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## A New Look at Trade Secret Law: Doctrine in Search of Justification

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# A New Look at Trade Secret Law: Doctrine in Search of Justification

Robert G. Bone

*Trade secret law is an anomaly in intellectual property. It focuses on relationally specific duties and imposes liability only when the means of appropriation is wrongful, where wrongfulness is mainly determined by reference to independent legal norms. This article provides an explanation for these anomalies and discusses some of the implications for trade secret reform. Simply put, the thesis is that there is no such thing as a normatively autonomous body of trade secret law; that trade secret law is mainly just a collection of other legal norms. Nothing in the idea of a trade secret as such—neither the fact that it is information nor the fact that it is secret—provides a convincing reason to impose liability in the way modern trade secret law does. To support this thesis, the author surveys the history of trade secret law and then critically examines the various policy justifications offered by courts and commentators. He concludes that the formalistic roots of the doctrine offer no support for its application today, and that modern policy arguments fail to make a convincing case except possibly in a few limited situations. As a result, trade secret liability should be governed mainly by contract principles.*

## INTRODUCTION

Trade secrets are among the most valuable assets firms own today, and many courts and commentators believe that the law of trade secrets is crucial to the protection of intellectual property.<sup>1</sup> Yet trade secret law is an anomaly. Copyright, patent, trademark, publicity rights, and various unfair competition torts all confer property rights against the world, rights that bind persons having no prior relationship to the right-holder and that prohibit appropriation and use without regard to how the information is obtained. For example, copyright law imposes liability for copying even when the copier is a stranger to the copyright owner and

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1. See, e.g., *Rockwell Graphic Sys., Inc. v. DEV Indus., Inc.*, 925 F.2d 174, 180 (7th Cir. 1991) (stressing the importance of intellectual property and trade secret law); Michael A. Epstein & Stuart D. Levi, *Protecting Trade Secret Information: A Plan For Proactive Strategy*, 43 BUS. LAW. 887, 887 (1988) (noting the economic importance of trade secrets); David D. Friedman et al., *Some Economics of Trade Secret Law*, 5 J. ECON. PERSP. 61, 62 (1991) (arguing the efficiency of trade secret law); Gale R. Peterson, *Trade Secrets in an Information Age*, 32 HOUS. L. REV. 385, 386-87 (1995) (noting the importance of trade secret law to the computer industry).

obtains the work lawfully. Patent law also applies to strangers, imposing liability even when the defendant independently comes up with the same invention. And trademark law holds strangers liable for perfectly innocent adoption of a confusingly similar mark.

Trade secret law is fundamentally different. It does not impose liability for mere appropriation.<sup>2</sup> Rather, the appropriator must have acquired, disclosed, or used the information in a wrongful manner.<sup>3</sup> For example, a person is liable if he uses or discloses trade secret information in violation of a duty of confidence or after acquiring the information by theft or fraud.

Furthermore, unlike other intellectual property theories, trade secret law is based at its core on the breach of relationally specific duties. The majority of trade secret cases involve disloyal employees who use or disclose their employers' secrets in violation of a duty of confidence stemming from the employer-employee relationship.<sup>4</sup> Although strangers are sometimes held liable, such as when they acquire secret information by theft, these cases are not as numerous or as salient as the relational cases.<sup>5</sup>

The relational focus of trade secret's liability rules aligns trade secret law more closely with the law of contract than with the law of property. Yet courts treat trade secret law as distinct from contract.<sup>6</sup> While a trade secret agreement matters when it exists, courts do not necessarily feel obliged to enforce such an agreement according to its terms.<sup>7</sup>

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2. See 1 MELVIN F. JAGER, *TRADE SECRET LAW* § 3.03, at 3-47 (1996) ("Unlike a patent owner, a person who possesses a trade secret does not have an exclusive right to the information."); Friedman et al., *supra* note 1, at 62 (noting that most of trade secret law is based on independent common law wrongs, such as breach of contract and theft, rather than on infringement of rights in the information itself).

3. See *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 475-76 (1974).

4. See 1 ROGER M. MILGRIM, *MILGRIM ON TRADE SECRETS* § 5.02[1] (1996) ("The rights and duties arising from the employer-employee relationship are the context of the great majority of reported trade secret cases.").

5. For example, one major treatise on trade secret law organizes its presentation of the subject around relational duties and devotes two chapters to the employment relationship. See 1 MILGRIM, *supra* note 4, at ch. 3 (quasi-contract or confidential relationship), ch. 4 (contract), ch. 5 (employment relationship), ch. 6 (employee agreements), ch. 7 (other relationships).

6. Not only is trade secret law classified with other intellectual property laws, but trade secrets themselves are treated as property capable of free transfer and devise. See *Carpenter v. United States*, 484 U.S. 19, 25-28 (1987) (finding that confidential information is "property" for purposes of a criminal conviction under the federal mail and wire fraud statute); *Ruckelshaus v. Monsanto Co.*, 467 U.S. 986, 1002-04 (1984) (holding that trade secrets are "property" for purposes of the Constitution's prohibition against takings without just compensation).

7. See *American Paper & Packaging Prod., Inc. v. Kirgan*, 228 Cal. Rptr. 713, 717 (Cal. Ct. App. 1986) ("An agreement between employer and employee defining a trade secret may not be decisive in determining whether the court will so regard it."); *Electro-Craft Corp. v. Controlled Motion, Inc.*, 332 N.W.2d 890, 903 (Minn. 1983) (noting that no duty of confidentiality could attach to employer-employee relationship, despite express confidentiality agreement, unless court also found information to be a trade secret); 1 MILGRIM, *supra* note 4, § 4.02[1][b] ("The mere presence of a

Moreover, courts are willing to impose confidentiality duties as a matter of law in the absence of a contract,<sup>8</sup> and they sometimes hold strangers liable without any basis for a relational duty at all.<sup>9</sup> In fact, judges seem to view trade secret law as a relatively open-ended delegation of authority to police the morality of commercial relationships.<sup>10</sup>

This Article offers an explanation for these anomalies and discusses some of the implications for reform of trade secret law. Simply put, the thesis is that there is no such thing as a normatively autonomous body of trade secret law. Rather, trade secret law is merely a collection of other legal norms—contract, fraud, and the like—united only by the fact that they are used to protect secret information. Neither the fact that a trade secret is information nor the fact that it is secret provides a convincing reason to impose liability for a nonconsensual taking. Trade secret law in this sense is parasitic: it depends on a host theory for normative support.<sup>11</sup>

The reason we have a body of trade secret law with special rules is largely a matter of historical contingency. Trade secret law took shape in the late nineteenth century, and its doctrinal structure developed in response to formalistic conceptions of possession and ownership that were popular at the time.<sup>12</sup> We inherited the doctrine, but rejected its formalistic justification. The result is a normative vacuum that continues to remain unfilled.

I propose that we stop seeking a functional justification for trade secret law and recognize this body of law for what it really is—a

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confidentiality agreement does not elevate nontrade secret matter to trade secret status.”); Edmund W. Kitch, *The Law and Economics of Rights in Valuable Information*, 9 J. LEG. STUD. 683, 689-90 (1980) (“Courts will accept . . . agreements as evidence that the firm valued the information and attempted to preserve its secrecy, but they decide for themselves whether the information should actually be protected.”).

8. See 1 MILGRIM, *supra* note 4, § 3.01 (noting that courts impute confidentiality duties either as a matter of quasi-contract or as an inherent aspect of the particular relationship).

9. See *E.I. duPont deNemours & Co. v. Christopher*, 431 F.2d 1012 (5th Cir. 1970) (recognizing a trade secret cause of action against a stranger for taking an aerial photograph of a secret area).

10. See *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 481-82 (1974) (“The maintenance of standards of commercial ethics and the encouragement of invention are the broadly stated policies behind trade secret law.”); *Drill Parts & Serv. Co., Inc. v. Joy Mfg. Co.*, 439 So.2d 43, 49 (Ala. 1983) (Alabama Supreme Court adopting the law of trade secret for the first time and noting that it protects generally against breach of faith and reprehensible means of learning another’s secret); *Abbott Lab. v. Norse Chem. Corp.*, 147 N.W.2d 529, 533 (Wis. 1967) (“The basis of the doctrine [of trade secret law] is an attempt to enforce morality in business.”); 1 JAGER, *supra* note 2, § 1.03, at 1-4 to 1-8 (“The encouragement of increasingly higher standards of fairness and commercial morality continues to be the touchstone of trade secret law in the courts.”). See generally Don Wiesner & Anita Cava, *Stealing Trade Secrets Ethically*, 47 MD. L. REV. 1076 (1988) (discussing the use of trade secret law to enforce commercial ethics).

11. For example, in cases involving breach of contract, the reasons for enforcing contracts are the reasons—and the only persuasive reasons—for imposing trade secret liability.

12. See *infra* Part II.A.

collection of other legal wrongs. With this insight, much of trade secret law becomes comprehensible, especially its parasitic quality. At the same time, however, much of its doctrinal structure becomes difficult to justify.

The main body of this Article is divided into five Parts. Part I briefly summarizes current trade secret law for readers unfamiliar with the subject. Part II traces the history of modern trade secret law back to its origins in the mid-nineteenth century, focusing on the legal ideas and beliefs that made sense of protecting secrets. For many nineteenth century jurists, trade secret law was a logical embodiment of natural principles of property, and these principles gave the doctrine its distinctive shape.

Parts III, IV, and V critically examine the modern policy justifications for trade secret law, including arguments from economic efficiency, theories of rights and fairness, and conventionally accepted norms. In the end, none of these arguments is persuasive. Those who tout economic efficiency either ignore the broader legal context within which trade secret law operates or fail to take into account all the costs of a trade secret system. Those who argue from rights and fairness are unable to identify a right or a coherent conception of fairness that fits trade secret law. And those who point to conventional norms—so-called “generally accepted standards of commercial morality and reasonable conduct”<sup>13</sup>—do so without citing empirical support for the conventions they invoke and without explaining why trade secret remedies are needed to enforce these norms.

Part VI then discusses some of the more important implications of the analysis for reform of trade secret law. I argue that trade secret law should not be expanded beyond the limits of its host theories (contract, theft, and the like). This means that cases imposing liability without violation of an independent legal norm are misguided.<sup>14</sup> Furthermore, courts should not recognize confidential relationships apart from those created by express contract or justified as contract default rules, since nothing about trade secrets as such justifies broader protection. Also, courts should not strictly enforce the requirement of reasonable secrecy safeguards, or even secrecy itself, when liability is based on breach of a contract that does not include such terms—unless doing so can be justified as a default rule or a prophylactic measure for assuring meaningful consent. Contrary to the popular view, trade secret law is not essential to

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13. RESTATEMENT (FIRST) OF TORTS § 757, cmt. f (1939); *see also* College Watercolor Group, Inc. v. William H. Newbauer, Inc., 360 A.2d 200, 205 (Pa. 1976).

14. This includes the much celebrated case of *E.I. duPont deNemours & Co. v. Christopher*, 431 F.2d 1012 (5th Cir. 1970).

the protection of intellectual property; in fact, most of its benefits are better achieved through contract.

# I

## WHERE WE ARE TODAY—A BRIEF SUMMARY OF CURRENT TRADE SECRET LAW

Since its emergence in the middle of the nineteenth century, trade secret law has developed primarily as a creature of state common law. The First Restatement of Torts, published in 1939,<sup>15</sup> extracted a relatively clear definition and a set of liability rules from a confusing body of precedent.<sup>16</sup> Perhaps because of its clarity, the Restatement's formulation has become very popular with the courts.<sup>17</sup> In recent years, due mainly to the influence of the Uniform Trade Secrets Act,<sup>18</sup> most states have enacted statutes codifying the traditional common law rules.<sup>19</sup> The most recent effort to organize trade secret doctrine is the American Law Institute's Third Restatement of Unfair Competition, published in 1995.<sup>20</sup>

Although trade secret doctrine varies from state to state, the general rules are substantially similar in all jurisdictions. To establish liability for trade secret infringement, the plaintiff must show: (1) the information qualifies as a "trade secret," and (2) the defendant acquired, used, or disclosed the information in breach of confidence or by other improper means.

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15. RESTATEMENT (FIRST) OF TORTS § 757 (1939).

16. As late as 1939, the year of the Restatement's publication, one commentator noted that trade secret law had not yet "crystallized around any particular pattern." William B. Barton, *A Study in the Law of Trade Secrets*, 13 U. CINN. L. REV. 507, 558 (1939); see also Note, *Equitable Protection of Trade Secrets*, 23 COLUM. L. REV. 164 (1923) (noting the conflicting legal theories for trade secret protection and arguing that the doctrine can be reduced to a core policy tension) [hereinafter Note, *Equitable Protection*]; Note, *Nature of Trade Secrets and Their Protection*, 42 HARV. L. REV. 254 (1928) (noting the conflicting legal theories justifying trade secret protection and the limitations of a property rationale) [hereinafter Note, *Nature of Trade Secrets*].

17. See 1 JAGER, *supra* note 2, § 3.02, at 3-37 to 3-38 ("In fact, the Restatement of Torts analysis, despite some flaws, has become an almost universal starting point for defining the rights and liabilities of the parties in trade secret cases.").

18. UNIF. TRADE SECRETS ACT, 14 U.L.A. 433 (1985). The National Conference of Commissioners on Uniform State Laws drafted the Act, and the American Bar Association approved it in 1979. See William E. Hilton, *What Sort of Improper Conduct Constitutes Misappropriation of a Trade Secret*, 30 IDEA J.L. & TECH. 287, 288 n.3 (1990).

19. See Hilton, *supra* note 18, at 290-91 & App. B (noting that thirty-nine states have trade secret statutes providing for civil remedies, most of which are based in whole or in part on the Uniform Act, and that some have statutes providing for criminal sanctions). However, some states, like New York, still rely exclusively on the common law. See *id.* at 291. Moreover, in 1996, Congress responded to reports of huge losses from trade secret theft by creating federal criminal penalties for trade secret misappropriation to supplement state civil remedies. See Economic Espionage Act, 18 U.S.C. §§ 1831-1839 (1996).

20. See RESTATEMENT (THIRD) OF UNFAIR COMPETITION §§ 39-45 (1985).

### A. Information That Qualifies as a Trade Secret

To qualify as a trade secret, information must meet three requirements: (1) it must confer a competitive advantage when kept secret; (2) it must be secret in fact; and (3) in many states, it must be protected by reasonable secrecy safeguards.<sup>21</sup> The competitive advantage requirement is quite general. While most cases involve technological subject matter—such as the formula for Coca-Cola,<sup>22</sup> a process for making methanol,<sup>23</sup> or the dimensions of a robot-operated machine<sup>24</sup>—almost anything can qualify as a trade secret, provided it has the potential to generate commercial value.<sup>25</sup> Courts have protected subject matter as varied as customer lists,<sup>26</sup> pricing information,<sup>27</sup> business methods and plans,<sup>28</sup> and marketing research data.<sup>29</sup>

Moreover, trade secret law protects unpatentable as well as patentable information.<sup>30</sup> Unlike patent law, which only protects inventions that are “nonobvious,”<sup>31</sup> trade secret law protects all inventions that confer a competitive advantage, even ones that are not especially new.<sup>32</sup>

The second requirement, actual secrecy, captures the essence of trade secret protection. Secrecy need not be absolute.<sup>33</sup> Firms can share secret information with employees and others when necessary to exploit the information's commercial value, provided the firm takes precautions

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21. See 1 MILGRIM, *supra* note 4, §§ 1.03-1.04. Some states recognize other requirements: for example, that the information be continuously used in the plaintiff's business, that it be novel, and that it be sufficiently concrete. I discuss the continuous-use requirement below. See *infra* notes 40-42 and accompanying text. As to novelty, most courts follow the First Restatement of Torts in treating novelty as probative of secrecy rather than as a distinct requirement. See *Forest Lab., Inc. v. Formulations, Inc.*, 299 F. Supp. 202 (E.D. Wis. 1969); RESTATEMENT (FIRST) OF TORTS § 757, cmt. b (1939). Moreover, concreteness is usually treated as one factor among others relevant to delineating the contours and limits of the proprietary claim and the commercial value of the information being protected. See 1 JAGER, *supra* note 2, § 5.05.

22. See *Coca-Cola Bottling Co. of Shreveport, Inc. v. Coca-Cola Co.*, 227 U.S.P.Q. 18 (D. Del. 1985).

23. See *E. I. duPont deNemours & Co. v. Christopher*, 431 F.2d 1012 (5th Cir. 1970).

24. See *SI Handling Sys., Inc. v. Heisley*, 753 F.2d 1244 (3d Cir. 1985).

25. See 1 JAGER, *supra* note 2, § 3.02. For a general survey of the kinds of information that have been protected, see 1 MILGRIM, *supra* note 4, § 1.09.

26. See *Town & Country House & Home Serv., Inc. v. Newbery*, 3 N.Y.2d 554 (1958).

27. See *SI Handling*, 753 F.2d at 1244.

28. See *Clark v. Bunker*, 453 F.2d 1006 (9th Cir. 1972).

29. See *Western Electro-Plating Co. v. Henness*, 180 Cal. App. 2d 442 (1960).

30. See 1 MILGRIM, *supra* note 4, §§ 1.08[1]-1.08[2] (if an invention has sufficient novelty to qualify for patent protection, it necessarily can be protected as a trade secret, but a trade secret need not be patentable).

31. 35 U.S.C. §103 (1984). This means that the invention must be more than just an ordinary advance over the prior art. The test is whether a person “with ordinary skill in the relevant art” would find the invention obvious before it was invented. See *Dennison Mfg. Co. v. Panduit Corp.*, 475 U.S. 809 (1986); *Graham v. John Deere Co.*, 383 U.S. 1 (1966).

32. See 1 MILGRIM, *supra* note 4, § 1.08[2] (noting that some element of discovery is necessary to assure that the information cannot be easily acquired by others, so it can qualify as secret).

33. See *id.* § 1.07[2].



against unauthorized use and disclosure.<sup>34</sup> Moreover, a firm does not lose legal protection by marketing a product embodying the information, so long as the information cannot easily be extracted from the product.<sup>35</sup> However, if information is known by most of a firm's competitors, or can be easily discovered independently or by reverse engineering, it cannot qualify as a trade secret.<sup>36</sup>

In addition to competitive advantage and actual secrecy, most states also require that the owner of the trade secret take reasonable precautions to prevent disclosure.<sup>37</sup> Such precautions may include disclosing the secret only under a confidentiality agreement and on a need-to-know basis, constructing fences or walls to block public view, using passwords, and restricting employee access to sensitive areas.<sup>38</sup> However, there is no checklist of minimally acceptable secrecy precautions; instead, courts require that the precautions be reasonable under the circumstances.<sup>39</sup>

Some courts recognize a fourth requirement for liability: the information must be continuously used in the plaintiff's business.<sup>40</sup> In

34. *See id.* § 1.04 ("A trade secret does not lose its character by being confidentially disclosed to agents or servants, without whose assistance it could not be made of any value.").

35. *See id.* § 1.05[3].

36. *See Arco Indus. Corp. v. Chemcast*, 633 F.2d 435, 441 (6th Cir. 1980); 1 MILGRIM, *supra* note 4, §§ 1.05[2], 1.07[1].

37. *See Arco Indus.*, 633 F.2d at 443 (applying Michigan law); *Mirafi, Inc. v. Murphy*, 14 U.S.P.Q.2d 1337, 1349 (W.D.N.C. 1989) (applying North Carolina law); UNIF. TRADE SECRETS ACT § 1(4)(ii), 14 U.L.A. 433 (1985) (including in the definition of a trade secret that it must be "the subject of efforts that are reasonable under the circumstances to maintain its secrecy"); 1 MILGRIM, *supra* note 4, § 1.04 (cataloging measures courts have required); Michael J. Hutter, *Trade Secret Misappropriation: A Lawyer's Practical Approach to the Caselaw*, 1 W. NEW ENG. L. REV. 1, 17-20 (1978) (discussing the reasonable precautions requirement). A common justification for this requirement is that the plaintiff who takes no precautions does not give any indication that he treats the information as secret and therefore there is no reason for a court to treat it as secret either. *See J. T. Healy & Son, Inc. v. James A. Murphy & Son, Inc.*, 357 Mass. 728, 737-38 (1970).

38. *See Hutter, supra* note 37, at 20 ("The lessons of these cases seem clear. Plaintiff must establish at the very least that he or she pursued some of the following: Restricting outside visitors from the manufacturer's plant where the alleged trade secret is used; limiting access to it only to those who have a need to know; maintaining it in a secure location; and advising those who have access to it that it is confidential.").

39. The Third Restatement of Unfair Competition seems to treat reasonable secrecy safeguards as an evidentiary factor relevant to other liability elements such as the information's value and its actual secrecy. *See* RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 39 cmt. g (1995) (stating that "if the value and secrecy of the information are clear, evidence of specific precautions taken by the trade secret owner may be unnecessary").

40. *See Lehman v. Dow Jones & Co, Inc.*, 783 F.2d 285, 298 (2d Cir. 1986) (applying New York law); 1 MILGRIM, *supra* note 4, § 1.02 (discussing the requirement critically). The Restatement (First) of Torts popularized the requirement by including it in its definition of a "trade secret." *See* RESTATEMENT (FIRST) OF TORTS § 757 cmt. b (1939) ("A trade secret is a process or device for continuous use in the operation of the business."). The primary legal effect was to exclude abstract ideas, such as the general idea for a game or a television program, from trade secret protection. *See* 1 MILGRIM, *supra* note 4, § 1.02 (noting that use requirement distinguished idea submission cases

recent years, however, courts have relaxed or ignored this requirement.<sup>41</sup> In keeping with this trend, the Third Restatement of Unfair Competition and the Uniform Trade Secrets Act omit the requirement altogether.<sup>42</sup>

### *B. Improper Acquisition, Use or Disclosure*

Once information qualifies as a trade secret, the liability analysis shifts to the second prong: whether the defendant acquired, used, or disclosed the information by improper means. Improper means include breach of contract, violation of a confidential relationship, theft, bribery, misrepresentation, and other wrongs.<sup>43</sup> Trade secret law does not impose liability for mere copying; others are free to inspect a publicly available product or use reverse engineering to glean secret information from it.<sup>44</sup> In this respect, trade secret differs from patent and copyright law and even from its close cousin in state law, the tort of misappropriation.<sup>45</sup>

In general, courts find liability in three circumstances: (1) when the defendant breaches a duty of confidence arising from a contract or confidential relationship;<sup>46</sup> (2) when the defendant violates an independent legal norm (such as laws against trespass, fraud, or theft);<sup>47</sup> and (3) when the defendant appropriates the secret in a way that offends standards of commercial ethics.<sup>48</sup> However, these three categories leave considerable room for judicial discretion; trade secret law is potentially capable of reaching any conduct that strikes a judge as unethical.<sup>49</sup>

Moreover, third parties not in privity with the plaintiff can be held liable if they knowingly or negligently obtain trade secret information

from trade secret cases). In an abstract idea case, the plaintiff does not use the idea himself but instead tries to sell it to someone else.

