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The Problematic Role of Criminal Law in Regulating Use of Information: The Case of the Economic Espionage Act

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THE PROBLEMATIC ROLE OF CRIMINAL LAW IN REGULATING USE OF INFORMATION: THE CASE OF THE ECONOMIC ESPIONAGE ACT

GERALDINE SZOTT MOOHR*

The Economic Espionage Act (“EEA”), passed in 1996, makes stealing or otherwise interfering in a trade secret a federal crime. Congress abandoned the approach of most states that bases civil and criminal trade secret laws on wrongful conduct, and justified the EEA on the view that trade secrets are property. As a result, under the EEA, more information qualifies as a trade secret, more conduct triggers legal action, and it is easier to establish that a trade secret exists. Unintended consequences of this enhanced protection are likely to undermine achievement of Congress’s goals. The EEA is likely to restrain employee mobility, reduce the creation of innovative products and ideas, and constrain economic growth. The analysis shows that criminalizing takings of information and information products is a difficult and complex task, and the more judicious course is to protect the interests of trade secret holders through civil law.

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INTRODUCTION

Current headlines chronicle a profound unrest in industries that produce and distribute information, as powerful interests quarrel over who “owns” the use of a song or a business secret. The winner gains a

power that can be used to limit the rights of others to use and to benefit from the information. Such control of information raises significant public policy concerns because granting access to information products can lead to future innovation, and limiting access to them can stifle it.¹

The best-known dispute about control of an information product is the controversy over Napster, the Internet company that delivered music to personal computers. The recording industry launched, and won, copyright infringement suits against Napster, and succeeded in effectively closing the company down.² Other examples abound, such as disputes involving the patenting of business methods,³ trademarks

1. Deciding upon a term to describe this subject matter and to navigate between short-hand, conversational language and the precise terms that are mandated by intellectual property law is not a simple matter. I use the term “information” or “information product” throughout the Article. While imperfect, it serves here as an umbrella term to include those intangible products that are the result of creating, accumulating, and using knowledge and whose value is based on that content, rather than on its medium.

Several other definitional difficulties emerge when the topic is intangible information. The term “property” assumes what is often at issue—whether the information object is property. Thus, using “property” obscures the real debate, the scope of one’s rights against others as to a specific, albeit intangible, interest. The term “owner” is problematic for the same reason. In order to avoid these difficulties, I use the terms “interests” and “holders.” Cf. Stephen L. Carter, *Does It Matter Whether Intellectual Property is Property?*, 68 CHI.-KENT L. REV. 715, 716 (1993) (noting the universal habit of talking about an owner as though the term had legal significance).

2. See *A&M Records, Inc. v. Napster, Inc.*, 239 F.3d 1004, 1029 (9th Cir. 2001); *UMG Recordings, Inc. v. MP3.Com, Inc.*, 92 F. Supp. 2d 349, 352–53 (S.D.N.Y. 2000), cert. denied; *UMG Recordings, Inc. v. MP3.Com, Inc.*, 2000 WL 710056 (S.D.N.Y. 2000); *Napster Settles Suits with Music Publishers*, WALL ST. J., Sept. 25, 2001, at B4 (reporting that Napster executives would not predict when the site would reopen); Matt Richtel, *Two Record Labels Settle Copyright Suit with MP3.com*, N.Y. TIMES, June 10, 2000, at C1 (reporting the settlement that allows MP3, a music start-up Internet company, to store consumers’ record libraries and provide access to them over the Internet in return for twenty million dollars and licensing fees); Matt Richtel, *With Napster Down, Its Audience Fans Out*, N.Y. TIMES, July 20, 2001, at A1 (reporting that the music industry has formed alliances with former competitors to deliver music over the Internet and that several new music-swapping sites provide Napster-like services).

The movie industry has followed the recording industry’s strategy. See *Universal City Studios, Inc. v. Reimerdes*, 111 F. Supp. 2d 346, 347 (S.D.N.Y. 2000) (finding that a program that can decrypt and copy DVDs violates the Digital Millennium Copyright Act and permanently enjoining the posting of the program), *aff’d*, *Universal City Studios, Inc. v. Corley*, 273 F.3d 429 (2nd Cir. 2001); Matt Richtel, *Movie and Record Companies Sue a Film Trading Site*, N.Y. TIMES, July 21, 2000, at C2 (reporting the filing of a copyright suit against Scour.com, a venture the industries say permits the free trading of movies).

3. See *Amazon.com, Inc. v. BarnesandNoble.com, Inc.*, 73 F. Supp. 2d 1228, 1249 (W.D. Wash. 1999) (granting Amazon.com’s motion for preliminary injunction), *vacated by Amazon.com, Inc. v. BarnesandNoble.com, Inc.*, 239 F.3d 1343 (Fed. Cir. 2001); Scott Thurm & Rebecca Quick, *Amazon.com is Granted an Injunction in BarnesandNoble.com Patent Dispute*, WALL ST. J., Dec. 3, 1999, at B5 (reporting the granting of a preliminary

on the Internet,⁴ photographs of professional basketball games,⁵ proposed database legislation,⁶ and even comic strips⁷ and college professors' lecture notes.⁸

The disputes are not confined to the civil arena. Increasingly, disputes over control of information products are the subject of criminal actions. For example, in May 2000, a grand jury in Detroit indicted a senior vice president of General Motors, who had accepted a position with Volkswagen, on various charges for stealing trade secrets.⁹ In January 2001, the recording industry threatened a Princeton professor with criminal charges.¹⁰ The tactic led the

injunction barring the use by BarnesandNoble.com of the patented one click check-out system).

4. See Laurie J. Flynn, *New Economy, Whose Name Is It Anyway?*, N.Y. TIMES, Sept. 4, 2000, at C3 (reporting that trademark owners are prevailing in their battle with Internet domain addresses).

5. See Felicity Barringer, *Times is Sued by N.B.A. Over Sale of Photos*, N.Y. TIMES, July 11, 2000, at C1 (reporting that the NBA is suing the newspaper over the sale of game photographs to enforce terms printed on the back of press credentials that limit photos to "news coverage").

6. See David E. Rosenbaum, *Database Legislation Spurs Fierce Lobbying*, N.Y. TIMES, June 5, 2000, at A14 (reporting odd alliances and arguments concerning use of the Internet to copy, repackage, and distribute factual databases). Real estate agents favor protecting databases because it will safeguard their multiple listing services, but financial information services oppose it because they use facts in databases to calculate stock market trends. *Id.*

7. See John Sullivan, *Charles Atlas Complaint Held as Legal Weakling*, N.Y. TIMES, Aug. 31, 2000, at B3 (reporting that a federal district court rejected the claim that a new comic book based on Charles Atlas's classic advertising character, ironically once advertised in comic books, had damaged the goodwill of Atlas's fitness centers).

8. See Georgia Holmes & Daniel A. Levin, *Who Owns Course Materials Prepared by a Teacher or Professor?: The Application of Copyright Law to Teaching Materials in the Internet Age*, 2000 BYU EDUC. & L.J. 165, *passim*; Jacques Steinberg, *Boola, Boola: E-Commerce Comes to the Quad*, N.Y. TIMES, Feb. 13, 2000, at WK1 (reporting that the potential income from an Internet education firm raises the issue of who owns the electronic rights to a professor's lectures and research).

9. See Keith Bradsher, *Former G.M. Executive Indicted on Charges of Taking Secrets*, N.Y. TIMES, May 23, 2000, at C1. Jose' Ignacio Lopez de Arriortua, G.M.'s former vice president for worldwide purchasing, was indicted for wire fraud and interstate transportation of stolen property. *Id.* Lopez is currently fighting extradition from Spain. See Emma Daly, *Court Fight in G.M. Spy Case*, N.Y. TIMES, May 22, 2001, at W1.

The long-running dispute between Avant and Cadence is another high-profile case involving criminal law protection of trade secrets and copyright. See *Criminal Charges Against Avant Dismissed*, N.Y. TIMES, Apr. 29, 2000, at C2 (reporting that a federal district court dismissed charges of theft of trade secrets); Howard Mintz, *Jury Re-Indicts Software Maker*, KNIGHT-RIDDER TRIB. BUS. NEWS, SAN JOSE MERCURY NEWS, Aug. 12, 2000, 2000 WL 25442791 (reporting that prosecutors secured a new indictment of the firm and its officers).

10. See Amy Harmon, *Group Says It Beat Music Security But Can't Reveal How*, N.Y. TIMES, Jan. 15, 2001, at C2 (recounting that Professor Felton would not reveal the results of an experiment in testing the security of a digital music copyright system because doing

professor to forego release of the research he and others had done and thwarted a discussion of the results.¹¹ In July 2001, the FBI arrested a Russian computer software designer for writing a program that enabled consumers to circumvent an encryption device.¹² The program did not infringe any copyright, but it did violate a federal law that makes it a crime to design software that might be used to infringe a copyright.¹³

Although the disputes implicate a host of legal doctrines, common threads tie the stories together. The disputes involve intangible objects—songs, photos, and confidential or secret business information—that are all, at bottom, based on knowledge or information. Most basically, the stories highlight a persistent and perhaps irreconcilable problem: how to protect interests in information without reducing too much the public's access to that information. While failing to protect such interests may discourage innovation, limiting public access may ultimately reduce production of new knowledge and ideas.

New technology exacerbates this enduring problem. Information products derive both additional value and vulnerability from computer technology. It is now possible to create information products that are entirely new,¹⁴ to venture into new markets for familiar information products,¹⁵ and to create hybrid services.¹⁶

so may subject him to criminal charges under the Digital Millennium Copyright Act); John Markoff, *Record Panel Threatens Researcher With Lawsuit*, N.Y. TIMES, Apr. 24, 2001, at C4 (reporting that the Recording Industry Association of America threatened legal action against Professor Edward Felton's research group if it presented a paper at an academic conference); Felton v. Recording Indus. Ass'n of America, No. 01-CV-2669 (D.N.J. Nov. 28, 2001) (dismissing scientists' suit alleging that the Digital Millennium Copyright Act chills their rights to present research results because there is no present controversy).

11. See Harmon, *supra* note 10.

12. See Amy Harmon, *New Economy*, N.Y. TIMES, Aug. 13, 2001, at C4 (recounting the arrest of a Russian programmer); Lawrence Lessig, *Jail Time in the Digital Age*, N.Y. TIMES, July 30, 2001, at A17. The programmer was charged with violating the 1998 Digital Millennium Copyright Act that outlaws technologies designed to circumvent codes that protect copyrighted material. Lessig, *supra*.

13. See Harmon, *supra* note 12; Jennifer 8. [sic] Lee, *In Digital Copyright Case, Programmer Can Go Home*, N.Y. TIMES, Dec. 14, 2001 at C4 (reporting that authorities are allowing Dmitri Sklyarov to return to Russia after being detained for five months); Lessig, *supra* note 12.

14. The technology is itself a kind of information product, and is the best example of new products now available.

15. Consider, for example, on-line newspapers, sports channels, and electronic books. See Doreen Carvajal, *Long Line Online for Stephen King E-Novella*, N.Y. TIMES, Mar. 16, 2000, at A1; David D. Kirkpatrick, *Stephen King Sows Dread in Publishers with his Latest E-Tale*, N.Y. TIMES, July 24, 2000, at C1 (recounting how Stephen King, a popular

Delivering digitized information products through the Internet lowers distribution costs, which often leads to increased profits and the stimulus to produce more.¹⁷ While digitization, Internet transactions, and the allure of cyberspace expand the potential market for, and the value of, information-based products, the same technology also makes these products vulnerable to illicit use and theft. The market value of an information product can be destroyed in the instant it takes to send digitized information to another computer. Indeed, estimated values of such losses are legion.¹⁸ Technological advances add another layer of concern; new technology must itself be nurtured and protected, but again, without unduly privileging existing products and thus closing off avenues for future innovation.

Is there a role for criminal law in finding and maintaining the balance between encouraging innovation and maintaining access? If so, what is it? Both Congress and courts have answered the first question affirmatively; criminal law has a role to play.¹⁹ Courts have

novelist, sold a thriller over the Internet, an act that eliminates the traditional publishing house and could increase his profits).

16. An example of a hybrid product is software that makes it possible to download music and video files from the computers of fellow subscribers. See Clay Shirky, *Freedom, One Song at a Time*, N.Y. TIMES, July 15, 2000, at A13 (noting that this type of software delivers one song at a time, which enables consumers to assemble a music library consisting only of preferred songs, freeing them from the industry's ten-track format).

17. The contribution of electronically delivered information products to general economic well-being is now universally acknowledged. See, e.g., Paul Krugman, *Reckonings: Dynamo and Microchip*, N.Y. TIMES, Feb. 20, 2000, § 4, at 13 (stating that the productivity boom since 1996 is the result of technology); Robert J. Samuelson, *Puzzles of the 'New Economy'*, NEWSWEEK, Apr. 17, 2000, at 49 (describing a White House conference that credited technological advances with raising living standards).

The phrase "information-based economy" has become little more than a dated axiom. Cf. JOHN NAISBITT, MEGATRENDS 1-33 (1984) (identifying the information-based economy as a major societal transformation).

18. See *infra* note 248 (providing estimates of losses of up to one hundred billion dollars annually); *infra* notes 248-50 and accompanying text (noting the infirm basis of such estimates).

19. This Article emphasizes the use of criminal law; however, legislators and courts have also been active in civil law.

Congress has amended existing statutes and passed new laws that strengthen and create property rights in information. See, e.g., Semiconductor Chip Protection Act of 1984, Pub. L. No. 98-620, 98 Stat. 3347 (codified as amended at 17 U.S.C. §§ 901-914 (2000)) (extending copyright protection to maskworks); Sonny Bono Copyright Term Extension Act and Fairness in Music Licensing Act of 1998, Pub. L. No. 105-298, 112 Stat. 2827 (codified at 17 U.S.C. § 302(a) (2000)) (extending the copyright term to the life of the author plus seventy years).

Judicial decisions involving civil causes of action have expanded existing doctrines to grant property rights in intangibles. See Robert P. Merges, *One Hundred Years of Solicitude: Intellectual Property Law, 1900-2000*, 88 CAL. L. REV. 2187, 2234 (2000) (noting the judicial trend to strengthen rights that attach to intellectual property); Wendy

allowed prosecutors to use general federal criminal laws,²⁰ and Congress has recently enacted specific criminal statutes.²¹

One of Congress's recent and most significant initiatives is the Economic Espionage Act of 1996 (EEA), which makes misappropriating a trade secret a federal crime.²² Passage of the EEA presents an opportunity to consider generally the basis for and consequences of relying on criminal law to regulate use of information. The aim here is to identify the consequences of using criminal law to regulate use of trade secrets and to consider whether the EEA maintains a balance between stimulating the creation of information products and securing efficient use of the information. The analysis reveals that the EEA creates a broad, expansive federal law of trade secrets—a new kind of trade secret law—that rests upon a property basis. This combination is likely to produce unintended consequences that tilt the balance toward stimulating creation and away from effective use of information. Ultimately, this choice may undermine Congress's purpose in enacting the statute.

Throughout this Article, the new federal law of trade secrets is measured against trade secret doctrine, which is based on the

J. Gordon & Sam Postbrief, *On Commodifying Intangibles*, 10 YALE J.L. & HUMAN. 135, 137-38 (1998) (book review) (characterizing courts as "pro-property").

20. I have considered elsewhere the application of traditional general criminal laws, mail fraud, wire fraud, and the National Stolen Property Act, to intangible interests. See Geraldine Szott Moohr, *Federal Criminal Fraud and the Development of Property Rights*, 2000 U. ILL. L. REV. 683, *passim*. I concluded that the use of such statutes was inappropriate and recommended that prosecutors confine their enforcement efforts to specific criminal laws, such as the Economic Espionage Act. *Id.* at 738. This Article continues that inquiry with reference to a specific, rather than a general, federal crime.

21. See, e.g., Copyright Felony Act of 1992, Pub. L. No. 102-561, 106 Stat. 4233 (codified at 18 U.S.C. § 2319 (2000)) (amending the penalties for criminal copyright infringement); Digital Millennium Copyright Act, Pub. L. No. 105-304, 112 Stat. 2860 (1998) (codified as amended in scattered sections of 17 U.S.C.) (expanding the scope of criminal penalties for infringement); No Electronic Theft (NET) Act, Pub. L. No. 105-147, 111 Stat. 2678 (1997) (codified as amended at 18 U.S.C. § 2319 (2000)) (amending the criminal copyright infringement provisions); Anti-Bootlegging Law, Pub. L. No. 103-465, § 513(a), 108 Stat. 4809, 4974 (1994) (codified at 18 U.S.C. § 2319A (2000)) (providing criminal penalties for the unauthorized sale of recordings and videos of live musical performances); Computer Fraud and Abuse Act of 1986, Pub. L. No. 99-474, 100 Stat. 1213 (codified as amended at 18 U.S.C. § 1030 (2000)) (prohibiting the unauthorized use of computers).

State legislators have also utilized criminal laws. See generally Eli Lederman, *Criminal Liability for Breach of Confidential Commercial Information*, 38 EMORY L.J. 921, 947-65 (1989) (surveying state criminal laws dealing with trade secrets and information); *infra* notes 113-25 and accompanying text (reviewing state criminal laws that protect trade secrets).

22. Economic Espionage Act of 1996, Pub. L. No. 104-294, 110 Stat. 3488 (codified at 18 U.S.C. §§ 1831-1839 (2000)).

common law and administered by the states.²³ Accordingly, after briefly introducing the EEA in Part I,²⁴ a review of trade secret doctrine in Part II places the new law in context.²⁵ That review considers the scope of protection given secret information and finds that trade secret law confers only a limited right. Moreover, ascertaining whether information is a trade secret is a fact-intensive and somewhat circular exercise. In Part III, an analysis of specific provisions of the EEA shows that—in contrast to common law—the new federal law of trade secrets offers broad protection to holders of such information while retaining the problematic aspects of defining a trade secret.²⁶ Under the EEA, more information is considered a trade secret, and a greater range of conduct with respect to secret information is barred. In Part IV, the analysis returns to common law in order to identify and evaluate the conceptual bases for protecting the interests of those who hold trade secrets.²⁷ Common law bases trade secret protection on wrongful conduct, whereas Congress rests the EEA on a property conception.

Part V addresses the consequences of creating a broad law of trade secrets that ignores the historical basis of trade secret law and key characteristics of the common law doctrine.²⁸ The analysis indicates that enhanced property rights in trade secrets, enforced through criminal sanctions, are likely to reduce movement of employees between firms. Not only does this have profound effects on experienced workers and regional economies, but the reduction in employee mobility closes one path through which information enters the public domain. In addition, use of a criminal statute is likely to chill second-generation innovation and create a perverse incentive for firms to rely less on the protection of patent law, which benefits the public by requiring holders to reveal information and knowledge. In the end, expanding and strengthening trade secret protection may cause less information to reach the public domain, which discourages innovation. For these reasons, this Article concludes that the EEA may ultimately constrain, rather than encourage, innovation and economic well-being. The larger lesson, outlined in Part VI,²⁹ is that

23. "Common law" is used here to refer to judicially-created law and to state statutes because generally states codified their common law. See *infra* notes 59–112 and accompanying text (discussing state laws).

24. See *infra* notes 30–58 and accompanying text.

25. See *infra* notes 59–125 and accompanying text.

26. See *infra* notes 126–170 and accompanying text.

27. See *infra* notes 171–261 and accompanying text.

28. See *infra* notes 262–318 and accompanying text.

29. See *infra* notes 319–38 and accompanying text.

it is wiser to legislate with a presumption against criminal penalties when dealing with information and information products. Civil enforcement is more likely to produce a nuanced solution that takes into account the rights of others and established public policies. Finally, the analysis suggests that it may be time to consider a federal civil law of trade secrets in order to ensure that trade secret protection is consistent with the policy that underlies intellectual property laws.

I. THE ECONOMIC ESPIONAGE ACT

The Economic Espionage Act is significant both as a trade secret law and as a criminal law.³⁰ It is the first federal legislation to deal directly with trade secrets in the private sector.³¹ Rather remarkably, injured parties have no federal civil cause of action for the loss of a trade secret. Until now, plaintiffs with trade secret claims were confined to state courts.³²

30. Several commentators have written about the EEA. See, James H.A. Pooley et al., *Understanding the Economic Espionage Act of 1996*, 5 TEX. INTEL. PROP. L.J. 177, 196-97 (1997) (characterizing the EEA as a "major shift in the balance traditionally struck between intellectual property owners and competitors"); see also Kent B. Alexander & Kristen L. Wood, *The Economic Espionage Act: Setting the Stage for a New Commercial Code of Conduct*, 15 GA. ST. U. L. REV. 907, 939 (1999) (arguing that the EEA "tightened a seam in the existing patchwork" of intellectual property law); Ronnie Heather Brandes et al., *Intellectual Property Crimes*, 37 AM. CRIM. L. REV. 657, 659-63 (2000) (outlining the provisions of the EEA); Chris Carr et al., *The Economic Espionage Act: Bear Trap or Mousetrap?*, 8 TEX. INTEL. PROP. L.J. 159, 209 (2000) (arguing that the government's narrow application of the EEA has limited its influence); Victoria A. Cundiff, *The Economic Espionage Act and You*, 490 PLI/Pat 9, 27 (1997) (discussing the enforcement difficulties under existing criminal laws); Arthur J. Schwab & David J. Porter, *Federal Protection of Trade Secrets: Understanding the Economic Espionage Act of 1996*, 10 J. PROPRIETARY RTS. 2, 3-8 (1998) (outlining the provisions and ambiguities of the EEA).

Only a few cases have resulted in reported opinions. See *United States v. Krumrei*, 258 F.3d 535, 536 (6th Cir. 2001); *United States v. Martin*, 228 F.3d 1, 6 (1st Cir. 2000); *United States v. Hsu*, 155 F.3d 189, 191 (3d Cir. 1998); *United States v. Yang*, 74 F. Supp. 2d 724, 725 (N.D. Ohio 1999); *United States v. Hsu*, 40 F. Supp. 2d 623, 631 (E.D. Pa. 1999). According to a database maintained by attorney Mark Halligan, as of June 1, 2001, the government brought EEA charges in thirty cases. See R. Mark Halligan, *Reported Criminal Arrests and Convictions under the Economic Espionage Act of 1996*, at www.execpc.com/~mhallign/indict.html (last visited Jan. 17, 2002) (on file with the North Carolina Law Review).

31. Trade secrets owned by the federal government are governed by 18 U.S.C. § 1905, which forbids government employees from disclosing confidential government information, including trade secrets. See *Hsu*, 155 F.3d at 194 n.5 (noting the "limited value" of § 1905 because it does not apply to private sector employees).

