traditional" Japanese employee loyalty, low employee turnover, and strong social, psychological, and cultural pressures may have prevented widespread misappropriation of Japanese firms' trade secrets. Yet as Japan solidifies its position as a leading economic power, changes in its domestic business structure and the internationalization of Japanese business may begin to erode existing social and cultural bonds between firms and their employees, customers, and suppliers. If Japanese business becomes more fragmented and job-hopping becomes more prevalent, Japanese firms may need the protection of realistic damage remedies and injunctive relief in order to preserve their investments in research and development. In addition, Japan as a nation may wish to endorse strong trade secret protection as it seeks to protect its own technology abroad. Accordingly, the prognosis for stronger protection of trade secrets in Japan appears good.²⁰⁴

204. During my research visit in December 1987, several Japanese colleagues revealed an expectation that the United States would soon apply pressure on Japan through trade negotiations to strengthen trade secret protection. This expectation was based upon then-recent news reports that the United States intended to propose uniform rules for worldwide trade secret protection during the then-upcoming Uruguay Round of talks on the General Agreement on

Tariffs and Trade. *See* Kyodo News Service, Nov. 20, 1987 (available on NEXIS). Since that time, Congress and the President have approved effective international protection of trade secrets as a statutory objective for American trade negotiators. *See* Omnibus Trade and Competitiveness Act of 1988, Pub. L. No. 100-418, § 1101(b)(10)(A)(i), 102 Stat. 1107, 1123 (Aug. 23, 1988). Regardless of American goals in international trade talks, however, this article suggests that adoption of stronger trade secret protection is in Japan's own long-term self interest.