41. See *Burten v. Milton Bradley Co.*, 763 F.2d 461 (1st Cir. 1985) (applying trade secret law to an idea submission case despite no continuous use).

42. See 1 JAGER, *supra* note 2, §§ 3.03[2], 3.05[6].

43. See *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 475-76 (1974); UNIF. TRADE SECRETS ACT § I(1), 14 U.L.A. 433 (1985) (defining "improper means"); Hilton, *supra* note 18, at 292 (enumerating proper and improper means); Hutter, *supra* note 37, at 22 (addressing the question of what constitutes improper means).

44. See *Kewanee Oil*, 416 U.S. at 476; Peterson, *supra* note 1, at 450-56. Moreover, those who learn the secret lawfully have trade secret rights of their own provided they too keep the information secret—at least until the information is discovered by too many people. See 2 MILGRIM, *supra* note 4, § 7.02[I][c].

45. See, e.g., *Board of Trade v. Dow Jones & Co.*, 98 Ill.2d 109 (1983).

46. See 1 MILGRIM, *supra* note 4, § 3.01 *et seq.*, § 4.01 *et seq.*

47. See Hilton, *supra* note 18, at 294-95; Hutter, *supra* note 37, at 22.

48. See Hilton, *supra* note 18, at 295-96; Hutter, *supra* note 37, at 22-24.

49. As one court described the improper means requirement:

"Improper" will always be a word of many nuances, determined by time, place, and circumstances. We therefore need not proclaim a catalogue of commercial improprieties. *E. I. duPont deNemours & Co. v. Christopher*, 431 F.2d 1012, 1017 (5th Cir. 1970).

from someone who acquired or disclosed it unlawfully.<sup>50</sup> Thus, when an employee leaves A, his first employer, and takes a trade secret to B, his new employer, B can be held liable for using A's trade secret despite B's lack of privity with A. But liability only attaches if B knew or should have known that the employee was under a duty to keep the information confidential.

Assuming the plaintiff establishes liability, she can obtain monetary damages, as well as injunctive relief prohibiting use and further disclosure.<sup>51</sup> Damages are measured by plaintiff's loss or defendant's profits attributable to the trade secret, or both if necessary to make the plaintiff whole. Depending on the jurisdiction, punitive damages and attorney's fees may be available as well. Furthermore, although not relevant to civil liability, it is worth mentioning that the federal government and many states have enacted statutes that impose criminal penalties for trade secret theft.<sup>52</sup>

## II

### HOW WE GOT WHERE WE ARE—AN INTELLECTUAL HISTORY OF TRADE SECRET LAW

The critical question for trade secret law always has been and continues to be: Why give legal protection to secret information? As I discuss later, this question had a relatively clear answer in the late nineteenth century, but the answer lost its power to persuade with the ascendancy of legal realism in the 1920s and 1930s. We have yet to find a satisfactory substitute.<sup>53</sup>

#### A. *The Emergence of a General Theory of Trade Secret Law*

Trade secret law as we know it today began to develop with the rise of industrial capitalism in the early nineteenth century.<sup>54</sup> It was not until mid-century, however, that a general theory began to take shape. Prior to 1860, courts simply dealt with specific legal issues in the course of deciding suits involving express agreements not to use or disclose secret

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50. See 2 MILGRIM, *supra* note 4, § 7.02; Hutter, *supra* note 37, at 33-34. Third parties without such knowledge can be held liable for using the information after receiving notice of the wrong, but some courts also require that the third party not be a bona fide purchaser or have materially changed its position before receiving notice. See Hutter, *supra* note 37, at 33-34.

51. For an overview of trade secret remedies, see 1 JAGER, *supra* note 2, §§ 7.01-7.05; Hutter, *supra* note 37, at 34-43.

52. See Economic Espionage Act of 1996, 18 U.S.C. § 1832; 3 MILGRIM, *supra* note 4, § 12.06.

53. See John C. Stedman, *Trade Secrets*, 23 OHIO ST. L.J. 4, 26-27 (1962) (noting that the many legal theories used to protect trade secrets lack a coherent policy rationale).

54. It appears that secrets might have received some protection in Roman law, although the matter is open to some dispute. See A. Arthur Schiller, *Trade Secrets and the Roman Law: The Actio Servi Corrupti*, 30 COLUM. L. REV. 837 (1930). In any event, this early form of protection is very different from the trade secret law we know today.

information. These issues included whether courts of equity had jurisdiction to grant injunctive relief (they did),<sup>55</sup> and whether agreements not to use or disclose were void as unlawful restraints on trade (they were not).<sup>56</sup> All these issues were decided on the basis of established legal principles, though they were decided with some difficulty due to the intangible nature of the new subject matter. No court tried to expound a general theory, but by the middle of the nineteenth century, there were enough suggestions in the opinions for a general theory to emerge.

The Massachusetts Supreme Judicial Court seized the opportunity to generalize in an 1868 opinion, *Peabody v. Norfolk*,<sup>57</sup> which is credited with crystallizing the law of trade secrets in the United States.<sup>58</sup> The plaintiff, Francis Peabody, invented a new process and machinery for making gunny cloth from jute butts. He built a factory and employed Norfolk as a machinist under a written contract that obligated Norfolk not to use or disclose the secret process. Some time later, Norfolk left Peabody's employment and joined with James Cook and others to build

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55. The earliest published cases, decided in England, expressed doubts about the existence of equity jurisdiction, but assumed that plaintiffs could seek a remedy at law for breach of contract. *See Newbery v. James*, 2 Mer. 446, 35 Eng. Rep. 1011, 1012-13 (Ch. 1817) (framing the issue in terms of the availability of specific performance and denying the decree because enforcement would disclose the secret); *Williams v. Williams*, 3 Mer. 157, 36 Eng. Rep. 61, 62 (Ch. 1817) (framing the issue in terms of specific performance and expressing doubts about jurisdiction). It did not take long, however, for English courts to resolve the issue in favor of jurisdiction, although they never quite agreed on the rationale. *See Morison v. Moat*, 9 Hare 241, 68 Eng. Rep. 492 (Ch. 1851) (observing that jurisdiction is well settled, but courts disagree on whether it is founded on breach of contract, breach of trust, or property).

56. *See Vickery v. Welch*, 36 Mass. 523, 527 (1837) (holding agreement not to use or disclose enforceable in connection with sale of a business); *Jarvis v. Peck*, 10 Paige Ch. 118, 125 (N.Y. Ch. 1843) (agreement not to use or disclose enforceable in connection with sale of a partnership interest). These early cases involved the sale or transfer of a business interest where secret information, such as a manufacturing process, was the most valuable asset. Because it was impossible for the transferor to erase the information from his mind, the only way to effect a transfer of the secret was for the transferor to agree not to use or disclose it after the transfer. The problem with enforcing these agreements, however, was that they seemed to impose a restraint on trade by impeding the seller's ability to compete. Nevertheless, courts upheld the agreements and even implied promises not to use or disclose when it was clear that the parties intended a transfer. *See Vickery*, 36 Mass. at 527 ("The public are not prejudiced by the transfer [because] if it were worth any thing, the defendant would use the art and keep it secret, and it is of no consequence to the public whether the secret art be used by the plaintiff or by the defendant."); *Jarvis*, 10 Paige Ch. at 125 (finding "the object of the parties was not to restrain trade, but to insure to the purchasers of an interest in the secret the full benefit of their purchase"). At the same time, however, the rule only applied when the information was actually secret. *See Taylor v. Blanchard*, 95 Mass. 370, 374 (1866); *see also* MICHAEL J. TREBILCOCK, *THE COMMON LAW OF RESTRAINT OF TRADE: A LEGAL AND ECONOMIC ANALYSIS* 11-12, 35 (1986) (noting how courts historically have found it easier to justify restraints attached to the sale of business than to justify restraints attached to employment).

57. 98 Mass. 452 (1868).

58. *See* 1 JAGER, *supra* note 2, § 2.02 (calling *Peabody* one of the most famous and best-reasoned of the early trade secret cases); Hutter, *supra* note 37, at 7 (noting *Peabody* is frequently cited as the seminal case).

a competing factory using Peabody's machinery and process. Peabody sued in equity for an injunction against the new factory.

Cook demurred to the bill and raised every conceivable issue in defense.<sup>59</sup> In a masterful opinion, Justice Gray rejected each of Cook's arguments. In the process, he pulled the many strands of trade secret precedent together into a compelling synthesis. Justice Gray began with a statement of policy: "It is the policy of the law, for the advantage of the public, to encourage and protect invention and commercial enterprise."<sup>60</sup> Instead of arguing directly from this policy, however, he shifted immediately to a statement of general principle and focused on it for the rest of the opinion: "If a man establishes a business and makes it valuable by his skill and attention, the good will of that business is recognized by the law as property."<sup>61</sup>

Gray clearly intended this principle to unify all branches of what is today known as "intellectual property law."<sup>62</sup> Moreover, the principle had clear implications for trade secret law:

If [a person] invents or discovers, and keeps secret, a process of manufacture, whether a proper subject for a patent or not, he has not indeed an exclusive right to it as against the public, or against those who in good faith acquire knowledge of it; but he has a property in it, which a court of chancery will protect against one who in violation of contract and breach of confidence undertakes to apply it to his own use, or to disclose it to third persons.<sup>63</sup>

However, the *Peabody* court's principle justified a decision to overrule Cook's demurrer only because the concept of "property" was understood to have certain legal consequences. For example, classifying secret information as "property" meant that a contract to convey that information could not be an unlawful restraint on trade.<sup>64</sup> Moreover,

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59. Defenses included that the agreement was in restraint of trade, that the information could not be kept secret in a large factory, that enforcing the agreement was inconsistent with the patent laws, that Cook had no privity of contract with Peabody, and that secret information was not property capable of passing by will or inheritance. *Peabody*, 98 Mass. at 455-57. Given the precedent, *Peabody* was in fact a hard case. Since the plaintiff sought enforcement of a contract against a former employee, the restraint-of-trade defense could not be disposed of in the usual way, see *supra* note 56, by arguing that the contract was necessary to perfect a sale or transfer of the secret. Moreover, Cook learned the secret from Norfolk and so was not in privity of contract with Peabody.

60. *Peabody*, 98 Mass. at 457.

61. *Id.*

62. See *id.* at 457-58 (referring specifically to trademark law, patent law, and trade secret law).

63. *Id.* at 458.

64. See *id.* at 459-60 ("In this court, it is settled that a secret art is a legal subject of property; and that a bond for a conveyance of the exclusive right to it is not open to the objection of being in restraint of trade."); see also HARRY D. NIMS, *THE LAW OF UNFAIR COMPETITION AND TRADEMARKS* § 144, at 298 (2d ed. 1917) ("[T]here is no difference between contracts as to trade secrets and contracts as to any other personal property, so far as restraint of trade is concerned.").

classifying the information as property meant that the court could restrain Cook even though he was not in privity with Peabody. Equity courts had always exercised jurisdiction to grant injunctive relief when necessary to provide an adequate and complete remedy for a property rights violation.<sup>65</sup>

But *Peabody* left an important question hanging: if secret information is property, why does the owner not have "an exclusive right to it as against the public" like other property owners? Today we would be inclined to answer this question by referring to trade secret policies. For example, one might argue that an *in rem* right would generate excessive costs, or that it would provide more protection than necessary to safeguard privacy. I examine these arguments in subsequent sections.<sup>66</sup> For purposes of this discussion, it is enough to note that late nineteenth century courts and commentators did not rely on functional arguments of this sort but instead reasoned formalistically from an ideal conception of "property" linked to the concept of exclusive control.<sup>67</sup>

At common law, property rights depended on possession. Possession was a prerequisite to ownership, and ownership was necessary for common law rights.<sup>68</sup> Moreover, possession required clear acts manifesting an intent to bring the thing under exclusive control and to appropriate it to individual use.<sup>69</sup> A person obtained exclusive property rights by exercising actual control over things in the world.

Since the legal protection of secret information not covered by statutory patent or copyright was a matter for the common law, common law principles applied. Thus, for secret information to be "property," as the court in *Peabody* held, the owner must possess it. The difficult question was how someone could "possess" an intangible thing, like information, which was not subject to physical control. Moreover, there were other difficulties as well. Because information is capable of infinite replication, everyone can enjoy it without anyone having any less of it. And once someone learns information, there is no way to erase that knowledge and therefore no means of excluding the person in fact. For these reasons, exclusivity must have seemed oddly inappropriate.

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65. See *Peabody*, 98 Mass. at 459-60.

66. See *infra* Parts III (economic efficiency), IV.A. (privacy).

67. Of course, few nineteenth century courts were as ambitious as *Peabody*. Most just applied the rules, occasionally nodding in the direction of a deeper theory. But some opinions offer more, and the secondary literature is also suggestive. The explanation in the text reconstructs a theory of trade secret law from these sources and from what we know about the dominant mode of legal reasoning and prevailing ideas about property during the late nineteenth century.

68. See *Ghen v. Rich*, 8 Fed. 159, 161 (D. Mass. 1881) (the right of property in a whale attaches with first possession, achieved by shooting the whale with a distinctively marked harpoon); *Pierson v. Post*, 3 Cai. R. 175, 177-78 (N.Y. Sup. Ct. 1805) (property in a fox depends on possession, which requires acts to bring the fox under control).

69. See Carol M. Rose, *Possession as the Origin of Property*, 52 U. CHI. L. REV. 73, 76 (1985).

It followed from these special features that the only way someone could possess information to the exclusion of others was to keep it secret.<sup>70</sup> Ideas were like wild animals *ferae naturae*, common property free for all to enjoy until captured.<sup>71</sup> An idea could be captured by "discovering" it and then excluding others through secrecy. Secrecy required constant vigilance, however, since ideas, like wild animals, had a tendency to escape. Once gone, they returned to the commons as public property.<sup>72</sup>

Accordingly, secrecy was the *sine qua non* of possession and thus of common law property rights in information.<sup>73</sup> To late nineteenth century courts and commentators, this meant that common law and statutory rights were mutually complementary. The common law protected information so long as it remained secret. Once published, however, the information became "public property" and all common law rights ended.<sup>74</sup> The public, which then owned the information, decided through legislation what exclusive rights, if any, to give to individuals. Thus, rights in published information were statutory, conferred by the Patent and Copyright Acts.<sup>75</sup>

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70. See *Haskins v. Ryan*, 71 N.J. Eq. 575, 580 (1906), *aff'd*, 75 N.J. Eq. 623 (1909) (holding that an undeveloped idea cannot be property because the originator cannot exercise dominion over it and apply it to his own use without involving others in its development); *Bristol v. Equitable Life Assurance Soc'y*, 132 N.Y. 264, 267 (1892) (holding that an undeveloped idea cannot be protected as property because, unlike information subject to trade secret and common law copyright, its "exclusive ownership [cannot] be easily preserved and protected").

71. The analogy to wild animals was made explicit in *Werckmeister v. American Lithographic Co.*, 134 Fed. 321 (2d Cir. 1904), a celebrated common law copyright case:

[Conceptions] are as free as the birds of the air or the wild beasts of the forest, but they belong to him who first reduces them to captivity . . . . To pursue the foregoing analogies, the common-law protection continues only so long as the captives or creations are kept in confinement or controlled.

*Id.* at 324.

72. Unlike wild animals, however, ideas could not be reclaimed from the common a second time, since there was no way to create an exclusive sphere as a matter of fact once everyone learned the information. See, e.g., *Hamilton Mfg. Co. v. Tubbs Mfg. Co.*, 216 Fed. 401, 407 (W.D. Mich. 1908) ("The property in a secret process is the power to make use of it to the exclusion of the world. If the world knows the process, then the property disappears.") (quoting *Cincinnati Bell Foundry Co. v. Dodds*, 10 Ohio. Dec. Reprint 154 (1887)).

73. See, e.g., *Werckmeister*, 134 Fed. at 324; *Tabor v. Hoffman*, 118 N.Y. 30 (1889). As one court put it: "Independent of copyright and patent, an inventor or author has, by the common law, an exclusive property in his invention or composition, until by publication it becomes the property of the general public." *Tabor*, 118 N.Y. at 34.

74. See, e.g., *Board of Trade v. Christie Grain & Stock Co.*, 198 U.S. 236, 251 (1904); *Stewart v. Hook*, 45 S.E. 369, 370 (Ga. 1903); *Eastman Co. v. Reichenbach*, 20 N.Y. Supp. 110, 110-16 (1892), *aff'd*, 29 N.Y. Supp. 1143 (1894).

75. See, e.g., *Werckmeister*, 134 Fed. at 324 (noting that statutory copyright supplants common law copyright after publication and provides some additional protection provided the statutory requirements are met); *Potter v. McPherson*, 28 N.Y. (21 Hun.) 559, 562-63 (1880) (same); *Palmer v. DeWitt*, 47 N.Y. 532, 536-38 (1872) (noting that an author has a right of first publication based in property, but, once published, a work is dedicated to the public and the right to multiply copies to the exclusion of others is then exclusively a creature of statute).

These statutory rights were treated as subordinate to common law property rights. Many late nineteenth century jurists believed the common law to be a repository of fundamental and universal principles of right.<sup>76</sup> As an application of common law principle, therefore, trade secret law had a strong claim to authority; indeed, a legal system that did not protect secret information would be incomplete. Statutes, on the other hand, were just expressions of historically and culturally contingent social policy. Therefore, the Copyright and Patent Acts had no special claim to authority. Their authority depended entirely on the policy choices of particular legislatures at particular times.<sup>77</sup>

This simple, property-based theory had powerful implications. It justified the court's decision in *Peabody* to anchor legal protection for secret information in property rather than contract or trust. Indeed, the link to common law property elevated trade secret law over patent and statutory copyright—the reverse of the status those fields enjoy today. Moreover, the property-based theory reached beyond the law of trade secret to explain other, seemingly unrelated fields, such as common law copyright and privacy rights.<sup>78</sup>

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76. See, e.g., 1 J. POMEROY, A TREATISE OF EQUITY JURISPRUDENCE §§ 90-110 (1881). For a more detailed account of these beliefs, see Robert G. Bone, *Mapping the Boundaries of a Dispute: Conceptions of Ideal Lawsuit Structure from the Field Code to the Federal Rules*, 89 COLUM. L. REV. 1, 9-26 (1989) [hereinafter Bone, *Mapping*]; and Robert G. Bone, *Normative Theory and Legal Doctrine in American Nuisance Law: 1850 to 1920*, 59 S. CAL. L. REV. 1101, 1112-22 (1986).

77. This might explain why it made sense to read intellectual property statutes in terms of utilitarian goals, such as providing socially optimal incentives for the creation and publication of information, while at the same time reading the common law as the embodiment of rights-based principles.

78. See, e.g., *Christie Grain & Stock*, 198 U.S. at 250-51; *Tabor*, 118 N.Y. at 34; JAMES LOVE HOPKINS, THE LAW OF UNFAIR COMPETITION § 69, at 157 (1900); NIMS, *supra* note 64, § 141, at 294. Like trade secret law, common law copyright existed only so long as the creator kept his work private, and it ended upon publication. See *Werckmeister v. American Lithographic Co.*, 134 Fed. 321, 324 (2d Cir. 1904) (noting that "the common law protection continues only so long as the captives or creations are kept in confinement or controlled," and the federal Copyright Act "permits them to go free and releases the restraint").

The heated debate over common law privacy during the late nineteenth and early twentieth centuries also tracks the common law property theory. See JAMES LOVE HOPKINS, THE LAW OF TRADEMARKS, TRADENAMES, AND UNFAIR COMPETITION § 93, at 231-41 (2d ed. 1905) (noting that most courts refused to recognize a common law privacy right). In the ordinary privacy case, the defendant used plaintiff's image or appearance without her consent, typically in advertising. Opponents of a common law right assumed implicitly that a person's appearance could not be kept private, and concluded that there could be no remedy apart from legislation because no recognized common law principle applied, there being no property in the absence of exclusivity and no breach of contract or libel. See *Roberson v. Rochester Folding Box Co.*, 171 N.Y. 538, 547-53, 556-57 (1902) (defendants used plaintiff's portrait in advertising). Supporters of a privacy right, on the other hand, tried to enlist the private-public dichotomy central to the common law property theory by arguing that a person's right to control personal attributes was a form of common law property, at least so long as the person remained a private individual rather than a "public character." See *Schuyler v. Curtis*, 147 N.Y. 434, 453-55 (1895) (Gray, J., dissenting). But see *Pasevich v. New England Life Ins. Co.*, 50 S.E. 68, 69-70 (Ga. 1905) (basing the privacy right not on property, but on liberty "rooted in natural law and the instincts of human nature").



Most importantly, the theory offered a rationale for trade secret rules. As we have seen, secrecy was a necessary requirement for exclusion. But secrecy was not sufficient. Even if the plaintiff alone knew the information, courts still required the plaintiff to take affirmative steps to protect the secret in order to demonstrate his intent to exclude others. Thus, in addition to requiring secrecy in fact, many courts also required reasonable precautions against disclosure, or at least hesitated to find secrecy where the plaintiff failed to take such precautions.<sup>79</sup>

In addition, the property-based theory answered the question left hanging in *Peabody*—why trade secret law did not recognize property rights against the world. The answer followed logically from the scope of the property right. Exclusive rights against the world simply did not fit the kind of factual exclusivity that defined the common law property right in secret information. The only way a person could violate a trade secret owner's exclusivity was by invading his secrecy. Thus, trade secret liability depended entirely on whether the defendant used unfair means to acquire the information.

As a result, independent discovery and reverse engineering were perfectly lawful because they did not cross the boundaries of the owner's secrecy and violate his factual exclusivity.<sup>80</sup> A marketed product "communicated" its contents to the public, so anyone was free to infer those contents from the publicly available product, just as he was free to discover the information from any other publicly available source.<sup>81</sup>

Furthermore, a trade secret owner could communicate secret information and still preserve its secrecy if the recipient promised to hold the information in confidence. This was, after all, the customary way to share secrets, and the confidentiality agreement was evidence of the owner's continuing intent to exercise exclusive control.

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79. See, e.g., *Excelsior Steel Furnace Co. v. Williamson Heater Co.*, 269 Fed. 614, 615 (6th Cir. 1920); *Hamilton Mfg. Co. v. Tubbs Mfg. Co.*, 216 Fed. 401, 404-05 (W.D. Mich. 1908).