32. As to federal criminal law, taking a trade secret may be prosecuted as mail or wire fraud. See §§ 1341, 1343.

In some circumstances, violations of federal offenses or state criminal trade secret laws may implicate the federal civil Racketeer Influenced and Corrupt Organizations Act

For the first federal initiative in trade secret law to be a criminal statute, rather than a civil statute, is, in itself, worthy of note. Modern federal regulatory law normally includes both civil and criminal provisions, a practice that allows the development of standards through civil law, which eventually supports criminalization.³³ In this case, however, Congress moved directly and only to criminal enforcement. In addition, Congress addressed thefts of trade secrets even though no federal law prohibits theft of physical property in the private sector.³⁴ Moreover, the new statute criminalizes conduct that traditionally has been treated as a civil violation under state law,³⁵ plus some conduct that would not give rise to either a civil or criminal cause of action.³⁶

A. *The Comprehensive Approach of the EEA*

The EEA establishes a comprehensive and systematic scheme that uses criminal law to protect trade secrets.³⁷ The EEA's definition

(RICO). See § 1964(c). Plaintiffs may file a civil suit for treble damages when the conduct violates a state law that serves as a predicate act for a RICO violation. See, e.g., *Religious Tech. Ctr. v. Wollersheim*, 796 F.2d 1076, 1084 (9th Cir. 1986) (recognizing civil RICO claims for the state crime of stealing trade secrets); *Cont'l Data Sys., Inc. v. Exxon Corp.*, 638 F. Supp. 432, 437 (E.D. Pa. 1986) (recognizing civil RICO claims based on state trade secret law); *Fleet Mgmt. Sys., Inc. v. Archer-Daniels-Midland Co.*, 627 F. Supp. 550, 559 (C.D. Ill. 1986) (recognizing a civil RICO claim based on the loss of information in violation of mail and wire fraud). See generally Thomas P. Heed, Comment, *Misappropriation of Trade Secrets: The Last Civil RICO Cause of Action That Works*, 30 J. MARSHALL L. REV. 207 (1996) (proposing that victims of trade secret theft use civil RICO provisions).

33. Insider trading and environmental laws are examples of this "sequentially interactive" relationship between civil and criminal laws. See John C. Coffee, *Does "Unlawful" mean "Criminal"?: Reflections on the Disappearing Tort/Crime Distinction in American Law*, 71 B.U. L. REV. 193, 201 (1991) (suggesting that criminal enforcement is appropriate at the point civil law standards "harden" into a community norm).

34. The federal criminal code generally protects only government property from theft and conversion. See, e.g., 18 U.S.C. § 641; see also *Morissette v. United States*, 342 U.S. 246, 270 (1952) (overturning a conviction for stealing government property due to a lack of criminal intent).

35. See *United States v. Hsu*, 40 F. Supp. 2d 623, 626 (E.D. Pa. 1999) (noting that the EEA criminalizes "conduct that heretofore was thought best left to the civil law of unfair competition").

36. See *infra* notes 126-70 and accompanying text (presenting specific provisions of the EEA).

37. See *United States v. Hsu*, 155 F.3d 189, 202 (3d Cir. 1998) (concluding that the great weight of the EEA's legislative history evinces an intent to create a comprehensive solution to economic espionage); see also S. REP. NO. 104-359, at 11 (1996) (underscoring the importance of developing a systematic approach); H.R. REP. NO. 104-788, at 7 (1996), reprinted in 1996 U.S.C.C.A.N. 4021, 4025 (stating that the EEA is designed to provide a "systematic approach" and a comprehensive federal criminal statute); Statement by President William J. Clinton Upon Signing H.R. 3723, reprinted in 1996 U.S.C.C.A.N.

of a trade secret is considerably broader than the conception used at common law or contained in state civil and criminal statutes. This point is explored in some detail in Part III,³⁸ and it is sufficient here to note that the statute broadens the range of protected information, both explicitly and by making it easier to establish that a trade secret exists. The EEA also reaches a greater range of conduct by barring, in effect, any act that exceeds uses authorized by the holder.

In addition to protecting a wide variety of information and to prohibiting a broad range of conduct, including attempt and conspiracy to take a trade secret,³⁹ the EEA also reaches third parties who receive such information.⁴⁰ Under the EEA, anyone who receives, buys, or possesses information with knowledge that it was stolen or misappropriated is subject to criminal sanctions.⁴¹ Third parties also may be reached through the conspiracy provision.⁴²

Even as a federal felony, the EEA exacts severe punishment. Individual violators of the general provision face fines and imprisonment for up to ten years; organizations may be fined as much as five million dollars.⁴³ In contrast, federal crimes that address similar pecuniary harms, such as fraud, carry a maximum penalty of five years in prison.⁴⁴ The criminal provisions of copyright infringement provide for graded punishment up to five years for a first offense.⁴⁵ Patent infringement is not a criminal offense, and the criminal provision governing federal government trade secrets is a misdemeanor.⁴⁶

4034, 4034 (stating that the “Act establishes a comprehensive and systematic approach to trade secret theft”).

38. *See infra* notes 126–44 and accompanying text.

39. *See* 18 U.S.C. §§ 1832(a)(4)–(a)(5) (2000).

40. *Id.* § 1832(a)(3).

41. *Id.*

42. *Id.* § 1832(a)(5).

43. *Id.* § 1832(a)–(b). The maximum fine for individual offenders is \$250,000, the same as for mail and wire fraud. *Id.* § 3571(d) (providing the general fine provision).

Penalties for violations that benefit foreign governments, instrumentalities, or agents carry a penalty for individuals of fines up to \$500,000 and imprisonment not more than 15 years. *Id.* § 1831(a). When the defendant is an organization, the fine may reach \$10 million. *Id.* § 1831(a)–(b).

In large part, the Sentencing Guidelines assign the term of imprisonment. U.S. SENTENCING GUIDELINES MANUAL § 2B1.1 (2001). The prison term is affected by the value of what was taken and whether the conduct involved a breach of trust. U.S. SENTENCING GUIDELINES MANUAL § 2B5.3(b) (2001); U.S. SENTENCING GUIDELINES MANUAL § 3B1.3 (2001).

44. 18 U.S.C. § 1341, 1343.

45. *Id.* § 2319(b)–(c).

46. *Id.* § 1905.

Complementing the penalty provision, the EEA authorizes both mandatory and discretionary forfeiture that includes proceeds of the crime and any personal property used in the commission of the crime.⁴⁷ Notably, the EEA does not displace other laws that deal with trade secrets; federal prosecutors may charge offenders with the full range of relevant crimes and state prosecutors may also charge actors under state criminal laws.⁴⁸

B. *Passage of the EEA*

In drafting and debating the Economic Espionage Act, Congress and the President expressed concerns that the loss of American intellectual capital jeopardized the country's economic well-being.⁴⁹ Testimony of interested parties⁵⁰ revealed that commercial espionage

47. *Id.* § 1834(a). Restitution may also be required. *Id.* § 3663A (requiring restitution for any property offense in which an identifiable victim suffers a pecuniary loss).

48. *Id.* § 1838 (stating that the EEA does not preempt or displace other civil or criminal remedies on either the state or federal level).

Administrative provisions of the Act protect whistleblowers and authorize extra-territorial application. *Id.* §§ 1833, 1837. Congress encourages reporting by authorizing trial courts to preserve confidentiality of the trade secret. *Id.* § 1835; see *United States v. Hsu*, 155 F.3d 189, 198 n.15 (3d Cir. 1998) (noting that the court is not determining whether documents containing trade secrets must be disclosed to the defendant when the charge is actual theft and stating that the issue is complex because actual content of a trade secret may not be material to its existence); Joel M. Androphy et al., *Criminal Prosecutions of Trade Secret Theft: The Emergence of the Economic Espionage Act*, HOUS. LAW., July–Aug. 2000, at 16, 18 (pointing out the tension between § 1835 and defendants' rights to obtain documents that are material to the preparation of the case).

Although the EEA authorizes the Attorney General to bring a civil suit for injunctive relief, 18 U.S.C. § 1836, it does not authorize a civil cause of action by individuals. See *cf.* Computer Abuse Amendments Act of 1994, Pub. L. 103-322, 108 Stat. 2098–99 (codified at 18 U.S.C. § 1030(g) (2000)) (authorizing private civil suits).

49. See Statement by President William J. Clinton Upon Signing H.R. 3723, *reprinted in* 1996 U.S.C.C.A.N. 4034, 4034 (stating that the ultimate purpose of the EEA is to safeguard the nation's security and economic strength by protecting the intellectual capital of American businesses).

50. Congress did not hear testimony from practitioners or scholars from the intellectual property community. Craig L. Uhrich, *The Economic Espionage Act—Reverse Engineering and the Intellectual Property Public Policy*, 7 MICH. TELECOMM. & TECH. L. REV. 147, 170–71 (2001), available at <http://www.mtlr.org/volseven/uhrich.html> (noting that witnesses were confined to industry representatives and did not include less self-interested representatives, such as practitioners and scholars); see also Daniel C. Richman, *Federal Criminal Law, Congressional Delegation, and Enforcement Discretion*, 46 UCLA L. REV. 757, 776 & n.88 (1999) (suggesting that the EEA may be the result of concentrated interest group power deployed to criminalize conduct).

This legislative focus on industry representatives may not be unusual. See Jessica D. Litman, *Copyright, Compromise, and Legislative History*, 72 CORNELL L. REV. 857, 870 (1987) (stating that credit for the substance of the 1976 Copyright Act “belongs more to the representatives of interested parties negotiating among themselves than to members of Congress”); Lanier Saperstein, Comment, *Copyrights, Criminal Sanctions and*

by foreign entities, often allies, represented the greatest threat to that investment.⁵¹ Testimony emphasized the losses sustained by American business because of information theft, and Congress noted the enormous value of lost information.⁵²

Having established the severity of the threat, Congress concluded that existing federal criminal laws were not adequate to address the danger. Indeed, although prosecutors may use federal criminal fraud and transportation statutes against interferences with trade secrets and confidential information,⁵³ the statutes do not invariably apply to information products. Written with tangible property in mind, general federal fraud and transportation offenses may not encompass thefts of trade secrets.⁵⁴ Congress also concluded

Economic Rents: Applying the Rent Seeking Model to the Criminal Law Formulation Process, 87 J. CRIM. L. & CRIMINOLOGY 1470, 1474 (1997).

51. Congress heard evidence indicating that foreign companies and their governments, especially allies, were actively engaged in acts of industrial espionage. S. REP. NO. 104-359, at 7 (1996) (recounting the 1992 testimony of Robert Gates, Director of the Central Intelligence Agency, and the 1995 report of the National Counterintelligence Center detailing the threat of foreign economic espionage). Testimony drew parallels between industrial espionage and cold war military espionage. *Id.*

52. H.R. REP. NO. 104-788, at 6 (1996), *reprinted in* 1996 U.S.C.C.A.N. 4021, 4024 (reporting that losses could amount to sixty-three billion dollars annually). The figure was based on a survey by the American Society for Industrial Security, which also reported a 323% increase in reported incidents since a similar survey four years ago. *See also* 142 CONG. REC. S12,211-12 (1996) (statement of Sen. Kohl) (adopting estimate of \$63 billion); *Economic Espionage: Joint Hearing Before the Select Comm. on Intelligence United States Senate and the Subcomm. on Terrorism, Technology, and Government Information and of the Comm. on the Judiciary United States Senate*, 104th Cong. 2 (1996) (statement of Sen. Specter) (estimating a loss of \$100 billion).

The press has also reported large estimated losses. Don Clark, *Steps by Music Industry to Halt Internet Piracy May Be Futile*, WALL ST. J., Sept. 19, 2000, at A3 (reporting a prediction that record companies will lose \$3.1 billion annually in potential music sales by 2005 and book publishers will lose \$1.5 billion by 2005); *House Judiciary Panel Backs Stiffer Penalties for Economic Spying*, WALL ST. J., Sept. 12, 1996, 1996 WL-WSJ 11798048 (stating that estimated losses may exceed \$24 billion); Paul Lewis, *The Artist's Friend Turned Enemy: A Backlash Against the Copyright*, N.Y. TIMES, Jan. 8, 2000, at A17 (recounting that in 1996 the cost of foreign piracy of film, music, business software, and books reached \$10 billion) (citing MICHAEL P. RYAN, KNOWLEDGE DIPLOMACY (1998)).

53. 18 U.S.C. §§ 1341, 1342 (2000) (imposing federal criminal liability for mail fraud and wire fraud); *Id.* § 2314 (National Stolen Property Act). These offenses are predicate acts for charges under RICO. *Id.* § 1962.

54. *United States v. Hsu*, 155 F.3d 189, 194-95 (3d Cir. 1998) (noting that criminal laws such as the National Stolen Property Act and mail and wire fraud have limited applicability to theft of trade secrets); *see also* Peter J. Toren, *Internet: A Safe Haven for Anonymous Information Thieves*, 11 ST. JOHN'S J. LEGAL COMMENT. 647, *passim* (1996) (listing problems in using existing federal criminal laws to prosecute hypothetical theft of trade secret); *cf.* Moohr, *supra* note 20, at 722-30 (explaining why statutes written to

that state criminal laws were inadequate because state offenses are not uniform, do not cover the full range of trade secret theft, fail to deter because of their low penalties, and present jurisdictional problems.⁵⁵ For all of these reasons—and the reflexive impulse of legislators to rely upon criminal laws—the Act easily passed.⁵⁶

The EEA encompasses two types of industrial espionage. First, the Act bars espionage by or for the benefit of foreigners.⁵⁷ Focusing on economic espionage by other countries, this provision reflects the ostensible motivating force for the legislation. Notwithstanding the emphasis in both chambers on the threat to American industries from abroad, the EEA also includes a second, general provision that makes it a federal crime for anyone to steal or convert a trade secret.⁵⁸ The general provision, which applies to all who engage in the prohibited conduct, creates a new federal law of trade secrets and is the focus of this analysis.

To understand the full implications of the EEA, a review of the common law of trade secrets is in order. Following that review, the discussion turns to a more detailed analysis of the principal elements of the Economic Espionage Act in Part III.

II. THE COMMON LAW OF TRADE SECRETS

Although trade secret law is a newcomer by common law standards, it comes with respectable credentials.⁵⁹ Holders of trade

protect tangible property and money should not be applied to infringements of intangible property).

55. S. REP. NO. 104-359, at 11 (1996) (noting that state civil and criminal laws protect information “only haphazardly”).

56. Joseph F. Savage, Jr. et al., *Trade Secrets: Conflicting Views of the Economic Espionage Act*, CRIM. JUST., Fall 2000, at 8, 11 (noting that the EEA garnered bipartisan support and “breezed through Congress”).

57. § 1831 (stating that this provision is entitled, “Economic espionage”). The provision requires that the person engaging in the prohibited conduct do so “intending or knowing that the offense will benefit any foreign government, foreign instrumentality, or foreign agent.” *Id.*

58. *Id.* § 1832 (stating that this provision is entitled, “Theft of trade secrets”). The legislative history does not explain this deviation from Congress’s purpose. See Pooley et al., *supra* note 30, at 187 (suggesting that the bill was rewritten because of concerns that limiting the law to espionage by foreign entities might violate international trade agreements). The Senate had drafted two separate bills, S. 1556 (dealing with general economic espionage) and S. 1557 (dealing with foreign government-sponsored theft). S. REP. NO. 104-359, at 7 n.1 (1996). These bills were apparently combined late in the legislative process. In the House, the general provision that prohibits all thefts of trade secrets was added to a bill introduced by Congressman Bill McCollum on June 26, 1996. Schwab & Porter, *supra* note 30, at 3.

59. RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 39 cmt. a (1995) (referring to origins in Roman law); ALLISON COLEMAN, THE LEGAL PROTECTION OF TRADE

secrets have sought the protection of common law since the eighteenth century,⁶⁰ and a Massachusetts court recognized limited rights in secret information in 1837.⁶¹

As commonly understood, a trade secret is “[a]ny device, method formula, etc., known to the manufacturer who uses it but not to his competitors.”⁶² When someone takes a trade secret by wrongful means or in breach of a duty, the holder may sue that person for damages and injunctive relief. Despite its lineage and the familiarity of that common understanding, trade secret doctrine is less than straightforward.

A. *The Paradox of Trade Secrets*

Common law courts created a unique and limited right in secret information. Most fundamentally, one who holds a trade secret does not have a guaranteed right to the exclusive use of the secret.⁶³ Rather, the holder’s right to sue is triggered only when the secret is

SECRETS 93 (1992) (noting the Hammurabic Code of 2100 B.C. provided for the loss of an eye to one caught prying into forbidden secrets) (citing Fetterley, *Historical Perspectives on Criminal Laws Relating to the Theft of Trade Secrets*, 25 BUS. LAW. 1535, 1535 n.3 (1970)).

60. RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 39 cmt. a (1995) (reciting history); SISSELA BOK, *SECRETS: ON THE ETHICS OF CONCEALMENT AND REVELATION* 137–38 (1989) (recounting the efforts of eighteenth-century manufacturers to protect the process for making porcelain); 1 MELVIN F. JAGER, *TRADE SECRETS LAW* § 2.01–2.02, at 2-2 (1990) (recounting the development of trade secret law); Miguel Deutch, *The Property Concept of Trade Secrets in Anglo-American Law: An Ongoing Debate*, 31 U. RICH. L. REV. 313, 313 n.3 (1997) (listing English cases).

61. *Vickery v. Welch*, 36 Mass. (1 Pick.) 523, 526 (1837) (enforcing a covenant to sell rights to a secret art of making chocolate); *Peabody v. Norfolk*, 98 Mass. 452, 458 (1868) (holding the defendant liable for appropriating secret information in breach of a contractual promise not to disclose it). One treatise writer points out that the Supreme Court in *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 493 n.23 (1974), incorrectly identified *Peabody* as the first United States trade secrets case. 1 JAGER, *supra* note 60, § 2.02, at 2-7 n.21.1. Nevertheless, *Peabody* is viewed as the more thorough exposition of the doctrine. *Id.* at 2.02.

62. WEBSTER’S DELUXE UNABRIDGED DICTIONARY (2d ed. 1983); AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE (1971) (“Any method or device that gives one an advantage over competitors.”). The classic common law formulation provides, “A trade secret may consist of any formula, pattern, device or compilation of information which is used in one’s business, and which gives him an opportunity to obtain an advantage over competitors who do not know or use it.” RESTATEMENT OF TORTS § 757 cmt. b (1939).

63. See RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 43 (1995) (“The owner of a trade secret does not have an exclusive right to possession or use of the secret information.”); CRAIG JOYCE ET AL., *COPYRIGHT LAW* § 1.02, at 11 (4th ed. 1998) (noting that the absence of a right of exclusive use makes trade secrets a weak form of property protection).

wrongfully used or taken.⁶⁴ Thus, the interest in a trade secret is not protected against the world, but only against malefactors.⁶⁵ If someone else independently discovers the secret information, the original owner loses exclusive rights to the secret.⁶⁶ Purposeful scrutiny of an object is lawful, and although discovery in this way extinguishes the initial holder's rights, such discovery is lawful.⁶⁷ Discovery that occurs through an accident or luck is also not illegal.⁶⁸ "Ownership" of a trade secret, and the commercial advantage that attends that ownership, is thus accurately characterized as inherently precarious.⁶⁹ The "leaky" nature of trade secrets means that secret information often eventually enters the public domain, where others are free to use it. Paradoxically, however, as long as secrecy is maintained, this rather weak form of ownership may last forever.⁷⁰

B. *The Varying Law of Trade Secrets*

States developed trade secret law through common law, resulting in considerable variation among states.⁷¹ This variation is of two sorts: the law of states may differ and, even when doctrines are

64. See *Kewanee Oil Co.*, 416 U.S. at 475–76 (noting that trade secret law does not protect the holder when discovery is by fair and honest means, independent invention, reverse engineering, or accidental disclosure); RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 43 cmt. a (1995) (noting that protection is available only against wrongful acquisition, use, or disclosure of the trade secret).

65. See Deutch, *supra* note 60, at 318–19, 341 n.111 (noting that trade secret law does not create an in rem property right that reaches third parties).

66. As long as the information is kept secret from others who would benefit from knowing it, more than one owner may claim trade secret protection. See RESTATEMENT OF TORTS § 757 cmt. b (1939); RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 40 cmt. a (1995) (explaining that because neither novelty nor absolute secrecy is required more than one discoverer can hold a proprietary interest in the same information).

67. See *infra* notes 304–08 and accompanying text (discussing reverse engineering).

68. See *Kewanee Oil Co.*, 416 U.S. at 476.

69. See *id.* at 490 (stating that trade secret law, unlike patent law, functions "as a sieve" and noting also the risk of a secret passing to competitors in a manner that cannot be detected or proved).

70. See *id.* at 494 (Marshall, J., concurring) (noting that trade secret law offers "substantial protection" of unlimited duration and, in that sense, is "clearly superior" to the limited monopoly term afforded by patent law).

The Coca-Cola formula provides the classic example of a trade secret that may last forever. *Coca-Cola Bottling Co. v. Coca-Cola Co.*, 563 F. Supp. 1122, 1124–26 (D. Del. 1985) (noting the impregnable barriers that the company has erected to protect its valuable trade secret, the formula for Coca-Cola syrup).

71. See Marina Lao, *Federalizing Trade Secrets Law in an Information Economy*, 59 OHIO ST. L.J. 1633, 1649–65 (1998) (discussing variability of state trade secret law); Christopher Rebel J. Pace, *The Case for a Federal Trade Secrets Act*, 8 HARV. J.L. & TECH. 427, 442–45 (1995) (discussing variance in the treatment of trade secret misappropriation).

similar, the vague standards for ascertaining whether information is a trade secret result in divergent decisions.⁷²

The development of trade secret doctrine is characterized as “uneven” and riven with “undue uncertainty.”⁷³ Common law tends to describe rather than define trade secrets, so no precise criteria exist for determining whether information is a trade secret.⁷⁴ Ironically, despite the formulations of two Restatements and a Uniform Act, there is still no uniform definition of a trade secret.⁷⁵

A reading of these authorities indicates that since 1939, more material has become eligible for protection under trade secret law.⁷⁶ According to the *Restatement of Torts*, published in 1939,⁷⁷ information that was eligible for trade secret status was limited to a

72. The variance is exacerbated by the continuing and uneven evolution of trade secret law. See Gale R. Peterson, *Trade Secrets in an Information Age*, 32 HOUS. L. REV. 385, 387 (1995) (noting the significant changes in trade secret law as courts cope with new issues).

73. See UNIF. TRADE SECRETS ACT prefatory note (amended 1985), 14 U.L.A. 434 (1990).

74. Treatise writers and commentators have noted the absence of a single definition. See RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 39 cmt. d (1995) (explaining that trade secrets must be ascertained through a comparative evaluation of all relevant factors); 1 JAGER, *supra* note 60, at 2-1 (noting that the “existence of a ‘trade secret’ in a particular situation” is more a subjective legal conclusion than a finding of fact and lamenting that there is no “readily discernible” definition of a trade secret); 1 ROGER M. MILGRIM, MILGRIM ON TRADE SECRETS, § 1.01, at 1-4 (2001) (warning practitioners to research the definition of trade secrets in each jurisdiction because the term lacks a uniform definition); Robert Unikel, *Bridging the “Trade Secret” Gap: Protecting “Confidential Information” Not Rising to the Level of Trade Secrets*, 29 LOY. U. CHI. L.J. 841, 842 n.6 (1998) (noting that case law definitions often embody specific fact patterns and cannot be extended to more universal fact situations).