80. Thus, not only did an independent discoverer not violate the trade secret rights of the original owner, but he had trade secret rights of his own, provided he too kept the information secret. Moreover, if the independent discoverer ever publicized his discovery, the information became common property, and both the independent discoverer and the original trade secret owner lost their common law rights.

81. See *Tabor v. Hoffman*, 118 N.Y. 30, 32 (1889); *Eastman Co. v. Reichenbach*, 20 N.Y. Supp. 110, 116 (1892), *aff'd*, 29 N.Y. Supp. 1143 (1894); Nims, *supra* note 64, § 146, at 300; see also A.W. Whitlock, *The Law As to Trade Secrets*, 74 CENT. L.J. 83, 85 (1912) (using an estoppel argument to justify the reverse-engineering rule). However, this line of reasoning created a problem. If a product was publicly marketed, why didn't it follow that all of its contents were dedicated to the public? In other words, how was it possible for anyone to have a secret in information that was part of a publicly marketed product? Late nineteenth century courts reasoned that enough secrecy remained so long as it was difficult to access the information; that is, so long as it required a significant investment to reverse-engineer the product's contents. See *Tabor*, 118 N.Y. at 32.

This property-based theory also explained why strangers were liable for obtaining secret information through criminal wrongdoing, such as theft and fraud. Independently wrongful conduct of this sort improperly invaded the owner's zone of secrecy. It is important to recognize, however, that the criminal wrong was not the basis for the cause of action. The cause of action vindicated an infringement of property rights, and the wrong was simply the manner in which the defendant violated those rights. This explains why trade secret liability attached to third parties who induced a breach of confidence, even though they were not in privity with the trade secret owner, and also why those third parties were not liable if they were bona fide purchasers without notice of any wrong. These rules follow logically from the fact that liability was based on violation of a property right rather than breach of contract or confidence. The breach was merely *the way* the property right was violated.<sup>82</sup>

This relatively simple theory had a serious drawback, however. It was incapable of identifying all the impermissible modes of acquisition, use, or disclosure. Breach of an express confidentiality duty was easy, but what about talking with customers or surreptitiously following the plaintiff and observing the raw materials he purchased?<sup>83</sup> Nothing in the ideas of possession, control, or secrecy gave a clear answer in cases like these. The real question was whether the plaintiff, in order to keep his information secret, was obliged to guard against the particular means used by the defendant, or whether he could reasonably expect the defendant and others to avoid such means as improper invasions of secrecy. Since this question had to be answered before determining whether the information was secret and whether the plaintiff exercised sufficient control to establish possession, the ideas of secrecy, control, and possession could not supply an answer. The normative standard had to be found outside of these property notions, and the logical place to find it was in whatever norm—contractual obligation, confidentiality, or the like—the defendant violated by acquiring, using, or disclosing the information.

Perhaps because of this, some courts and commentators glossed over the property theory and focused instead on the wrongfulness of the defendant's conduct as the true basis of liability, despite the strength of

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82. See *Board of Trade v. Christie Grain & Stock Co.*, 198 U.S. 236, 252 (1904) (noting that the contracts between the plaintiff and telegraph companies were not the basis of the cause of action, but instead simply showed that plaintiff's communications were all confidential and thus did not destroy the trade secret claim).

83. See *King v. Gannon*, 261 Mass. 94 (1927) (no liability for copying plans given to machine shop).

the common law property theory.<sup>84</sup> In addition, the notion that trade secret rights were not good against the world did not sit well with many nineteenth century jurists, nor was it easy for many of them to conceive of property rights in an intangible thing like information.<sup>85</sup>

### B. The Collapse of the General Theory

The general theory that supported common law property rights in secret information began to lose its grip, first with the rise of sociological jurisprudence, and then with the advent of legal realism in the early twentieth century.<sup>86</sup> A new positivism and commitment to instrumental reasoning replaced the natural law formalism of the late nineteenth century. This change undermined the logic of the common law property theory—in particular, its claim that exclusivity through secrecy implied property and that property implied legal rights which protect the owner's exclusivity.<sup>87</sup>

In a passage frequently quoted by the new positivists, Justice Holmes framed the central question for trade secret law in terms that rejected the late nineteenth century conception of property:

The word "property" as applied to trade-marks and trade secrets is an unanalyzed expression of certain secondary consequences of the primary fact that the law makes some rudimentary requirements of good faith. Whether the plaintiffs have any valuable secret or not, the defendant knows the facts, whatever they are, through a special confidence that he accepted. The property may be denied, but the confidence cannot be. Therefore, the starting point for the present matter is not

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84. See, e.g., *Vulcan Detinning Co. v. American Can Co.*, 72 N.J. Eq. 387, 395-96 (1907) (noting that there is too much stress on secrecy and not enough attention to the wrongfulness of defendant's conduct measured by norms of good faith and good morals); Note, *Equity—Trade Secrets—Duty of Non-Disclosure by Fiduciary Relation*, 37 YALE L.J. 1154, 1155 (1927) ("Many courts grant relief . . . on the basis of the 'property right' theory. More modern decisions, however, in the absence of an express contract, place the protection afforded on the basis of a contract implied in law."); Note, *Trade Secrets*, 11 HARV. L. REV. 262 (1897-98) (resting equity jurisdiction in trade secret cases on breach of trust without mentioning property).

85. See, e.g., Christopher Columbus Langdell, *Patent Rights and Copy Rights*, 12 HARV. L. REV. 553 (1898); W. E. Simonds, *Natural Right of Property in Intellectual Production*, 1 YALE L.J. 16 (1891).

86. The literature on sociological jurisprudence, legal realism, and the early twentieth century challenge to legal formalism is voluminous. See, e.g., ROBERT SUMMERS, *INSTRUMENTALISM AND AMERICAN LEGAL THEORY* (1982); WILLIAM TWINING, *KARL LLEWELLYN AND THE REALIST MOVEMENT* (1973); G. E. White, *From Sociological Jurisprudence to Realism: Jurisprudence and Social Change in Early Twentieth-Century America*, 58 VA. L. REV. 999 (1972).

87. See generally Morris Cohen, *Property and Sovereignty*, 13 CORNELL L.Q. 8 (1927) (criticizing the nineteenth century formalistic conception of property). For an historical overview of the change in property conceptions, see Kenneth Vandavelde, *The New Property of the Nineteenth Century: The Development of the Modern Concept of Property*, 29 BUFF. L. REV. 325 (1980).

property or due process of law, but that the defendant stood in confidential relations with the plaintiffs.<sup>88</sup>

On this view, property was not a logical entailment of fundamental truths about possession and ownership. Instead, property rights were created by positive law and were designed to serve whatever goals the community wished to pursue.<sup>89</sup>

This new view of property created a problem for trade secret doctrine. During the nineteenth and early twentieth centuries, the formalistic conception of property made it possible to justify trade secret law as distinct from contract and ordinary tort law. With its property foundation stripped away, however, trade secret law lost its justifying theory and its source of normative independence from other fields of law. Courts and commentators have been trying to fill the gap ever since.<sup>90</sup>

### III

#### MAKING SENSE OF WHERE WE ARE—ARGUMENTS FROM EFFICIENCY

In this Part, as well as Parts IV and V below, I examine the main policy arguments for trade secret law. As Part II's brief history shows,

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88. *E. I. duPont deNemours Powder Co. v. Masland*, 244 U.S. 100, 102 (1917); see also Note, *Equitable Protection*, *supra* note 16, at 164 ("A trade secret is property only if the court decides to protect it."); Note, *Nature of Trade Secrets*, *supra* note 16, at 258 (noting that as a practical matter it does not matter whether courts treat trade secrets as property so long as they protect them).

89. See Francis S. Phibrick, *Changing Conceptions of Property in Law*, 86 U. PA. L. REV. 691, 728-32 (1938) (critiquing earlier property conceptions and calling for a "modern conception" of property that is positivist and utilitarian).

90. During the first half of the twentieth century, many courts and commentators seized on the idea of "unfair competition" as a way to justify trade secret law. See RUSDALE ELLIS, *TRADE SECRETS* §§ 6-11, at 10-19 (1953) (basing trade secret protection on norms against unfair competition rather than property); Note, *Basis of Jurisdiction for the Protection of Trade Secrets*, 19 COLUM. L. REV. 233, 236-38 (1919) (arguing that the real rationale for trade secret liability is unfair competition, not protection of property). Underlying the broad idea of unfair competition was the assumption that the law should intervene when competitive practices offend common perceptions of morality. See, e.g., RESTATEMENT (FIRST) OF TORTS § 757 cmt. a, f (1939) ("A complete catalog of improper means is not possible[;] in general they are means which fall below the generally accepted standards of commercial morality and reasonable conduct."). See generally Zechariah Chafec, Jr., *Unfair Competition*, 53 HARV. L. REV. 1289 (1940) (noting the potentially broad scope of unfair competition and cautioning against expanding it too far). The assumption that there were conventional norms capable of identifying "unfair" competitive practices fits the pragmatism of early twentieth century reformers, many of whom believed that judges could discover norms embedded in the regularity of social practice. See Robert Gordon, *Legal Thought and Legal Practice in the Age of American Enterprise*, in *PROFESSIONAL IDEOLOGIES IN AMERICA* 70, 95-97 & n.76 (G. Gcison, ed. 1983); Bone, *Mapping*, *supra* note 76, at 97.

With the passing of the realists, however, this pragmatic brand of conventionalism lost its power to persuade. See, e.g., Stedman, *supra* note 53, at 24 ("[T]he term 'unfair competition' . . . is a loose and flexible appellation that contains no built-in definition and provides little help in telling what it includes and does not include."). Judges and lawyers today are not content with the "I know it when I see it" approach; nor do they believe that extant social norms are necessarily good. Legal rules require policy justification. Even when the law incorporates informal norms, the incorporation must be justified. This, as we shall see, is the challenge facing proponents of trade secret law.

late nineteenth century judges did not justify trade secret law on policy grounds. Instead, they invoked a natural-rights-based formalism that is no longer accepted today. This raises doubt as to whether there actually is a convincing policy argument for trade secret law and prompts us to examine the conventional justifications with some care.

At the same time, it is significant that trade secret law has endured for more than a century. This suggests that the doctrine has some practical value. But one would have to take the extreme and highly problematic view that the common law evolutionary process always produces good rules in order to defend trade secret law on this ground alone.<sup>91</sup> The fact that trade secret law endures is a reason to take all possible policy justifications seriously, but it does not relieve trade secret proponents of their burden of persuasion.<sup>92</sup>

It is important at the outset to be clear about the scope of my claim. I do not argue that it is *logically* impossible to justify trade secret law.<sup>93</sup> My point instead is that none of the justifications offered to date are satisfactory. This means that the case for trade secret law depends mainly on who has the burden of persuasion. It makes sense to place that burden on the defenders of trade secret law because the law's formalistic roots and relatively recent vintage rule out any hope of finding a convincing justification in history or precedent. Thus, there is simply *no* reason for trade secret law unless its defenders can supply one.

The policy arguments that I examine fall into three broad categories. I address arguments from efficiency in this section. In Part IV, I

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91. For example, some commentators argue that the common law tends toward efficient rules independently of the reasons judges actually give for deciding cases. *See, e.g.,* RICHARD A. POSNER, *ECONOMIC ANALYSIS OF LAW* § 21.5, at 554-60 (4th ed. 1992). On this view, the mere existence of trade secret law might be evidence of its efficiency, even if a convincing efficiency justification was not otherwise obvious. However, this theory of common law evolution is quite problematic. For one thing, it is not at all clear that the hypothesized "invisible hand" actually works in the benign way the theory's proponents claim. *See, e.g.,* Robert Cooter & Lewis Kornhauser, *Can Litigation Improve the Law Without the Help of Judges?*, 9 J. LEG. STUD. 139 (1980) (concluding that the mechanisms for common law efficiency do not guarantee efficient rules). Moreover, although some common law rules are efficient, others do not appear to be, and the common law efficiency hypothesis has trouble explaining the differences. *See, e.g.,* TREBILCOCK, *supra* note 56, at 142-51 (arguing that common law rules about restraint of trade are inefficient in some respects, contrary to the common law efficiency hypothesis).

92. American trade secret law has been around for just a little over a century, a relatively brief period of time for a common law evolutionary process to work. It is also worth noting, if only as an antidote to cultural myopia, that the trade secret law of some foreign countries has, in the recent past at least, been considerably narrower than the law of the United States. For example, before the 1990 amendments to the Japanese Unfair Competition Prevention Act, *see* Trade Secret Act, AN AMENDMENT OF THE UNFAIR COMPETITION PREVENTION ACT (118th Diet, 66th Act, 1990), there was no independent law of trade secrets in Japan and legal protection was very limited. *See* Jay Dratler, Jr., *Trade Secrets in the United States and Japan: A Comparison and Prognosis*, 14 YALE J. INT'L L. 68 (1989) (reviewing pre-1990 Japanese trade secret law).

93. In particular, the force of efficiency arguments depends on empirical data that is very difficult to obtain.

turn to arguments from rights and fairness. And finally in Part V, I address an argument from conventionally accepted norms against unfair competition.

### A. Incentives to Create

The efficiency rationale for trade secret law takes two different forms. The first argues that trade secret law enhances incentives to create. The second argues that it reduces the level of private investment in discovering and protecting secrets as well as the transaction costs associated with value-enhancing transfers. I address the argument from creation incentives first.

#### 1. The General Argument

The incentive-based argument is one of the most frequently invoked in the trade secret literature today.<sup>94</sup> Moreover, it is well-established as the principal economic justification for intellectual property rights in general.<sup>95</sup> I first outline the argument in its general form before applying it to trade secret law.

The incentive-based argument focuses on the public goods character of information.<sup>96</sup> On this view, the market does a poor job of providing incentives to create information because of the difficulty creators

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94. See, e.g., *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 482, 484 (1974); *American Can Co. v. Mansukhani*, 742 F.2d 314, 328 (7th Cir. 1984); JAGER, *supra* note 2, § 1.04; RICHARD POSNER, *ECONOMICS OF JUSTICE* 244 (1981); TREBILCOCK, *supra* note 56, at 120-21; Friedman et al., *supra* note 1; Christopher Rebel J. Pace, *The Case for a Federal Trade Secrets Act*, 8 HARV. J.L. & TECH. 427, 435-42 (1995). It has not always been so, however. As the history in Part II shows, incentive arguments had little explicit impact on the development of trade secret doctrine in the nineteenth and early twentieth century. See *id.* at 435 n.23 (noting that early American cases focused on commercial morality rather than incentives). Indeed, the First Restatement of Torts expressly rejected the incentive rationale:

The patent monopoly is a reward to the inventor. But such is not the case with a trade secret. Its protection is not based on a policy of rewarding or otherwise encouraging the development of secret processes or devices. The protection is merely against breach of faith and reprehensible means of learning another's secret.

RESTATEMENT (FIRST) OF TORTS § 757 cmt. b (1939). Moreover, in rejecting patent preemption, the Supreme Court in *Kewanee Oil*, 416 U.S. at 481-82, 487, stressed that trade secret law went beyond patent by also protecting non-incentive-based values, such as privacy and commercial morality.

95. For a general overview of the incentive argument for intellectual property rights, see ROBERT COOTER & THOMAS ULEN, *LAW AND ECONOMICS* 112-16, 135-49 (1988). For an application to copyright law, see William M. Landes & Richard A. Posner, *An Economic Analysis of Copyright Law*, 18 J. LEG. STUD. 325-63 (1989). For an application to patent law, see Kenneth W. Dam, *The Economic Underpinnings of Patent Law*, 23 J. LEG. STUD. 247 (1994).

96. Public goods are defined by two features: nonexcludability (*i.e.*, difficulty excluding others from the good), and nonrivalry (*i.e.*, the fact that one person's consumption of the good does not reduce the amount available to others). See COOTER & ULEN, *supra* note 95, at 108-112. A classic example is a lighthouse. It is extremely difficult to exclude ships from the navigational benefits a lighthouse provides, and all ships can enjoy this benefit without reducing its availability to others. See Ronald H. Coase, *The Lighthouse in Economics*, 17 J.L. & ECON. 357 (1974).

have in excluding others from their creations. Once a creation is made public, others can copy it, usually at a very low cost. If the cost of copying is less than the creator's fixed cost of creation, then copiers will be able to sell at a price below what the creator must charge to recoup his fixed costs.<sup>97</sup> In other words, copiers can free ride on the creator's investment. And if prospective creators anticipate this, they will be reluctant to create.

One solution to this problem is to grant creators legal rights to exclude, such as those conferred by patent and copyright. With a legally enforceable right to prevent copying or, in the case of patent, independent replication, creators can force others to pay for using their creations and thereby recoup their fixed costs. However, these rights must be limited in order to avoid generating social costs that exceed the benefits of exclusivity. Four costs are relevant: (1) the deadweight loss of monopoly prices, (2) the enhanced cost of future creation using previous works, (3) administrative and enforcement costs, and (4) transaction costs.<sup>98</sup>

An exclusive right gives the creator a monopoly over his creation. If there are few substitutes, legal exclusivity can create monopoly prices and resulting deadweight loss. This effect can be especially serious in the case of information, because everyone can enjoy information without anyone having any less of it.<sup>99</sup> This non-rivalry feature means that the Pareto-efficient outcome, conditional on the information being created, is to supply it to everyone at the (normally low) marginal cost of duplication. Monopoly prices are likely to be much higher.

Monopolies in information generate a second kind of social cost associated with the fact that creativity is cumulative.<sup>100</sup> Creators build on past works when making new ones. To do this in a system of exclusive rights, however, creators must license previous works. Licensing increases costs, which in turn dampen incentives to create.

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97. The argument in this simple form is subject to many important qualifications, such as the possibility of a head start advantage, brand loyalty, or price discrimination. See, e.g., S. J. Liebowitz, *Copyright Law, Photocopying, and Price Discrimination*, in 8 RESEARCH IN LAW AND ECONOMICS 181 (1986) (discussing the effect of price discrimination on copyright); Stephen Breyer, *The Uneasy Case for Copyright: A Study of Copyright in Books, Photocopies, and Computer Programs*, 84 HARV. L. REV. 281 (1970) (discussing the effect of head start and brand loyalty on the need for copyright in books); Landes & Posner, *supra* note 95, at 329-33 (discussing qualifications).

98. See, e.g., Landes & Posner, *supra* note 95, at 33-43 (integrating these costs into a formal model of copyright law).

99. An exception is the phenomenon of saturation. For example, if everyone were free to broadcast a popular song, the exposure might rapidly saturate the public and dissipate the value of the song. Property rights are one way to avoid this "tragedy of the commons" effect. See, e.g., Mark F. Grady, *A Positive Economic Theory of the Right of Publicity*, 1 UCLA ENT. L. REV. 97 (1994) (justifying publicity rights on this ground).

100. For example, this cost figures prominently in the Landes and Posner analysis of copyright law. See Landes & Posner, *supra* note 95, at 341.

In addition to monopoly prices and the enhanced cost of future creation, exclusive legal rights also generate administrative and enforcement costs. A person seeking a patent, for example, must subject his invention to an administrative process in the United States Patent Office, where it is examined for compliance with statutory requirements, such as novelty and nonobviousness. Furthermore, enforcement through civil actions produces litigation costs.

Finally, exclusive rights yield the creator an economic return only if she engages in market transactions, such as licensing. All transactions, however, generate transaction costs, and those costs also must be included in any efficiency analysis.

## 2. *The Argument Applied*

With this background in place, I now turn to an analysis of how well the incentive-based argument works for trade secret law. At first glance, it seems to work very well indeed. Insofar as a firm anticipates a substantial economic return from secret information, the availability of trade secret law should improve its prospects of actually receiving that return by mitigating the harmful effects of free riding. Moreover, trade secret law encourages efficient sharing of secrets by protecting a firm against disclosure by employees and others whose assistance is needed to develop the information into marketable form.<sup>101</sup>

This argument is persuasive, however, only because it ignores the broader context in which trade secret law operates. This context includes laws, such as patent, copyright, trademark, contract, and criminal law, that already furnish substantial security to the owner of information, and non-legal mechanisms, such as lead-time and learning curve advantages, that also help to overcome the free-rider problem.<sup>102</sup> The question then is how much trade secret law adds to creation incentives, and at what cost.

The most extensive analysis of this question to date appears in a 1991 article by David Friedman, William Landes, and Richard Posner ("FLP").<sup>103</sup> FLP argue that trade secret law is a useful supplement to patent law because it allows inventors to internalize more of the social

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101. See, e.g., *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 486 (1974) (emphasizing these benefits).

102. On the importance of lead-time and learning curve advantages, see Richard C. Levin et al., *Appropriating the Returns from Industrial Research and Development*, in *BROOKINGS PAPERS ON ECONOMIC ACTIVITY: MICROECONOMICS* 783, 793-98 (1987).

103. Friedman et al., *supra* note 1.



benefit of their inventions.<sup>104</sup> Inventors who can choose between patent and trade secret will choose the option that nets them the larger return.<sup>105</sup>

FLP's argument is strongest for two categories of invention: patentable inventions that take longer than the patent term to reinvent or reverse-engineer, and nonpatentable inventions that take long enough to reinvent or reverse-engineer that the inventor expects to earn a substantial return from keeping the invention secret.<sup>106</sup> In the first category, trade secret law gives inventors a chance to show that their inventions are more valuable than the patent law assumes.<sup>107</sup> In the second category, the inventor's commercial success through secrecy shows that the invention was in fact nonobvious, and deserved a patent, since others presumably took a long time to reinvent it.<sup>108</sup> By relying on trade secret law, the inventor receives something closer to the "correct" economic return.<sup>109</sup>

That a choice between trade secret and patent allows the inventor to internalize more of the social value of his invention is almost tautologically true. The more valuable option necessarily internalizes more of the invention's value, or it would not be more valuable. The economic goal of information protection, however, is not to internalize as much social value as possible. Rather, the best thing to do, conditional on the information being created, is to distribute it widely. This is not done only because it would seriously impair the quantity of information produced. Thus, the economic goal is to internalize just enough of the social value so that prospective inventors will invest optimally in creative activity given the social costs.<sup>110</sup> The problem with FLP's argument is

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104. See *id.* at 64.

105. The two options are mutually exclusive. Patent holders must disclose their inventions to the public, which vitiates any claim to secrecy. See 1 MILGRIM, *supra* note 4, § 1.06[1] (issuance of a patent bars trade secret protection insofar as the secret is disclosed in the patent). Moreover, trade secret owners are prevented by the on-sale bar from obtaining a patent if they do not apply promptly. See 35 U.S.C. § 102(b) (1984) (barring a patent when the invention has been in public use for one year prior to the application).

106. FLP also mentions a third category: patentable inventions with only modest economic value that are expected to take almost as long as the patent period for someone else to invent. See Friedman et al., *supra* note 1, at 63. If the cost of obtaining a patent exceeds the cost of maintaining secrecy, then trade secret law reduces the inventor's costs.

This argument has the same defect as the others discussed in the text. The proper focus is not the inventor's private benefit, but the expected social gain. Although reducing costs might bolster incentives somewhat at the margin, it is not clear that this is desirable given the costs of diverting inventions from the patent system. Moreover, the social value of encouraging this class of inventions is likely to be quite small, since, by hypothesis, the inventions have little economic value.

107. See *id.* at 63.

108. See *id.* at 63-64.

109. See *id.* at 64.

110. For this reason, empirical studies that purport to show substantial reliance on secrecy in some industries, see Levin et al., *supra* note 102, at 794-97; Josh Lerner, *The Importance of Trade Secrecy: Evidence from Civil Litigation*, Harv. Bus. Sch. #95-043 (Dec. 1994), do not demonstrate the efficiency of trade secret law. Due to externalities, private firms do not have to bear the full

that it exaggerates the benefits of trade secret law and underestimates the costs.<sup>111</sup>

The proper way to evaluate incentive benefits is to consider trade secret law's effect on a prospective inventor's decision about whether and how much to invest. This is relatively easy for FLP's first category of invention, patentable inventions that are not likely to be reinvented during the patent term. The Patent Act gives the patent owner exclusive rights that last for twenty years from the date of filing the application.<sup>112</sup> From an economic perspective, this term reflects a balance between the social benefit of enhanced incentives (longer patent terms mean more valuable patents, which means greater investment in research and more inventions) and the social cost of a longer period of exclusivity (the longer the term, the greater the monopoly, enforcement, and transaction costs).<sup>113</sup> If this term is efficient, then it may be inefficient to extend it through trade secret law.

Moreover, there is reason, apart from a belief that Congress is better at adjusting incentives, to doubt whether trade secret law improves efficiency for patentable inventions. Secrecy is likely to generate high costs. If an inventor chooses trade secret instead of patent, others will be denied ready access to the information, access that would exist under patent law.<sup>114</sup> Thus, future innovators will not be able to learn from the scientific and technological insights that led to the original invention, slowing the overall rate of innovation.<sup>115</sup> In addition, because trade

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social costs of a trade secret system. Moreover, a firm has an incentive to protect an invention *ex post*, even if *ex ante* it would have made the same invention without trade secret law. See Levin et al., *supra* note 102, at 816 (noting that the data does not necessarily support broader intellectual property rights due in part to social costs).

111. For a critical analysis of trade secret law that questions the benefits and highlights the costs, see RUSSELL B. STEVENSON, JR., CORPORATIONS AND INFORMATION: SECRECY, ACCESS, AND DISCLOSURE 21-25 (1980).

112. This term starts on the date of issue. See 35 U.S.C. § 154(a)(2) (1984). Before the 1994 amendments to the Patent Act, see Uruguay Round Agreements Act, Pub. L. No. 103-465, 108 Stat. 4809 (1994), the patent term was seventeen years from date of issue.

113. The marginal social benefit of an incremental addition to the patent term is a decreasing function of term length. This is because the marginal value to the inventor must be measured *ex ante* and so must be discounted to present value at that stage. However, the marginal social cost is roughly constant, since cost is measured *ex post*. Under these circumstances, marginal benefit must equal marginal cost at some finite term length, and this is the efficient patent term. Cf. Landes & Posner, *supra* note 95, at 361-63 (applying this analysis to copyright). But see Edmund W. Kitch, *The Nature and Function of the Patent System*, 20 J. LAW & ECON. 265, 284-85 (1977) (offering a different explanation for the patent term).

114. See Steven N. S. Cheung, *Property Rights in Trade Secrets*, 20 ECON. INQUIRY 40, 44-45 (1982) (noting the costs associated with the difficulty of diffusing ideas protected by trade secret). Encouraging early disclosure is an important goal of the patent system. See *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 480-81 (1974); Kitch, *supra* note 113, at 269.

115. In fact, it appears that computer firms in Silicon Valley profit from not enforcing their trade secret rights. Without the restraint of trade secret law, mobile employees carry information from firm to firm, and the resulting diffusion stimulates further innovation, apparently to the benefit of the

secret law permits independent invention—and even gives the second inventor protection—firms will continue to seek the same invention, thereby wastefully duplicating the efforts of the first inventor.<sup>116</sup>

Admittedly, the Patent Act creates rights for a general class of inventions without drawing refined distinctions according to type (such as distinguishing between pioneering inventions that are very difficult to reinvent and improvement inventions that are much easier to reinvent).<sup>117</sup> However, since a prospective inventor calculates an expectation over all possible types, the Patent Act's aggregate approach might roughly match the way an inventor predicts her likely return. In other words, since the inventor herself is uncertain *ex ante* about what kind of invention she might produce, it is not clear how much is gained by tailoring legal rights *ex post*.<sup>118</sup>

The case for trade secret as a supplement to patent is potentially stronger for FLP's second category—nonpatentable inventions that are difficult to reinvent. There is potential for a partnership here: perhaps patent can handle the patentable inventions and trade secret the nonpatentable ones. To the prospective inventor deciding how much to invest in research, however, things are not quite so tidy.

To see why, let us consider a simple model of investment choice under uncertainty, focusing on technological information which falls within the general scope of patent.<sup>119</sup> Suppose a hypothetical firm, X, must decide how to proceed with a research project. First, assume that the project is already fixed, so X chooses how much to invest, not what kind of project to undertake. For simplicity, assume also that there are

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industry as a whole. See 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* (visited Feb. 17, 1998) <<http://andromeda.rutgers.edu/~hyde/real.html>>.

116. See Cheung, *supra* note 114, at 47 (discussing the rent dissipation problem for trade secret law); Dam, *supra* note 95, at 251-53 (discussing rent seeking in general). At the same time, it is important not to exaggerate the advantages of the patent system. For instance, patent law can accelerate the race for the first invention and thus produce somewhat higher costs at an earlier stage. Moreover, relative to patent, trade secret law tolerates more potential competition, which can somewhat mitigate monopoly effects. Finally, it is also worth noting that duplicative research is not altogether wasteful when firms engaged in seeking the same invention stumble across different innovations.

117. This is not quite true. The use of secondary considerations in determining nonobviousness rewards inventions with greater commercial value. And the use of the doctrine of equivalents in determining infringement provides broader protection for pioneer patents. See Dam, *supra* note 95, at 258-59; Robert P. Merges & Richard R. Nelson, *On the Complex Economics of Patent Scope*, 90 COLUM. L. REV. 839, 853 (1990).

118. Furthermore, the tailoring argument proves too much. For if trade secret law does a better job than patent of generating optimal incentives for each type of invention, then trade secret law should replace, not supplement, patent for all inventions that can be kept secret; that is, all inventions that are not clearly disclosed by public marketing.

119. I discuss trade secret protection for nontechnological information, such as customer lists, marketing ideas, or financial projections, in Part III.A.3. *infra*.

seven possible outcomes: (1) no invention at all, (2) a nonpatentable invention, or (3) a patentable invention—with both nonpatentable and patentable inventions being (a) easy, (b) moderately difficult, or (c) exceptionally difficult to reinvent or reverse-engineer. Given these seven outcomes, a rational actor “X” will calculate an expected return based on estimates of the economic value and probability of each outcome, and will invest an amount just slightly less than this expectation.<sup>120</sup>

Suppose there were no trade secret law. X would estimate the economic value of each of the various outcomes by considering the protection afforded by existing laws such as patent, copyright, trademark, contract, and criminal law, and the benefits of extra-legal measures, such as lead-time and learning-curve advantages. For example, X would probably assign a higher value to patentable than nonpatentable inventions because the surplus is likely to be higher for patentable inventions and broad patent rights should guarantee more of that surplus for X. Even so, X should anticipate some success in keeping nonpatentable inventions secret, especially if X can count on contract and criminal law to supplement its own self-help efforts. After estimating the likely value of each type of invention, taking account of the costs and benefits of the alternative modes of protection, X calculates an expectation by discounting the value of each type by the probability the project will yield that type.<sup>121</sup>

The critical question is how X's *ex ante* calculation changes with the addition of trade secret law. There is reason to question the substantiality of any such change. For one thing, trade secrecy gives little, if any, protection to the nonpatentable invention that is relatively easy to reinvent or reverse-engineer.<sup>122</sup> Moreover, inventions that are exceptionally difficult to reinvent are likely to be “nonobvious” and hence patentable.<sup>123</sup> Thus, trade secret law's beneficial effect on *ex ante* incentives depends on the likelihood that X will create an invention that is *moderately* difficult to reinvent or reverse-engineer. This is an empirical question, and the answer depends in part on how rapidly the probability of invention declines with difficulty. If the decline is rapid enough, then trade secret law is not likely to add much to *ex ante* incentives.

120. See generally COOTER & ULEN, *supra* note 95, at 55-63 (explaining expected value and expected utility models for making choices under uncertainty).

121. Formally, let  $p_i$  ( $i=1,2,\dots,7$ ) be the probabilities of each type of invention and  $v_i$  be the value of that type. Then the expected value of the project is  $p_1v_1+p_2v_2+p_3v_3+p_4v_4+p_5v_5+p_6v_6+p_7v_7$ .

122. Under these circumstances, the invention is not likely to qualify as a trade secret. See *supra* note 36 and accompanying text.

123. Cf. *Roberts v. Sears, Roebuck & Co.*, 723 F.2d 1324, 1346 (7th Cir. 1983) (Posner, J., concurring and dissenting) (defining “obvious” inventions as those that would have been made almost as soon without patent protection).

Furthermore, to the extent trade secret law is used for patentable inventions, it risks undermining the effectiveness of the patent system.<sup>124</sup> One could avoid this result by limiting trade secret protection to non-patentable inventions, but that would add substantially to enforcement costs, since courts would then have to determine in each trade secret case whether the invention was patentable. This, coupled with the fact that secrecy deprives other inventors and the public of the information, means that the case is not convincing for extending trade secret law to nonpatentable inventions.<sup>125</sup>

Matters only get worse when we enlarge X's choice-set to include the type of project as well as the amount of investment. Because trade secret law confers a larger benefit on nonpatentable than patentable inventions, adding trade secret law to the mix should shift X's choices at the margin toward projects with a relatively higher likelihood of yielding nonpatentable inventions. If patentable inventions create more social surplus on average than nonpatentable inventions—as seems likely because of patent's novelty and nonobviousness requirements—then these altered incentives might be socially undesirable.<sup>126</sup>

While FLP focus mainly on the benefits of trade secret law, they also briefly discuss some of the potential costs. However, their analysis is seriously incomplete. For example, FLP deal with the problem of monopoly costs by arguing that the limited scope of trade secret rights—in particular, tolerance of reverse engineering and independent discovery—mitigates monopoly effects and facilitates diffusion.<sup>127</sup> The matter is not quite so simple, however. It is precisely the fact that trade secret law confers limited rights that encourages firms to make wasteful investments in reverse engineering and in continuing the invention race.

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124. The United States Supreme Court assumed, in *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 482-90 (1974), that this was not likely because patent law was much more attractive than trade secret law. However, most commentators agree that the Court's assumption was clearly mistaken; trade secrecy has numerous advantages over patent, not the least of which is its indefinite duration. See Friedman et al., *supra* note 1, at 63; Dan Rosen, *A Common Law for the Ages of Intellectual Property*, 38 U. MIAMI L. REV. 769, 788 (1984). See generally MILGRIM, *supra* note 4, § 8.02[1] (discussing the relative advantages of trade secrecy over patent).

125. FLP also argue that trade secret can help correct for patent examiner errors in denying patentability. See Friedman et al., *supra* note 1, at 64. However, this benefit will not be terribly significant unless the error risk is substantial and prominently skewed in the direction of denial, neither of which is very likely. Moreover, any benefit of this sort must be assessed for its contribution to *ex ante* incentives, and that contribution is bound to be small.

126. For evidence that the Supreme Court is concerned about this problem in general, see *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 155, 157, 159-61 (1989).

127. See Friedman et al., *supra* note 1, at 71; see also RICHARD A. POSNER, *ECONOMIC ANALYSIS OF LAW* 40 (4th ed. 1992).

Moreover, secrecy itself keeps information from the public with a potentially significant adverse impact on future innovation.<sup>128</sup>

In sum, it is not clear that trade secret law promotes creation incentives to the extent necessary to justify its additional costs. Indeed, trade secret law runs the risk of undermining the socially beneficial incentives of the patent system.<sup>129</sup> This latter point would not necessarily follow had Congress expressly designed federal patent rights to fit existing trade secret law. In that case, cutting back on trade secret law might upset the Congressional scheme.<sup>130</sup> However, defenders of trade secret law, such as FLP, do not make this argument, and for good reason since there is no compelling evidence to support the presumed Congressional intent.<sup>131</sup>

### 3. *Intermediate Research Results and Nontechnological Information*

Notwithstanding the foregoing, trade secret law might enhance incentives in two special situations: intermediate results of an ongoing

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128. FLP make two other arguments. First, they reason that because inventors anticipate lower economic returns from trade secrets than from patents, they will invest less under a trade secret regime, and as a result inventions will be made later. According to FLP, this outcome can be socially beneficial whenever the cost of invention declines sharply over time. See Friedman et al., *supra* note 1, at 65-66. Even if its premises are sound, this argument hardly makes the case against high trade secret costs. Invention delay creates social costs of its own by retarding public access to innovation. Moreover, race costs will still be high as inventors continue to make duplicative investments after the first discovery.

FLP's second argument is even less persuasive. They point out that the first inventor has an incentive to seek a patent immediately—and so disclose her invention to the public—because of the risk that a subsequent inventor will exclude her from the invention by obtaining a patent himself. See *id.* at 65. Accordingly, firms will invest a lot to keep patentable inventions secret only when the invention is so “original and ingenious” that independent discovery and reverse engineering are extremely unlikely, and as a result secrecy costs should be contained. See POSNER, *supra* note 127, at 40-41. Even if this prediction is accurate (which seems highly doubtful), what it means for the desirability of trade secret law is unclear. After all, social costs are likely to be especially high when public access is denied to ingenious, pioneering inventions, and the potential for undermining the patent law is particularly serious in these cases. Moreover, the argument ignores the potentially high costs and questionable benefits of trade secret protection for nonpatentable inventions.

129. This conclusion assumes, as defenders of trade secret law do, that there is a baseline set of patent-like rights for nonobvious inventions. There are efficiency reasons to make this assumption; that is, to prefer patent over trade secret for nonobvious inventions. See, e.g., Cheung, *supra* note 114, at 49-52; Kitch, *supra* note 113, at 275-80.

130. It might not be inefficient, however, if it forced Congress to respond with a corresponding expansion of patent rights, assuming patent law is superior to trade secret law as a means of encouraging innovation.

131. The first federal Patent Act was enacted in 1790, about seventy years before the advent of trade secret law in the United States, and the basic framework of federal patent law today was set in the 1836 Patent Act, also adopted well before trade secret law. See B. BUGBEE, *GENESIS OF AMERICAN PATENT AND COPYRIGHT* 144, 152 (1967). Moreover, if the assumption were true, it should be obvious that trade secret law is not preempted by the Patent Act and therefore hard to explain why so many courts and commentators, before in *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470 (1974), found that issue so difficult.

research project and valuable commercial information of a nontechnological nature.

First, consider the intermediate results of an ongoing research project that has a high probability of yielding a patentable invention.<sup>132</sup> A firm could use patent law to protect intermediate results, but applying for patents at each intermediate stage would be very costly.<sup>133</sup> Allowing recourse to trade secret law in such cases could reduce the social costs of the patent system without impairing its incentives. On this view, trade secret law complements patent: firms would still use patent law to protect final research products, but they could rely on trade secret law to protect intermediate results.

However, the justification for even this limited form of trade secret law is hardly clear-cut. First, it is worth noting that this application of trade secret law might not be terribly significant, since most reported trade secret cases involve completed inventions, not preliminary results.<sup>134</sup> Second, it is hardly self-evident that trade secret law is less costly than patent from a private or social perspective. As the next section shows, firms with recourse to trade secret law will continue to invest significantly in detection and litigation, and in precautions to protect against disclosure.<sup>135</sup> Third, trade secret law encourages firms to keep patentable intermediate results secret and thus delays diffusion and may even prevent access altogether if the information is not disclosed in the patent covering the final research product. Finally, firms have a number of legal and practical options other than trade secret law to protect intermediate results, such as reliance on contractual remedies or assignment of loyal employees to research and development projects. To be sure, these alternatives do not eliminate the risk of disclosure altogether, but neither does trade secret law.

Even so, the case for trade secret protection of intermediate research results is stronger than for final research products. For example, the notoriously long patent application process makes patent law much less useful for intermediate results.<sup>136</sup> Moreover, the social costs of secrecy are likely to be less for preliminary research, at least assuming that

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132. I adopt the terminology and much of the analysis from Cheung, *supra* note 114, at 49.

133. *See id.*

134. Intermediate research results were not historically the principal focus of trade secret law. Indeed, this kind of information might not even have satisfied the traditional requirement of continuous use in business. *See supra* note 40 and accompanying text. *But see* 1 MILGRIM, *supra* note 4, § 1.02[1] (arguing that research and development ideas at the pre-commercial stage should be entitled to the same trade secret protection as mature, commercially profitable ideas).

135. *See infra* III.B.1; *see also* Mark F. Grady & Jay I. Alexander, *Patent Law and Rent Dissipation*, 78 VA. L. REV. 305, 318 (1992) (pointing out that patents reduce rent dissipation resulting from investments in secrecy).

136. *See* ROBERT PATRICK MERGES, *PATENT LAW AND POLICY* 36 (1997) (noting that the "average" prosecution of a patent application takes approximately two to three years).

the final research product is publicly disclosed. However, the legal implications call for, at most, an extremely stripped-down form of trade secret law, one that protects only intermediate research results in the context of an ongoing research project.

The second type of information for which trade secret law might produce socially beneficial incentives is nontechnological information, such as market studies, long term business plans, and customer information. There is no risk of interfering with patent goals in these cases because patent law is not intended to protect this sort of information.<sup>137</sup>

It is unclear, however, whether trade secret law is needed to encourage the production of nontechnological information.<sup>138</sup> After all, a firm must have a marketing plan and must compile financial data in any event, if it is to compete effectively.<sup>139</sup> The anticipated profit from product sales is itself an inducement to create this information, and firms can use trademarks to capture at least some of the benefit of a marketing plan.<sup>140</sup> Conceivably, a firm might invest more if it knew it could protect the results through trade secret law, but it is not evident that the additional investment would enhance competition or product quality enough to justify the social costs.

### *B. Indirect and Transaction Costs*

Some commentators defend trade secret law not for its beneficial impact on incentives to create, but for its salutary effect on indirect and transaction costs<sup>141</sup>—the costs generated by efforts to “steal”<sup>142</sup> secret information, to guard against theft, and to transfer information to other users. In the absence of trade secret law, they argue, firms would invest substantial sums in measures designed to protect their valuable secrets from disclosure. Some measures—such as fences or security passes—would be relatively inexpensive, but others would be much more costly. For example, a firm might reduce its research and development

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137. Insofar as relevant here, patentable subject matter is limited to any “new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof.” 35 U.S.C. § 101 (1984).

138. It is worth mentioning that almost all the nineteenth and early twentieth century cases I reviewed involved technological information.

139. See Lynn Sharp Paine, *Trade Secrets and the Justification of Intellectual Property: A Comment on Hettinger*, 20 PHIL. & PUB. AFF. 247, 257-58 (1991); see also STEVENSON, *supra* note 111, at 28-30 (arguing against trade secret protection for commercial information, like customer lists or cost data, that is produced as a by-product of activities the firm would undertake anyway).

140. Firms often build a marketing plan around a distinctive trademark, which is protectible under federal and state trademark law. With the new intent-to-use provisions of the Lanham Act, the trademark can now be registered and protected well before it is actually used in commerce. See 15 U.S.C. §§ 1051(d), 1057(c) (1984).

141. See, e.g., TREBILCOCK, *supra* note 56, at 120-21; Friedman et al., *supra* note 1, at 66-69.

142. I will refer to the behavior of competitors as “stealing,” but the reader should bear in mind that in a world without trade secret law, “stealing” can be perfectly legal.



department to an inefficiently small number of employees, or hire loyal but less-skilled family members.<sup>143</sup>

The existence of trade secret law increases the expected cost of stealing, which reduces the private investment in theft. The lower risk of theft causes trade secret owners to invest less in safeguards, and this reduces indirect costs. Furthermore, the increased cost of stealing encourages firms to switch to licensing. Insofar as licensing is less costly than stealing, transaction costs are reduced as well.

This argument parallels one of the main economic justifications for criminalizing theft.<sup>144</sup> The question for economists is why theft should be prohibited if it transfers goods to higher value users. One answer is that theft is a particularly costly transfer mechanism because it induces wasteful offsetting expenditures. The risk of theft encourages property owners to invest in security precautions, and this creates a feedback loop: thieves invest more to circumvent the added precautions, which in turn encourages property owners to invest more in security. Prohibiting theft reduces these socially wasteful expenditures and encourages use of the market, which is assumed to be a less costly transfer mechanism.<sup>145</sup>

Whatever force this argument may have for tangible property, it is extremely weak as applied to trade secrets. It ignores enforcement costs and underestimates the transaction costs of licensing, both of which are likely to be especially high when secret information is involved.

### 1. Enforcement Costs

Since litigation is costly, trade secret law is efficient only if the total indirect and enforcement costs with trade secret law are less than the indirect costs without trade secret law.<sup>146</sup> At first glance, it might seem obvious that this condition would be satisfied. If the threat of litigation deterred most firms from stealing, there would be little need for trade secret owners to invest in precautions or in litigation, and as a result,

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143. See Friedman et al., *supra* note 1, at 67; see also *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 485-86 (1974) (noting this risk).

144. See Richard L. Hasen & Richard H. McAdams, *The Surprisingly Complex Case Against Theft*, 17 INT'L REV. LAW & ECON. 367 (1997); Fred S. McChesney, *Boxed In: Economists and Benefits from Crime*, 13 INT'L REV. LAW & ECON. 225, 227-28 (1993); see also Richard S. Murphy, *Property Rights in Personal Information: An Economic Defense of Privacy*, 84 GEO. L.J. 2381, 2397 (1996) (using this argument to justify a privacy right on economic grounds).

145. See Hasen & McAdams, *supra* note 144, at 371 (viewing theft and licensing as substitute methods for transferring property and arguing that the cost of licensing is less than the cost of theft).