75. Judges routinely note the absence of a definition. See, e.g., *Lear Siegler, Inc. v. Ark-Ell Springs, Inc.*, 569 F.2d 286, 288 (5th Cir. 1978) (stating that “[t]he term ‘trade secret’ is one of the most elusive and difficult concepts in the law to define”); *Cont’l Data Sys., Inc. v. Exxon Corp.*, 638 F. Supp. 432, 442 (E.D. Pa. 1986) (citing *Anaconda Co. v. Metric Tool & Die Co.*, 485 F. Supp. 410, 421 (E.D. Pa. 1980) (noting that the resolution of the issue regarding the existence of a trade secret is “more difficult” because there is no precise definition)); *Cherne Indus., Inc. v. Grounds & Assocs., Inc.*, 278 N.W.2d 81, 89 (Minn. 1979) (stating that the term “trade secret” has no universally recognized definition); *Ingersoll Rand Co. v. Ciavatta*, 542 A.2d 879, 893 (N.J. 1988) (“There is no exact definition of a trade secret.”); *Ashland Mgmt., Inc. v. Janien*, 624 N.E.2d 1007, 1012 (N.Y. 1993) (“There is no generally accepted definition of a trade secret . . .”).

76. That reading also reveals that development of a coherent doctrine has not been a smooth undertaking. The decision not to include trade secrets in the *Restatement (Second) of Torts*—because it was seen as a competitive tort—indicates the doctrinal disarray. See UNIF. TRADE SECRETS ACT prefatory note (amended 1985), 14 U.L.A. 434 (1990).

77. This influential work, the first to attempt to define a trade secret, outlined a civil cause of action for damages and injunctive relief when trade secrets were taken by wrongful means. See RESTATEMENT OF TORTS §§ 757-759 (1939).

narrow range of material that was "continuously used" in the business.⁷⁸

In light of the "unsatisfactory development" of trade secret law and the failure to achieve uniformity,⁷⁹ the American Law Institute promulgated the Uniform Trade Secrets Act ("UTSA") in 1979.⁸⁰ The UTSA expressly defined the general category of eligible material as "information,"⁸¹ and explicitly included material not previously thought to be trade secrets under the common law of most states, such as programs, methods, techniques, and processes.⁸² Notably, the UTSA eliminated the requirement of continuous use in order to protect incipient inventions,⁸³ and added protection for information with potential value.⁸⁴ Most recently, in 1995, the *Restatement (Third) of Unfair Competition's* definition of a trade secret included "any information that can be used in the operation of a business," if it is secret and has value.⁸⁵

78. That material consisted of a "formula, pattern, device, or compilation." See RESTATEMENT OF TORTS § 757 cmt. b (1939) (stating also that a trade secret did not include "other secret information in a business," such as the terms of a secret bid but did include a client list).

79. See UNIF. TRADE SECRETS ACT prefatory note (amended 1985), 14 U.L.A. 434 (1990); Lao, *supra* note 71, at 1652 (noting that the First Restatement had failed to achieve uniformity).

80. See UNIF. TRADE SECRETS ACT §§ 1-12 (amended 1985), 14 U.L.A. 433 (1990). The UTSA was issued in 1979 and amended in 1985. See Pace, *supra* note 71, at 432 n.17 (discussing the 1985 amendments, which added remedies available for trade secret misappropriation).

81. The relevant provision states:

"Trade secret" means information, including a formula, pattern, compilation, program, device, method, technique, or process, that:

(i) derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use, and is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

UNIF. TRADE SECRETS ACT § 1 (4) (amended 1985), 14 U.L.A. 438 (1990).

82. UNIF. TRADE SECRETS ACT § 1 cmt. (amended 1985), 14 U.L.A. 438 (1990) (noting also that the terms include the concept of "know-how").

83. See *id.* The UTSA thus includes material that is in the development stage and information that has only a negative value. *Id.*

84. See UNIF. TRADE SECRETS ACT § 1(4)(i) (amended 1985), 14 U.L.A. 438 (1990); see also RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 39 & cmt. e (1995).

85. RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 39 (1995). The Third Restatement is intended to be consistent with and to follow the UTSA. See RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 39 cmt. b (1995); Edmund W. Kitch, *The Expansion of Trade Secrecy Protection and the Mobility of Management Employees: A New Problem for the Law*, 47 S.C. L. REV. 659, 662 (1996) (stating that the Third Restatement followed the Uniform Trade Secrets Act by eliminating the distinction between information that is a trade secret and other confidential information). The Third Restatement also eliminates the misappropriation cause of action that had applied to non-

Despite these efforts to rationalize trade secret doctrine, a consistent law of trade secrets has yet to materialize. First, the recent changes in trade secret doctrine, embodied in the UTSA, have not been adopted by every state. Although the UTSA has been nominally adopted by forty-two states,⁸⁶ those state laws often deviate significantly from the UTSA.⁸⁷ Second, courts that interpret statutes purportedly based on the UTSA continue to invoke principles from cases decided under the *First Restatement of Torts*.⁸⁸ Third, nine states, including Pennsylvania, New York, and Texas, have not enacted civil trade secret laws and rely on the First Restatement and the common law developed by their courts.⁸⁹ Moreover, states rely upon different underlying theories to justify creating rights in trade secrets.⁹⁰

In sum, no single, agreed-upon definition of a trade secret exists, and considerable variation exists in other aspects of trade secret doctrine. These characteristics, standing alone, make trade secrets an

secret business information. See Robert L. Tucker, *Industrial Espionage as Unfair Competition*, 29 U. TOL. L. REV. 245, 266-69 (1998) (arguing that the Third Restatement leaves nonsecret business information without protection). But see RAYMOND T. NIMMER, INFORMATION LAW § 3.17, at 3-77 (1996) (noting that the misappropriation tort was not universally accepted).

Thus far, only a few courts have cited the Third Restatement. See, e.g., *Religious Tech. Ctr. v. Netcom On-Line Communication Servs., Inc.*, 923 F. Supp. 1231, 1252 (N.D. Cal. 1995) (finding that the Church's techniques "used in the operation of the enterprise" were deserving of protection if secret and valuable); *Basic Am., Inc. v. Shatila*, 992 P.2d 175, 184 (Idaho 1999) (noting that the current Restatement definition is even broader than that incorporated in the Uniform Trade Secrets Act).

86. See RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 39 statutory note, at 437-38 (1995) (listing states in which the UTSA or another civil trade secret statute of general applicability is in effect).

87. See Lao, *supra* note 71, at 1657 (noting that the North Carolina and Alabama statutes "deviate so radically from the UTSA that they are hardly recognizable as adoptions of the uniform act"); Pace, *supra* note 71, at 443 (noting that several states have adopted the 1979 version of UTSA); James Pooley, *The Top Ten Issues in Trade Secret Law*, 70 TEMP. L. REV. 1181, 1188 (1997) (referring to UTSA as the "non-Uniform" Trade Secrets Act because states have enacted it in "all sorts of different forms").

88. See *Religious Tech. Ctr.*, 923 F. Supp. at 1250 n.21 (noting that although California had adopted the UTSA, courts looked to the Restatement to interpret it); RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 39 reporters' note, at 438 (1995); 1 JAGER, *supra* note 60, § 3.01[1], at 3-5 (noting that courts use the Restatement of Torts for guidance even when states have adopted the UTSA).

89. The other common law states are Michigan, Missouri, New Mexico, Tennessee, Vermont, and Wyoming. See RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 39 statutory note, at 437-38 (1995). These states, however, may have enacted a criminal statute that prohibits thefts of trade secrets. See, e.g., TEX. PENAL CODE ANN. § 31.05 (Vernon 1994).

90. See *infra* notes 171-243 and accompanying text (discussing underlying justifications for trade secret law).

unlikely candidate for protection through criminal law. Perhaps for this reason, states generally use criminal law sparingly and prefer to rely upon private civil suits in order to enforce trade secret law.⁹¹

C. *A Civil Trade Secret Claim*

A civil trade secret claimant must show that (1) the material at issue is a trade secret, and (2) the defendant used improper means to obtain the trade secret.⁹² Whether information qualifies as a trade secret depends on actual secrecy from competitors, the owner's efforts to maintain secrecy, and commercial value that is based on the secret nature of the information.⁹³ In light of the inconsistent case law and doctrine, the following discussion is couched in general terms.

1. Secrecy

As its name implies, secrecy is the defining characteristic and the core value of trade secret doctrine. "The subject of a trade secret must be secret and must not be of public knowledge in the trade or business."⁹⁴ Secrecy, however, need not be absolute.⁹⁵ An absolute standard of secrecy would limit or even prevent economically efficient use of the information. Employees must be privy to secret information necessary to perform their jobs, and potential buyers of a business have an interest in ascertaining the value of the enterprise, which may include its trade secrets.

In determining whether the information is secret, courts using the First Restatement consider evidence of efforts made to keep the information secret.⁹⁶ The UTSA requires both secrecy and

91. See *infra* notes 115–25 and accompanying text (noting that state criminal laws generally are more limited than their civil counterparts).

92. See RESTATEMENT OF TORTS §§ 757–759 (1939); UNIF. TRADE SECRETS ACT § 1 (amended 1985), 14 U.L.A. 434 (1990); RESTATEMENT (THIRD) OF UNFAIR COMPETITION §§ 39, 43 (1995) (defining trade secret and improper means).

93. See RESTATEMENT OF TORTS §§ 757–759 (1939); UNIF. TRADE SECRETS ACT § 1 (amended 1985), 14 U.L.A. 434 (1990); RESTATEMENT (THIRD) OF UNFAIR COMPETITION §§ 39, 43 (1995).

94. See *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 475 (1974) (stating Ohio law, which mirrored the First Restatement); RESTATEMENT OF TORTS § 757 cmt. b (1939) (stating that an entity may not appropriate as its own secret matters of public knowledge or of general knowledge in an industry).

95. See RESTATEMENT OF TORTS § 757 cmt. b (1939) ("It is not requisite that only the proprietor of the business know it."); RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 39 cmt. f (1995) (requiring only secrecy sufficient to confer an actual or potential economic advantage on one who possesses the information).

96. The Restatement directs courts to consider several factors that deal with firms' efforts: the extent of measures taken by the particular business to guard the secrecy of the information; the amount of effort or money expended by the particular business in

reasonable efforts to maintain secrecy.⁹⁷ These efforts include advising employees of the existence of a trade secret, limiting access to a trade secret on a “need to know basis,” and controlling plant access.⁹⁸ Generally the efforts necessary to maintain secrecy need only be reasonable under the circumstances.⁹⁹ Courts may consider the defendant’s conduct in determining whether the plaintiff’s efforts to maintain secrecy were reasonable.¹⁰⁰ The test also takes into account the value of the secret, requiring owners seeking to protect trade secrets with a greater value to make greater efforts.¹⁰¹

2. Economic Value

Claimants also must establish that the secret information has economic value and that this value emanates from its secrecy.¹⁰² As the *Restatement of Unfair Competition* explains, information is

developing the information; and the ease or difficulty with which the information could be properly acquired or duplicated by others. See RESTATEMENT OF TORTS § 757 cmt. b (1939).

97. See UNIF. TRADE SECRETS ACT § 1(4) (amended 1985), 14 U.L.A. 438 (1990).

98. See UNIF. TRADE SECRETS ACT § 1 commissioners’ cmt. (amended 1985), 14 U.L.A. 438 (1990).

99. See *Electro-Craft Corp. v. Controlled Motion, Inc.*, 332 N.W.2d 890, 902 (Minn. 1983) (stating that the plaintiff’s efforts were inadequate because of the non-intuitive nature of the claimed secret, dimensions of a motor, as opposed to “secret formulas”); *USM Corp. v. Marson Fastener Corp.*, 393 N.E.2d 895, 902 & n.12 (Mass. 1979) (stating that an owner need not take “heroic measures”); . *But see J.T. Healy & Son, Inc. v. James A. Murphy & Son, Inc.*, 260 N.E.2d 723, 731 (Mass. 1970) (recommending that a trade secret owner keep “eternal vigilance”).

100. See *Dupont v. Christopher*, 431 F.2d 1012, 1016–17 (5th Cir. 1970) (finding that the holder of a trade secret could not reasonably protect against aerial reconnaissance); *DB Riley, Inc. v. AB Eng’g Corp.*, 977 F. Supp. 84, 90 (D. Mass. 1997) (stating that Massachusetts courts balance security measures against a defendant’s improper conduct).

101. See RESTATEMENT OF TORTS § 757 cmt. b (1939) (recommending an evaluation of the value of the information to the particular business and to its competitors). In contrast to the First Restatement and the UTSA, the Third Restatement does not require evidence of the owner’s efforts to maintain secrecy, although such efforts are relevant. See RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 39 cmt. g (1995) (noting that if value and secrecy are clear, evidence of specific precautions may be unnecessary).

102. See RESTATEMENT OF TORTS § 757 cmt. b (1939) (stating that the information must give its holder an advantage over competitors who do not know it); UNIF. TRADE SECRETS ACT § 1(4)(i) (amended 1985), 14 U.L.A. 438 (1990) (providing that information derives “independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by . . . other persons who can obtain economic value from its disclosure or use”); RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 39 cmt. e (1995) (stating that a trade secret must be of sufficient value in the operation of an enterprise to provide actual or potential economic advantage over others who do not possess the information). The UTSA broadens the concept of commercial value to include negative information that proves a process will not work. See UNIF. TRADE SECRETS ACT § 1 commissioners’ cmt (amended 1985), 14 U.L.A. 438 (1990).

valuable when—and because—competitors do not have it.¹⁰³ The link between secrecy and value reflects the logic that when competitors possess the information, the person claiming a trade secret does not enjoy a competitive advantage, so the secret cannot be economically valuable. Thus, a process readily known to a particular industry, even though not known by the general public, will not be considered a trade secret.¹⁰⁴ Courts may conflate two separate inquiries, the reasonableness of the owner's efforts to maintain secrecy and economic value.¹⁰⁵

3. Wrongfully Taken

Finally, common law provides a remedy only when the secret was subject to one of two types of conduct: (1) it was taken by "improper means," or (2) the taking breaches a confidential relationship.¹⁰⁶ The term "improper means" is defined ambiguously as those acts that fall below generally accepted standards of commercial morality.¹⁰⁷ Theft, bribery, and misrepresentation are obviously improper.¹⁰⁸ Less

103. See RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 39 cmt. f (1995) (noting that secrecy must be sufficient to confer an actual or potential economic advantage on its possessor). Although the value need not be great, it must be more than trivial. See *id.*

104. See UNIF. TRADE SECRETS ACT § 1 commissioners' cmt. (amended 1985), 14 U.L.A. 438 (1990) (noting that a trade secret may be lost even when the general public does not know the secret).

105. See, e.g., *Rockwell Graphic Sys. v. DEV Indus.*, 925 F.2d 174, 178–80 (7th Cir. 1991) (emphasizing that the requirement of reasonable efforts has both evidentiary and remedial significance).

106. See *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 475–76 (1974) (quoting RESTATEMENT OF TORTS § 757(a) (1939)). The Restatement provides:

One who discloses or uses another's trade secret, without privilege to do so, is liable to the other if (a) he discovered the secret by improper means, or (b) his disclosure or use constitutes a breach of confidence reposed in him by the other in disclosing the secret to him

RESTATEMENT OF TORTS § 757 (1939); see also RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 40–43 (1995) (imposing liability for misappropriation of a trade secret when a person acquires the secret by theft, fraud, breach of confidence, or other wrongful means); UNIF. TRADE SECRETS ACT §§ 1(2), 3 (amended 1985), 14 U.L.A. 438, 455 (1990) (providing a cause of action for the misappropriation of a trade secret when the secret was acquired by improper means).

107. See RESTATEMENT OF TORTS § 757 cmt. f (1939); see also *DuPont v. Christopher*, 431 F.2d 1012, 1016–17 (5th Cir. 1970) (holding that otherwise lawful aerial reconnaissance was an improper means because holders of trade secrets could not reasonably protect against intrusion of this sort).

108. See RESTATEMENT OF TORTS § 757 cmt. f (1939) (providing examples of theft and wiretaps); RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 43 (1995) (defining "improper acquisition" to include theft, fraud, unauthorized interception of communications, inducement of or knowing participation in a breach of confidence, and other wrongful means); UNIF. TRADE SECRETS ACT § 1(1) (amended 1985), 14 U.L.A. 437 (1990) (stating that "improper means" includes theft, bribery, misrepresentation,

obvious is the formulation of the recently published Third Restatement, that “improper means” includes “means wrongful in themselves or wrongful under the circumstances of the case.”¹⁰⁹

The second type of conduct, breach of a confidential relationship, occurs when an actor uses or discloses the secret in violation of an express or implied obligation.¹¹⁰ The UTSA categorizes disclosure as a breach when the information was acquired “under circumstances giving rise to a duty to maintain its secrecy.”¹¹¹ The Third Restatement explains that a duty to keep the information secret arises when the actor expressly promised to do so, or, somewhat less concretely, when the secret was disclosed under circumstances that justify a conclusion that the information was intended to be kept confidential.¹¹²

In sum, the fact-intensive inquiry for civil claims depends on several factors. Although courts successfully describe a trade secret, the descriptive criteria do not provide a definition of a trade secret. The determination becomes somewhat circular when courts rely on the owner’s efforts in maintaining secrecy to determine whether the information is secret and therefore has economic value—and then use economic value as an index of actual secrecy. State criminal laws use these same standards, secrecy, economic value, and wrongful means, but with significant limitations.

D. State Criminal Enforcement

Twenty-four states have enacted criminal statutes that specifically prohibit theft or takings of trade secrets.¹¹³ This use of criminal law as a means to protect trade secrets is relatively recent.¹¹⁴ More significantly, state criminal laws generally have a more limited scope than their civil counterparts.¹¹⁵ No clear consensus has

breach or inducement of a breach of a duty to maintain secrecy, or espionage through electronic or other means).

109. See RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 43 cmt. c (1995) (stating that the acquisition of a trade secret may be improper even if the method used was not independently wrongful).

110. See RESTATEMENT OF TORTS § 757 cmt. j (1939) (noting the chief example of a confidential relationship is that of principal and agent).

111. See UNIF. TRADE SECRETS ACT § 1(2)(ii)(B)(II) (amended 1985), 14 U.L.A. 438 (1990).

112. See RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 41 (1995); see also *id.* § 42 (specifically applying section four to employees and former employees).

113. See 1 JAGER, *supra* note 60, at app. L3 (providing criminal statutes).

114. See Lederman, *supra* note 21, at 930–31 (noting that most state criminal trade secret statutes have been enacted since the 1960s).

115. See *id.* at 943–66.

emerged among the states regarding the circumstances under which wrongful use or taking of information constitutes a criminal act.¹¹⁶ Consequently, the criminal statutes that prohibit stealing trade secrets vary from state to state.¹¹⁷

In 1989, Professor Eli Lederman classified state trade secret crimes according to several factors.¹¹⁸ He concluded that the majority of states either do not criminalize thefts of trade secrets or do so restrictively,¹¹⁹ a finding corroborated by other researchers.¹²⁰ For example, Professor Lederman found that most state criminal statutes only apply to trade secrets and information that are embodied in some physical form.¹²¹ The majority of state crimes do not apply to takings accomplished by memorizing or other incorporeal transfers.¹²² Finally, many states have not devoted significant resources to prosecuting industrial espionage,¹²³ and penalties for violating state criminal laws regarding trade secrets are not stringent.¹²⁴

116. See *supra* notes 53–56 and accompanying text (presenting congressional findings that state criminal laws are sporadic, inconsistent with one another, and largely ineffective).

117. See Christopher A. Ruhl, Note, *Corporate and Economic Espionage: A Model Penal Approach for Legal Deterrence to Theft of Corporate Trade Secrets and Proprietary Business Information*, 33 VAL. U. L. REV. 763, 801 (1999) (criticizing current state criminal laws for their lack of uniformity).

118. See Lederman, *supra* note 21, at 943–66. The factors were (1) the “content” or kind of information covered by the provision; (2) the “form” in which the information existed, that is, whether physical or electronic; and (3) the “transfer” or whether the information was taken by physical means. See *id.*

119. See *id.* at 966 (concluding that the conception of confidential information as property was “still maturing”).

120. See Pooley et al., *supra* note 30, at 189 (noting that state criminal laws are frequently more limited in scope than their civil counterparts); Ruhl, *supra* note 117, at 798–801 (noting that current state criminal laws limit definitions of trade secret, fail to proscribe sufficient modes of transmission or taking, and provide only low penalty structures); Schwab & Porter, *supra* note 30, at 4 (stating that most state criminal trade secret statutes apply only to scientific and technical information).

121. See Lederman, *supra* note 21, at 966 (noting that most states restrict criminal responsibility to only corporeal acquisitions or transfers of information embodied in tangible articles).

122. See *id.* (stating that the number of states using trade secret offenses to forbid incorporeal retention or transfer of information “is still relatively modest”).

123. See *People v. Serrato*, 62 Cal. App. 3d 9, 24 (1976) (noting that the crime of trade secret theft enacted in 1967 was “only rarely” enforced and suggesting that difficult, complicated, and expensive investigation was the reason); Pooley et al., *supra* note 30, at 186.

124. See, e.g., ALA. CODE § 13A-8-10.4 (1994) (Class C felony); ARK. CODE ANN. § 5-36-107 (Michie 1997) (Class A misdemeanor); CAL. PENAL CODE § 499c (West 1999) (misdemeanor); COLO. REV. STAT. § 18-4-408 (1986) (Class 1 misdemeanor); FLA. STAT. ANN. § 812.081 (West 2000) (third-degree felony); LA. REV. STAT. ANN. § 14:73.2 (West 1997) (maximum of six months imprisonment); MICH. COMP. LAWS ANN. § 752.772 (West 1991) (misdemeanor); 18 PA. CONS. STAT. ANN. § 3930 (West 2000) (third-degree felony);

The tendency of states to insist that a physical manifestation of the trade secret was taken, and other such limitations, may not be entirely rational.¹²⁵ Nevertheless, such limitations serve the purpose of ensuring some degree of lenity in the face of a vague and elastic doctrine. Given the indeterminate definition of a trade secret and the circular determination of whether the information at issue is a trade secret, narrow criminal provisions do not seem inappropriate.

III. FEDERAL TRADE SECRET LAW—THE EEA'S BROADER APPROACH

In enacting the EEA, Congress created a trade secret law that differs from the common law by broadening both the kind of information covered and the type of conduct prohibited. The EEA thus expands and strengthens the rights of those who hold trade secrets. The following discussion explains how the EEA applies to more kinds of information, presents elements of the offense, and notes potential problems of applying the statute.