146. Others have observed in different legal contexts how including enforcement costs can significantly affect the selection of efficient legal rules. See, e.g., A. Mitchell Polinsky & Daniel L. Rubinfeld, *The Welfare Implications of Costly Litigation for the Level of Liability*, 17 J. LEG. STUD. 151 (1988) (showing how litigation costs affect strict liability rules). See generally Steven Shavell, *The Social Versus the Private Incentive to Bring Suit in a Costly Legal System*, 11 J. LEG. STUD. 333 (1982) (describing the externalities created by litigation, which complicate the efficiency analysis when enforcement is considered).

costs would be low. Unfortunately, however, this rosy scenario does not fit trade secret law today.

The available empirical evidence supports the widely held view that trade secret theft is a serious problem and trade secret litigation a relatively frequent phenomenon.<sup>147</sup> A 1996 study conducted by the American Society for Industrial Security ("ASIS") is particularly informative on the question of trade secret theft. This study reported an average of thirty-two successful incidents of trade secret theft *per month* during 1995.<sup>148</sup> These results reflected an increase of 323% over the comparable figure for 1992.<sup>149</sup> Moreover, the ASIS study estimated aggregate industry losses from trade secret theft at two billion dollars *per month*.<sup>150</sup> Partly in response to these findings, Congress passed the Economic Espionage Act of 1996, which for the first time imposed federal criminal penalties for trade secret theft.<sup>151</sup>

It is important not to overstate the significance of this data, however. For one thing, we do not know how many potential thieves were deterred during the same period, so we cannot evaluate the ASIS results on a comparative basis.<sup>152</sup> Moreover, there are limits to the reliability of surveys under the best of conditions.<sup>153</sup> Even with these qualifications, however, the empirical and anecdotal evidence has serious

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147. See, e.g., AMERICAN SOCIETY FOR INDUSTRIAL SECURITY, TRENDS IN INTELLECTUAL PROPERTY LOSS SURVEY (1996) [hereinafter "ASIS STUDY"] (reporting results of a survey on trade secret theft); RICHARD EELLS & PETER NEHEMKIS, CORPORATE INTELLIGENCE AND ESPIONAGE 109-118 (1984) (finding "industrial espionage is widespread and commonplace throughout the contemporary business world"); LOIS FELSON MOCK & DENNIS ROSENBAUM, A STUDY OF TRADE SECRETS THEFT IN HIGH TECHNOLOGY INDUSTRIES (1988) (reporting a high frequency of trade secret theft); Epstein & Levi, *supra* note 1, at 889-890 (reporting a sharp rise in industrial espionage and employee disclosure of trade secrets and an "astounding" level of economic loss from trade secret theft); *Thieves Among Us*, INDUSTRY WK., June 17, 1996, p. 12 (reporting widespread efforts to obtain competitor secrets and relatively lax precautions). The relatively large number of reported trade secret opinions and empirical data showing a significant amount of trade secret litigation are inconsistent with a prediction of few lawsuits. See James H. A. Pooley et al., *Understanding the Economic Espionage Act of 1996*, 5 TEX. INTELL. PROP. L.J. 177, 225 (1997) (trade secret lawsuits are "commonplace" and on the rise); Lerner, *supra* note 110 (collecting a substantial sample of trade secret cases for the period January 1, 1990, to June 30, 1994, brought by manufacturing firms based in Middlesex County, Massachusetts).

148. See ASIS STUDY, *supra* note 147, at 4.

149. See *id.*

150. See *id.* at 15-17.

151. Economic Espionage Act of 1996, Pub. L. No. 104-294, 110 Stat. 3488 (1996). Sections 1831 and 1832 of the Act impose stiff criminal penalties for intentional and knowing theft or unlawful disclosure of trade secrets. For a detailed analysis of the Espionage Act, see Pooley et al., *supra* note 147.

152. Moreover, public choice theory teaches that congressional action, such as enactment of the Economic Espionage Act, does not always respond to a genuine social problem.

153. Survey results are sensitive to the framing of questions and the biases of respondents. Moreover, one must be cautious about any survey conducted by an organization like ASIS that might have an interest in the results.

implications: it seems unrealistic to assume that with trade secret law we have achieved the happy state of infrequent theft and few lawsuits.

More significantly, these empirical findings are consistent with a theoretical analysis of firm incentives, which suggests that trade secret law is likely to increase enforcement costs by more than it reduces indirect costs. To see this, suppose a firm (O) that has information chooses how much to invest in secrecy precautions and a competing firm (S) that seeks information chooses how much to invest in trying to steal O's secret. Each firm's choices depend on what it believes the other firm will do. The more O believes S will invest, for example, the more O will invest, up to the point of diminishing returns. Thus, it is useful to think of O and S as playing a game, which I call the "precaution/stealing game."<sup>154</sup> In this game, O (or S) chooses how much to invest by trying to anticipate what S (or O) will do, knowing that S (or O) is thinking about its choice in exactly the same way.

The strategic nature of the investment choice has important consequences for the efficiency of trade secret law. For one thing, it limits the amount each firm is willing to invest, even in the absence of trade secret law.<sup>155</sup> Suppose O is considering whether to increase its investment in precaution. If O anticipates that S will respond with an increase of its own in order to try to circumvent the additional precautions, then O will have to discount the marginal benefit of its investment to take account of S's response. Thus, O will invest at a lower level than it would if it could be sure S would not react. The same analysis affects the investment decisions of S. The overall result is that each firm is restrained by its competitor's threatened response.

Even so, total investment can still be quite high without trade secret law, depending on the value of the information and the relative productivity of the parties' respective investments.<sup>156</sup> However—and this is the most important point—there is strong reason to doubt whether trade

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154. This is a game-theoretic model in that it assumes each party's investment choice depends on what the other party chooses. For background on game theory and formal game-theoretic modeling, see ERIC RASMUSEN, *GAMES AND INFORMATION: AN INTRODUCTION TO GAME THEORY* (2d ed. 1994).

155. Furthermore, the availability of contract, tort, and criminal law remedies already deters S to some extent. And informal devices, such as reputation markets, can add to the deterrent effect. See generally Ronald J. Gilson & Robert H. Mnookin, *Disputing Through Agents: Cooperation and Conflict Between Lawyers in Litigation*, 94 COLUM. L. REV. 509, 522-34 (1994) (discussing how reputation markets deter). An employee should think twice before disclosing trade secrets to a competitor if he anticipates serious reputation harms from doing so, and even a competitor might worry about retaliation if it acquires a reputation for trade secret theft. Of course, reputation markets cannot deter all disclosure. A competitor might be willing to pay enough to compensate the employee for his reputation loss, and the employee is likely to be much less concerned about reputation effects if he is near the end of his career or intends to change professions.

156. The Appendix analyzes a simple investment model that predicts O and S will each invest a substantial fraction of the information's private value. See Appendix, III.A.

secret law will improve matters, and some reason to believe that it might make matters worse by adding more in enforcement costs than it saves on indirect and transaction costs.

Suppose that O develops a computer software program worth 100 (in whatever units) if O maintains exclusivity through secrecy. Suppose further that if S successfully steals the software, O and S will split the monopoly value equally, so each will receive 50.<sup>157</sup> Assume that trade secret law confers a legal remedy designed to restore the status quo prior to the misappropriation.<sup>158</sup> Thus, O expects to obtain relief worth 50 if it wins a trade secret lawsuit, since 50 is the amount of O's loss from disclosure. Finally, suppose that O's probability of success is 0.8 and that it costs each party 5 to try the case. Thus, O's expected gain from a trade secret suit, net of litigation costs, is  $0.8 \times 50 - 5 = 35$ . Similarly, S's expected loss is  $0.8 \times 50 + 5 = 45$ .

Trade secret law causes O to shift from exclusive reliance on precautions to reliance on a mix of precautions and litigation. Litigation benefits O both by providing compensation after disclosure and by deterring S before disclosure. In our hypothetical, for example, S must take the threat of litigation seriously, since it stands to lose almost as much from litigation as it gains from disclosure—an expected litigation loss of 45 compared to a disclosure gain of 50.

However, the strength of O's litigation threat depends directly on O's ability to detect S's theft. This means that S has an incentive to invest in methods of stealing that are difficult to detect. In our hypothetical, for example, S should be willing to spend a great deal on avoiding detection, since its potential litigation loss is 90% of the secret's value. Yet if O believes that S will invest a lot in avoiding detection, O will invest more in detection technology to counteract S's efforts.

Thus, O and S play two games in the presence of trade secret law. They play the same precaution/stealing game as they did without trade secret law. But they also play a detection game, in which O tries to detect theft and S tries to avoid detection. This new game generates its own social costs, which must be folded into trade secret's enforcement

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157. One might use a standard duopoly model to calculate profits, such as the Cournot model, *see, e.g.*, RASMUSEN, *supra* note 154, at 83-85, but doing so would add a layer of complexity without advancing the point.

158. Some readers might object that ignoring punitive damages here strips trade secret law of some of its deterrent force. However, the indirect cost argument for trade secret law does not purport to turn on the availability of punitive damages. Moreover, punitive damages require malice and so are not available in all trade secret cases. *See* 1 MILGRIM, *supra* note 4, § 15.02[3][I]. Thus, it is useful to see why the indirect cost argument fails in the paradigmatic case of injunctive relief and compensatory damages. Furthermore, the analysis in the Appendix, *see* Appendix, III.C (Proposition 2), shows that the addition of punitive damages can actually make matters worse by encouraging more expenditures at the detection stage and more litigation, thereby increasing enforcement costs. For a more extensive discussion, *see infra* note 162 and Appendix, III.C.

cost along with the private and public cost of litigating trade secret suits. Moreover, the detection game also limits trade secret law's cost-reduction effect at the precaution stage. For if disclosure is difficult to detect after the fact, O will be less inclined to reduce precautions, since precautions help to prevent disclosure in the first place.<sup>159</sup>

Therefore, trade secret law adds potentially high enforcement costs in the form of expenditures on detection and litigation. Moreover, its beneficial effect in reducing investments in precaution and theft is likely to be diluted by detection difficulties at the disclosure stage. As a result, there is no assurance that trade secret law will improve social welfare.

In the Appendix, I analyze a formal model of O's and S's investment choices. This model shows that for quite plausible scenarios, the introduction of trade secret law is likely to generate more social cost than benefit.<sup>160</sup> To be sure, this conclusion depends on certain assumptions about the value of the secret, the marginal efficacy of firm investments at the precaution and detection stages, the likelihood of success with a trade secret lawsuit, the probable trial award, and the costs of litigation to the parties and the public.<sup>161</sup> But these assumptions are likely to hold for trade secret law because of certain special features of trade secret cases.<sup>162</sup>

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159. See Stanley Arkin & Michael F. Colosi, *The Criminalization of Theft of Technology and Trade Secrets*, BUS. CRIMES BULL. vol. 3, no. 5, pp. 4, 5-8 (June 1996) (noting problems with criminal and civil remedies and recommending that companies institute precautions and "not rely on either the criminal or civil law to provide a remedy after the damage is done"); Epstein & Levy, *supra* note 1, at 901-14 (recommending extensive precautionary measures despite trade secret law). Moreover, the trade secret requirement of reasonable secrecy safeguards also assures that firms will invest in precautionary measures. See also Epstein & Levy, *supra* note 1, at 896-97 (cautioning businesses that courts can be quite strict about precautions necessary for establishing a trade secret); Thomas J. Rechen, *Are the Crown Jewels Protected? Steps Your Business Can Take to Guard Trade Secrets*, CONN. EMPLOY. LAW LETTER, vol. 1, no. 5, p. 1 (May 1993) (listing recommended precautions for proving a trade secret). And in light of the uncertainty of the reasonableness standard, firms with a lot at stake, and thus a propensity to risk-aversion, will be likely to invest excessively.

160. Propositions 2 and 3 in the Appendix show a wide range of situations for which trade secret law increases social costs, *even if one ignores public litigation costs*. See Appendix, III.C.

161. The traditional trade secret requirement that the owner take reasonable secrecy precautions to qualify the information as a trade secret, *see supra* notes 37-39 and accompanying text, might reduce social costs to some extent, depending on how "reasonableness" is defined, but not enough to make a difference to the basic results. Because trade secret suits generate external costs for the defendant and the public, trade secret owners may have excessive incentives to resort to litigation and inadequate incentives to take precautions. A rule requiring self-help measures can help to correct this distortion. At the same time, however, it also increases precaution and stealing costs, as well as litigation costs, and it does little to reduce costs incurred at the detection stage.

162. Moreover, the threat of punitive damages or criminal penalties does not necessarily increase social benefit. Both require proof of malice or scienter, which is difficult to obtain, and criminal penalties also require proof beyond a reasonable doubt. See Stanley S. Arkin, *When Theft of an Idea Can Be a Crime*, N.Y.L.J., vol. 215, no. 70, pp. 3, 6 (April 11, 1996) (discussing the difficulties of proving criminal intent in a trade secret case). These features imply a reduced likelihood of success, and thus reduced deterrence benefits, as well as higher litigation costs. In addition, the prospect of punitive damages makes litigation more attractive for trade secret owners, which can also

For one thing, detection of trade secret theft is likely to be very difficult.<sup>163</sup> Unlike tangible property, information can be stolen without depriving the owner of anything observable and without leaving any physical trace of the deed whatsoever. Moreover, the simple fact that a competitor eventually acquires the information is not in itself a sign of stealing; a competitor may properly acquire such information through independent discovery or reverse engineering. In short, a trade secret owner cannot rely on the usual signs of theft. It follows that firms like O will not relax their precautions much, and firms like S will continue to devote substantial resources to stealing. The empirical evidence of widespread trade secret theft is consistent with these predictions.<sup>164</sup>

Furthermore, trade secret litigation is costly,<sup>165</sup> a fact that discourages many firms from bringing trade secret suits.<sup>166</sup> One reason for the high cost is the large number of complex factual issues in a trade secret case.<sup>167</sup> For example, plaintiffs must prove that they took reasonable

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increase expenditures at the detection stage. The net effect can easily increase social costs. *See* Appendix, III.C. (Proposition 2). And the success of criminal penalties still depends on the ability of firms to detect trade secret theft, the willingness of firms to report it to authorities, and the willingness of the government to prosecute. *See* Arkin, *supra*, at 6 (cautioning firms about the risk of losing control over valuable secrets in a criminal prosecution); Pooley et al., *supra* note 147, at 210-16 (describing the obstacles to prosecuting criminal trade secret cases and the factors that affect government decisions whether to prosecute). Finally, serious criminal penalties for trade secret appropriation, such as those imposed by the Economic Espionage Act of 1996, 18 U.S.C. § 1832, can create additional costs by chilling employee mobility.

163. *See, e.g.*, TREBILCOCK, *supra* note 56, at 140 (noting the "quite severe" costs of monitoring compliance by employees with contractual covenants restraining disclosure); Pooley et al., *supra* note 147, at 224 (noting that "information loss is inherently difficult to detect"); Ian C. Ballon, *Alternative Corporate Responses to Internet Data Theft*, 471 PLIPAT. 737, 739 (1997) (stressing the detection problems with computer data theft).

164. *See supra* notes 147-153 and accompanying text.

165. *See, e.g.*, ASIS STUDY, *supra* note 147, at 17 (noting that legal expenditures on litigation were the second highest source of loss from trade secret theft); Epstein & Levi, *supra* note 1, at 899-900 (describing the high costs of trade secret litigation); Miles J. Feldman, *Toward a Clearer Standard of Protectable Information: Trade Secrets and the Employment Relationship*, 9 HIGH TECH. L.J. 1, 15 (1994) (noting that trade secret litigation is very costly in part due to the uncertainty of the legal standards).

166. *See* Roy E. Hofer, *Business Warfare Over Trade Secrets*, LITIGATION, vol. 9, no. 4, pp. 8, 9 (Summer 1983) (noting that a reluctance to admit publicly that secrets have been stolen, coupled with the high cost of litigation and the difficulty of proof, have contributed to avoidance of litigation).

167. There are other costs as well. Litigation alerts the public that secret information has been stolen, which can have adverse repercussions for the trade secret owner. *See* Hofer, *supra* note 166, at 9 (noting that "most companies prefer quiet firings to public prosecution"). In addition, a firm that regularly brings trade secret suits against former employees risks developing a reputation as a tough employer, which can have a negative impact on employee creativity, employee morale, and future hiring. *See* Hyde, *supra* note 115. Furthermore, litigation creates a risk of further trade secret disclosure. Protective orders can reduce this risk to some extent, but they cannot eliminate it. *See* 1 JAGER, *supra* note 2, § 5.06[2] (discussing protective orders and the residual risks of disclosure). Moreover, parties have incentives to litigate the scope of a protective order, since the defendant usually wants more latitude with the secret than plaintiff is willing to give, and this adds to litigation costs.

precautions to protect the secret and that the defendant acquired the information from the plaintiff and did so unlawfully.<sup>168</sup> Given the likelihood of concurrent innovation in the technology field, it can often be very difficult to show that the defendant obtained the information improperly. This difficulty is only compounded when a secret is susceptible to lawful reverse engineering. While courts sometimes shift the burden to the defendant to prove lawful acquisition,<sup>169</sup> this redistributes litigation costs; it does not necessarily reduce them.<sup>170</sup>

Moreover, trade secret law is replete with open-ended standards and vague balancing criteria that create numerous opportunities for parties to gain from investment in litigation.<sup>171</sup> Indeed, the circumstances of trade secret cases and the uncertainty of trade secret law create incentives for frivolous litigation designed to harass competitors rather than to obtain relief for trade secret misappropriation.<sup>172</sup> For example, a company might sue ex-employees who leave to start a competing firm in order to hinder their ability to raise capital during the start-up phase. Frivolous suits of this sort not only add to litigation costs, they also chill competition.<sup>173</sup>

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168. See 1 JAGER, *supra* note 2, § 5.02 (noting that the burden of proving the existence of a protectable trade secret and the ownership of the secret lies with the plaintiff even when that burden is difficult to meet).

169. See, e.g., *Pioneer Hi-Bred Int'l. v. Holden Found. Seeds*, 35 F.3d 1226, 1240 (8th Cir. 1994); see also *Sokol Crystal Prods. v. DSC Communications*, 15 F.3d 1427, 1432 (7th Cir. 1994).

170. See Richard Linn & Michael D. Bednarek, *US Trade Secrets—An IP Manager's Guide*, 47 *MANAGING INTELL. PROP.* 38 (1995) (noting the difficulty of proving lawful acquisition and observing that it "could result in costly and protracted legal proceedings").

171. For example, many courts follow the First Restatement of Torts' multifactor balancing test for determining whether information is a trade secret. See *RESTATEMENT (FIRST) OF TORTS* § 757, cmt. b (1939). In addition, the balancing test for assessing the reasonableness of precautions adds to uncertainty, which makes summary judgment difficult and increases litigation costs. See, e.g., *Rockwell Graphic Sys., Inc. v. DEV Indus., Inc.*, 925 F.2d 174, 179 (7th Cir. 1991) (holding that "only in an extreme case can what is a 'reasonable' precaution be determined on a motion for summary judgment, because the answer depends on a balancing of costs and benefits that will vary from case to case . . ."). Indeed, the parties are likely to spend a lot just on disputing the precise definition of the protected information. Information, unlike tangible property, has no visible boundaries, so its scope depends on how it is defined. A patented invention must be clearly defined in the patent claims and specifications, but there is no similar requirement for trade secrets. See, e.g., Cheung, *supra* note 114, at 49-50. As a result, the scope of the trade secret must be defined in the course of litigation when the adverse interests of the parties encourage contentiousness.

172. See, e.g., *Gilson & Mnookin*, *supra* note 155, at 536-37; *Hofer*, *supra* note 166, at 9; Linn & Bednarek, *supra* note 170, at 41-42; Henry J. Silberberg & Eric G. Lardiere, *Eroding Protection of Customer Lists and Customer Information Under the Uniform Trade Secret Act*, 42 *BUS. LAW.* 487, 503 n.81 (1987).

173. There is another reason to doubt the indirect-cost argument: It cannot satisfactorily explain why reverse engineering is lawful. Reverse engineering creates indirect costs of its own, and its lawfulness encourages firms at the margin to redirect their research toward inventions that are difficult to reverse engineer, such as manufacturing processes, with resulting efficiency losses. One possible reason for the rule is that prohibiting reverse engineering would create excessive monopoly costs and possibly even interfere with federal patent law to such an extent as to trigger preemption concerns. See *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470 (1974). But it is not clear why we

## 2. Transaction Costs

Trade secret law encourages firms to acquire secret information through licensing rather than theft, and this can reduce social costs if licensing is less costly than stealing. Unfortunately, this benefit is likely to be quite small because of the high costs usually associated with licensing trade secrets.

There are several reasons for these high costs. First, there is a significant obstacle—known as “Arrow’s Information Paradox”—to bargaining over secret information.<sup>174</sup> A trade secret owner generally is reluctant to reveal the secret unless the potential licensee first promises not to use it in the event a license is not negotiated. The licensee, on the other hand, is not likely to make such a promise without first learning the secret. For if the licensee promises not to use the information without obtaining a license, the licensee will be forever foreclosed, even if it develops the information independently or by lawful reverse engineering. This dilemma compounds transactions costs and scuttles many efficient bargains.

Second, because of the uncertainty associated with trade secret law, a trade secret owner and a potential licensee may have difficulty valuing rights under a license.<sup>175</sup> Indeed, the risks associated with trade secret licensing encourage trade secret owners to reinforce confidentiality agreements with devices, such as collateral, that provide additional protection but increase transaction costs.<sup>176</sup>

These transaction costs exist without trade secret law, but the point is that trade secret law is not likely to reduce them significantly. Indeed, transaction costs might be lower in the absence of trade secret law. This is because firms with patentable inventions would be more likely to seek patents and licensing patents is probably less costly than licensing trade secrets.<sup>177</sup> Patent claims and specifications are publicly available and

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should worry more about these consequences for products that are amenable to reverse engineering than for processes and the like that can be hidden from view.

174. See Kenneth J. Arrow, *Economic Welfare and the Allocation of Resources for Invention*, in *THE RATE AND DIRECTION OF INVENTIVE ACTIVITY* 614-16 (1962); Cheung, *supra* note 114, at 45. Cf. Del I. Hawkins & Gerald G. Udell, *Corporate Caution and Unsolicited New Product Ideas: A Survey of Corporate Waiver Requirements*, 58 J. PAT. OFF. SOC’Y 375 (1976) (describing ways of dealing with the problem in the context of idea submissions).

175. See Cheung, *supra* note 114, at 44-45 (noting how limitations on third party liability increase uncertainty and transaction costs associated with licensing trade secrets).

176. See *id.* at 45.

177. Note, however, that administrative costs will be higher because of the need to process more patent applications. Indeed, firms today tend to combine trade secret licenses with patent licenses. See 2 MILGRIM, *supra* note 4, § 8.01; Kitch, *supra* note 113, at 288. One reason might be that it reduces the costs of licensing. Since the patented invention is specifically described in publicly available patent claims and specifications and patent rights are very broad, the value of the patent portion of the license should be relatively easy to ascertain.



define the invention reasonably clearly, so valuation is much easier. And patent rights are sufficiently broad to reduce legal uncertainty.<sup>178</sup>

It is important to bear in mind that my analysis of enforcement and transaction costs depends on the special nature of trade secrets and does not necessarily extend to laws against theft of *tangible property*. For one thing, a thief usually leaves behind a visible sign of his deed when he steals tangible property: the property is missing. This makes it more likely that victims will report the theft early enough to make investigation profitable, so anti-theft laws should have a stronger deterrent effect.

Moreover, proof of liability in a case involving theft of tangible property should be easier and less costly than in a trade secret case. For one thing, there is no reason to dispute the precise contours of the stolen item, since, unlike information, physical property has obvious boundaries. In addition, determination of liability is not encumbered, as it is in trade secret cases, with the need to negate independent discovery and reverse engineering or to satisfy open-ended requirements such as reasonable secrecy safeguards.

Finally, the transaction costs of selling or licensing are likely to be lower for tangible property. The parties do not have to deal with Arrow's Information Paradox, nor do they have to struggle with the same serious valuation problems.

### 3. *Employee Use or Disclosure to Third Parties*

The cost-reduction argument has force, however, where detection is relatively easy, litigation success is substantial, litigation costs are low, and indirect costs are high in the absence of trade secret law. One type of trade secret case might fit this profile: suits against employees who leave their employer to establish a competing business or join a competing firm.

Detection is probably easier in these situations. For example, if the competing business or firm produces an identical product in an unusually short period of time, this would suggest that the information must have been improperly acquired from the former employee. The inference is likely to be especially strong when the competing business is an employee start-up company that has insufficient time to develop the secret by proper means.<sup>179</sup> Moreover, the same evidence that signals

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178. In addition, fewer nonpatentable inventions will be kept secret when secrecy is more costly to protect. This means that more information will be available to more people, thereby reducing reliance on costly licensing to effect value-enhancing transfers. Moreover, even with respect to nonpatentable information that is successfully kept secret, the owner should still be willing to license so long as contract law protects against unauthorized disclosure or use.

179. The inference would also be strong when the competing business has tried unsuccessfully to discover the secret over a long period of time. Cf. *Pioneer Hi-Bred Int'l. v. Holden Found. Seeds*, 35 F.3d 1226, 1239-40 (8th Cir. 1994) (noting that the defendant unsuccessfully tried over a long period

misuse can also support a circumstantial case of improper acquisition and use at trial,<sup>180</sup> which enhances a trade secret owner's chance of success.<sup>181</sup>

These factors might support giving an employer legal protection for trade secrets in situations where employees establish competing firms or join competitors—at least if the costs of self-help are high in the employment setting. It is not clear, however, that we need a special trade secret law to reap this benefit, as firms can use contract law to enforce nondisclosure covenants in employment agreements.<sup>182</sup> Contract law should handle the employee start-up company fairly well, since remedies against the former employees will make it difficult for the start-up to use the information.<sup>183</sup>

However, contract law is likely to be much less effective when competing firms learn secrets by hiring employees. Contract provides no relief against defendants not in privity with the trade secret owner, and remedies against employees will do little to prevent firms from using information after the employee discloses it.

Nevertheless, it is not obvious that trade secret remedies beyond contract should be provided in this situation. Even though hiring employees can sometimes signal misappropriation, detection and proof of third-party liability will still be very costly. Moreover, faced with the threat of liability, firms have incentives to make detection and proof even more difficult by purchasing information outright rather than hiring employees, thus pushing enforcement costs even higher.

In sum, the strongest case for legal protection on cost-reduction grounds—the employee-start up—is already handled by contract law. In other employee-disclosure cases, there might be a benefit to providing trade secret remedies against the firm that obtains the secret, but

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of time to acquire the same information). At the same time, it is important not to exaggerate the difference in detection costs, especially as employees and competitors have incentives to conceal improper use. Moreover, detection is likely to be difficult when trade secrets involve marketing strategies, financial projections, or production processes that can be used without tipping off the trade secret owner.

180. See, e.g., *Cybertek Computer Prods., Inc. v. Whitfield*, 203 U.S.P.Q. 1020 (Cal. Super. Ct. 1977) (shifting the burden of showing lawful acquisition to the defendant when defendant developed a similar computer system shortly after a former employee of the plaintiff joined defendant's employ); see also *Pioneer Hi-Bred Int'l. v. Holden Found. Seeds*, 35 F.3d 1226, 1239-40 (8th Cir. 1994) (recognizing the presumption even in the absence of evidence of access).

181. Still, litigation costs are likely to be high, since the defendant will invest heavily to rebut the presumption. Moreover, as noted above, the burden-shifting rule also makes it easier for trade secret owners to bring frivolous suits to harass competitors. See *supra* note 172 and accompanying text.

182. See generally 2 MILGRIM, *supra* note 4, § 6.01 (noting that employee nondisclosure agreements are "commonplace").

183. In addition, venture capitalists who fund employee start-ups have incentives to screen for potential trade secret suits. See Hyde, *supra* note 115, at 20-21.

even here the cost-reduction argument has yet to be made in a convincing way.

#### IV

#### MAKING SENSE OF WHERE WE ARE—ARGUMENTS FROM RIGHTS AND FAIRNESS

Arguments from rights and fairness focus not on aggregate welfare effects or economic costs but on the harm to trade secret owners. In particular, one cannot justify limiting protection of rights or giving an individual less than his fair share simply on the ground that providing more would increase overall social cost; one must also show why the cost increase should warrant concern on moral grounds.<sup>184</sup>

The rights-based argument most commonly invoked to defend trade secret law focuses on privacy. It assumes that the owner's privacy right is infringed whenever a competitor takes secret information surreptitiously.<sup>185</sup> The most promising fairness argument is contractarian. It assumes that everyone in a suitably defined bargaining situation would agree to rules that roughly correspond to the basic features of modern trade secret law.<sup>186</sup>

Other rights-based and fairness arguments are sometimes used to justify intellectual property rights but none fits trade secret law very well. First, the familiar Lockean labor-desert theory is said to support a natural right to control the fruits of one's own labor.<sup>187</sup> This theory focuses on the claimant's investment, and supports—with some possible qualifications—legal rights against any nonconsensual taking.<sup>188</sup> A second argument is based on the notion of unjust enrichment tied to the

184. See, e.g., RONALD DWORKIN, *TAKING RIGHTS SERIOUSLY* 90-100 (1977); THOMAS NAGEL, *MORTAL QUESTIONS*, 112-15, 131-33 (1979).

185. See, e.g., *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 487 (1974) (noting that trade secret law protects a most fundamental human right of privacy); 1 JAGER, *supra* note 2, § 1.05; Paine, *supra* note 139, at 251-52.

186. See KIM LANE SCHELPELE, *LEGAL SECRETS: EQUALITY AND EFFICIENCY IN THE COMMON LAW* 57-85 (1988). Some reason that trade secret law enforces a moral duty to respect relationships of trust and confidence. See Paine, *supra* note 139, at 253. However, this argument only begs the question. If the trust and confidence has been voluntarily undertaken, trade secret law simply collapses into contract law. If the trust and confidence is imposed by law, one needs something more than conclusory appeals to trust in order to justify the imposition.

187. See JOHN LOCKE, *Second Treatise of Government*, in *TWO TREATISES OF GOVERNMENT* (1698) (P. Laslett ed. 1970). See generally Wendy J. Gordon, *A Property Right in Self-Expression: Equality and Individualism in the Natural Law of Intellectual Property*, 102 *YALE L.J.* 1533, 1540 (1993) (noting the widespread use of Locke's labor theory to justify intellectual property rights).

188. One serious problem with the labor theory is the difficulty of justifying limits on property rights. See, e.g., ROBERT NOZICK, *ANARCHY, STATE AND UTOPIA* 174-78 (1974) (discussing some of the problems with limiting Lockean property rights); Gordon, *supra* note 187, at 1555-62 (using Locke's theory to argue for limits on intellectual property rights). For a comprehensive critique of non-economic justifications, see Stewart E. Sterk, *Rhetoric and Reality in Copyright Law*, 94 *MICH. L. REV.* 1197, 1230-44 (1996).

restitutionary ideal of rough reciprocity in the distribution of benefits.<sup>189</sup> An unjust enrichment theory based on reciprocity focuses on how benefits are distributed, and in particular on whether the appropriator is likely to contribute roughly the same as he takes over the long term. The problem with these theories is that they cannot explain two of the most basic features of trade secret law: its requirement of secrecy, and its concern with the way information is appropriated. Neither theory gives any reason to be concerned about secret information in particular or about how that information is obtained.

This is not to say that these theories are completely irrelevant. It might be morally significant that the possessor of secret information invested his own labor to create it, or that the appropriator received a benefit exceeding what others can expect to obtain from him. However, these two theories are not nuanced enough to explain the limits or reach of trade secret law.<sup>190</sup> It is little wonder then that courts and commentators turn to privacy rights and hypothetical contract to do this work.

One final point at the outset. It is tempting to focus moral concern exclusively on the appropriator. Language that labels defendant's conduct as "espionage" or "piracy" and that characterizes parties in terms of "owning" and "stealing" invites this one-sided view.<sup>191</sup> But the appropriator is not the only one whose actions harm others. Keeping information secret denies other innovators opportunities to express their creativity, deprives persons of the fruits of further research based on the secret, and forces consumers to pay higher prices. Moreover, an appropriator's efforts to discover a secret, while not altruistic, nevertheless benefit persons other than the appropriator. Of course, rough symmetry of harm and benefit does not mean that moral stakes are symmetric too, but it does mean that any moral argument for trade secret law must explain why the balance strikes in favor of the trade secret owner.

### A. *The Right to Privacy*

The privacy argument rests on the idea that persons have a right to be free from certain nonconsensual intrusions into their private lives.<sup>192</sup>

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189. See, e.g., Wendy J. Gordon, *On Owning Information: Intellectual Property and the Restitutionary Impulse*, 78 VA. L. REV. 149, 221 (1992) (developing a restitutionary theory of intellectual property rights based in part on the idea of non-reciprocal benefits).

190. Nor is it sufficient to appeal to social costs to explain the limits of trade secret law. First, this would not be possible in a pure rights-based or fairness theory. Second, even in a mixed theory—one that combines nonutilitarian and utilitarian values—relying on social cost to explain the doctrinal limits of trade secret law in effect assigns social cost most of the justificatory work and threatens to collapse rights-based and fairness arguments into efficiency.

191. See, e.g., *E. I. duPont deNemours & Co. v. Christopher*, 431 F.2d 1012 (5th Cir. 1970) (characterizing aerial photography as "espionage" and "piracy").

192. See, e.g., JULIE C. INNESS, *PRIVACY, INTIMACY, AND ISOLATION* (1992). The argument may also rest on a right of persons to control aspects of their personal selves.

It is important to be clear that the right in question is moral, not legal. Since the right of privacy is supposed to justify legal rights, it must exist independently of those rights.

At first glance, the right to privacy may seem an obvious way to justify trade secret law. If information is secret, then it is private and the proper subject of a privacy right. Yet there is something puzzling about the privacy claim. Corporations, the most common trade secret claimants, do not possess attributes of personal autonomy or the capacity for intimate relationships often thought important to justify privacy claims. Moreover, trade secrets do not fit the paradigmatic cases that trigger our strongest intuitions about privacy. Technological or business secrets are not intimate information, like diaries or love letters.

In fact, there are three objections to the privacy argument. First, it is not clear that there is any such thing as a moral right to privacy distinct from ordinary rights of property and person. Second, even if there is such a right, it is not clear that it attaches to corporate entities. Third, even if a privacy right attaches to corporate entities, it is doubtful that the right encompasses business secrets in a commercial setting.

### *1. Doubts About the Existence of the Right*

Secrecy alone is not sufficient for the existence of a privacy right. For example, if someone manages to keep her bad credit history secret, a credit agency commits no wrong by trying to uncover it, unless the agency uses wrongful methods such as trespass or force. This hypothetical suggests a more general question, whether the notion of privacy adds anything to restrictions imposed by other norms. Put differently, are there any circumstances in which someone's acquisition of information is morally wrongful just because it invades someone else's privacy?

This question has been hotly debated in philosophical and legal circles.<sup>193</sup> Those who answer in the negative contend there is no general right to privacy. They claim that all (or most) of the important interests in privacy are subsumed in other rights, such as rights of person and property, and that the right to privacy is merely derivative of these more specific rights.<sup>194</sup>

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193. See *id.* at 28-40 (describing this debate).

194. See, e.g., H.J. McCloskey, *Privacy and the Right to Privacy*, 55 *PHIL.* 17, 31 (1980) (arguing that privacy rights are derivative); Judith Jarvis Thomson, *The Right to Privacy*, 4 *PHIL. & PUB. AFF.* 295, 312 (1975) ("I don't have a right to not be looked at because I have a right of privacy; . . . it is because I have *these* rights that I have a right to privacy."); cf. Richard A. Epstein, *Privacy, Property Rights, and Misrepresentations*, 12 *GA. L. REV.* 455, 463-65 (1978) (noting that legal privacy claims, distinct from misrepresentation and other more conventional torts, are not very important, have a problematic moral foundation, and seem suited to an economic approach).

If this view is correct, then taking secret information is wrongful not because it violates a right to privacy, but because it transgresses some other right such as a right against trespass or fraud. In fact, this is an accurate description of the bulk of trade secret law. Most trade secret cases involve a breach of relation-based confidentiality duties or a violation of independent legal norms unrelated to privacy.<sup>195</sup>

Yet to some of its defenders, the right of privacy is entailed in personhood, in what it means to respect persons as autonomous, rational agents capable of formulating coherent life plans<sup>196</sup> or making choices about emotional attachments of love and caring.<sup>197</sup> To others, a right to privacy is justified as a way to promote relationships of intimacy, such as friendship and love, which have moral value.<sup>198</sup>

This philosophical debate is complex, and we need not examine it with care. It is enough to note that those who would defend trade secret law on privacy grounds cannot simply assume the existence of a right; they must be prepared to respond to the arguments of privacy skeptics. Yet even if trade secret proponents can respond, they have still more serious obstacles to surmount. For even if a distinctive moral right to privacy exists, it is extremely unlikely that it attaches to corporate actors and the commercial information involved in most trade secret cases.

## 2. Corporations Cannot Be Holders of the Right

Corporations are not the sort of entities capable of intimate associations, attachments, and feelings usually associated with privacy. Because of this, most courts and commentators refuse to extend legal

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195. See *supra* Part I. In addition, the fact that courts have been reluctant to recognize a common law right to privacy at least suggests that privacy has a problematic moral pedigree. After all, one might expect a more enthusiastic reception for a legal claim backed by clear moral principle.

196. See, e.g., Stanley I. Benn, *Privacy, Freedom, and Respect for Persons*, in *PRIVACY: NOMOS XIII*, 8-13 (J. Roland Pennock & J. W. Chapman, eds., 1971) (privacy is essential to respect for persons as rational choosers of life plans); Hyman Gross, *Privacy and Autonomy*, in *PRIVACY: NOMOS XIII*, 169, 174, 178-79 (J. Roland Pennock & J. W. Chapman, eds., 1971) (privacy is inherent in what it means to respect persons as autonomous moral agents); Robert S. Gerstein, *Intimacy and Privacy*, 89 *ETHICS* 76, 78 (1978) (intruding on intimacy violates a person's autonomy); Joseph Kupfer, *Privacy, Autonomy, and Self-Concept*, 24 *AM. PHIL. Q.* 81, 82 (1987) ("privacy is essential to the development and maintenance of an autonomous self"); Jeffrey H. Reiman, *Privacy, Intimacy, and Personhood*, 6 *PHIL. & PUB. AFF.* 26, 39 (1976) ("privacy is necessary to the creation of selves"); cf. Richard A. Wasserstrom, *Privacy: Some Arguments and Assumptions*, in *PHILOSOPHICAL LAW: AUTHORITY, EQUALITY, ADJUDICATION, PRIVACY* 147, 154 (Richard Brunaugh, ed. 1978) (connecting privacy to a conception of the person as "an entity that is capable of being exclusively aware of its own thoughts and feelings").

197. See INNESS, *supra* note 192, at 95-112.

198. See, e.g., Charles Fried, *Privacy*, 77 *YALE L.J.* 475, 477-78, 484-86 (1968) (privacy makes it possible to disclose facts about oneself selectively, a capacity essential to the formation of intimate relationships of love and friendship); James Rachels, *Why Privacy Is Important*, 4 *PHIL. & PUB. AFF.* 323, 331 (1974) (privacy makes it possible for us to regulate the sort of relationships we have with other people); Wasserstrom, *supra* note 196, at 157-158 ("some degree of privacy is a logically necessary condition for the existence of many of our most meaningful social relationships").

privacy rights to a corporation, arguing that the corporate entity is not able to feel offense, emotional suffering, or humiliation essential to the tort.<sup>199</sup>

In fact, there is a powerful theoretical argument against recognizing moral privacy rights in corporations.<sup>200</sup> As we saw above, a right to privacy can be justified in two different ways: as necessary to the formation of morally valuable relationships, or as entailed in what it means to respect persons as autonomous moral agents. The first justification is a *consequentialist* form of moral argument, focusing on the consequences that the right is likely to produce. The second justification, by contrast, is *deontological*, defending the right as embedded in personhood without regard to the consequences.

Consider the deontological justification first. Since it rests on attributes of personhood, it cannot apply to a corporation *qua* corporation, for corporations are not autonomous agents capable of formulating life plans or making choices about emotional attachments.<sup>201</sup> Thus, for the deontological justification to hold in this context, the corporation must be able to assert the privacy rights of its employees. But there are serious problems with this idea.

For one thing, it is not clear that taking trade secrets violates an employee's privacy right. Employees have no ownership interest in corporate trade secrets, and while ownership might not be strictly necessary, most violations of informational privacy arise in settings where the information in an important sense belongs to the individual whose privacy is at stake.

More importantly, the person who takes secret information usually directs his actions at the corporation *qua* corporation, not at individual employees. A deontological justification based on respect for personal autonomy is generally thought to require that the offender direct his action toward the victim.<sup>202</sup> When the offender harms an individual only

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199. See RESTATEMENT (SECOND) OF TORTS § 652(1), cmt. c (1977) (privacy right is personal and does not attach to corporations); *Southern Air Transp. v. American Broad. Cos.*, 670 F. Supp. 38, 42 (D.D.C. 1987), *aff'd*, 877 F.2d 1010 (D.C. Cir. 1989) (noting corporations are not capable of being offended, which is essential to the idea of a wrongful intrusion into private matters).

200. See generally SISSELA BOK, *SECRETS: ON THE ETHICS OF CONCEALMENT AND REVELATION* 13-14 (1982) (noting that use of the language of privacy for the "collective secrecy" of large-scale enterprises, such as companies holding trade secrets, "should not go unchallenged" and can be excessively sentimental and "distort our understanding of the role of these enterprises").

201. See *id.* at 141-42 ("The claim to personal autonomy over trade secrets, moreover, cannot simply be extrapolated to collective autonomy. Neither the concept of privacy nor that of personal autonomy can, by itself, easily be expanded to fit both the individual entrepreneur and the large corporation."); MEIR DAN-COHEN, *RIGHTS, PERSONS, AND ORGANIZATIONS: A LEGAL THEORY FOR BUREAUCRATIC SOCIETY* 61-62 (1986) ("The paradigm of autonomy is directly concerned with individuals only, and it provides moral grounds for legal claims made by individuals alone.").

202. See DAN-COHEN, *supra* note 201, at 66-69 (discussing this objection to a corporation asserting the deontologically based autonomy rights of its employees). See generally Nancy Ann

as an unintended consequence of action directed elsewhere, he does not show the kind of disrespect for personhood necessary to a rights violation.<sup>203</sup> In the trade secret context, this means that the deontologically based privacy rights of employees are not likely to be violated by trade secret appropriation directed at and intended to harm the corporation. An employee under such circumstances "can scarcely feel the special indignation of being singled out and personally mistreated by another individual."<sup>204</sup>

These objections present serious obstacles to using a deontologically based privacy right. But what about a privacy right based on consequentialist grounds? According to the consequentialist argument, privacy has moral value insofar as it promotes relationships of friendship and love, which are thought to possess intrinsic moral value.<sup>205</sup> However, corporations are incapable of the sort of moral relationships that support the right. Relationships in the corporate setting are commercial, and commercial relationships have economic value, not intrinsic moral value.

### 3. *Commercial Information Is Not Within the Scope of the Right*

A third reason to doubt whether trade secret law can be justified on privacy grounds concerns the subject matter of trade secrets.<sup>206</sup> Most proponents of a privacy right link the right to matters of personal intimacy, for which our moral intuitions tend to be strongest.<sup>207</sup> But none of the commercial or technological information protected by trade secret law falls into this category.

Although trade secret law cannot be grounded in a moral right of privacy, we must still consider the possibility that there is a moral right of secrecy that extends beyond privacy to encompass commercial secrets. Privacy scholars are careful to distinguish secrecy from privacy,<sup>208</sup> and some even suggest that secrecy might have moral value apart from

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Davis, *Contemporary Deontology*, in A COMPANION TO ETHICS 205, 208-10 (Peter Singer ed., 1993) (discussing the narrow-directedness of deontological theories).

203. See DAN-COHEN, *supra* note 201, at 66-69.

204. *Id.* at 69.

205. See Fried, *supra* note 198.

206. Moreover, privacy rights cannot explain the reverse-engineering rule. An argument that publicly selling a product in effect waives any privacy interest, see SCHEPPELE, *supra* note 186, at 261, rings hollow when the private information is so well-concealed that it takes considerable work to reverse-engineer it. Moreover, a trade secret owner does not consent to disclosure simply by selling his product.

207. See INNESS, *supra* note 192, at 103-04 ("We value privacy not merely because we value choice, but because we value choice *with respect to intimacy*."); Gerstein, *supra* note 196, at 76 ("Intimacy and privacy seem to go together.").

208. See, e.g., INNESS, *supra* note 192, at 59-61.



privacy.<sup>209</sup> Perhaps judicial references to "privacy" are merely clumsy efforts to invoke a moral right of secrecy.