A. *The EEA Protects More Information As a Trade Secret*

According to the EEA, any information is a trade secret if the owner took reasonable measures to keep it secret and if it has independent economic value because of its secrecy.¹²⁶ Congress's formulation of a trade secret, unlike the common law's, expressly

TEX. PENAL CODE ANN. § 31.05(c) (Vernon 2001) (third-degree felony); WIS. STAT. ANN. § 943.205(3) (West 1996) (Class E felony).

125. See Lederman, *supra* note 21, at 937 (noting that the practical significance of including abstract information or procedure in the definition is lost when enforcement is confined to corporeal acquisition and transmission); Arnold S. Weinrib, *Information and Property*, 38 U. TORONTO L.J. 117, 140 (1988) (noting the oddity of conditioning criminal liability on the use of physical paper).

126. The Act defines a trade secret as:

[A]ll forms and types of financial, business, scientific, technical, economic, or engineering information, including patterns, plans, compilations, program devices, formulas, designs, prototypes, methods, techniques, processes, procedures, programs, or codes, whether tangible or intangible, and whether or how stored, compiled, or memorialized physically, electronically, graphically, photographically, or in writing if —

(A) the owner thereof has taken reasonable measures to keep such information secret; and

(B) the information derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable through proper means by, the public.

18 U.S.C. § 1839(3) (2000).

The definition of a trade secret applies to both criminal provisions: economic espionage when foreign entities are involved and theft of a trade secret by any actor. See *Id.* §§ 1831, 1832, 1839.

includes “financial, business, scientific, technical, economic, [and] engineering information.”¹²⁷ The EEA provides an extensive—and nonexhaustive—list of examples, ranging from the traditional “formula” to cyber-age “programs” and “code.”¹²⁸

Congress also went beyond state trade secret laws by expressly including trade secrets that are stored in intangible systems.¹²⁹ As a result, the EEA may be read to protect trade secrets that exist only in the mind of the holder¹³⁰ against misappropriation through memorization by another.¹³¹ In contrast, state criminal laws generally use a narrower definition of trade secrets and do not cover takings by memorization.¹³²

The EEA widens the category of trade secrets in another way, which is both less obvious and more significant. States, whether they follow the traditional Restatement, the UTSA, or even the new Restatement, use knowledge by competitors as the touchstone by which to determine the element of secrecy.¹³³ Congress, however, used the general public as the reference point to determine whether the information is secret.¹³⁴ The general public usually will not know, nor be able to readily ascertain, information about a manufacturing process or business procedure. Thus, it is easier for prosecutors in a federal criminal case to establish that information is a trade secret than it is for plaintiffs in state civil cases.¹³⁵ The standard used to establish a trade secret under the EEA, a criminal statute, is less

127. *Id.* § 1839(3).

128. *See id.* (stating that a trade secret includes “patterns, plans, compilations, program devices, formulas, designs, prototypes, methods, techniques, processes, procedures, programs, or codes”).

129. *See id.* (stating that trade secrets include information “whether tangible or intangible, and whether or how stored, compiled, or memorialized physically”).

130. *Id.*

131. *See id.* § 1832(a)(2) (prohibiting the unauthorized delivery, communication, and conveyance of information).

132. *See supra* notes 118–24 and accompanying text (summarizing Lederman’s study that found that most state criminal laws require physical manifestation of a secret).

133. *See* RESTATEMENT OF TORTS § 757 cmt. b (1939); RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 39 cmt. f (1995); UNIF. TRADE SECRETS ACT § 1(4) (amended 1985), 14 U.L.A. 438 (1990).

134. *See* 18 U.S.C. § 1839(3)(B) (providing that guarded information must be valuable because it is not “generally known to” or not “readily ascertainable” by the general public).

135. *See* *United States v. Hsu*, 155 F.3d 189, 196 (3d Cir. 1998) (noting the provision broadens the EEA’s scope by altering the relevant party from whom proprietary information must be kept); Pooley et al., *supra* note 30, at 191 (characterizing this provision as a “dramatic[] lower[ing]” of the civil standard).

rigorous than state civil law standards—or most state criminal laws.¹³⁶ As a result, a person could be guilty of a federal offense for conduct that would not violate state civil law. In sum, the EEA protects a wider variety of information than current civil laws, both directly and indirectly.

Although federal courts could constrain the EEA's breadth by insisting upon rigorous proof that the information is a trade secret, that prospect seems unlikely. Under the EEA, the holder must take reasonable measures to keep the information secret.¹³⁷ The House Report on the EEA indicates that Congress felt it sufficient if courts utilized the civil standard, that owners must take only objectively reasonable measures to protect the information.¹³⁸

In the same vein, the requirement of secrecy would appear to require proof that the information was actually secret.¹³⁹ As noted earlier, however, civil courts may infer that the information is, in fact, secret whenever the owner made reasonable efforts to maintain that secrecy and when it is economically valuable.¹⁴⁰ These tests for secrecy have allowed courts to hold that information is secret even when the holder of the secret encouraged its dissemination.¹⁴¹

The EEA also states that information is not secret unless it has independent economic value, either actual or potential, because it is

136. See *supra* notes 118–24 and accompanying text (noting that state criminal trade secret laws are generally more narrowly drawn than state civil law).

137. See § 1839(3)(A).

138. See H.R. REP. NO. 104-788, at 7 (1996), *reprinted in* 1996 U.S.C.A.N. 4021, 4026.

139. See *Metallurgical Indus. v. Fourtek, Inc.*, 790 F.2d 1195, 1199 (5th Cir. 1986) (interpreting Texas law) (“[T]o qualify as [a trade secret], the subject matter involved must, in fact, be a secret”); *Basic Am., Inc. v. Shatila*, 992 P.2d 175, 183 (Idaho 1999) (stating that “in order to prevail . . . plaintiff must show that a trade secret actually existed”).

The First Restatement states: “The subject matter of a trade secret must be secret.” RESTATEMENT OF TORTS § 757 cmt. b. (1939).

140. See *Ruckelshaus v. Monsanto Co.*, 467 U.S. 986, 1002 (1984) (noting that a property right in a trade secret is defined by the extent to which the owner protects his interest from disclosure to others); *Rockwell Graphic Sys., Inc. v. DEV Indus.*, 925 F.2d 174, 179 (7th Cir. 1991) (explaining that an owner's efforts to keep information secret are evidence of the value of the secret); *supra* notes 96–101 and accompanying text (discussing the standard of secrecy).

In a disquieting development, some state laws direct courts to presume secrecy if the holder had taken reasonable measures to protect the information. See, e.g., 415 ILL. COMP. STAT. 5/3.48 (West 1997).

141. See *Schalk v. Texas*, 823 S.W.2d 633, 638 (Tex. Crim. App. 1991) (noting that the defendants argued “somewhat convincingly” that the information was not a secret because the company encouraged sharing research with other scientists in the same field by delivering academic papers on the subject).

not known to the general public.¹⁴² Congress neglected, however, to explain how the factfinder is to determine whether the information has actual or potential “independent economic value.” This gap is significant because there is no single agreed-upon method of ascertaining the value of trade secrets,¹⁴³ and because a showing of minimal value may satisfy the standard.¹⁴⁴ The inclusion of information with only potential or negative value also raises significant measurement problems because of the difficulty of establishing a market value in such circumstances.

In addition to these concerns, the broad and open-ended attributes of trade secrets raise significant issues in the criminal context. For instance, the district court in *United States v. Hsu*,¹⁴⁵ a case that has resulted in important interpretations of the EEA, expressed significant reservations about the statute’s “vaporous terms.”¹⁴⁶ A definitive analysis of whether the EEA is unconstitutionally vague deserves further judicial development and more attention than can be given here. Nevertheless, the concerns of the district court in *Hsu* merit brief mention. The court took issue with the statutory terms used to determine secrecy, the language requiring the owner to take “reasonable measures” and the language “generally known to or readily ascertainable by the public.”¹⁴⁷ Although the court rejected the vagueness challenge,¹⁴⁸ it expressed

142. See 18 U.S.C. § 1839(3)(B).

143. See Alexander & Wood, *supra* note 30, at 918–19 (noting that judges have used various measures to establish value); *supra* notes 102–05 and accompanying text (discussing requirement of economic value); *infra* note 334 (discussing problem of ascertaining value of a trade secret).

144. This would appear to be the outcome if the courts rely upon the civil standard, which is both low and vague (“greater than trivial”). See RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 39 (1995).

145. 40 F. Supp. 2d 623 (E.D. Pa. 1999).

146. See *id.* at 630. Hsu argued that several phrases in the definition section of the statute were unconstitutionally vague. *Id.* at 625. One challenge was to the language that an owner take “reasonable measures” to establish secrecy. See *id.* at 628. Hsu also challenged the definition of a trade secret that requires “the information to derive independent economic value . . . from not being generally known to, and not being readily ascertainable through proper means by, the public.” *Id.* at 626.

147. See *id.* at 630 (registering concern because analysis of the EEA definition is “more problematic” than that required when terms are clearly defined).

148. The challenges failed for reasons specific to the facts of the case. First, the court found that Hsu knew that the firm had taken many steps to keep its technology secret because an FBI agent had told him that it had. *Id.* at 628. Second, the charges in this case, attempt and conspiracy, did not require the government to establish that trade secrets existed, but only that the defendant thought the information was a trade secret. *Id.* at 629; see also *United States v. Krumrei*, 258 F.3d 535, 539 (6th Cir. 2001) (holding that the EEA was not vague as applied because the defendant admitted as part of plea bargain that he

significant concerns over the absence of a fixed definition of a trade secret.¹⁴⁹ According to the court, in contrast to other offenses, a significant element of this offense depends, not upon a clearly defined end, but upon what is “generally known” or “readily ascertainable” by some unclear conception of the public.¹⁵⁰ The court noted that information that is “generally known” or “reasonably ascertainable” at any given moment is never necessarily certain because ideas, concepts, and technology are constantly evolving.¹⁵¹ The court finally noted, with considerable frustration, that Congress had not defined “the public,” and wondered whether Congress meant the general, the scientific, the commercial, or even the judicial public.¹⁵²

Congress’s failure to be more specific is particularly problematic in a criminal statute. A description rather than a definition of a trade secret and a manipulable test to determine the issue may be acceptable in a civil suit when the penalty is money damages.¹⁵³ The question of whether the material is a trade secret can be determined at trial.¹⁵⁴ But in a criminal action, whether information is protected should be clear to citizens before trial. A descriptive conceptualization, rather than a definition, may not provide constitutional notice in the criminal context.¹⁵⁵ If citizens cannot determine whether material is a trade secret, arguably they do not have notice that using the material may be a criminal offense.¹⁵⁶ Clear notice also furthers a goal of criminal law—to reduce violations. In addition to failing to provide adequate notice, the statute may also fail to satisfy the enforcement prong of the vagueness test because the

knew information was “proprietary” and stated that he “should have known” the information was a trade secret).

149. See *Hsu*, 40 F. Supp. 2d at 629.

150. See *id.* at 630.

151. See *id.*

152. See *id.*

153. See *COLEMAN*, *supra* note 59, at 28 (stating that the absence of a generally accepted definition “does not matter too much” because an appreciation of the “overall concept” is most important and praising the flexibility of law); *Id.* at 4 (stating that to “appreciate the concept” is a better approach than formulating a definition).

154. See *Peterson*, *supra* note 72, at 387–88 (noting that the first task is to establish whether information is a trade secret).

155. See *United States v. Harriss*, 347 U.S. 612, 617 (1954) (stating that no one “shall be held criminally responsible for conduct which [that person] could not reasonably understand to be proscribed”); *Connally v. Gen. Constr. Co.*, 269 U.S. 385, 391 (1926) (stating that a criminal statute violates due process when the average person “must necessarily guess at its meaning and differ as to its application”).

156. See *Connally*, 269 U.S. at 391; *United States v. Protex Indus., Inc.*, 874 F.2d 740, 743 (10th Cir. 1989) (noting that the essence of the vagueness doctrine is that potential defendants must have “fair warning”) (citations omitted).

descriptive language does not provide adequate guidance to prosecutors.¹⁵⁷

In sum, the EEA's expansion of the subject matter that qualifies as a trade secret creates a qualitatively different kind of trade secret law. The federal law broadens the kinds of information that may be deemed a trade secret, expanding the rights of those with secret information. In addition, Congress used vague terms that fail to provide notice to citizens and guidelines to prosecutors. Moreover, the elements of the crime, especially those relating to conduct, depart from common law and present significant issues.

B. *The Conduct and Culpability Elements of Economic Espionage*

Once a trade secret is established, the EEA makes it a criminal offense for anyone to engage in certain conduct with the requisite criminal intent. The statute prohibits acts that range from actually taking some physical embodiment of the secret information, for instance a paper on which the secret is written, to almost any unauthorized interference with the information.¹⁵⁸ Prohibited conduct includes a broader range of improper means than those prohibited by state civil or criminal laws. In addition, the Act includes the inchoate offenses of attempt and conspiracy to misappropriate information.¹⁵⁹

Recall that the common law provides a cause of action only when the parties were in a confidential relationship or when defendants used "improper means."¹⁶⁰ In contrast, the EEA's version of improper means encompasses almost any unauthorized use of a trade

157. See *Smith v. Goguen*, 415 U.S. 566, 575 (1974) (stating that when the legislature fails to provide minimal guidelines it may permit "policemen, prosecutors, and juries to pursue their personal predilections"); *Papachristou v. City of Jacksonville*, 405 U.S. 156, 168 (1972) (stating that vague statutes violate due process by placing unfettered discretion in the hands of police, thereby permitting or even encouraging arbitrary and discriminatory enforcement).

158. The provision states:

- (a) Whoever, with intent to convert a trade secret, that is related to or included in a product that is produced for or placed in interstate or foreign commerce, to the economic benefit of anyone other than the owner thereof, and intending or knowing that the offense will, injure any owner of that trade secret, knowingly
- (1) steals, or without authorization appropriates, takes, carries away, or conceals, or by fraud, artifice, or deception obtains such information;
 - (2) without authorization copies, duplicates, sketches, draws, photographs, downloads, uploads, alters, destroys, photocopies, replicates, transmits, delivers, sends, mails, communicates, or conveys such information

18 U.S.C. § 1832(a)(1)-(2) (2000).

159. See *id.* § 1832(a)(4)-(5).

160. See *supra* notes 92-112 and accompanying text (discussing a civil cause of action).

secret: unauthorized copying, duplicating, drawing, photographing, downloading, uploading, and other uses of the information become criminal acts when the culpability elements are met.¹⁶¹ The “improper means” that merits criminal penalties has become unauthorized use—freed from the requirement of a confidential relationship. Not only does the EEA protect more information, prohibiting any unauthorized use also strengthens holders’ rights in that information.¹⁶²

In contrast to the straightforward, albeit broadening, conduct provisions, the Act’s culpability elements are facially more complex. The government must first prove that actors “knowingly” interfered with a trade secret or “knowingly” used it in an unauthorized manner.¹⁶³ Prosecutors thus must establish that defendants knew the information was a trade secret.¹⁶⁴ Second, the government must prove that defendants acted with the intent to convert a trade secret to the economic benefit of themselves or another person.¹⁶⁵ Finally, the government must prove that actors intended or at least knew that the conduct would injure the owner.¹⁶⁶

Because the EEA criminalizes acts that are not always recognized as inherently unlawful, criminal intent is a crucial element of the offense, and the multiple culpability elements of the offense

161. See § 1832(a)(2).

162. For example, the conduct provisions appear to criminalize acts necessary to reverse engineer a product, providing another significant expansion of holders’ rights. See *infra* notes 304–08 and accompanying text (discussing the reverse engineering problem).

163. See § 1832(a) (1)–(2).

164. See 142 CONG. REC. S12,213 (1996) (stating that a “person must be aware or substantially certain that he is misappropriating a trade secret”).

But consider that the Third Circuit has held that when the charge is attempted trade secret misappropriation, the prosecutor need not prove that the information was, in fact, a trade secret because the crucial inquiry is whether the defendant thought it was a trade secret. See *United States v. Hsu*, 155 F.3d 189, 202–03 (3d Cir. 1998) (noting that the defendant had such a belief because a federal agent acting as a seller in the sting operation had told the defendant that the information was a trade secret).

165. See 142 CONG. REC. 512,213; *cf.* RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 40 cmt. c (1995) (explaining that a former employee who discloses a trade secret of a former employer in retaliation is subject to liability under section 40 on grounds that the purpose of disclosure was to harm the owner). Commentators have been quick to point out that the requirement of intent to gain an economic benefit probably excludes acts by computer hackers and disgruntled employees. See, e.g., Pooley et al., *supra* note 30, at 198.

166. See 18 U.S.C. § 1832(a). This language does not specifically require that the victim suffer an economic injury, but consistency with the entire provision argues for that interpretation. *But see* H.R. REP. NO. 104-788, at 11–12 (1996), *reprinted in* 1996 U.S.C.C.A.N. 4021, 4030 (stating that this provision requires the government to prove the actor knew that the conduct would *cause some disadvantage* to the rightful owner) (emphasis added).

may limit enforcement.¹⁶⁷ For instance, it may be difficult for the government to establish beyond a reasonable doubt that a defendant knew information was a trade secret if evidence sheds doubt as to whether a trade secret existed.¹⁶⁸ Further analysis of the culpability elements await judicial application and interpretation as those decisions are likely to affect greatly the scope of the Act and enforcement efforts.¹⁶⁹

In sum, the EEA criminalizes conduct that would not give rise to a civil cause of action and that is broader than state criminal statutes. The EEA expands the range of protected material by adopting an expansive conception of trade secrets that raises constitutional vagueness and notice issues. The broad definition of a trade secret means that the EEA protects more property than state laws, and its broad conduct provision creates stronger rights in that property by prohibiting any unauthorized use of secret information. Most basically, the Act gives holders of secret information a powerful new tool with which to guard their interests.

The decision to create a new federal law of trade secrets through a criminal provision and the breadth of that enactment prompts two inquiries: (1) what is the conceptual basis for the law, and (2) what are the consequences of using a criminal provision. The following section turns first to common law in order to identify and evaluate the conceptual basis of trade secret law. The inquiry then examines the basis used by Congress in enacting the Economic Espionage Act. In Part V, the analysis examines the potential consequences of using criminal law to regulate use of trade secrets.¹⁷⁰

167. *Hsu*, 155 F.3d at 195–96 (noting that the general provision includes limitations based on the criminal state of mind).

168. *United States v. Hsu*, 185 F.R.D. 192, *passim* (E.D. Pa. 1999) (noting that four experts had differed as to whether material was a trade secret and questioning whether an ordinary person could determine the point when specialists in the field could not).

169. Those decisions are likely to be challenging because culpability elements create interpretative problems for courts. See Richard Singer & Douglas Husak, *Of Innocence and Innocents: The Supreme Court and Mens Rea Since Herbert Packer*, 2 BUFF. CRIM. L. REV. 859, 889–90 (1999) (illustrating the complexity of interpreting culpability elements of 18 U.S.C. § 2252 (2000) (prohibiting knowingly transporting and shipping pornographic material)); John Shepard Wiley, Jr., *Not Guilty by Reason of Blamelessness: Culpability in Federal Criminal Interpretation*, 85 VA. L. REV. 1021, 1113 (1999) (illustrating permutations that result when it is not clear to which elements of the offense express culpability language applies).

170. See *infra* notes 262–318 and accompanying text.

IV. THE CONTRASTING CONCEPTUAL BASES OF TRADE SECRET LAW AND OF THE EEA

An inquiry into the reasons for protecting interests in trade secrets must recognize that there is no single reason for protecting trade secrets.¹⁷¹ Common law jurists relied upon two main justifications, referred to here as property and conduct.¹⁷² Under the property justification, trade secrets constitute a form of property subject to legal protection. The second and more widely accepted justification, conduct, focuses on a desire to maintain standards of commercial behavior.¹⁷³

The common law justifications generally have short-term goals that operate as ends in themselves, such as deterring undesirable behavior, but they also may implicate longer-term goals and broader

171. RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 39 cmt. a (1995) (noting that protecting trade secrets “advances several interests”); see Richard H. Stern, *A Reexamination of Preemption of State Trade Secret Law After Kewanee*, 42 GEO. WASH. L. REV. 927, 938 (1974) (concluding that the law of trade secrets is not a single, well-defined body of doctrines).

Some scholars conclude that there is no adequate justification for a separate trade secret law. See Robert G. Bone, *A New Look at Trade Secret Law: Doctrine in Search of Justification*, 86 CAL. L. REV. 241, 245 (1998) (concluding that trade secret law does not rest on an independent ground and is parasitic); Vincent Chiappetta, *Myth, Chameleon or Intellectual Property Olympian? A Normative Framework Supporting Trade Secret Law*, 8 GEO. MASON L. REV. 69, 73–116 (1999) (agreeing with Bone, but constructing an alternate policy justification based on concepts of leveraging, public order, and commercial privacy); Deutch, *supra* note 60, at 320–21 (analyzing the property concept of trade secrets); David D. Friedman et al., *Some Economics of Trade Secret Law*, 5 J. ECON. PERSP. 61, 62 (1991) (recognizing that most trade secret violations are tied to other wrongs).

Others are more sanguine. See Edmund W. Kitch, *The Law and Economics of Rights in Valuable Information*, 9 J. LEGAL STUD. 683, 708–23 (1980) (applying economic analysis to justify laws that protect information); Weinrib, *supra* note 125, at 126–27 (arguing that the reality of modern commerce is a sufficient reason for legal protection of confidential business information).

172. These categories are analogous to entitlements based on property and tort. See generally Guido Calabresi & A. Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARV. L. REV. 1089 (1972) (offering a framework of legal analysis that integrates legal relationships in property and tort law).

173. See *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 481–82 (1974) (referring to the policy of maintaining standards of commercial ethics).

In *Kewanee Oil Co.*, the Court also suggested that trade secret law is grounded on privacy interests. *Id.* at 487 (mentioning that trade secret law protects an owner’s “fundamental human right, that of privacy”). *But see* Bone, *supra* note 171, at 284–89 (rejecting privacy rationale for corporations); Tucker, *supra* note 85, at 249 (rejecting the right of privacy for corporations). Others favor the law of contract. See *Kewanee Oil Co.*, 416 U.S. at 498 (Douglas, J., dissenting) (stating that a suit to redress theft of a trade secret is grounded in tort damages for breach of contract); Bone, *supra* note 171, at 297 (concluding that contract theories provide the only rational explanation for trade secret law).

public interests. Thus, deterring disapproved conduct is also a way to regulate competition and to ensure its fairness. Alternatively, we protect trade secrets as property—not only because property merits protection, but also in order to encourage the creation of innovative and creative products.¹⁷⁴ These longer-term justifications are often offered as a post-hoc explanation, an effort to defend or to rationalize the common law. Although such after-the-fact reasoning almost certainly does not reflect the thinking of common law jurists, it may reveal other valid reasons for trade secret law. Therefore, the following analysis presents both the immediate reasons that inspired common law jurists to protect the interests of trade secret holders and the broader, longer-term policy goals that this legal doctrine may achieve.