Switching from privacy to secrecy, however, does little to help the case for trade secret law. There are strong reasons to doubt the existence of a secrecy right, at least a right sufficiently broad to justify trade secret law. Moral intuitions might be strong enough to justify secrecy for intimate matters, but they are much weaker when intimacy is not involved.

The most promising justification for a moral right to secrecy beyond privacy focuses on the importance of secrecy to personal autonomy; in particular, to the freedom of persons to formulate and act on life plans that involve surprise and unpredictability.<sup>210</sup> But this justification fails when applied to trade secrets for the same reason it failed for privacy: corporations cannot assert deontological autonomy rights either directly or vicariously. As a result, there is no basis for a broad moral right to corporate secrecy.<sup>211</sup>

### B. The Contractarian Argument

Some commentators rely on contractarian arguments to justify trade secret law.<sup>212</sup> The idea is to show that all firms would agree to the rules of trade secret law if they could bargain with one another in a suitably defined hypothetical bargaining situation. That there would be unanimous agreement is considered sufficient to bind firms in the real world to the predicted outcome.

The contractarian form of argument is quite familiar in moral and political philosophy,<sup>213</sup> and commentators have used it to justify legal

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209. See Bok, *supra* note 200, at 10-28 (distinguishing secrecy from privacy and exploring the moral value of secrecy).

210. See *id.* at 22-24.

211. More precisely, if corporate secrecy has any moral value at all, that value must inhere in the consequences secrecy makes possible. In that case, however, the moral argument for corporate secrecy is far too sensitive to context to support a broad secrecy right. See *id.* at 26-27 (arguing that "there can be no presumption either for or against secrecy in general . . . it is especially important to look at [secrecy practices] separately, and to examine the moral arguments made for and against each one"). Stated differently, because corporate secrecy has only consequentialist moral value and because there is no moral value to secrecy *in itself*, there are not likely to be many situations in the commercial corporate setting which call for protecting secrecy on moral grounds. Perhaps when secrecy would prevent serious physical harm to an individual, the value of preventing such harm would give moral support to secrecy. But such cases are likely to be quite rare.

212. See, e.g., SCHEPPELE, *supra* note 186, at 231-47; Friedman et al., *supra* note 1, at 70-71.

213. John Rawls's derivation of principles of justice from the "original position" is perhaps the most well-known example. See JOHN RAWLS, *A THEORY OF JUSTICE* (1971). For sympathetic, yet critical, discussions of contractarian theory, see BRIAN M. BARRY, *THEORIES OF JUSTICE* 3-142, 282-92 (1989); NAGEL, *supra* note 184, at 120-27; Daniel Brudney, *Hypothetical Consent and Moral Force*, 10 L. & PHIL. 235 (1991); Jean Hampton, *Rational Choice and the Law*, 15 HARV. J.L. & PUB. POL'Y 649 (1992). For an ambitious effort to construct a contractarian foundation for ethics, see DAVID GAUTHIER, *MORALS BY AGREEMENT* (1986).

rules in a number of settings outside of trade secret law.<sup>214</sup> All contractarian arguments have the same two part structure. In the first stage, an initial bargaining situation is defined. This includes specifying the agents who bargain, the information and strategies available to each, the possible outcomes, and the payoffs. In the second stage, the desired result is shown to be an outcome of bargaining under the specified conditions.

For a contractarian argument to have normative force, however, it must also give some reason why persons in the real world should abide by the terms of the hypothetical agreement.<sup>215</sup> The analogy to contract suggests the reason lies in consent, but none of the real world actors have actually given consent or made a promise of any kind. This means that when analyzing a contractarian argument for trade secret law, one must be attentive to the source of its normativity—the reason why hypothetical bargaining justifies forcing firms to comply in the real world.<sup>216</sup>

### 1. *Contractarianism as Efficiency*

Friedman, Landes and Posner ("FLP") rely on a contractarian argument to justify the lawfulness of reverse engineering.<sup>217</sup> They argue that all firms would agree to the reverse-engineering rule if they could bargain for it in advance. By reverse engineering, firms are able to learn and build on their competitors' secrets. Although they also risk having their own secrets revealed, this risk is not too costly: reverse engineering normally takes considerable time and effort, which guarantees a significant head start and reduces a competitor's free-ride advantage.

The best way to understand FLP's argument is in efficiency terms. If all firms would agree to the rule, then all must be better off, so the rule must increase aggregate welfare. Thus, the rule is normatively

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214. See, e.g., Kim Lane Scheppele & Jeremy Waldron, *Contractarian Methods in Political and Legal Evaluation*, 3 YALE J.L. & HUM. 195 (1991).

215. See, e.g., Brudney, *supra* note 213, at 243-49; Hampton, *supra* note 213, at 653-56. Without an answer to this question, a contractarian argument is simply a formal exercise in bargaining theory, a demonstration that certain results can follow under certain bargaining conditions.

216. For example, John Rawls justifies the "original position" by arguing that it embodies fundamental views of "free and equal" persons that are part of the considered convictions of those subscribing to democratic practices. See JOHN RAWLS, *POLITICAL LIBERALISM* 22-28 (1993). Contractarianism also has been justified in other settings as a way to give specific content to general norms independently accepted as part of a social practice. The general norms supply the reason participants must pay attention to the more concrete results of the bargaining process. See Brudney, *supra* note 213; see also Robert G. Bone, *Statistical Adjudication: Rights, Justice, and Utility in a World of Process Scarcity*, 46 VAND. L. REV. 561, 648-50 (1993) (justifying use of a contractarian argument as a way to give content to a general norm of fair regard for other litigants).

217. See Friedman et al., *supra* note 1, at 70.

desirable not because of hypothetical consent, but simply because it is efficient.<sup>218</sup>

This argument has serious difficulties, however, even for those willing to accept the efficiency rationale. First, not all firms are actually better off under a reverse-engineering rule. A firm with no valuable secrets and little inventive ability might be, but a firm with valuable secrets or particularly creative employees might easily lose more than it gains.<sup>219</sup> Moreover, if FLP mean that there would be an increase in aggregate social welfare even if some firms were worse off,<sup>220</sup> then their argument is the same as the efficiency arguments discussed in Part III and suffers from the same deficiencies.<sup>221</sup>

## 2. Contractarianism as Fairness

There are forms of contractarian argument that do not collapse into efficiency and that are used to establish the fairness of particular principles or rules. Typically, these arguments employ bargaining situations that strip agents of knowledge of the real world in order to remove the bias of narrow self-interest and hence create conditions for impartial choice thought essential to morality.<sup>222</sup> In such an idealized bargaining

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218. See Richard Craswell, *Efficiency and Rational Bargaining in Contractual Settings*, 15 HARV. J.L. & PUB. POL'Y 805, 813-15, 820-22 (1992) (criticizing contractarian arguments in economics as adding nothing to and sometimes obfuscating a straightforward efficiency analysis).

219. FLP's analogy to the Semiconductor Chip Protection Act is inapposite. See Friedman et al., *supra* note 1, at 70. It is true that the semiconductor industry lobbied Congress for special legislation prohibiting knock-offs but allowing reverse engineering to make improvements. The reason is as FLP states: semiconductor firms felt they would be better off with the ability to copy one another's chip technology in order to design improvements. See *id.* However, the semiconductor industry did not endorse reverse engineering as such; it endorsed reverse engineering as a step toward creating an improved chip. See generally Semiconductor Chip Protection Act of 1984, 17 U.S.C. §§ 905, 906(a) (1995). Congress intended to exempt reverse engineering from liability only when it produced a new chip that was not substantially identical to the first chip and when it involved a substantial additional investment of energy and resources beyond reverse engineering. See Leo J. Raskind, *Reverse Engineering, Unfair Competition, and Fair Use*, 70 MINN. L. REV. 385, 398-402 (1985). These additional requirements were important to the industry, see *id.* at 390-92, presumably because they reduced the free-rider problem sufficiently to benefit all firms. By contrast, reverse engineering is lawful in trade secret law even if it is used simply to duplicate the secret. Thus, the history of the Semiconductor Chip Protection Act is hardly support for the efficiency of trade secret's reverse-engineering rule. See *Brooktree Corp. v. Advanced Micro Devices, Inc.*, 977 F.2d 1555, 1565-67 (Fed. Cir. 1992) (noting the importance of "innovation and improvement" for lawful reverse engineering under the Chip Act).

220. This is the familiar Kaldor-Hicks efficiency criterion, which can be incorporated into a contractarian argument by letting firms make side payments. See Craswell, *supra* note 218, at 813.

221. There is another way to see this point. FLP's contractarian argument must include in the bargaining situation all persons who might be affected by trade secret law, including innovators outside the industry who would benefit from knowing about the invention, consumers who must pay the price of secrecy, and taxpayers who fund the court system that adjudicates the trade secret lawsuits. However, it would be impossible to buy agreement from all these parties if the social costs of trade secret law, including enforcement and transaction costs, exceed the benefits.

222. See SCHEPPELE, *supra* note 186, at 63-67.

situation, agents lack the information about costs and benefits necessary to choose efficient rules.

In her book, *Legal Secrets*, Professor Kim Lane Scheppele presents the most comprehensive contractarian theory of trade secret law to date.<sup>223</sup> Her declared purpose is to construct a moral theory that can compete with economic accounts.<sup>224</sup> To do this, she employs an idealized bargaining situation in which agents bargain over the legal rules that will govern disclosure and protection of secrets, including trade secrets, without knowing their particular circumstances and without being able to predict how they will fare individually under any set of secrecy rules.<sup>225</sup> Scheppele derives a bargaining outcome that she claims includes two types of rules: (1) rules requiring disclosure when secrecy risks catastrophic loss, but tolerating secrecy short of catastrophe so long as everyone has roughly equal access to the secret information,<sup>226</sup> and (2) rules prohibiting disclosure by those told a secret in confidence but not by those who learn a secret without any basis for a confidentiality duty.<sup>227</sup>

The first thing to note about Scheppele's argument is that it justifies only a limited scope for trade secret law. When discussing liability, for example, Scheppele focuses almost exclusively on breach of confidence cases.<sup>228</sup> Moreover, her explanation of why rational bargainers would choose to hold persons liable for breach of confidence has nothing to do with the fact that secret information is involved. Rather, it is the same reason bargainers would choose to enforce contracts in general; namely, the gain to be had from facilitating executory promises.<sup>229</sup> Thus, Scheppele's argument collapses trade secret law into contract.

Professor Scheppele's analysis also suffers from two problems that have to do with the logic of contractarianism more generally. First, Scheppele does not adequately explain why her bargaining agents would choose the particular principles and rules she advocates. At times it appears as if she imputes to her agents a belief in the very principles she hopes to derive. For example, Scheppele simply states that her agents would not wish to prohibit disclosure of secrets imparted to

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223. See *id.* at 70-83, 231-47.

224. See *id.* at 3, 83-85, 260-65, 308-312.

225. See *id.* at 71. In Scheppele's view, this forces each agent to approach the question of what rules to adopt from an impartial perspective and consider the impact of each alternative on all possible social roles the agent might fill.

226. See *id.* at 74-79.

227. See *id.* at 79-83.

228. See *id.* at 240-45. In fact, she claims that "the presence of a confidential relationship can be said to be at the heart of the protection of trade secrets." *Id.* at 240. Although she does recognize that there are cases that go further, see *id.* at 235, 245 n.46, she never even attempts to explain why bargainers would agree to liability under those circumstances.

229. See *id.* at 82-83.

others outside a promise of confidentiality.<sup>230</sup> Yet she never explains why. A rule barring disclosure more broadly would make secrets more valuable to their owners. And since bargainers have no way to predict how often they will end up being owners, there is no obvious reason why they would reject a broad rule of restraint that created more valuable secrets in favor of a narrower rule that assured easier access to the secrets of others.<sup>231</sup>

The second problem with the argument strikes deeper. Why should persons in the real world heed the results of a bargaining process that does not reflect their actual preferences? Consider Firm A, with no valuable secrets and little inventive ability. Firm A would like to use all possible methods to steal its competitors' secrets. Why should Firm A comply with even the relatively limited constraints Scheppele proposes? When told that it would have agreed to those constraints if it knew nothing about itself, Firm A would protest that it did not in fact agree and that some hypothetical agent cannot possibly represent its interests.

At this point, Scheppele could argue that the agreement has to do with moral principle and that Firm A would agree if it set aside narrow self-interest and adopted an impartial, moral point of view. Yet Firm A could simply deny that morality is relevant to trade secrecy and thus reject impartiality as the proper vantage point from which to choose secrecy rules. In other words, Firm A could insist that the only moral constraints on secrecy practices in a competitive market are those constraints imposed by general background norms, such as prohibitions against torture or killing, which apply without regard to whether secret information is involved. On this view, there would be no reason to invoke morality more broadly to regulate secrecy practices among market actors.<sup>232</sup>

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230. *See id.*

231. Another example is Scheppele's argument that bargaining agents would agree to rules allowing reverse engineering and independent discovery because those rules help ensure everyone has "equal access;" that is, a roughly equal probability of finding information by the same expenditure of effort. *See id.* at 261; *see also id.* at 78-79, 119-22 (noting that equal access prevents parties from taking advantage of *structural* inequalities such as privileged access to information due to occupation or role). Without equal access, she argues, bargaining agents would not be willing to gamble on secrecy since the gamble would not be fair to those who end up on the losing end.

First, I doubt that Scheppele's bargaining agents would actually require equal access. They would if they shared Scheppele's particular view of what constitutes a fair gamble, but then Scheppele's theory of fairness, and not her contractarian argument, does all the work. Second, even if they would require equal access, they could still accept rules prohibiting reverse engineering and independent discovery. Such rules in fact satisfy the equal access requirement since firms have an equal *ex ante* chance of being the first to discover the secret. Given that secrets are more valuable with rules prohibiting reverse engineering and independent discovery, there is no obvious reason why bargaining agents would not agree to them.

232. Thus, Firm A need not take the extreme position that there are no moral norms at all that apply to a firm's conduct in the trade secrecy setting. Firm A can concede, for example, that using

What Professor Scheppele must show then is that morality is relevant in a way that fits her particular characterization of the bargaining situation.<sup>233</sup> Stated more generally, the idea of consent in a contractarian argument does normative work only if the parties have reason to accept the initial bargaining conditions. This is difficult for trade secret law because it is not immediately obvious why those engaged in market competition ought to think about *secrecy* rules from an impartial point of view.<sup>234</sup>

Thus, contractarianism fares poorly as a justification for current trade secret law. Either it collapses into efficiency, in which case the analysis of Part III applies, or it fails to justify actual trade secret rules apart from contract or to give a convincing account of moral obligation in the secrecy context.

## V

### MAKING SENSE OF WHERE WE ARE—AN ARGUMENT FROM INDUSTRY NORMS

Another common justification offered for trade secret law is that it is a useful device for maintaining "standards of commercial ethics."<sup>235</sup> These standards are never precisely defined.<sup>236</sup> Insofar as they incorporate theories of efficiency, rights, and fairness, there is nothing to add to the discussion of the previous sections. Nevertheless, there is a possibility that trade secret law might function as a legal mechanism for enforcing the informal norms of an industry.<sup>237</sup>

According to some theories, norms that survive the test of time are likely to be efficient, at least if all the effects of enforcement are internalized by the industry and there are no other obstacles to an efficient

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torture to force disclosure of secret information is immoral without having to accept the proposition that morality should regulate secrecy rights in general.

233. It is worth noting that Professor Scheppele's analysis is both positive and normative. *See, e.g.,* Scheppele, *supra* note 214, at 308-12. I am interested in the normative side, and my objections are addressed to that aspect of her argument. On the positive side, Scheppele claims that judicial reasoning in secrecy cases better fits a contractarian theory than an economic one. The validity of this positive claim depends on the degree of fit, not the source of normative obligation.

234. A reader might object that privacy is involved and that privacy implicates morality. However, this recalls the problems with privacy discussed in Part IV.A. There is a more general point here. One way to argue that morality is relevant to trade secrecy is to identify a moral theory that applies, but then that moral theory does the normative work directly and there is no need for contractarianism.

235. *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 481-82 (1974).

236. *See* *E.I. duPont deNemours & Co. v. Christopher*, 431 F.2d 1012, 1017 (5th Cir. 1970) ("'Improper' will always be a word of many nuances, determined by time, place, and circumstances. We therefore need not proclaim a catalogue of commercial improprieties.").

237. *See, e.g.,* RESTATEMENT (FIRST) OF TORTS § 757, cmt. f (1939) ("In general [improper means] are means which fall below the generally accepted standards of commercial morality and reasonable conduct."); *see also supra* note 90 (discussing early twentieth century conventionalism underlying the idea of unfair competition).

equilibrium.<sup>238</sup> Moreover, by some moral views, it is considered fair to impose obligations on someone who voluntarily takes part in an institution when she derives reciprocal benefits from others who assume the same obligations toward her, and the resulting system of mutual obligations makes the institution as a whole work better for everyone.<sup>239</sup> Assuming that informal norms are generally accepted because they work well, and that each firm benefits from others following the same norms, this reciprocity principle would justify imposing a conventionally accepted norm on the defendant in a trade secret suit.

There are two problems with this argument, however. First, the argument only works for norms that are actually accepted.<sup>240</sup> All firms do not have to agree to the norm explicitly. It is possible to infer a norm from industry practice on the theory that firms implicitly accept those norms that support the practices in which they engage. However, there must be actual evidence that the norm is accepted in the industry. A court cannot therefore simply condemn conduct as wrongful while nodding in the direction of industry practice; the court must offer convincing evidence that the practice exists. To my knowledge, no court has yet done so in a trade secret case.<sup>241</sup>

The second problem is analytic. For an industry norm to exist, it must be part of a relatively stable industry-wide equilibrium.<sup>242</sup> Such an equilibrium often will be supported by non-legal sanctions imposed informally within the industry.<sup>243</sup> Under these circumstances, courts should exercise caution before intervening to enforce these norms. For although judicial intervention can be beneficial, it can also be very costly.<sup>244</sup>

On the one hand, judicial intervention can bolster weak industry enforcement and deter high stakes opportunism, especially in end-game

238. See, e.g., Robert D. Cooter, *Decentralized Law for a Complex Economy: The Structural Approach to Adjudicating the New Law Merchant*, 144 U. PA. L. REV. 1643 (1996).

239. See, e.g., Allan Gibbard, *Constructing Justice*, 20 PHIL. & PUB. AFF. 264 (Summer 1991).

240. See Cooter, *supra* note 238, at 1664-66.

241. Moreover, the empirical evidence suggests pervasive and widespread industrial spying. See *supra* notes 147-153 and accompanying text. Given this practice, it is not clear there are any industry norms that are generally accepted. But see Jerry L. Wall, *What the Competition Is Doing: Your Need to Know*, HARV. BUS. REV. 22 (Nov.-Dec. 1974) (survey of opinions of business executives concerning the ethical propriety of various methods of acquiring competitor secrets).

242. By an "equilibrium," I mean the game-theoretic notion of a set of strategies that are mutual best responses for all parties. See, e.g., RASMUSEN, *supra* note 154, at 14-15. Most commentators explain norms in terms of the equilibrium of a repeated game, where the equilibrium involves some significant amount of cooperation centered on a particular standard of conduct. See, e.g., Cooter, *supra* note 238, at 1661-67; Eric A. Posner, *The Regulation of Groups: The Influence of Legal and Nonlegal Sanctions on Collective Action*, 63 U. CHI. L. REV. 133, 137-44 (1996).

243. These can include informal penalties, such as ostracism or boycott, or more formal penalties imposed by an industry dispute-resolution process. See Posner, *supra* note 242, at 155-56.

244. See, e.g., Lisa Bernstein, *Merchant Law in a Merchant Court: Rethinking the Code's Search for Immanent Business Norms*, 144 U. PA. L. REV. 1765 (1996); Posner, *supra* note 242, at 156.

situations.<sup>245</sup> On the other hand, intervention risks high litigation costs. Industry trade secret norms are likely to vary a great deal with contextual factors, such as the tactics used to obtain the secret, the target's conduct, and the nature of the information. Such a fact-specific inquiry encourages investment in litigation and opens up numerous opportunities for contentiousness.

More importantly, judicial intervention can undermine the equilibrium supporting the norm. One reason is judicial error. A court's ability to gather and process information about industry practice is extremely limited, so the risk of error is potentially quite high. Erroneous definition of a norm, entrenched in positive law through stare decisis, as well as judicial error in applying a norm, can destabilize the equilibrium.<sup>246</sup> Furthermore, even if there were no risk of error, judicial intervention still substitutes for, and therefore can weaken, the informal sanctions that support the equilibrium. This can have a deleterious effect if, as is likely, informal sanctions work better for the industry as a whole.<sup>247</sup> Finally, industry norms based on custom are potentially more responsive to changing conditions than formal law, so turning an informal norm into a formal rule sacrifices flexibility.<sup>248</sup>

Thus, the argument for trade secret law based on industry norms is weak. There is no reliable empirical evidence that these norms exist. Moreover, even if they do exist, the cost of identifying and enforcing them could well be prohibitive. And even if these costs are manageable, judicial intervention might jeopardize the existence and undermine the advantages of the norm itself. Therefore, it would seem better for the courts not to intervene, or to intervene only when evidence for the norm is clear and the danger to the equilibrium slight.

## VI

### WHERE WE GO FROM HERE—RECOMMENDATIONS FOR REFORM OF TRADE SECRET LAW

We have seen so far that the historical roots of trade secret law provide no reason to endorse the doctrine today and that the standard policy justifications are weak. In this final section, I consider some of the

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245. See, e.g., Cooter, *supra* note 238, at 1682-83 (recommending that courts enforce efficient industry standards in end-game situations); see also Posner, *supra* note 242, at 156-58 (limiting judicial intervention to situations where a group's detection and sanctioning mechanisms are weak or the value of defection is high).

246. See, e.g., Posner, *supra* note 242, at 156 (recommending only limited judicial intervention because of the group's superior knowledge about its own norms and about the facts underlying a dispute); Edward B. Rock & Michael L. Wachter, *The Enforceability of Norms and the Employment Relationship*, 144 U. PA. L. REV. 1913, 1929-40 (1996) (arguing against judicial enforcement of norms partly because of the potential for undermining the norms themselves).

247. See Posner, *supra* note 242, at 155-56.

248. See Cooter, *supra* note 238, at 1654-57.



implications of my analysis for reform of trade secret law. Although a detailed treatment is beyond the scope of this Article, I will briefly discuss some of the more important changes.