As a preface, it ought to be acknowledged that the difference between the property and conduct rationales, especially in enforcement, may not be definitive.¹⁷⁵ Nevertheless, treating the justifications separately helps to ascertain the purpose, rationale, and scope of the Economic Espionage Act. Identifying the purpose for enacting new legislation is an indispensable first step in evaluating the legislation's efficacy, as well as in guiding courts in interpreting the statute.

A. *The Conduct Basis of Trade Secret Law*

The most commonly used justification for protecting trade secrets and the interests of trade secret holders rests on the conduct of the person who interferes with secret information. The vast majority of states rely upon a conduct justification for protecting trade secrets.¹⁷⁶

1. The Traditional View of Conduct—Commercial Morality

Under the traditional common law view, trade secret law is based on a desire to enforce certain standards of commercial conduct.¹⁷⁷

174. See *Kewanee Oil Co.*, 416 U.S. at 481–82 (referring to encouragement of invention).

175. See 1 JAGER, *supra* note 60, § 4.01[3], at 4-24 (characterizing the distinctions as “often academic and practically meaningless”); Pooley et al., *supra* note 30, at 193–94 n.99 (noting tort and property theory may “push in the same direction”).

176. See 1 JAGER, *supra* note 60, § 4.01[2], at 4-8 (reporting that the majority of state court decisions follow conduct theory); 1 MILGRIM, *supra* note 74, at § 5.02(1) n.7.

177. As noted, trade secret law addresses two types of conduct and the rationale for deterring each type is similar. The first is based on a duty, either express or implied, to keep a confidence; it is often referred to as breach of confidentiality. The second type of conduct, “wrongful means,” includes such acts as bribing competitors’ employees,

When conduct fails to meet the prevailing commercial standards, wrongdoers are forced to return any financial benefit that they gained through bad behavior. This deterrent mechanism discourages undesirable conduct that fails to meet the standards. Two cases, although widely separated in time, illustrate the rationale and uncertain boundary of the conduct justification.

In *E.I. DuPont De Nemours Powder Co. v. Masland*,¹⁷⁸ Justice Holmes explained the conduct rationale of trade secret doctrine, emphasized the wrong of breaching confidentiality, and distinguished the property and conduct views of trade secret law in a short, but widely quoted, opinion. The unanimous Court refused to entertain the argument that a secret process for making artificial leather was property.¹⁷⁹ Justice Holmes found no merit in the property argument, holding that property “is an unanalyzed expression of certain secondary consequences of the primary fact that the law makes some rudimentary requirements of good faith.”¹⁸⁰ Instead, the Court based liability on conduct. Noting that the defendant only knew about the process through a special confidence, the Court stated that he should not be allowed to abuse that trust.¹⁸¹ As Justice Holmes succinctly stated, “The property may be denied, but the confidence cannot be.”¹⁸² In short, the law will not condone wrongful conduct—in this case breaching a confidence—by allowing the wrongdoer to profit.

A well-known, and more recent case, *DuPont v. Christopher*,¹⁸³ explains the policy associated with the conduct model. The Christopher brothers were hired, presumably by a competitor of the plaintiff, to photograph a partially completed factory from the air.¹⁸⁴ The Fifth Circuit held that this otherwise lawful reconnaissance was improper because the photographs revealed information about the manufacturing process that the plaintiff had taken reasonable measures to keep secret.¹⁸⁵ In explaining its rationale, the court emphasized the policy of establishing standards of commercial

trespassing, or stealing. See *supra* notes 106–12 and accompanying text (discussing the conduct element of a trade secret civil suit).

178. 244 U.S. 100 (1917).

179. See *id.* at 102 (interpreting Pennsylvania law).

180. *Id.*

181. See *id.* (adding that the defendant had accepted that confidence).

182. *Id.*

183. 431 F.2d 1012 (5th Cir. 1970).

184. See *id.* at 1012–14 (noting the defendants’ arguments that they did not fly directly overhead or otherwise trespass, complied with air regulations, and did not engage in fraudulent or illegal conduct).

185. See *id.* at 1016 (stating it would not be reasonable to require the plaintiff to construct a roof over an unfinished plant).

morality. Its decision was consistent, thought the court, with a trend to encourage high standards of behavior in the business world.¹⁸⁶ Improper conduct could not be sanctioned: “[T]he market place must not deviate far from our mores.”¹⁸⁷ The court also noted: “[O]ur devotion to free wheeling industrial competition must not force us into accepting the law of the jungle as the standard of morality expected in our commercial relations.”¹⁸⁸

Although the decision is considered an outlier in its sanctioning of otherwise legal conduct,¹⁸⁹ the maintenance of standards of commercial morality is an accepted justification for protecting the interests of trade secret holders. Supreme Court decisions continue to rely on the conduct justification.¹⁹⁰ State courts,¹⁹¹ scholars,¹⁹² and treatise writers¹⁹³ also repeatedly have endorsed the objective of maintaining commercial standards.

2. The Modern Rendition of the Conduct Justification—Competition and Efficiency

A modern approach builds upon the insight that deterring certain conduct is one way of regulating competition among businesses. Indeed, the most recent formulation of common law regards taking of trade secrets as a type of unfair competition.¹⁹⁴ This

186. *See id.* (finding that the Texas Supreme Court had declared that “the undoubted tendency of the law has been to recognize and enforce higher standards of commercial morality in the business world”) (citations omitted).

187. *Id.* at 1017.

188. *Id.* at 1016.

189. *See* *Rockwell Graphic Sys., Inc. v. DEV Indus., Inc.*, 925 F.2d 174, 178–79 (7th Cir. 1991) (suggesting that *Christopher* represents a property view of trade secret law because it established rights against the world, not merely against those who act unlawfully).

190. In two relatively recent criminal decisions involving fraud of confidential business information, the Court relied upon breaches of a duty of confidentiality to find deception required by fraud. In *Carpenter v. United States*, the Court invoked common law precepts relating to employees’ fiduciary duties in condemning the violation of that duty. 484 U.S. 19, 27 (1987). In *United States v. O’Hagan*, involving securities fraud, the Court emphasized the duty of a fiduciary not to use a principal’s information for personal gain. 521 U.S. 642, 653 (1997).

191. *See* RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 39 reporters’ note, cmt. b, 440 (1995) (listing cases).

192. *See* UNIF. TRADE SECRETS ACT § 1 commissioners’ cmt. (amended 1985), 14 U.L.A. 438 (1990) (“One of the broadly stated policies behind trade secret law is ‘the maintenance of standards of commercial ethics.’”).

193. *See* 1 JAGER, *supra* note 60, § 1.03, at 1–8 n.22 (noting that concern for business morality is a constant theme of the common law of trade secrets and listing cases).

194. *See* *Brunswick Corp. v. Outboard Marine Corp.*, 404 N.E.2d 205, 207 (Ill. 1980) (stating that the third doctrinal base of trade secret protection is the public interest in free competition in goods unprotected by patents); *supra* note 76 (explaining that the trade

newer view looks behind the desire to ensure some acceptable standard of business conduct to identify a broader social goal: maintaining a high standard of commercial morality is a means to ensure fair competition.

The unfair competition view of trade secret law is not an entirely new approach to the issue of protecting information products. In the *International News Service v. Associated Press*¹⁹⁵ case of 1918, the Supreme Court considered the conduct of competing news organizations and enforced an injunction against International News Service (“INS”); INS had rewritten and published its competitor’s stories in its own newspapers.¹⁹⁶ The Court considered whether news was property, but based the decision on a broad theory of unfair competition.¹⁹⁷ Even Justice Holmes, who disagreed with much of the majority’s reasoning, agreed that a narrower ground of unfair competition justified the majority’s result.¹⁹⁸

In 1974, the Supreme Court again spoke on the connection between trade secret law and the competitive process.¹⁹⁹ In *Kewanee Oil Co. v. Bicron Corp.*,²⁰⁰ the Court considered whether federal patent law pre-empted state trade secret laws. In ruling against preemption, the Court reasoned that trade secret law encourages businesses to initiate new plans of operation and results in “constructive” competition.²⁰¹ Trade secret law fosters efficiency. By preventing wasteful measures, holders of trade secrets need not incur the costs of excessive efforts to ensure secrecy.²⁰² In a similar vein, the Court thought that trade secret law encouraged efficient

secret tort was moved from the general Restatement of Torts to the Third Restatement of Competition).

195. 248 U.S. 215 (1918).

196. *See id.* at 246.

197. *See id.* at 239–40 (noting the unfairness of appropriating to oneself the result of a competitor’s work).

198. *See id.* at 246–48 (Holmes, J., concurring) (noting that the International News Service engaged in unfair competition by not properly crediting its competitor as the source of the stories).

199. *See Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 485 (1974) (stating that trade secret law fosters competition by encouraging invention in areas patent law does not reach).

200. 416 U.S. at 470.

201. *Id.* at 483.

202. *See id.* at 485–87 (noting that trade secret laws reduce defensive measures such as duplicative manufacturing and marketing practices that firms would take in order to protect secrecy).

production methods.²⁰³ According to the Court, trade secrets benefit the general public by allowing the public to buy the invention or some product, the manufacture of which depended upon a trade secret.²⁰⁴

This line of reasoning ignores a countervailing issue—that, in the long run, protecting interests against competitors often allows the protected party to charge a higher price for the product. When viewed from this perspective, the law of trade secrets may be seen to inhibit competition and economic efficiency by creating a monopoly producer.²⁰⁵ Creating a monopoly is not usually considered a constructive way to support competition; monopolists restrain trade

203. See *id.* at 482 (stating that trade secret law increases economic efficiency within large companies by enabling the “dispersion of responsibilities for creative developments”).

204. See *id.* at 485 (noting that the public is not deprived of the use of valuable invention because the trade secret holder can license the use of the invention to others and be legally protected). This view ignores the possibility of a reduced or nonexistent demand for information because it is, in fact, unknown to others or because it may not be in the holder’s interest to make it available, even under license. See, e.g., Robert C. Dean, Jr., *Patent Law’s Impact on Invention and Innovation*, 4 TEX. REV. L. & POL. 95, 99 (1999) (noting that RCA, sponsor of research on FM radio, blocked implementation of FM because it would destroy RCA’s interests in AM radio).

205. See *Brunswick Corp. v. Outboard Marine Corp.*, 404 N.E.2d 205, 207 (Ill. 1980) (noting the public interest in the sale and manufacture of goods not protected by a valid patent). In contrast to that view, some argue that intellectual property rights are simply property rights and do not implicate monopoly concerns. See, e.g., Frank H. Easterbrook, *Intellectual Property is Still Property*, 13 HARV. J.L. & PUB. POL’Y 108, 109 (1990); Edmund W. Kitch, *Patents: Monopolies or Property Rights?*, 8 RES. L. & ECON. 31, 33–34 (1986).

Nevertheless, antitrust law has been deployed against patent holders in some circumstances. See *SCM Corp. v. Xerox Corp.*, 645 F.2d 1195, 1210 (2d Cir. 1981) (stating that section 7 of the Clayton Act proscribes a corporation from acquiring the assets—which include patents—of another corporation when “the effect may be to substantially lessen competition or tend to create a monopoly” (quoting 15 U.S.C. § 18 (1976)), *cert. denied*, 455 U.S. 1016 (1982); see also Willard K. Tom & Joshua A. Newberg, *Antitrust and Intellectual Property: From Separate Spheres to a Unified Field*, 66 ANTITRUST L.J. 167, 170 n.20 (1997) (stating that “ownership of intellectual property confers upon the intellectual property holder a ‘monopoly’”).

Further, if other elements necessary to prove a monopolization case are present, enforcement of a patent that was procured through knowing and willful misrepresentation may be deemed a violation of the Sherman Act. *Walker Process Equip., Inc. v. Food Mach. & Chem. Corp.*, 382 U.S. 172, 174 (1965); *Cataphote Corp. v. DeSoto Chem. Coatings, Inc.*, 450 F.2d 769, 770 (9th Cir. 1971), *cert. denied*, 408 U.S. 929 (1972).

The Justice Department is currently investigating whether the major recording companies are violating antitrust laws by using their copyrights in an anticompetitive manner. See Matt Richtel, *U.S. Inquiry is Under Way on Online Music Business*, N.Y. TIMES, Oct. 16, 2001, at C2 (reporting the investigation of joint ventures between copyright holders to distribute online music).

when they keep others out of the market and charge higher than necessary prices for their products.²⁰⁶

A concept of competition that encourages vigorous competition and is also fair to competitors is difficult to implement. The law tries to balance the need to protect business assets from certain interferences with the need to promote competition between businesses. The freedom to compete for business is a fundamental premise of the free enterprise system; competition creates incentives to offer quality products at reasonable prices and fosters the general welfare by promoting efficient allocation of resources.²⁰⁷ Notwithstanding the benefits of competition to the public, all businesses do not benefit from competition; competitors necessarily harm one another. The law of unfair competition thus imposes liability for competitive harms only when the particular method of competition is determined to be unfair.²⁰⁸ The concept of unfair competition echoes a theme that permeates misappropriation cases, the unfairness that results when someone who has not expended time or money profits from another person's effort.²⁰⁹

Whether its basis is to redress a breach of confidentiality, to encourage fair competition, or to rectify unfairness, the conduct model continues to influence judicial and legislative decisions. Nevertheless, the conduct rationale does not entirely stand apart from the property justification. Condemning conduct that occurs in relation to some interest inevitably casts that interest as property—or as the Supreme Court famously stated—a “quasi-property right.”²¹⁰

206. See ROGER SHERMAN, REGULATION OF MONOPOLY 62–67 (1989).

207. See generally *id.* at 54–58 (explaining the benefits of competition).

208. See RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 1 cmt. a (1995).

209. See *Int'l News Serv. v. Associated Press*, 248 U.S. 215, 239 (1918) (stating that the defendant newspaper was “endeavoring to reap where it has not sown,” thus appropriating the “harvest of those who have”); see also *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 482 (1974) (stating that a discovery that is not patentable should not advantage “one who obtains the desired knowledge without himself paying the price in labor, money, or machines” (quoting *A.O. Smith Corp. v. Petroleum Iron Works Co.*, 73 F.2d 531, 539 (1934))). The Fifth Circuit also drew upon the unfairness theme when it characterized aerial photography as unfair because it allowed the defendant “to avoid labor.” See *E.I. DuPont deNemours & Co. v. Christopher*, 431 F.2d 1012, 1015 (5th Cir. 1970) (“To obtain knowledge of a process without spending the time and money to discover it independently is improper.”).

A persuasive argument has been made that the impulse to redress unjust enrichment underlies misappropriation doctrine. See Wendy J. Gordon, *On Owning Information: Intellectual Property and the Restitutionary Impulse*, 78 VA. L. REV. 149, 156 (1992) (noting that the trend to use misappropriation to grant rights in intellectual property is based on an intuitive sense of fairness).

210. *Int'l News Serv.*, 248 U.S. at 236.

The justifications based on property and conduct are not absolutely distinct, either in general,²¹¹ or in trade secret law.²¹² In addition, both justifications may serve a similar policy goal.²¹³

B. The Property Justification of Trade Secret Law

Only four states justify trade secret law by treating trade secrets as a form of property.²¹⁴ Under the broad form of this view, trade secrets are reflexively deemed to be property, and therefore the law protects the interests of those who hold such secrets. A narrower, more sophisticated property justification analogizes trade secrets to intellectual property, and rests on the same utilitarian foundation.

1. The Traditional View

Under the traditional property model, owners' interests in trade secrets are protected for the same reasons that tangible property is protected.²¹⁵ Property rights flow from a natural right that goes to the first person to discover or to occupy some object, or to those who use their labor, be it physical or intellectual, to create an object, whether tangible or intangible.²¹⁶

211. See Moohr, *supra* note 20, at 722–24 (discussing the relation between the property and conduct categories of criminal law).

212. See J. Neel Chatterjee, *Should Trade Secret Appropriation Be Criminalized?*, 19 HASTINGS COMM. & ENT. L.J. 853, 874 (1997) (arguing that trade secret doctrine is a hybrid that fits under both property and liability regimes); Peterson, *supra* note 72, at 457 (explaining that trade secret protection is based on a “marriage” of property and wrongful appropriation).

213. This is particularly true when the goal is articulated in broad or abstract terms. See *Rockwell Graphic Sys. v. DEV Indus.*, 925 F.2d 174, 178 (7th Cir. 1991) (explaining that one trade secret theory deters efforts whose “sole purpose and effect is the redistribution of wealth from one firm to another” and that the second theory prevents “sterile wealth-distributive” activities).

214. See 1 JAGER, *supra* note 60, § 4.01[3], at 9–15 (reporting that only a few states adhere to a property view of trade secret law).

215. See RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 39 cmt. b (1995) (stating that early trade secret theory treated trade secrets as property).

216. See JOHN LOCKE, *Second Treatise of Government*, in TWO TREATISES ON GOVERNMENT 396 (Oskar Piest ed. 1947) (stating that “whenever one mingles his effort with the raw stuff of the world, any resulting product ought—simply ought—to be his”); Frank I. Michelman, *Property, Utility and Fairness: Comments on the Ethical Foundations of “Just Compensation” Law*, 80 HARV. L. REV. 1165, 1204–05 (1967) (explaining the theory that suggests ownership follows labor).

Recent scholarship has identified another justification for the general trend to strengthen rights in intellectual property—our romantic view of authorship. See, e.g., JAMES BOYLE, *SHAMANS, SOFTWARE, & SPLEENS: LAW AND THE CONSTRUCTION OF THE INFORMATION SOCIETY* 53–58 (1996); Peter Jaszi, *Toward a Theory of Copyright: The Metamorphoses of “Authorship,”* 1991 DUKE L.J. 455, *passim*.

In 1984, the Supreme Court relied on the intuitive power of such reasoning to endorse the view that trade secrets are property for purposes of due process. Although the discussion of trade secret doctrine in *Ruckelshaus v. Monsanto*²¹⁷ is brief, the Supreme Court's statement that trade secrets are property is unequivocal.²¹⁸ The Court based its decision that research and test data were property on its finding that under Missouri law, the data were trade secrets.²¹⁹ The majority noted that treating trade secrets as property "is consonant with a notion of 'property' that extends beyond land and tangible goods."²²⁰ Relying upon a natural rights theory, the Court emphasized that property includes the products of "labor and invention."²²¹ That was apparently enough for the Court, and it did not identify any underlying social policy that is furthered by its decision to treat trade secrets as property. The Court's commitment to this proposition is indicated by its effort to distinguish Justice Holmes's contrary precedent.²²²

The Court has relied upon and extended *Monsanto* to find that confidential business information is a form of property for purposes of mail and wire fraud.²²³ It has also endorsed that view in adopting

217. 467 U.S. 986 (1984).

218. See *Ruckelshaus*, 467 U.S. at 1003–04. Monsanto argued that an Environmental Protection Agency regulation, which required Monsanto to give certain test data to the agency, resulted in a taking of property without due process in violation of the Fifth Amendment. See *id.* at 992–97. The EPA rule required applicants for registration of a pesticide to present research and test data in support of the application. *Id.*

219. See *id.* at 1001. For commentary that disputes this conclusion, see Pamela Samuelson, *Information as Property: Do Ruckelshaus and Carpenter Signal a Changing Direction in Intellectual Property Law?*, 38 CATH. U. L. REV. 365, 380 n.91 (1989) (pointing out that cases cited by the Milgrim treatise—upon which the Supreme Court relied—do not support the characterization of trade secrets as property).

220. *Ruckelshaus*, 467 U.S. at 1003. The Court appeared most concerned with disposing of a distinction between tangible and intangible property and noted the term "property" was not limited to the "vulgar and untechnical sense of the physical thing." See *id.* (quoting *United States v. General Motors*, 323 U.S. 373, 377–78 (1945)). The Court also noted ways in which trade secrets resemble tangible property. *Id.* at 1002.

221. See *id.* at 1003 (quoting 2 W. BLACKSTONE, COMMENTARIES 405 and citing J. LOCKE, THE SECOND TREATISE OF CIVIL GOVERNMENT, ch. 5 (J. Goughed ed. 1947)).

222. See *id.* at 1004 n.9 (arguing that *E.I. DuPont De Nemours Powder Co. v. Masland*, 244 U.S. 100 (1917), did not deny the existence of a property interest; it stood for the proposition that a property interest was irrelevant to resolution of the case); *supra* notes 178–82 and accompanying text (discussing *Masland*).

223. See *Carpenter v. United States*, 484 U.S. 19, 26 (1987). The Court noted that "[c]onfidential business information has long been recognized as property," and cited *Monsanto* as well as other cases involving stock prices, *Dirks v. SEC*, 463 U.S. 646, 653 n.10 (1983); *Bd. of Trade v. Christie Grain & Stock Co.*, 198 U.S. 236, 250–51 (1905), and the news, *Int'l News Serv. v. Associated Press*, 248 U.S. 215 (1918). *Carpenter*, 484 U.S. at 26.

the misappropriation theory of insider trading.²²⁴ In subsequent cases, the Court has shown a tendency to assume that other nonsecret information is property.²²⁵ Notwithstanding this reliance on the traditional, natural rights of property, applying the theory to trade secrets does not withstand close analysis.²²⁶ If the premise of trade secret doctrine was that trade secrets are a traditional form of property, one would expect a broad set of rights would be given to holders of trade secrets, similar to those that attach to physical products of labor. But trade secret law does not confer a broad set of property rights; trade secrets are property only in a conditional sense. As noted earlier, common law does not confer an exclusive right of

224. See *United States v. O'Hagan*, 521 U.S. 642, 652 (1997) (stating that information concerning a plan of one firm to merge with another was property and that the deprivation of exclusive use of the information merits criminal penalties). The Court ultimately ruled that the defendant, who had used the information to trade in securities, had committed securities fraud. See *id.* at 659.

225. See *Reno v. Condon*, 528 U.S. 141, 148 (2000) (implying that information on a driver's license is property by noting that such information is an article in interstate commerce).

In addition, the Court appears poised to treat rights under patent law as property for purposes of due process. See *Fla. Prepaid Postsecondary Educ. Expense Bd. v. Coll. Sav. Bank*, 527 U.S. 627, 642 (1999) (stating that patents are "surely included within the 'property' of which no person may be deprived by a [s]tate without due process"). The Court nevertheless held that state governments are not subject to due process claims for patent infringement. See *id.* (holding that Congress could not seek to remedy a Fourteenth Amendment violation by abolishing sovereign immunity under the Patent and Plant Variety Protection Remedy Clarification Act).

One should note that section 261 of the patent statute states that, subject to provisions of the patent statute, patents shall have the attributes of property. 35 U.S.C. § 261 (1994) (providing for the assignment of a patent).

226. Reflecting these insights, common law expressly rejects the property basis of trade secret claims and bases the tort upon the wrongfulness of the actor's conduct. See *RESTATEMENT OF TORTS* § 757 cmt. a (1939) (rejecting the property view and stating that the prevailing theory underlying trade secret protection is a general duty of good faith); see also *id.* at cmt. b (explaining that liability for disclosure or use of a trade secret rests upon abuse of confidence or impropriety in learning the secret). States provide recourse for loss of trade secrets only when they were taken by improper means or in breach of a confidential relationship. See *supra* notes 106–12 and accompanying text (discussing the element of wrongfulness in a trade secret civil claim).

use.²²⁷ In further contrast, the owner of a trade secret must take certain precautions to keep the information a secret.²²⁸

Moreover, modern property theory rejects the proposition that the state protects property rights that already exist. It is axiomatic that the state affirmatively creates property rights by protecting interests when it prevents others—through judicial or legislative action—from using the tangible or intangible objects at issue.²²⁹ The community, either through legislation or judicial decisions, usually enforces an interest against others only when doing so furthers a significant social policy.²³⁰ Reflecting these considerations, a second, more sophisticated theory of property is invoked to support property rights in trade secrets.

2. Modern Treatment of the Property Justification—Trade Secrets As Intellectual Property

A more nuanced property justification for trade secret law analogizes trade secrets to intellectual property and adopts its underlying utilitarian basis.²³¹ Proponents of this view emphasize the

227. See *supra* notes 63–70 and accompanying text; see also Deutch, *supra* note 60, at 361–69 (concluding that trade secrets do not convey an in rem property right); Thomas W. Merrill, *Property and the Right to Exclude*, 77 NEB. L. REV. 730, 744 (1989) (concluding that exclusivity is core right of property); John C. Stedman, *Trade Secrets*, 23 OHIO ST. L.J. 4, 21 (1962) (“It is, indeed, a strange form of ‘property’ that disappears when the information it embraces becomes public or others independently make the same discovery . . .”).

228. See Deutch, *supra* note 60, at 332 (“A thief is not heard to claim to the owner that he, the owner, did not properly guard his property . . .”).

229. See *Cheney Bros. v. Doris Silk Corp.*, 35 F.2d 279, 280 (2d Cir. 1929) (noting that the source of a property right is common law or statute); see also LAWRENCE M. FRIEDMAN, *CRIME AND PUNISHMENT IN AMERICAN HISTORY* 109 (1993) (stating that property is a social concept); Morris A. Cohen, *Property and Sovereignty*, 13 CORNELL L. REV. 8, *passim* (1927) (criticizing eighteenth and nineteenth century formalistic conception of property); Charles A. Reich, *The New Property*, 73 YALE L.J. 733, 771–73 (1964) (stating that property is a legal institution, a deliberate construction rather than a natural right); Kenneth J. Vandavelde, *The New Property of the Nineteenth Century: The Development of the Modern Concept of Property*, 29 BUFF. L. REV. 325, 330 (1980) (noting that in the twentieth century, property was defined as “a set of legal relations”).

230. See *Int’l News Serv. v. Associated Press*, 248 U.S. 215, 246 (1918) (opinion per Holmes, J.) (stating that property designation is dependent upon exclusion by law from interference); *id.* at 250 (Brandeis, J., dissenting) (“[T]he attribute of property is continued . . . only in certain classes of cases where public policy has seemed to demand it.”); *E.I. DuPont De Nemours Powder Co. v. Masland*, 244 U.S. 100, 102 (1917) (stating that the designation of property is the result of secondary consequences).

231. Perhaps because of the utilitarian aspect, law and economics scholars have shown particular interest in intellectual property and have been quite influential. See, e.g., Kenneth W. Dam, *Intellectual Property in an Age of Software and Biotechnology*, in CHICAGO LECTURES IN LAW AND ECONOMICS 113, *passim* (Eric Posner ed. 2000)

similarities between trade secrets and intellectual property.²³² The property object protected by patent and copyright is intangible, as are trade secrets. Both intellectual property law and trade secret law deal with the products of intellectual effort. Most significantly, proponents of this view claim that trade secret law shares the utilitarian basis of intellectual property law.

The award of a property right in patents and copyrights is based on a public policy embodied in the Constitution.²³³ That policy is based upon a public interest in progress and innovation.²³⁴ The state creates an innovator's limited right of exclusive use only because enforcement achieves important societal goals.²³⁵ The constitutional

(discussing the economic principles that apply to intellectual property); Stanley M. Besen & Leo J. Raskind, *An Introduction to the Law and Economics of Intellectual Property*, 5 J. ECON. PERSP. 3, *passim* (1991) (providing an overview of current economic issues in intellectual property law); Chiapetta, *supra* note 171, at 93–116 (advancing a misappropriations framework for trade secret law); Deutch, *supra* note 60, at 323 n.41 (listing cases and articles that utilize law and economics approach); Frank H. Easterbrook, *Insider Trading, Secret Agents, Evidentiary Privileges, and the Production of Information*, 1981 SUP. CT. REV. 309, *passim* (analyzing three Supreme Court decisions that involve a property interest in information); Friedman et al., *supra* note 171, *passim* (discussing the economics of trade secret law); Kitch, *supra* note 171, *passim* (applying economic analysis to justify laws that protect information); William M. Landes & Richard A. Posner, *An Economic Analysis of Copyright Law*, 18 J. LEGAL STUD. 325, *passim* (1999) (explaining that copyright law is a means of promoting an efficient allocation of resources); J.H. Reichman, *Legal Hybrids Between the Patent and Copyright Paradigms*, 94 COLUM. L. REV. 2432, 2443 (1994) (applying the concept of market failure to explain the expansion of property rights in information products that do not qualify for patent or copyright protection).

232. See *Peabody v. Norfolk*, 98 Mass. 452, 457–58 (1868) (likening trade secrets to property such as business goodwill, trademarks, and patents); see also 1 JAGER, *supra* note 60, § 1.05, at 1–15 (noting that the purpose of trade secret protection includes “the encouragement of invention and innovation”); Deutch, *supra* note 60, at 325 (stating that the aims of trade secret laws are “in harmony with the aims of the laws regarding intellectual property”).

233. See U.S. CONST. art. I, § 8, cl. 8. Congress shall have the power “To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.” *Id.*

234. See *Feist Publ'ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 349 (1991) (“The primary objective of copyright is not to reward the labor of authors, but [t]o promote the Progress of Science and useful Arts.” (quoting U.S. CONST. art. I, § 8, cl. 8)); *United States v. Bily*, 406 F. Supp. 726, 730 (E.D. Pa. 1975) (stating that the policy basis of intellectual property law is the public benefit of access).

235. See *Feist*, 499 U.S. at 350 (stating that copyright assures authors' rights to their original expression in order to achieve the constitutional objective). Thomas Jefferson rejected a natural rights basis for intellectual property rights and viewed the grant of exclusive rights as an artificial creation. See *Graham v. John Deere Co.*, 383 U.S. 1, 8–9 (1966). Instead, Jefferson recognized a social and economic rationale; patents are a reward for and an inducement to bring forth new knowledge. *Id.* Jefferson was reluctant to give monopoly rights to inventors because he thought the benefits of even a limited monopoly would not exceed the benefits of competition. *Id.* at 8 n.2.

standard thus defines the goals—to provide an incentive to those who create new work and to provide meaningful access to the general public.

This policy accepts the proposition that creators are unlikely to produce new work unless they can control access to the material. In the language of economics, the subject matter of copyrights and patents are public goods, vulnerable to free riders.²³⁶ Legal rules are necessary because creators may not be able to recoup the investment of time, prior knowledge, and money that was used to create the material. Consequently, copyright and patent laws grant a set of limited rights to developers of creative expression and novel invention so that they may profit from their innovation and be motivated to produce more new ideas. The general public benefits because citizens may buy, use, read, view, and ultimately copy material that might not otherwise have been available.

In order to achieve innovation without unduly impinging on public access to and use of the information, intellectual property law provides only a limited right²³⁷—and a limited term for that right.²³⁸

236. See Landes & Posner, *supra* note 231, at 326. One definition of a public good rests on the inexhaustible character of intangibility. Thus: A public good arises when “[e]ach individual’s consumption leads to no subtraction from any other individual’s consumption.” DENNIS C. MOELLER, PUBLIC CHOICE 12–13 (1979) (quoting Paul A. Samuelson, *The Pure Theory of Public Expenditure*, 36 REV. ECON. & STAT. 386–89 (1954)). A somewhat more relaxed definition of the public good nature of intangible products rests upon the idea that they are expensive to create and cheap to copy. See Dam, *supra* note 231, at 114.

The classic example of a lighthouse has been used by many economists to illustrate the concept. Private individuals will not build a lighthouse because they could not charge for its use or recoup the investment. It is therefore necessary for government, or others through collective action, to provide the service. See R.H. Coase, *The Lighthouse in Economics*, 17 J.L. & ECON. 357, 357 (1974). Coase demonstrated that despite the fact that eminent economists, including Mill, Sidgwick, Pigou, and Samuelson, offered the lighthouse as the quintessential public good, it is not the best vehicle for analyzing this problem. See *id.* at 374–76 (noting that English lighthouse owners did charge shipowners, and that great economists made statements about lighthouses that were misleading as to the facts, unclear, and wrong in their policy implications).

237. Federal patent law grants the patent holder the right to exclude others from making, using, selling, or importing the product or process. See 35 U.S.C. § 154(a)(1) (1994). Copyright law gives authors the exclusive right to make and sell copies of expressions of ideas. See 17 U.S.C. § 106 (2000).

Limitations also apply. For instance, copyrights are subject to fair use by others. See *id.* § 107. Once a patent has issued, it is strictly construed so as not to secure any right beyond that contained in the patent. See *Sears, Roebuck & Co. v. Stiffel Co.*, 376 U.S. 225, 230 (1964). *But see Warner-Jenkinson Co., v. Hilton Davis Chem. Co.*, 520 U.S. 17, *passim* (1997) (adhering to the doctrine of equivalents, which may protect patent holders against products that do not literally infringe upon the express terms of a patent claim).

238. See 35 U.S.C. § 154(a)(2) (stating that the right of exclusive use of patented material ends twenty years after the date of application); 17 U.S.C. § 302 (2000) (limiting

In addition, those applying for patent protection must disclose information to the public in order to obtain the limited right.²³⁹ The disclosure requirement ensures that individuals other than the innovator can use information in the public domain to create even more innovative material.

The Supreme Court endorsed the analogy of trade secrets to intellectual property in *Kewanee Oil Co. v. Bicron Corp.*²⁴⁰ In *Kewanee*, the Court compared the characteristics and purposes of the laws of trade secrets and patents.²⁴¹ In holding against preemption of a state trade secret law, the majority noted that both patent law and trade secret law encourage invention.²⁴² Although the Court acknowledged that trade secret law protects different kinds of invention than patent law, it concluded that trade secret law still played an important part in advancing technology and science.²⁴³

C. Congress Adopted the Property View in the EEA

In one sense, criminalizing misappropriation of trade secrets (or providing a cause of action in tort) implicitly treats the interest at issue as property. Even when the focus of a criminal law is to punish certain conduct, the property approach is implicated; condemning conduct that involves some interest inevitably sweeps that interest into a protected category.²⁴⁴ In protecting those interests, criminalization confers an implicit property right: that which is stolen must be property. In the case of the EEA, however, Congress's adoption of the property basis was more explicit. Although the EEA prohibits a broad range of behavior, Congress does not appear to

copyright to the life of the author plus seventy years); see also *Eldred v. Reno*, 239 F.3d 372, 377-78 (D.C. Cir. 2001) (rejecting arguments that the Copyright Term Extension Act violated the Constitution), cert. granted __ S. Ct. __, 70 USLW (2002).

239. 35 U.S.C. § 112; see also *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 151 (1989) (stating that the ultimate goal of the patent system is to bring new technology into the public domain through disclosure).

240. 416 U.S. 470, 493 (1974); see *supra* notes 199-204 and accompanying text (presenting the view in *Kewanee Oil Co.* that trade secret law enhances the competitive process).

241. See *Kewanee Oil Co.*, 416 U.S. at 480-93 (stating that the major goals are to promote science and useful arts and fairness to inventors).

242. See *id.* at 485 (explaining that trade secret law will "prompt[] the innovator to proceed with discovery and exploitation of his invention").

243. See *id.* at 493 (stating that trade secret law encourages development of items of lesser or different invention than those accorded protection under patent law).

244. For a more detailed exposition of this observation, see Moohr, *supra* note 20, at 724. Consider also that the effect of barring one who had not labored from reaping a benefit created a "quasi-property right" in the news. See *Int'l News Serv. v. Associated Press*, 248 U.S. 215, 236 (1918).

have been motivated by a desire to maintain commercial morality or to prevent unfair competition. Rather, in the view of Congress, trade secrets are much like any other property.²⁴⁵

Congress effectively gave “owners” the right to control any use of the information—a right that approaches exclusive use.²⁴⁶ The person or entity holding a trade secret can authorize certain uses, and unauthorized use undertaken with the requisite mental state is a crime.²⁴⁷ Congress stopped short of creating an explicit in rem property right; instead, trade secrets are protected as property only when specified conduct and culpability are present. Yet the broad range of prohibited acts, which effectively prohibit any unauthorized use, imply that the trade secret holder does have rights against the world at large.

Congress undoubtedly was influenced by the value of secret information and its importance to the economy, and may have equated value with property. The concern over value, however, is problematic for two reasons. In this specific case, the estimated financial value of lost information cannot be considered as entirely reliable, in part because the estimates vary so wildly as to be suspect.²⁴⁸ The estimates of lost value are often based on an

245. See Pooley et al., *supra* note 30, at 193 (concluding that Congress believed trade secret law is rooted in property theory).

246. The statute speaks of “owner.” 18 U.S.C. § 1839(3)(A) (2000). The statute defines “owner” as corresponding to legal title and includes licensees. *Id.* § 1839(4); see also Rochelle Cooper Dreyfuss, *Trade Secrets: How Well Should We Be Allowed to Hide Them? The Economic Espionage Act of 1996*, 9 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 1, 8 (1998) (noting that the concept of owner, as opposed to rights holder, is unknown in state trade secret law). Congress also used the word “theft,” § 1832 (entitled “Theft of trade secrets”), implying that what is taken is property.

Congress utilized the concept of conversion to describe the prohibited conduct, a concept that normally applies only to tangible property. *Id.* § 1832(a). In civil law, takings of intangibles are treated as misappropriation and require a confidential relationship. See *Parks v. Int’l Harvester Co.*, 218 U.S.P.Q. 189, 190 (N.D. Ill. 1982) (applying Illinois law and stating that the tort of misappropriation of an intangible idea requires a confidential relationship and that conversion applies to tangible property); BLACK’S LAW DICTIONARY 333 (7th ed. 1999) (defining conversion as applying to personal property); Jeff C. Dodd, *Rights in Information: Conversion and Misappropriation Causes of Action in Intellectual Property Cases*, 32 HOUS. L. REV. 459, 475–97 (1995) (reviewing civil suits for conversion and misappropriation of ideas); see also *Morissette v. United States*, 342 U.S. 246, 272 (1952) (stating that conversion prohibited by 18 U.S.C. § 641 is misuse or abuse of property or its use in an unauthorized manner). But see *United States v. Girard*, 601 F.2d 69, 71 (Conn. 1979) (holding that a writing is a thing of value subject to conversion under 18 U.S.C. § 641).

247. See 18 U.S.C. § 1832(a)(1)–(3) (specifying acts taken “without authorization”); *supra* notes 158–62 and accompanying text (discussing conduct provisions).

248. See David R. Hofman, *The Economic Espionage Act—Congress’ Inadequate Solution to Trade Secret Protection* 8 (2001) (unpublished manuscript, on file with the

assumption that infringers would have purchased the object if it was not otherwise available, and there is no evidence that this is the case.²⁴⁹ Moreover, self-interested parties provided the estimates of losses, and their conclusions should be viewed skeptically.²⁵⁰

Another more general problem is that relying on value to determine whether an object is property is circular: an object has market value in large part because legislators or courts have given some individual or entity the right to exclude others from using it.²⁵¹ Even if value were a valid standard for deeming an object worth protecting, it is axiomatic that criminal law does not guard every valuable interest.²⁵²

The utilitarian property justification upon which Congress relied, that trade secret law serves the same general policy goal as intellectual property, is also unsatisfactory. Trade secret doctrine is not entirely analogous to patent law because it does not—and is not intended to—further one of the underlying purposes of intellectual property law. Trade secret law does not achieve the second purpose

North Carolina Law Review) (noting estimates of monetary loss to U.S. industries from economic espionage ranged from \$1.8 billion to \$100 billion per year); *see also supra* note 52 (listing estimates).

249. *See, e.g.*, Todd H. Flaming, Comment, *The National Stolen Property Act and Computer Files: A New Form of Property, A New Form of Theft*, 1993 U. CHI. L. SCH. ROUNDTABLE 255, 287 (providing a hypothetical problem of ascertaining value that assumes people who download software programs from the Internet would have paid for them).

250. Representatives from the American Society for Industrial Security (ASIS) testified before Congress. ASIS is a trade organization of security businesses “dedicated to increasing the effectiveness and productivity of security professionals.” American Society for Industrial Security, at <http://www.asisonline.org/member.html> (last visited on Nov. 19, 2001) (copy on file with the North Carolina Law Review). Its members are companies and their representatives who provide security services to business firms. Telephone interview with Gail Shisler, Executive Assistant to the Executive Director (Sept. 28, 2000).

251. *See Int’l News Serv. v. Associated Press*, 248 U.S. 215, 246 (1918) (opinion per Holmes, J.) (“Property, a creation of law, does not arise from value . . .”); Felix S. Cohen, *Transcendental Nonsense and the Functional Approach*, 35 COLUM. L. REV. 809, 815 (1935) (characterizing the value argument as fatally circular); Gordon, *supra* note 209, at 178 (noting that the value argument has so little reason in it that response is difficult); Wesley Newcomb Hohfeld, *Some Fundamental Legal Conceptions as Applied in Judicial Reasoning*, 23 YALE L.J. 16, 21–23 (1913).

252. *See* JOEL FEINBERG, *THE MORAL LIMITS OF THE CRIMINAL LAW: HARM TO OTHERS* 218–21 (1984) (discussing harm to competitive interests). Tellingly, there is no criminal provision for infringement of a patent, although patent holders may receive treble damages upon a finding of willful infringement. *See* 35 U.S.C. § 284 (1994). Only about one half of the states specifically criminalize trade secret theft. *See supra* notes 113–25 and accompanying text (discussing state criminal enforcement).

of intellectual property law: provide public access to knowledge and information.

In contrast to intellectual property law, owners of trade secrets do not divulge information to the public.²⁵³ The obligation of patent and copyright applicants to disclose becomes, in trade secret law, the opposite—an incentive to conceal. Not only do holders of trade secrets have no obligation to disclose, they lose all rights in the secret information if they should do so. Thus, the bargain of intellectual property, in which creators receive the benefit of exclusive use in return for disclosure to the community, is not present in trade secret law.²⁵⁴ When information is treated as a trade secret, the public benefit is limited to the opportunity to purchase a product that embodies secret information. The underlying information is not available to the public. The community thus cannot benefit from future innovation based upon it, with its possible consequences for increased competition.²⁵⁵

The procedures required to obtain a patent are also pertinent to the argument that trade secret doctrine is not entirely analogous to patent law. Patent law provides a screening process that limits the grant of exclusive use only to certain inventions.²⁵⁶ The statutory standards reflect the purpose of encouraging science and the useful arts, and legislators designed them to achieve the constitutional mandate to balance the creation and use of intellectual property.²⁵⁷ In contrast, no screening process or legislative action exists in the law of trade secrets—any information can be a trade secret. Unbound by statutory standards, the innovator decides what information will be protected by unilaterally deciding to keep valuable information secret. This method of creating a right in a trade secret may be

253. Note, however, that disclosure may occur through independent discovery, reverse engineering, or accidental disclosure. See *supra* notes 63–70 and accompanying text (discussing paradox of trade secrets).

254. Despite its emphasis on the common goals of trade secret and intellectual property laws in *Kewanee*, the Supreme Court conceded that trade secret law does not produce the benefits of disclosure. See *Kewanee Oil Co. v. Bicron Corp.* 416 U.S. 470, 484 (1974) (noting that the disclosure required by patent law is the “more difficult objective” to reconcile with trade secret law).

255. See Martin J. Adelman, *Secrecy and Patenting: Some Proposals for Resolving the Conflict*, 1 AM. PAT. L. ASS’N Q.J. 296, 299–300 (1973) (noting that the public right to a competitive economy is furthered by disclosure).

256. Patents protect discoveries and inventions if they are novel, useful, and not obvious. See 35 U.S.C. §§ 100–105 (1994 & Supp. V 1999).

257. See *supra* notes 233–35 and accompanying text (observing that the purpose of copyright law is to secure public benefit).

appropriate when the right is limited and precarious; it seems less so when a broader, stronger right is at issue.

Finally, the breadth of information protected by trade secret law further weakens the intellectual property analogy. The information protected by trade secret law inevitably includes material that does not satisfy the criteria implicit in the utilitarian standard—that the property is a public good. Under the EEA, any secret information qualifies for protection.²⁵⁸ Because the EEA covers information that does not require artificial protection and stimulation provided by granting a monopoly right, it is over-inclusive.²⁵⁹ In some cases—such as formulas for medical drugs—investors may not support development of the product without some assurance of recouping the investment. But in other cases—such as a client list or a manufacturing method—a company would produce the information for its use even in the absence of legal protection.²⁶⁰ In short, the market does not always fail when an intangible product is involved. The market often provides abundant incentives for businesses to create a great range of information without statutory protection.²⁶¹

In sum, the property right provided by the EEA is contrary in spirit and effect to the underlying principles that support the limited rights authorized by intellectual property law. Trade secret doctrine is better understood as a mechanism for ensuring a competitive standard that redresses unfair enrichment while supporting vigorous competition. In basing the EEA on property, Congress over-

258. See 18 U.S.C. § 1839(3) (2000) (requiring that information has value due to secrecy and that the owner made reasonable efforts to secure secrecy).

259. This concern underlies criticism of the Patent and Trademark Office policy of approving business methods patents. See Leo J. Raskind, *The State Street Bank Decision: The Bad Business of Unlimited Patent Protection for Methods of Doing Business*, 10 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 61, 102 (1999) (critiquing the award of patents for business methods on grounds of economic policy).

260. See *Abbott Labs. v. Norse Chem. Corp.*, 147 N.W.2d 529, 541 (Wis. 1967) (noting that customer lists are peripheral because legal protection does not provide as much incentive to compile them and because most are developed in the normal course of business anyway). Consider that computer software was continuously and rapidly produced before it was considered eligible for protection by copyright or patent. Consider also that Dr. J. S. Pemberton created and sold Coca-Cola (and also trademarked and sold the formula) before Georgia courts recognized a right in trade secrets. See *Coca-Cola Bottling Co. v. Coca-Cola Co.*, 563 F. Supp. 1122, 1124 (D. Del. 1983) (noting that Coca-Cola syrup was created in 1886, the drink was registered as a trademark in 1887, and the formula was sold to Asa Chandler for \$2,300 in 1888); *Stewart v. Hook*, 45 S.E. 369, 370 (Ga. 1903) (establishing protection of trade secrets).

261. See Moohr, *supra* note 20, at 735 (discussing the public good justification and noting that the profit incentive provided by markets is typically an adequate inducement to produce general business information).

simplified the issues and, in responding to the interests of those who already hold valuable information, tilted the public balance away from efficient use of information.

V. CONSEQUENCES OF USING CRIMINAL LAW

Congress's stated goal in passing the Economic Espionage Act was to promote the general economic well-being of the nation.²⁶² To achieve that goal, Congress treated trade secrets as an undifferentiated kind of property and criminalized their misappropriation. The following exploration of likely consequences of those decisions reveals that Congress may have been misguided. Criminalizing trade secret takings is a double-edged sword; while the EEA may deter such takings, unintended consequences of enforcement may very well undermine the goal of economic growth. The issue is familiar; protecting trade secrets in order to encourage innovation is not costless. One cost of enhanced rights in trade secrets is that exercising those rights impedes the ability of employees to take jobs in other firms or to start new businesses. Loss of employee mobility leads to another cost, or inefficiency, by affecting regional economic performance. The following section also analyzes likely effects of the EEA on the public domain and on intellectual property law. Contrary to Congress's expectations, criminal protection of trade secrets is more likely to impede economic progress than to promote it.

A. *The EEA May Restrain Employee Mobility and Economic Growth*

Firms whose profits depend upon trade secrets typically consider their workers a potential threat to the firm's interests. Indeed, one would not be wrong in concluding that the historical impetus for trade secret law was to restrain employees from competing with their employers.²⁶³ Although the incongruent interests of employees and employers are well understood,²⁶⁴ the trade secret issue raises a

262. See *supra* notes 49–58 and accompanying text (discussing the passage of the EEA).

263. See BOK, *supra* note 60, at 137–38 (discussing the efforts of French and German producers to keep secret the methods for producing porcelain—methods they had taken from the Chinese—that included treating workers as prisoners).

264. Various agency doctrines (for example, employee loyalty and fiduciary duty) and contract doctrines (such as covenants not to compete) seek to accommodate competing interests of employers and employees. MARK A. ROTHSTEIN ET AL., *EMPLOYMENT LAW* 642–70 (2d ed. 1999) (presenting post-employment obligations of employees).

special application that involves a societal interest. Firms have an interest in maintaining their competitive advantage by keeping trade secrets and business information from their competitors.²⁶⁵ Employees, on the other hand, want the freedom to work for whichever business values them most highly.²⁶⁶ Not so obviously, the community has an independent interest in a sound and growing economy that may be aligned with either interest.²⁶⁷ This section explains how the EEA, while accounting for the interest of employers, falls short of accommodating either the interests of employees or the long-term interests of the community.

1. How the EEA May Restrain Employee Mobility

Employees benefit from the ability to move among employers. For one thing, taking advantage of opportunities for employment increases income, and the practical repercussions of losing job opportunities can harm employees and their families. Moreover, employee bargaining positions are diminished when they cannot move to the employer who values them most highly.²⁶⁸ Thus, when an employer is given a property interest in the skills that an employee

265. See *Winston Research Corp. v. Minn. Mining & Mfg. Co.*, 350 F.2d 134, 137-38 (9th Cir. 1965) (noting the competing policies and interests of employees and employers in California law).

266. For discussions of how protecting information may affect employee mobility, see Chatterjee, *supra* note 212, at 889 (noting that economic inefficiency results when employees cannot work where they are most valued); John C. Coffee, *Hush! The Criminal Status of Confidential Information After McNally and Carpenter and the Enduring Problem of Overcriminalization*, 26 AM. CRIM. L. REV. 121, 139 (1988) (noting that restricting the use of information through criminal penalties reduces bargaining power of employees); Dreyfuss, *supra* note 246, at 39 (explaining how the EEA may affect employee mobility); Kitch, *supra* note 85, at 664 (stating that expanded trade secrecy protection infringes employee mobility); Moohr, *supra* note 20, at 728-30 (noting restrictions on employee mobility when federal fraud statutes are applied to information).

267. See *Winston*, 350 F.2d at 137-38 (noting the advantages of the public policy favoring disclosure); *Brunswick Corp. v. Outboard Marine Corp.*, 404 N.E.2d 205, 207 (Ill. 1980) (noting the public interest "in allowing employees to make full use of their knowledge and ability"); *Wexler v. Greenberg*, 160 A.2d 430, 433-35 (Pa. 1960) (stating that "competition is diminished by slackening the dissemination of ideas, processes and methods" and noting harm to public in "forestalling widespread technological advances").

The public interest may be aligned with the firm because of benefits of technological improvements. The prospect of such improvements is based in part on the ability to entrust information to employees, and optimum trusting may not occur unless losses due to breaches of trust are held to a minimum. See *Wexler*, 160 A.2d at 433-35.

268. See *Wexler*, 160 A.2d at 435 (noting that an "employee's bargaining position is weakened because he is potentially shackled by the acquisition of trade secrets; and thus, paradoxically, he is restrained because of his increased expertise from advancing further in the industry in which he is most productive").

learned on the job, fundamental rights of employees may be violated.²⁶⁹

A general consequence of using criminal law as a regulatory device is that its blunt determinations can deter lawful, as well as unlawful, conduct.²⁷⁰ Risk-averse and law-abiding citizens may eschew legitimate and socially valuable activities in order to avoid criminal charges, which imposes significant social costs on individuals and on the economy.²⁷¹ Thus, when employees avoid legitimate activities—such as moving to other firms or beginning new businesses—economic progress is impeded, rather than augmented.

Congress apparently recognized this possibility and explicitly stated that it did not intend to prevent employees from using general skills and knowledge when they left an employer.²⁷² Congress's disclaimer is, however, somewhat disingenuous. As one commentator has pointed out, Congress explicitly identified employees as the main threat with which it was concerned.²⁷³ Moreover, the disclaimer is negated by the EEA itself: Congress enlarged the scope of what qualifies as a trade secret and broadened the conduct that triggers criminal charges.²⁷⁴ As a result of this broad coverage, employees will

269. See *AMP, Inc. v. Fleischhacker*, 823 F.2d 1199, 1202 (7th Cir. 1987) (stating that individuals maintain a fundamental right to pursue particular occupations); *Allis-Chambers Mfg. Co. v. Cont'l Aviation & Eng'g Corp.*, 255 F. Supp. 645, 652–53 (E.D. Mich. 1966) (considering freedom of employees to move); *Smith Oil Corp. v. Viking Chem. Co.*, 468 N.E.2d 797, 800 (Ill. App. Ct. 1984) (recognizing the right of an individual “to follow and pursue a particular occupation”).

270. See HERBERT L. PACKER, *THE LIMITS OF THE CRIMINAL SANCTION* 69 (Stanford Univ. Press 1978) (1968) (arguing that “the singular power of the criminal law resides . . . not in its coercive effect on those caught in its toils but rather in its effect on the rest of us”).

271. See *Coffee*, *supra* note 266, at 151–52 (noting that avoiding entanglements with criminal law entails significant “compliance costs”).

272. See 142 CONG. REC. S12,212 (1996) (Manager's Statement) (stating that the EEA does not in any way prohibit others from using their skills, knowledge, and experience to solve a problem or invent a product that they know someone else is working on); S. REP. NO. 104-359, at 12 (1996); H.R. REP. NO. 104-788, at 18–19 (1996), *reprinted in* 1996 U.S.C.C.A.N. 4021, 4026 (“The statute is not intended to be used to prosecute employees who change employers or start their own companies using general knowledge and skills developed while employed.”).

273. See *Dreyfuss*, *supra* note 246, at 37–38 (citing S. REP. NO. 104-359, at 8, 18 (1996); H.R. REP. NO. 104-788, at 5, 7 (1996), *reprinted in* 1996 U.S.C.C.A.N. 4021, 4023 & 4021, 4026) (pointing to legislative history that refers to employees and insiders and concluding that the EEA “was quite definitely targeted at employees”). Although conduct is not limited to persons in confidential relationships with the trade secret holder, employees are likely to be in a position to engage in many of the prohibited acts, such as photographing, copying, or otherwise communicating the information to others. See *id.* at 38.

274. The EEA authorizes punishment for unauthorized use of a trade secret even if the person had lawfully acquired it. See 18 U.S.C. § 1832(a)(2) (2000); *supra* notes 158–62 and

be less likely to consider moving to other firms because they will be afraid of incurring criminal charges.

Employees traditionally acquire the general skills and knowledge necessary to move to better jobs or start independent businesses by learning from their work.²⁷⁵ But the chilling of employee mobility that flows from the EEA's broad statutory provisions is sharpened by the difficulty of ascertaining the blurred and context-dependent line between information that belongs to the firm and that which belongs to the employee.²⁷⁶ The inherent ambiguity between these categories is heightened because the existence of a trade secret is not established until trial.²⁷⁷ Because of this uncertainty, and the harsh consequences that could follow from an error of judgment, employees are likely to err on the side of caution.²⁷⁸

accompanying text (discussing conduct provision). Further, the EEA appears to include taking information through memorization. See § 1832(a)(2); *supra* notes 130–31 and accompanying text (noting the EEA provision that prohibits taking trade secrets through memorization).

275. See Kitch, *supra* note 85, at 665 (noting that under the traditional common law view ex-employees' use of information that was "simply in his or her head was not viewed as improper").

276. Common law distinguishes between protected information, or firm-specific knowledge, that employees may not disclose to others, and unprotected information, general knowledge and skill, that they are free to use in other employment. See *Ram Metals Corp. v. Logan*, 565 P.2d 1080, 1083 (Or. 1977) (stating the common law rule that use of general knowledge and skill obtained during employment may not be restrained by the employer in the absence of special circumstances); see also GARY S. BECKER, *HUMAN CAPITAL* 11, 18 (1964) (discussing general and specific on the job training); Kitch, *supra* note 85, at 666 (noting that the "critical but unanswered question in the employment context is what obligations of confidence the employment contract creates"); Paul H. Rubin & Peter Shedd, *Human Capital and Covenants Not to Compete*, 10 J. LEGAL STUD. 93, *passim* (1981) (examining the economics of training markets).

277. See Dreyfuss, *supra* note 246, at 38 (noting that Congress did not provide a method to determine what is proprietary knowledge and what is merely a skill); Ronald J. Gilson, *The Legal Infrastructure of High Technology Industrial Districts: Silicon Valley, Route 128, and Covenants Not to Compete*, 74 N.Y.U. L. REV. 575, 599 (1999) (noting the imprecision of the line between general knowledge and knowledge that qualifies as a trade secret).

278. Courts have erred on the side of holders of trade secrets by adopting the inevitable disclosure doctrine. See *Pepsico, Inc. v. Redmond*, 54 F.3d 1262, 1268 (7th Cir. 1995). The doctrine allows an employer to prevent a former employee from working for a competitor upon a showing that the employee will inevitably disclose the former employer's trade secrets in the new job. See *id.* at 1269–70 (holding that the inevitable disclosure doctrine applied to a former Pepsi employee who knew of Pepsi's particularized strategic goals and strategies for getting ahead in the sports drink industry). Some commentators fear that the EEA will cover inevitable disclosure. See Dreyfuss, *supra* note 246, at 36–37 (suggesting the possibility that the EEA may also cover inevitable disclosure); Savage et al., *supra* note 56, at 17 (noting that the combination of the inevitable disclosure doctrine and the EEA increases the probability that movement of an employee to a competitor can trigger a criminal prosecution).

In addition, the third-party provision of the EEA may reduce employment opportunities for experienced workers. The EEA imposes criminal liability on third parties who knowingly possess or receive a trade secret.²⁷⁹ Unless the knowledge provision is strictly interpreted, a firm that hires a competitor's employee risks a criminal charge.²⁸⁰ In addition, the hiring firm risks incurring corporate liability even when a worker uses a former employer's trade secret without the knowledge of the hiring firm; firms can be held responsible for acts of agents that benefit the firm and are within the scope of the agent's authority.²⁸¹ These risks are likely to discourage prudent managers from hiring competitors' workers. Given the substantial fines that result from a criminal conviction,²⁸² potential employers would be foolish to expose their firms to that risk by hiring workers who might know the trade secrets of former employers. Despite Congress's avowed intention, criminal penalties of the EEA are likely to reduce opportunities of experienced employees, to dissuade them from looking for new opportunities, and to chill enthusiasm for moving to new jobs—even when a court would decide that that no trade secret existed.

2. The Community Interest in Employee Mobility

The community benefits when employees are free to move to new jobs. The firm that values employees most highly can presumably use them most effectively, leading to more output of goods or services from the same resources, which can increase overall

279. 18 U.S.C. § 1832(a)(3) (2000) (requiring that the third party acts with knowledge that the information was taken without authorization).

280. See *supra* notes 163–66 and accompanying text (discussing the mens rea elements of the EEA).

281. See *New York Cent. R.R. v. United States*, 212 U.S. 481, 494 (1909) (holding a corporation responsible for acts of agents on behalf of the corporation); *United States v. Hilton Hotels Corp.*, 467 F.2d 1000, 1005 (9th Cir. 1972) (holding corporations responsible for violations of the Sherman Act by their employees acting within the scope of their employment); *Commonwealth v. Beneficial Fin. Co.*, 275 N.E.2d 33, 71–74 (Mass. 1971) (comparing the common-law respondeat superior standard and the Model Penal Code standard for finding corporate liability); see also *Alexander & Wood*, *supra* note 30, at 920 (noting that criminal charges against the new firm arguably could result from the perceived undue pressure on employees to develop new products that leads an employee to steal information from a competitor).

The conspiracy provision may also be troublesome to new employers. § 1832(a)(5); see *Alexander & Wood*, *supra* note 30, at 920 (noting that hiring a competitor's employees without proper safeguards in place may create an appearance of an agreement to steal trade secrets from the former employer).

282. See *supra* note 43 and accompanying text (detailing organizational fines of up to five million dollars and forfeiture provisions).

economic well-being.²⁸³ In addition, employee mobility can reduce monopoly power or the possibility of such power, and that benefits the community by lowering prices to consumers. Competition is enhanced when employees are free to move to the firm that values their talents and skills most highly. Indeed, this insight underlies the skepticism with which the law regards non-compete agreements.²⁸⁴ Hiring only inexperienced workers or building firewalls around experienced new hires hinders the flow of all ideas and innovation—protected or not.²⁸⁵ Restricting employment opportunities in this way also reduces the bargaining strength of employees as they negotiate salaries and other benefits, leading to lower salaries, a development that economic theory teaches will lead to a reduction in the number of people willing to work.²⁸⁶ Thus, even when restricting employee choices may be good for the individual employer, it is not necessarily good for the community.

Constraining employee mobility may also implicate the public interest in economic growth in a more direct way. Recent research by Professor Ronald Gilson and by Professor Alan Hyde specifically links employee mobility and economic growth.²⁸⁷ Their studies are based on the performance of two regions between 1965 and 1995: Silicon Valley in California generally prospered while Route 128 in Massachusetts did not.²⁸⁸ The research indicates that the ability of employees to move freely between employers and to start their own businesses contributed to the better performance of Silicon Valley.²⁸⁹ In contrast to Massachusetts, engineers and managers in California

283. See WILLIAM H. HUTT, *THE ECONOMICS OF THE COLOUR BAR* 1 (1964).

284. See, e.g., *DeSantis v. Wackenhut Corp.*, 793 S.W.2d 670, 688 (Tex. 1990) (discussing the application of the rule of reason to an anticompete agreement); RESTATEMENT (SECOND) OF CONTRACTS § 188 (1981) (presenting the rule of reason factors that may invalidate a covenant not to compete); Harlan M. Blake, *Employee Agreements Not to Compete*, 73 HARV. L. REV. 625, 652 (1960) (stating that the risk of future competition from employees falls upon employers).

285. See Dreyfuss, *supra* note 246, at 38–39. Professor Dreyfuss also points out that the threat of criminal charges will chill corporate restructuring and joint ventures. *Id.* at 40.

286. See *id.* at 39.

287. See Gilson, *supra* note 277, at 595–96 (analyzing ANNALEE SAXENIAN, *REGIONAL ADVANTAGE: CULTURE AND COMPETITION IN SILICON VALLEY AND ROUTE 128* (1994); Alan Hyde, *Real Human Capital: The Economics and Law of Shared Knowledge* (May 1998) (unpublished manuscript on file with the North Carolina Law Review)); Alan Hyde, *The Wealth of Shared Information: Silicon Valley's High-Velocity Labor Market, Endogenous Economic Growth, and the Law of Trade Secrets* (1998), at <http://andromeda.rutgers.edu/~hyde/WEALTH.htm> (copy on file with the North Carolina Law Review) [hereinafter *Silicon Valley*].

288. See Gilson, *supra* note 277, at 587 (noting that Silicon Valley firms far surpassed Route 128 firms in increased employment, use of technology, and exports).

289. See *id.* at 590–91.

moved among firms, began start-up companies, and developed personal and professional relationships that cut across companies and competitors.²⁹⁰

Professor Gilson and Professor Hyde suggest that the performance of Silicon Valley is a function of California's legal infrastructure, which generally did not limit employee mobility as strictly as did Massachusetts.²⁹¹ They agree that the dynamic of employee mobility promoted economic performance of the Silicon Valley region as a whole.²⁹² The movement of employees between firms allowed companies to specialize. Small, specialized firms succeeded because they were able to utilize a network of associates who worked for suppliers or who were customers, relying on them to provide needed products and services.²⁹³ Freed from the need to vertically integrate or become a technological leader in all phases of production, entry into the market was less costly. On the whole, the computer industry in Silicon Valley benefited from knowledge spillovers between companies, which enhanced innovation and flexibility.²⁹⁴ The broader community thus reaped benefits when employers had access to the knowledge of, and services from, experienced employees who may have been hired away from other firms.²⁹⁵ This real-life experiment illustrates the benefits of maintaining effective, efficient use of information. As the California model illustrates, impeding employee mobility to protect employers' interests may conflict with the collective interest in economic growth, imposing significant costs on the community as well as on individual employees.²⁹⁶

290. See *id.* at 590; SAXENIAN, *supra* note 287, at 34–38 (noting that California business culture reflected nonlinear career patterns and a special status for entrepreneurs).

291. See Gilson, *supra* note 277, at 611–13 (attributing the success of Silicon Valley to the fact that California had sufficiently weakened trade secret protection); *Silicon Valley*, *supra* note 287 (attributing the success of Silicon Valley to a legal culture that effectively abolished trade secret law).

292. See Gilson, *supra* note 277, at 591.

293. See *id.* (noting California's advantage that success of a single firm did not depend on leading in technology at every stage of production).

294. See *id.* at 619 (noting that, in contrast to companies in Silicon Valley, firms along Route 128 in Massachusetts adjusted more slowly to market trends); see also Rebecca Achee Thornton & Peter Thompson, *Learning from Experience and Learning from Others: An Exploration of Learning and Spillovers in Wartime Shipbuilding*, 91 AM. ECON. REV. 1350, 1350 (2001) (reporting that data suggests learning spillovers are a significant source of productivity growth).

295. See Gilson, *supra* note 277, at 620.

296. Neel Chatterjee has noted that the statute may have additional anticompetitive effects because it can be purposefully used by those who hold trade secrets to reduce competition. See Chatterjee, *supra* note 212, at 890–92 (stating that the EEA creates

In sum, the EEA may directly restrain employees from seeking other employment opportunities, and indirectly limit mobility by discouraging potential employers from hiring experienced workers. When legal rules impede competition between employers for qualified workers in this way, the broader community interest in economic well-being is unlikely to be served. At first blush, it may seem odd to conclude that a statute that was designed to foster economic growth may actually retard growth. Yet a reduction in employee mobility can contribute to that effect. Another perverse consequence of the EEA is that it may ultimately cause a reduction in the amount of creative work that is produced.

B. The EEA May Reduce the Creation of Innovative Products and Ideas

This Article has shown that the EEA creates new rights by considering more information as a trade secret, specifically by including information that is not known by the general public and information that is electronically stored.²⁹⁷ The EEA also strengthens the rights of holders of trade secrets by giving them the right to utilize government power against interlopers. The right to invoke criminal authority of the federal government is a powerful weapon—a very large arrow in the proverbial quiver of property rights. The previous discussion showed how fear of that arrow can keep employees from moving to other firms and starting their own businesses.

In the same manner, the aversion to risk criminal charges can also keep second-generation innovators from using information that may be a trade secret. Because of the chilling effect of criminal law, innovators may believe that information subject to free use is a trade secret—even when it is not. Again, the fact that this determination is not made until trial enlarges this deterrent effect—prudent innovators will not want to risk the possibility that information they need is a trade secret. Moreover, expanding the rights of the trade secret holder may also ultimately lead to a reduction in the creation of innovative products as less information reaches the public domain where it may be used by other innovators.

incentives to use prosecution to keep competitors from entering the market and to reduce the cost of maintaining secrecy).

297. See *supra* notes 126–42 and accompanying text (discussing the definition of trade secret under EEA).

1. The EEA Changes Key Characteristics of Trade Secrets

Recall that common law rights in trade secrets are inherently precarious because holders of trade secrets are not guaranteed exclusive use of secret information.²⁹⁸ Unlike a patent holder, the holder of a trade secret has no recourse when others discover the secret information by fair and honest means, through independent invention, reverse engineering, or accidental disclosure. These limitations, as well as the normal attrition that occurs when trade secrets are licensed, products used, and employees move on, mean that trade secret law is inherently leaky, allowing information gradually to seep into the public domain.²⁹⁹

As Professor Dreyfuss points out, the leaky nature of trade secrets serves purposes that are consistent with public policy.³⁰⁰ Because subsequent creators eventually have access to trade secrets, the community obtains innovations in secondary uses of the protected information that can be valuable in a way that the original creator did not foresee.³⁰¹ In addition, thin trade secret protection helps to avoid an offset problem, in which the encouragement given to the creator of an information product is simply offset by higher costs and obstruction faced by subsequent creators, with no net benefit to the community.³⁰² The contingent nature of trade secrets thus serves important functions that may be undermined by a comprehensive property right in trade secrets, especially one enforced through federal criminal sanctions.³⁰³ The EEA, by broadening and strengthening rights in trade secrets, generally makes trade secret law less leaky so that secret information is not apt to reach the public domain.

A more specific way the EEA may make trade secrets less leaky is that it bars acts, such as copying, that are necessary to reverse engineer a product.³⁰⁴ Reverse engineering, a legally accepted

298. See *supra* notes 63–70 and accompanying text (discussing broad characteristics of common law trade secrets).

299. In the words of the Supreme Court, trade secret law operates as a “sieve.” *Kewanee Oil Co. v. Bicron Corp.* 416 U.S. 470, 490 (1974).

300. See Dreyfuss, *supra* note 246, at 33–36.

301. See *id.* at 34–35.

302. See *id.* at 34.

303. See *id.* at 36 (stating that the EEA makes trade secrets less contingent).

304. See *id.* at 15 (noting that read literally, the EEA prohibits specific methods of scrutiny, such as downloading, decompiling, and copying a software program); Pooley et al., *supra* note 30, at 192–93 (noting prohibited conduct and stating that the EEA prohibits a broader range of conduct than civil trade secret laws); Uhrich, *supra* note 50, at 150–69 (discussing the chilling effects that the EEA could have on creative efforts due to the

practice, is generally viewed as crucial to maintaining access to information;³⁰⁵ when knowledge is uncovered in this way, the holder's trade secret rights are not violated. If the EEA is interpreted to restrain reverse engineering, trade secret rights become more robust.

Outlawing reverse engineering would profoundly expand trade secret protection by significantly increasing the holder's rights in the information.³⁰⁶ Specifically, a ban on reverse engineering would lengthen the time in which trade secret holders can exploit the information and increase the likelihood that a trade secret could last forever. Criminalizing reverse engineering would block a major pipeline through which trade secrets eventually enter the public domain, leaving only independent discovery and use by others to effect this passage.

A ban on reverse engineering thus affects the public policy of intellectual property that favors disclosure by decreasing the likelihood that secret information will become available to the public.³⁰⁷ Congress arguably did not intend to outlaw reverse engineering, and the issue has not reached the courts.³⁰⁸ But even if courts eventually interpret the EEA to permit reverse engineering, the prospect of criminal penalties may well chill competitors from engaging in the practice because the statute would still seem to ban it. Either through over-deterrence or by making less material available, the EEA is likely to discourage second-generation innovators from using information that could be subject to trade secret protection.

confusion surrounding the legality of reverse engineering under the EEA); *supra* notes 158-62 and accompanying text (discussing conduct provisions).

305. Reverse engineering is the process of studying an item, the rights of which are held by another, in order to obtain a detailed understanding of the way in which it works. *See Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 476 (1974) (defining reverse engineering as a method that begins with the known product and works backward to divine the process that aided in its development or manufacture).

306. A ban on reverse engineering would eliminate its functional benefits, namely, spurring innovation, encouraging innovators to rely on patent and copyright protection, limiting lead time that trade secret law protects, and providing a means for second-comers to circumvent harsh or abusive licensing practices. *See* Charles R. McManis, *Taking Trips on the Information Superhighway: International Intellectual Property Protection and Emerging Computer Technology*, 41 VILL. L. REV. 207, 224 (1996).

307. *See* Friedman et al., *supra* note 171, at 70-71 (stating that comprehensively protecting trade secrets as property would be tantamount to a perpetual patent law without public disclosure).

308. Resolution of the issue is not entirely free from doubt. The language of the statute does not appear ambiguous, so courts would not find it necessary to refer to the legislative history. Even were they to do so, however, disposition of the issue is an open question. *See* 142 CONG. REC. S12,212-13 (1996) (statement of Sen. Kohl) (stating that the issue is whether the accused committed a prohibited act and endorsing a limited type of reverse engineering).

2. Strengthened Rights in Trade Secrets May Reduce Reliance on Patents

The broader and stronger rights provided by the EEA may tempt some holders of valuable secret information to rely less on patent law and more on trade secret protection. Trade secrets have always been an attractive option to developers of information products, whether from necessity or for reasons of expediency.³⁰⁹ Some developers may not be able to obtain a patent because the information at issue may not satisfy specific statutory requirements.³¹⁰ Even if the information is eligible for patent protection, developers may not always be able to afford, or be willing to spend, the time and money necessary to secure a patent and, possibly, to defend it against infringement.³¹¹ Finally, they may not wish to disclose any information, a necessary step in obtaining a patent, or want to relinquish the right of exclusive use when the statutory patent term expires.

Unlike patented information, trade secret protection—at least in theory—can last forever. Patents offer a stronger set of rights against others, but for a short and fixed term. Thus, trade secrets have been viewed as complementing patent law.³¹² The EEA moves that complementary function nearer to an alternative and competing substitution for patent law. By strengthening rights in trade secrets, Congress has added a significant incentive that is likely to encourage some innovators to rely less on patent law and more on trade secret law. Were this to occur, because a trade secret may last forever and because the holder has no obligation to disclose information, less information would enter the public domain.

This consequence is clearly contrary to the federal policy favoring disclosure that is expressed in copyright and patent laws. The Supreme Court, in seeking to maintain the balance between trade secrets and patents and copyrights, has registered concern with

309. See Deutch, *supra* note 60, at 313 (noting the increased importance of trade secret law because it is more flexible and general and therefore more easily applied to new technologies); Friedman et al., *supra* note 171, at 63 (explaining circumstances in which an inventor may prefer trade secret protection).

310. See 35 U.S.C. §§ 101–103 (1994) (defining patentable inventions, setting conditions for novelty and loss of right to patent, and setting conditions for non-obviousness); *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 476–77 (1974) (outlining the requirements of novelty, utility, and non-obviousness for patent protection).

311. See *Rockwell Graphic Sys., Inc. v. DEV Indus., Inc.*, 925 F.2d 174, 180 (7th Cir. 1991) (commenting that patent protection is “costly and temporary”).

312. See JOYCE ET AL., *supra* note 63, at 10.

such a reordering of protection.³¹³ Despite existing statutory policy and the Court's concern, Congress may have inadvertently tipped the balance toward use of trade secrets and away from the use of patents.³¹⁴

The creation of new work typically involves, to some extent, borrowing or building on prior work, and it is important to add information to the public domain, where it is available for use by others.³¹⁵ But greater reliance on trade secret protection has the opposite effect. At a minimum, plugging the leaks in trade secret law by restraining employee movement, chilling second-generation innovation and reverse engineering, and relying less on patent law means it would take longer for information to reach the public domain. If subsequent inventors have to duplicate the work of others or pay licensing fees for longer periods than they would if the object was patented, strengthened rights in trade secrets will increase the cost of innovation.³¹⁶ Ultimately, the quantity and quality of information products may actually decline as the cost of producing new work increases.

Tracing in this way the likely effect of a powerful new incentive to use trade secrets is not unduly speculative. At the least, these predictions seem no more speculative than the underlying assumption

313. See *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 161 (1989) (invalidating state law that offered protection tantamount to patent law while avoiding rigorous requirements of patentability on the ground that such laws were a substantial threat to the patent system's ability to accomplish its mission of promoting progress in the useful arts); *Kewanee Oil Co.*, 416 U.S. at 489 (1974) (noting that if state laws presented a risk that holders of patentable inventions would not seek patents, the Court would be compelled to hold that the state system was unconstitutional). In *Kewanee* and *Bonito Boats*, the Court considered state laws, and its calculus might be different were it considering a federal trade secret law.

314. See *Kewanee Oil Co.*, 416 U.S. at 494 (Marshall, J., dissenting) (stating that trade secret protection is a "substantial disincentive" to procuring a patent and "thus deprives society of the benefits of public disclosure of the invention which it is the policy of the patent laws to encourage"); see also *McManis*, *supra* note 306, at 224 (noting that when trade secret protection becomes more attractive it can supplant reliance on patent and copyright protection).

315. See *Bonito Boats*, 489 U.S. at 146 (noting that "imitation and refinement through imitation are both necessary to invention itself and the very lifeblood of a competitive economy"); see also *Gordon*, *supra* note 209, at 167-68 (noting the synergy of intellectual life depends upon a vibrant public domain); *Landes & Posner*, *supra* note 231, at 332 (noting the importance of prior work in the creative process); *David Lange*, *Recognizing the Public Domain*, 44 *LAW & CONTEMP. PROBS.*, Autumn 1981, at 147, 178 (observing that a robust, constantly enriched public domain of material is a good in its own right, which laws should promote); *Jessica Litman*, *The Public Domain*, 39 *EMORY L.J.* 965, *passim* (1990) (stating that the public domain is a device that permits the system to work).

316. See *Landes & Posner*, *supra* note 231, at 332 (explaining how a diminished public domain ultimately increases the cost of producing new work).

of those who support increased protection, the assumption that a legal rule awarding a property interest is necessary to provide an incentive to create new information products.³¹⁷ Even if this is so, we may not need as strong a property interest as advocates have assumed.³¹⁸

In sum, the use of criminal law to regulate trade secrets is likely to chill subsequent innovators, create an incentive to rely on trade secret protection, decrease public disclosure, and diminish the amount of information in the public domain. Coupled with the possibility of lower levels of innovation and competition due to decreased employee mobility, the EEA may actually reduce economic well-being.

VI. THE ROLE OF CRIMINAL LAW IN REGULATING USE OF INFORMATION PRODUCTS

The preceding analysis of trade secret doctrine, the EEA, and its likely consequences, raises significant doubts about using criminal law to protect trade secrets.³¹⁹ The implications that flow from this

317. See Besen & Raskind, *supra* note 231, at 3 n.1 (expressing doubt about the efficiency properties of intellectual property law); Mark A. Lemley, *Romantic Authorship and the Rhetoric of Property*, 75 TEX. L. REV. 873, 902–03 (1997) (book review) (expressing doubt that the Chicago school's emphasis on property "maps well onto intellectual property" and noting negative implications for public domain).

318. Contrary claims indicate the need for research. See Besen & Raskind, *supra* note 231, at 24 (noting economic analysis of trade secret protection would illuminate public policy interests and suggesting research topics).

Many questions remain unanswered. See BOYLE, *supra* note 216, at 42–45 (noting the failure of economists to determine whether the market produces too much or too little information); Lemley, *supra* note 317, at 877 n.23 (noting that economists have been unable to determine the effects of commodifying information).

For a summary of pertinent research on the effects of patent law, see Raskind, *supra* note 259, at 67–77. A random sample would include Janusz A. Ordover, *A Patent System for Both Diffusion and Exclusion*, 5 J. ECON. PERSP. 43, *passim* (1991) (considering ways of adjusting the patent system to provide returns and encourage diffusion); Mark Schankerman & Suzanne Scotchmer, *Damages and Injunctions in Protecting Intellectual Property*, 32 RAND J. ECON. 199, 219 (2001) (concluding that unjust enrichment damages may be a superior deterrent to a property rule in certain circumstances); Suzanne Scotchmer, *Standing on the Shoulders of Giants: Cumulative Research and the Patent Law*, 5 J. ECON. PERSP. 29, *passim* (1991) (analyzing the complex effects of patent protection when innovation is cumulative); Steven Shavell & Tanguy Van Ypersele, *Rewards Versus Intellectual Property Rights*, 44 J.L. & ECON. 525, *passim* (2001).

319. The issues identified here do not exhaust the effects and influence of the EEA. As the first and only federal law that deals with trade secrets in the private sector, the EEA and the criminal adjudications interpreting it will develop a federal law of trade secrets. The property emphasis of the EEA is likely to channel development of trade secret doctrine away from its roots in the law of unfair competition and may lead to stronger protection by the states. The EEA may also lead states to strengthen their

conclusion concern the use of criminal law to protect other information products and raise the prospect of relying on civil law to protect limited rights in information.

Whether that civil law should be a federal one is a logical follow-up question. The EEA is a flawed first step in the development of a federal law of trade secrets. Nevertheless, it may be the catalyst for a civil federal law of trade secrets that balances more evenly the need to protect trade secrets with other important public policies and with the rights of others.

A. *Criminal Law and Trade Secrets*

Trade secret doctrine is generally based on the view that interference with a trade secret is a species of unfair competition, and common law protects limited rights in trade secrets.³²⁰ In contrast, the EEA is based on a property conception.³²¹ The assumptions that flow from the property designation avoid the need to account for the limited scope of common law rights in trade secrets. Accordingly, the EEA expands and strengthens rights in trade secrets by broadening both the kind of information that is protected and the type of conduct that is suspect.³²²

The breadth of potentially protected material, combined with the use of criminal sanctions, produces a tension with two public policies and may result in unintended consequences that undermine Congress's purpose of fostering economic growth.³²³ As developed earlier, the EEA is likely to reduce movement of employees among firms, a possibility that has serious effects on rights of employees and on prospective employers. In addition, the economic performance of Silicon Valley shows how a less restrictive legal infrastructure can encourage regional economic expansion that benefits the general community. The EEA may also chill second-generation innovation and lead some innovators to rely less on patent law, which provides a limited term of protection and requires some disclosure of information. This result is inconsistent with the public policy that seeks a balance between encouraging innovation and maintaining effective use of information and knowledge. The costs of stimulating

criminal laws by broadening coverage and increasing penalties. The view that trade secrets are property may also subdue consideration of trade secret doctrine. *See, e.g.*, Bone, *supra* note 171.

320. *See supra* notes 176–213 and accompanying text.

321. *See supra* notes 244–61 and accompanying text.

322. *See supra* notes 126–70 and accompanying text.

323. *See supra* notes 262–318 and accompanying text.

innovation by strengthening rights in secret information may thus outweigh the benefit of any stimulative effect.³²⁴

It is worth considering whether amending the EEA could reduce or eliminate its negative consequences. To give the EEA's definition of a trade secret more clarity, the benchmark of secrecy might be competitors' knowledge of the secret information, rather than the knowledge of the general public. Congress might also limit the conduct provisions to a narrower range of acts, such as breach of confidence, rather than any unauthorized use.³²⁵ These changes ground the offense in unfair competition law and make the EEA consistent with state laws. To encourage future innovation and to make clear that such conduct is lawful, a proviso could explicitly except acts undertaken for the purpose of reverse engineering or other lawful means of discovery.³²⁶ Changes such as these do not unreasonably divest holders of rights in trade secrets. Rather, they reflect the traditional limited rights in trade secrets that are consistent with other existing public policies.

Nevertheless, even if such changes to the EEA were made, it is doubtful they would overcome the chilling effects on lawful behavior caused by the threat of federal penal sanctions. Some measure of ambiguity is inherent in the concept of trade secrets, which depend upon factors such as an owner's efforts and the commercial value of the secret. Yet when the subject matter is ill-defined and not identified until trial, and when the conduct is similar to lawful competitive practices, some measure of over-deterrence appears unavoidable.³²⁷ To paraphrase a Supreme Court observation made

324. Problematic constitutional issues also impose other sorts of costs. See *United States v. Hsu*, 40 F. Supp. 2d 623, 625-26 (E.D. Pa. 1999) (raising constitutional vagueness and due process issues). Another opinion in the same case points to issues involving criminal law doctrine. See generally *United States v. Hsu*, 155 F.3d 189 (3d Cir. 1998) (considering attempt, conspiracy, and legal impossibility). Although meaningful discussion of these issues must necessarily await another day, it is useful to register that economic harm is not the only unintended consequence of the EEA.

325. This change would bring to the forefront the fundamental issue of when breach of confidence or contract is sufficiently immoral to justify criminal penalties. See generally Bone, *supra* note 171 (concluding that trade secret doctrine is best justified as a contract matter); Stuart P. Green, *Why It's a Crime to Tear the Tag Off a Mattress: Overcriminalization and the Moral Content of Regulatory Offenses*, 46 EMORY L.J. 1533 (1997) (considering the moral basis for regulatory crimes).

326. See Urich, *supra* note 50, at 186 (proposing an amendment to the EEA that explicitly permits reverse engineering).

327. Judicial constructions that limit the scope of the statute may not decrease overdeterrence. See *supra* note 308 and accompanying text (explaining why a judicial limitation regarding reverse engineering may not cure overdeterrence).

with regard to copyright, trade secrets do not “easily equate with theft.”³²⁸

B. The Prospects for Using Criminal Law to Enforce Rights in Other Information Products

These observations about the EEA and trade secrets are relevant to the criminal enforcement of rights in other kinds of information products. One lesson of the EEA is that it is wise to resist using criminal sanctions to protect products based on information or knowledge. Although the conclusions drawn as to the EEA will not always apply with the same force to other contexts,³²⁹ the judicious course is to proceed with a presumption against imposing criminal penalties. Thus, Congress might reconsider the criminal provisions in new statutes dealing with copyrights³³⁰ and databases.³³¹ A more constructive strategy is to evaluate the efficacy of such civil provisions before endorsing criminal sanctions.

If criminal enforcement is eliminated, narrowed, or limited to egregious cases,³³² it becomes necessary for holders of trade secrets to

328. See *Dowling v. United States*, 473 U.S. 207, 216–17 (1985). To continue the analogy to copyright, trade secrets are also not an “ordinary chattel”; a trade secret “comprises . . . [a] delimited interest[] to which the [common] law affords correspondingly exact protections.” See *id.* at 216.

329. For example, the concern with employee mobility may have limited applicability to material protected by patent and copyright because employers may not profit from use of such protected material even if it was obtained lawfully. On the other hand, criminal penalties for copyright infringement raise other issues such as a tension between rights under copyright law and the First Amendment rights of users.

330. Criminal provisions in the Digital Millennium Copyright Act provide penal sanctions for devising and publishing methods that circumvent measures taken to protect copyrighted work against copying. See 17 U.S.C. §§ 1201–1202, 1204 (2000); *supra* note 12 and accompanying text (discussing arrest of Russian programmer).

In 1997, Congress broadened criminal copyright infringement to include reproducing or distributing within 180 days work exceeding a retail value of \$1,000. See No Electronic Theft (NET) Act, Pub. L. No. 105-147, 111 Stat. 2678 (1997) (codified at 17 U.S.C. § 506(a)(2) (2000)). For useful commentary on changes to criminal copyright infringement provisions, see generally Lydia Pallas Loren, *Digitization, Commodification, Criminalization: The Evolution of Criminal Copyright Infringement and the Importance of the Willfulness Requirement*, 77 WASH. U. L.Q. 835 (1999).

331. Proposed legislation that would protect rights in databases includes a criminal provision. See H.R. REP. NO. 106-349, pt. 1, at 12 (1999) (providing criminal penalties for willful violations).

332. The standard for determining egregious cases is somewhat problematic. Congress could condition criminal enforcement upon some minimum loss, although a bright-line limit may mean some cases of serious harm could not be prosecuted.

An early version of the EEA limited its reach to information that was worth more than \$100,000. See S. REP. NO. 104-359, at 15 (1995) (referring to draft bill that applied to proprietary economic information with a value of at least \$100,000). *Cf.* 18 U.S.C.

rely on civil law. This course is not without advantages. Civil remedies, which include punitive damages for willful conduct, are far less likely to deter legitimate conduct.³³³ The record of economic growth indicates that civil remedies appear to motivate adequately the creation of new products, while not over-compensating in a way that inhibits long-term innovation and economic growth. Civil remedies more effectively address the real harm that results when an information product is taken: the loss of value to its holder. When information is misappropriated, the original holder still possesses the information and may continue to use it. Because the owner has lost only exclusive use of the information, the loss is the diminished value that follows when others may use it. Civil remedies more precisely account for this harm because economic loss is a litigated issue.³³⁴ On the whole, civil law is more likely to produce a nuanced solution that takes into account the rights of others and the public policy of promoting efficient use of knowledge and information.

Greater reliance on civil law raises the question of whether that law should be federal. Recommendations of a federal civil law of trade secrets have emphasized the need for uniformity and compliance with international treaties.³³⁵ This Article suggests another reason, that there is some tension between current trade secret laws and the public policy that supports intellectual property laws.³³⁶ State courts hearing state claims are generally not in a

§ 1030(c) (2000) (providing differential penalties for computer fraud depending on whether it is a first or second offense); *id.* § 2319 (b)–(c) (providing penalties for criminal copyright infringement that depend upon retail value and whether offense is a first one).

333. See Chatterjee, *supra* note 212, at 898 (arguing that punitive damages would sufficiently deter others).

334. The problem of measuring diminished value, in both civil and criminal contexts, merits attention. Estimates of a reasonable royalty or license fee have been criticized as speculative. Replacement cost based on the victim's original cost may not be appropriate when present replacement costs are far less than original cost, and a thief's market price may be too low. See Savage, *supra* note 56, at 18; see also John T. Cross, *Trade Secrets, Confidential Information, and the Criminal Law*, 36 MCGILL L.J. 524, 558 (1991) (discussing monopoly value); Moohr, *supra* note 20, at 738 (reviewing problems in ascertaining value of information); Kent Walker, *Federal Criminal Remedies for the Theft of Intellectual Property*, 16 HASTINGS COMM. & ENT. L.J. 681, 684 (1994) (noting that the sentencing guidelines use "retail value," which generally exceeds a defendant's loss or gain).

335. See Lao, *supra* note 71, at 1636–39 (reviewing choice of law problems resulting from lack of uniform law and United States treaty obligations); Pace, *supra* note 71, at 442–56 (basing recommendation on need for uniformity and international treaties).

336. The Supreme Court in *Kewanee* reasoned that a conflict between patent and trade secret law was remote because trade secret law provides "a far weaker protection" than patent law. *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 489–90 (1974); see also *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 155 (1989) (affirming reasoning of

position to ascertain an inconsistency or to resolve it.³³⁷ A carefully drafted federal civil law of trade secrets could ensure that trade secret protection is consistent with the public policy underlying intellectual property laws.³³⁸

This suggestion is not made lightly. It is offered in full recognition of significant preliminary issues—both doctrinal³³⁹ and political³⁴⁰—that must be resolved and that may, in the end, lead to foregoing a federal solution. Nevertheless, a considered evaluation of the proposal would be useful, if only to ascertain whether current trade secret doctrine and practices have surpassed the rationale that has allowed the states to guide its development.

CONCLUSION

In enacting the EEA, Congress harnessed two powerful legal tools—property law and criminal law—to safeguard innovative information products. But the enhanced property rights in trade secrets and the powerful threat of criminal sanctions are likely to produce unintended consequences that undermine public policies encouraging competition, employee mobility, and the effective use of information products. Instead of a broad property conception of trade secrets enforced through penal sanctions, we need a nuanced conception of trade secrets that accounts for the public policy of

Kewanee). To the extent that trade secret protection has expanded since 1974, that calculus may now be different.

337. *But see* *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 515 So.2d 220, 221, 223 (Fla. 1987) (striking down Florida law because it conflicted with federal patent law), *aff'd*, 489 U.S. 141 (1989).

338. For example, work by Professor Reichman, focusing on trade secrets that are eligible for patent protection, presents an integrated analysis of the intellectual property paradigm and trade secret law. *See generally* Reichman, *supra* note 231.

Constitutional consistency may also require attention. *See* *United States v. Moghadam*, 175 F.3d 1269, 1279–80 (11th Cir. 1999) (stating that “in some circumstances the Commerce Clause cannot be used to eradicate a limitation placed upon Congressional power in another grant of power”), *cert. denied* 529 U.S. 1036 (2000); Dreyfuss, *supra* note 246, at 16 n.53 (stating it is unlikely that Supreme Court would allow Congress to avoid constitutional limitation of limited term for intellectual property by utilizing Commerce Clause, citing precedent from bankruptcy law).

339. This suggestion includes scrutinizing existing civil law standards and practices to determine their consistency with intellectual property policy rather than simply incorporating current standards into federal law.

340. *See* Lao, *supra* note 71, at 1695 (recommending a pre-emptive federal trade secret law in interest of uniformity); Pace, *supra* note 71, at 468 (concluding that federal preemption of state trade secret law is necessary to prevent states from “protecting non-patentable innovations from independent discovery or reverse engineering, or allowing special protection for innovations generally regarded as being in the public domain”).

maintaining a vibrant public domain and that recognizes the long-term benefits of using information developed by others.