Stated simply, I propose that, with perhaps a few limited exceptions, trade secrets should be protected only on contract principles. Recall that current trade secret law offers protection in three situations: (1) when a duty of confidence has been breached, (2) when an independent legal norm has been violated, and (3) when the means of acquisition, use, or disclosure are deemed improper for other reasons.<sup>249</sup> It follows from the analysis presented in this Article that liability is clearly justified only in the first category and then only on the basis of contract principles. The second category should be severely restricted, and the third eliminated. To see this, we must consider each of the three categories more closely. The following analysis takes them in reverse order.

### A. Improper Means Generally

The famous case of *E.I. duPont deNemours & Co. v. Christopher*<sup>250</sup> is a good example of the third category.<sup>251</sup> In *Christopher*, the defendants took aerial photographs of a new methanol manufacturing plant while the plant was under construction and exposed to view from above. The photographs focused on an area containing plaintiff's secret manufacturing process. The Court of Appeals held that this was an improper appropriation, though it involved no breach of confidence and no violation of an independent legal norm.<sup>252</sup> The Court reasoned that liability would bolster incentives to create, reduce indirect costs, protect privacy, and enforce standards of commercial ethics.<sup>253</sup>

Most commentators approve of the *Christopher* decision on one or more of the policy grounds that the Court announced.<sup>254</sup> However, this approval is misplaced. None of the Court's policy arguments are persuasive. For example, there is no assurance that trade secret law will

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249. See *supra* Part I.A.

250. 431 F.2d 1012 (5th Cir. 1970). Cf. *Interlox v. PPG Indus., Inc.*, 736 F.2d 194, 201 (5th Cir. 1984) (noting that the configuration of a plant and equipment readily visible from a nearby highway is not sufficiently secret).

251. See also *Drill Parts & Serv. Co., Inc. v. Joy Mfg. Co.*, 439 So.2d 43 (Ala. 1983) (liability imposed for obtaining trade secret by searching scrap metal and trash); *Tennant Co. v. Advance Machine Co.*, 355 N.W.2d 720, 725-26 (Minn. Ct. App. 1984) (rummaging through garbage is improper means); *Epstein & Levy, supra* note 1, at 889-92 (describing various methods of obtaining trade secrets, including wearing sticky shoes to pick up residue during a plant visit and disingenuously expressing interest in a job or possible commercial relationship).

252. See *Christopher*, 431 F.2d at 1014, 1017.

253. See *id.* at 1016-17.

254. See, e.g., SCHELPELE, *supra* note 186, at 235-36, 261-62; Dratler, *supra* note 92, at 81-82; Friedman et al., *supra* note 1, at 69; Note, *Trade Secret Misappropriation: A Cost-Benefit Response to the Fourth Amendment Analogy*, 106 HARV. L. REV. 461, 469-72 (1992). But see Hilton, *supra* note 18, at 295-96; Kitch, *supra* note 7, at 696-99.

enhance incentives to create enough to offset its additional costs. Moreover, a trade secret cause of action could have a negative impact on indirect and enforcement costs. After *Christopher*, future trade secret owners will expect competitors to fly over their property at higher altitudes and use more sophisticated cameras to reduce the likelihood of detection. In response, owners will either invest in preventive measures that increase indirect costs, or invest in sophisticated detection measures, such as telescopes, that increase enforcement costs. As to fairness, there is no convincing basis to recognize a moral right of privacy in a company like duPont, and no reason to believe that all firms would agree *ex ante* to a rule prohibiting over-flights. Furthermore, there is no empirical support for the existence of an industry norm.

### B. Violation of An Independent Legal Norm

The second category—violation of an independent legal norm apart from contract—requires a more complicated analysis. In this situation, trade secret law in effect supplements existing remedies with injunctive and monetary relief designed to compensate for taking the secret itself.<sup>255</sup> If S takes O's trade secret by breaking into O's offices, for example, then S commits a criminal offense and a civil trespass. Trade secret law supplements these criminal and civil remedies by giving additional relief for loss of the secret itself.

The question is: Why should existing remedies be supplemented in this way? Nothing in the nature of the trade secret itself, neither the fact that it is information nor the fact that it is a secret, justifies the result. The only possible reason is that these remedies further the values underlying the independent legal norm. However, the fact that they are not available in the absence of trade secret law casts at least some doubt on their desirability.

The conclusion of Part III, that remedies for trade secret misappropriation can increase social costs, is a sound reason not to supplement the remedial scheme when efficiency justifies the independent legal norm. For example, relying on trade secret liability when tangible property is also stolen<sup>256</sup> risks creating excessive enforcement and transaction costs.<sup>257</sup> If the legal norm serves moral values, however, a

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255. See *Rockwell Graphic Sys., Inc. v. DEV Indus., Inc.*, 925 F.2d 174, 178 (7th Cir. 1991) ("The only significance of [this type of] trade secrecy is that it allows the victim of wrongful appropriation to obtain damages based on the competitive value of the information taken.").

256. See, e.g., *Solo Cup Co. v. Paper Mach. Corp.*, 240 F. Supp. 126, 141-42 (E.D. Wis. 1965) (defendant may have learned the trade secret through stolen production drawings), *aff'd in part, rev'd in part*, 359 F.2d 754 (7th Cir. 1966); *Otis Elevator Co. v. Intelligent Sys. Inc.*, 17 U.S.P.Q.2d 1773, 1777 (Conn. Sup. Ct. 1990) (defendant learned the trade secret in part by stealing plaintiff's electronic device used to service elevators).

257. See *supra* Part III.B.

different problem arises: the moral values must also condemn the trade secret appropriation. Stated differently, there must be a nexus between the trade secret remedy and the moral wrong.

To illustrate, suppose that the defendants in *Christopher* violated FAA regulations during their over-flight—an argument duPont in fact made.<sup>258</sup> This should not be enough to find improper means and award trade secret relief, even if the FAA regulations served moral goals such as protecting personal and property rights from airplane injury, because the taking of trade secrets is unrelated to any of the FAA's goals. In other words, awarding relief for trade secret appropriation must in some significant way serve the same goals that support the independent legal norm.<sup>259</sup>

A remedy-wrong nexus is not enough, however. Suppose a firm discloses its secret to someone who falsely claims to be interested in employment. Many courts would find the means improper and award trade secret relief on the basis of the fraudulent misrepresentation.<sup>260</sup> The nexus requirement is probably satisfied here, at least insofar as the fraud tort reflects moral condemnation of lying. But it is significant that fraud itself does not give a remedy for trade secret loss. Of course, the reason might simply be that courts have not perceived a need to extend the fraud tort in this way, given the availability of trade secret law. However, if the reason for the omission were more substantial, then filling the gap with trade secret law might be unwise.<sup>261</sup>

In sum, when courts impose trade secret liability for violation of an independent legal norm, they should require a close fit between the trade secret remedy and the norm. In particular, three requirements should be satisfied: the independent norm should serve moral values; there should be a nexus between those moral values and the trade secret remedy; and the remedy should not interfere in any other way with the legal framework created by the independent norm.

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258. The *Christopher* Court mentioned this possibility, but did not consider it. See *E.I. duPont deNemours & Co. v. Christopher*, 431 F.2d 1012, 1017 (5th Cir. 1970).

259. This requirement is commonplace in the law: in general, for liability there must be an injury that fits the interests that the legal wrong protects. See, e.g., RESTATEMENT (SECOND) OF TORTS 275-76 (1965) (noting that the trespass tort is confined to the interests it protects).

260. See, e.g., *Franke v. Wiltschek*, 209 F.2d 493, 494-95 (2d Cir. 1953) (imposing liability where defendants misrepresented their interest in selling plaintiff's product, although court does so by imputing a confidential relationship).

261. The same thing is true for other torts. See *American Can Co. v. Mansukhani*, 216 U.S.P.Q. 1094 (E.D. Wis. 1982) (holding that fraud and interference with contractual obligations are improper means), *aff'd*, 728 F.2d 811 (7th Cir. 1982); Hilton, *supra* note 18, at 295-96 (describing a number of tortious wrongs that are treated as "improper means" under trade secret law). In general, if the tort itself does not provide a remedy, then one should be careful about awarding relief under the aegis of trade secret law.

### C. Breach of Confidence

What about the implications for the first category of trade secret liability—breach of a confidentiality duty? Here we must distinguish between those cases in which parties agree to confidentiality, and those in which courts impose confidentiality as a matter of law in the absence of agreement.<sup>262</sup> In the latter case, courts are not enforcing party consent, but rather implementing policies that they believe justify trade secret protection apart from contract.<sup>263</sup> Thus, these cases—whether based on quasi-contract or on the notion of an inherently confidential relationship<sup>264</sup>—are actually the same as those in the first category. Consequently, they suffer from the same infirmity: they lack a convincing policy justification for liability.<sup>265</sup> For example, the injustice necessary to support a quasi-contract claim cannot inhere in a breach of privacy, violation of contractarian fairness norms, or breach of industry custom, since none of these provides firm support for trade secret liability. Sometimes it seems as if courts believe that the mere taking of valuable information is itself unjust,<sup>266</sup> but such a broad holding grants property protection foreign to trade secret law.<sup>267</sup>

This leaves cases in which parties expressly or implicitly agree to a confidentiality duty, and liability is justified on contract principles.<sup>268</sup>

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262. See 1 MILGRIM, *supra* note 4, at ch. 3 (confidentiality as a matter of law), ch. 4 (confidentiality created by contract).

263. In fact, courts rarely offer explicit and well-reasoned policy justifications in these cases. Yet, it is often clear that liability rests on confidentiality duties imposed by law, not by the intent of the parties. See, e.g., *Burten v. Milton Bradley Co.*, 763 F.2d 461, 463 (1st Cir. 1985) (describing different situations in which confidential relationships arise by operation of law); 1 MILGRIM, *supra* note 4, § 3.02 (noting that the “doctrine of implied contract” in trade secret cases imposes obligations by operation of law, which are “fictitiously deemed contractual” even though they have nothing to do with party intent).

264. Here courts impute duties either by finding a contract implied in law—i.e., quasi-contract—or treating the relationship between the parties as inherently confidential. See 1 MILGRIM, *supra* note 4, § 3.01.

265. One court, for example, justified its generous approach to implying confidentiality duties as a matter of law by relying on incentives to create “standards of commercial ethics.” See *Burten*, 763 F.2d at 467.

266. See, e.g., 1 MILGRIM, *supra* note 4, § 3.02, at 3-9 (noting that some courts use quasi-contract to protect a supposed property right in the trade secret).

267. See *supra* Part 1 (describing the limits on trade secret rights). In addition, merely using someone else’s ideas, without more, is not wrongful in itself. See Gordon, *supra* note 187, at 1556. We use other people’s ideas all the time. Indeed, the practice of freely exchanging ideas is essential to the development of the self as well as the proper functioning of a vital democracy. See Neil Netanel, *Copyright and a Democratic Civil Society*, 106 YALE LJ. 283, 341-64 (1996).

268. This should not affect the kinds of remedies available. Trade secret owners will still be able to enjoin disclosure and use through the remedy of specific performance. Although punitive damages are not generally available for breach of contract, this might be acceptable—indeed, even desirable—if punitive damages are inefficient. On the other hand, if punitive damages are desirable, courts could still award them by recharacterizing the breach of contractual duty as a breach of confidence tort. See 1 MILGRIM, *supra* note 4, § 3.01.

Before analyzing this situation, however, it is important to consider a more general question. If providing legal protection for trade secrets creates incentives for owners and appropriators to act in ways that generate serious externalities, then why should the law offer any protection at all, and in particular why should it enforce trade secret contracts? One possible answer is that there are moral, not just economic, reasons to enforce contractual promises. Another is that legal enforcement makes it possible for parties *ex ante* to structure their relationships in ways that reduce indirect and enforcement costs and thus mitigate externalities.<sup>269</sup>

I admit, however, that I do not have a fully satisfactory answer to this question. For purposes of this Article, I shall assume that the case for contract can be made. Such an assumption is at least consistent with my general project of showing that trade secret law is normatively parasitic—in this case, parasitic on the norms underlying contract law. Indeed, if the case for contract cannot be made, then the implications for reform are even more radical than I describe here.

Contract cases include both express and implied-in-fact agreements.<sup>270</sup> In addition, they include situations in which a confidentiality duty is justified as a contract default rule. The default analysis is complex, and this Article is not the place to discuss trade secret defaults in detail. In general, default rules specify gap-filling terms for contracts. Parties can contract around a default, but they must do so explicitly; otherwise, the default controls. The choice of default rules for trade secrets depends on the nature of the case and the purpose of the default. In the employment setting, for example, it might be desirable to adopt a confidentiality default if the primary objective is to reduce transaction costs.<sup>271</sup> On the other hand, if it is more important to correct for informational asymmetry, then a default rule of no-confidentiality might be

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269. For example, covenants not to compete can make detection and proof of liability easier and less costly.

270. See, e.g., *Forest Lab., Inc. v. Formulations, Inc.*, 299 F. Supp. 202, 208-09 (E.D. Wis. 1969), (inferring an agreement to keep information confidential from the factual circumstances), *aff'd in part, rev'd in part*, 452 F.2d 621 (7th Cir. 1971).

271. This approach calls for default rules that mimic what most parties would have agreed to had they considered the matter. This minimizes the occasions on which parties would find it necessary to contract around the default explicitly, and thus saves on transaction costs. See, e.g., POSNER, *supra* note 94, at 92-94. There is reason to think that employers and employees would prefer to have a confidentiality duty, a prediction confirmed by the prevalence of trade secret confidentiality agreements in the employment setting. See MILGRIM, *supra* note 4, § 6.01, at 6-2 (observing that there is widespread use of confidentiality agreements). Due to liquidity constraints and problems accessing capital markets, employees are not likely to be able to pay for an option to disclose or use trade secrets. Moreover, the monopoly value of the secret to the owner is likely to exceed its duopoly value to the employee, making it impossible for the employee to offer an amount the employer would accept. See TREBILCOCK, *supra* note 56, at 120-23.

preferable.<sup>272</sup> A no-confidentiality default would force the employer, who has superior private information about trade secrets, to contract around the default and thus signal the employee that valuable secrets are involved.<sup>273</sup> In sum, courts should recognize confidentiality duties in the absence of agreement only when doing so is justified by a contractual default analysis, and such an analysis is more limited than the quasi-contractual or confidential relationship analysis typical of many trade secret cases.

In addition, express confidentiality agreements should be enforced mainly according to their terms. For example, trade secret owners should not have to prove actual secrecy or reasonable secrecy precautions to recover for breach unless the contract so provides.<sup>274</sup> Such an approach can benefit both parties. The trade secret owner is not likely to sue over publicly available information because the benefit of doing so is small relative to the cost. This means that a broad confidentiality agreement is likely to create little additional risk to the recipient of the secret. Moreover, the broad agreement should save the expense of proving secrecy and secrecy safeguards in court, which can benefit both parties.<sup>275</sup>

#### D. Exceptions

To summarize, we have seen that liability for trade secret misappropriation should be narrowed, and that courts and legislatures should reject broad trade secret torts.<sup>276</sup> The open-ended approach illustrated

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272. This is an application of the so-called penalty-default theory, which calls for default rules that force parties to disclose private information in order to facilitate wealth-enhancing bargains. See Ian Ayres & Robert Gertner, *Filling Gaps in Incomplete Contracts: An Economic Theory of Default Rules*, 99 YALE L.J. 87 (1989).

273. If the desirability of a confidentiality duty is clear to both parties, and the transaction costs of contracting for such a duty in the employment setting are fairly low, then the information-forcing benefits of a default rule might control. In addition, the value of forcing disclosure of private information might also be relevant to the choice of contract interpretation rules. For example, the traditional rule of reasonable specificity in defining the type of information subject to confidentiality could be justified as an information-forcing device.

274. Courts today refuse to enforce even express confidentiality agreements broadly written unless the plaintiff first proves that the information qualifies as a trade secret. See *supra* note 7 and accompanying text.

275. Cf. TREBILCOCK, *supra* note 56, at 144-48 (arguing for broader enforcement of restrictive covenants as they appear in employment contracts).

276. Most states have trade secret statutes based on the Uniform Trade Secrets Act. See *supra* note 19 and accompanying text. All such statutes should at least be construed narrowly. Moreover, jurisdictions that do not yet recognize a broad trade secret tort should refrain from doing so. For example, the Alabama Supreme Court waited until 1983 before adopting trade secret law, see *Drill Parts & Serv. Co., Inc. v. Joy Mfg. Co.*, 439 So.2d 43, 47-48 (Ala. 1983), and when it finally did, it noted with approval that the tort provided much broader protection than other common law theories. See *id.* at 49. In my view, it was a mistake for the Alabama Court to take this big a step.

by the *Christopher* case should be eliminated, and the imposition of liability for violation of an independent legal norm confined. Moreover, liability for breach of confidence should be limited to contract, without recourse to quasi-contract or inherently confidential relationships.

Nonetheless, it might be desirable to recognize some exceptions to this narrow set of liability rules. For example, if the risk of appropriating intermediate research results is substantial, it might make sense, as discussed in Part III above,<sup>277</sup> to provide a right that protects such information from appropriation by strangers. Moreover, some types of non-technological information might warrant broader protection, but only insofar as rights beyond contract are needed to stimulate creation incentives.<sup>278</sup>

Finally, there remains the question whether trade secret owners need trade secret law to provide rights against third parties not in contractual privity. As a legal matter, the answer is probably no. The tort of interference with contractual relations is nearly coextensive with trade secret law and provides almost identical relief.<sup>279</sup> As a policy matter, the arguments for third-party liability are uncertain because the cost-benefit balance is highly sensitive to context.<sup>280</sup> As a result, rights against third parties, if they are recognized at all, should be limited to specific types of cases where the cost-benefit balance is strongly favorable.

This last observation raises the question of whether to allow context-specific exceptions across-the-board, not just for third-party liability. There might be cases, for example, where detection and proof of liability are relatively inexpensive, so protecting trade secrets beyond contract could reduce indirect costs. However, uncertainty introduced by the possibility of case-specific exceptions encourages litigation, which can create high costs. It also makes litigation risky, which can

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At the same time, however, it is important to bear in mind that any attempt to implement these reforms must also be sensitive to practical factors, such as the extent of reliance on current trade secret law and the transition costs of reform.

277. See *supra* Part III.A.3.

278. See *id.*

279. In order to recover for intentional interference with contractual relations, the plaintiff must show a valid contract, that the defendant had actual or constructive knowledge of the contract and intended to interfere, and that plaintiff was injured. See, e.g., *Robbins v. Ogden Corp.* 490 F. Supp. 801, 810 (S.D.N.Y. 1980); Lillian R. Bevier, *Reconsidering Inducement*, 76 VA. L. REV. 877, 882-86 (1990). Moreover, intent can be inferred from defendant's knowledge of the contract, see *Doremus v. Hennessy*, 54 N.E. 524, 524 (Ill. 1898), at least when the defendant also takes steps to influence or cause the breach. See *Wolf v. Perry*, 339 P.2d 679, 681-82 (N.M. 1959). Indeed, it is commonplace for plaintiffs to couple interference tort claims with trade secret claims in the same lawsuit. See, e.g., *Baystate Tech., Inc. v. Bentley Sys., Inc.*, 946 F. Supp. 1079 (D. Mass. 1996) (denying relief on both claims); *Smithfield Ham and Prod. Co. v. Portion Pac. Inc.*, 905 F. Supp. 346, 348 (E.D. Va. 1995) (granting relief on both claims). Furthermore, the defendant can be liable even though it learns of the nondisclosure agreement only after its new employee has begun to use the former employer's trade secret. See, e.g., *Fowler v. Printers II, Inc.*, 598 A.2d 794, 804-05 (Md. Ct. Spec. App. 1991).

280. See *supra* Part III.B.3.

encourage parties to invest more in precaution and detection. Thus, context-specific exceptions might be desirable, but they should be recognized only when the social benefits are clear.<sup>281</sup>

### CONCLUSION

Trade secret law is in a muddle today. Although treated as a branch of intellectual property, trade secret law, with its relational focus, fits poorly with other intellectual property theories, such as copyright, patent, and trademark, that grant property rights against the world. Moreover, trade secret's liability rules include many puzzling features that resist policy justification.

I have argued that this muddle is due to the absence of a convincing normative theory capable of making coherent sense of trade secret doctrine. Trade secret law took its current shape in the late nineteenth century when formalistic reasoning prevailed, and its roots lie in a formalistic theory of property rights that equates property with factual exclusivity. Today we retain the doctrine even though we reject the theory that initially justified it.

Although some have tried to fill the justificatory gap with policy arguments, none of these efforts has been successful. The argument from creation incentives falters in the face of patent law and other alternatives, and the argument from indirect costs weakens when enforcement and transaction costs are included in the balance. Moreover, none of the standard arguments from rights and fairness work very well. Labor-desert theory and unjust enrichment as reciprocity cannot account for the limited rights trade secret law confers. Privacy is inapposite, and contractarian arguments weak. Finally, defending trade secret law as a way to enforce customary norms of good commercial conduct fails for want of a convincing argument that such customs exist and that courts should enforce them.

I have argued that the way out of the muddle is to recognize trade secret law for what it is: a collection of contract and tort theories grouped together by the nature of the subject matter they regulate. On this view, it is clear that trade secret law should be narrowed. In particular, most of its work should be handled by contract, with contractual default rules covering cases where trade secret obligations are not explicitly defined. Focusing on contract principles will direct courts toward the proper issues and away from open-ended inquiries into poorly defined standards of commercial morality. Intellectual property will be the better for the change.

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281. Moreover, insofar as defining exceptions requires a complicated cost-benefit analysis, it might be better undertaken by the legislature than by a court.



## MATHEMATICAL APPENDIX

This Appendix describes and solves a simple game-theoretic model of trade secret law's effect on indirect costs, as discussed in Part III.B of the text. Suppose there are only two competing firms, O ("owner") and S ("seeker"), both of which are risk neutral. O possesses certain secret information that gives it a competitive advantage over S. O's objective is to keep its information secret from S, and S's objective is to learn the information from O. Each party's success depends on the other's choice of strategy, so each party chooses its optimal strategy by anticipating what the other party will do.

## I

## WITHOUT TRADE SECRET LAW

In a world without trade secret law, O can reduce the probability of disclosure by investing more in secrecy precautions. Similarly, S can increase the probability of disclosure by investing more in employee bribes, sophisticated spy technology, efforts to penetrate O's computer network, and the like. The marginal benefit of investment is always positive, but declines as the amount of the investment increases.

Assume that both O and S know the value to O of the information so long as it remains secret ( $w$ ) and both know the value to O and S if the information is disclosed ( $v$ ). O and S also know how likely disclosure is for each level of investment; that is, they both know the objective function that relates levels of investment to probability of disclosure. However, neither party knows the other's investment choice before choosing its own. Therefore, O and S choose their respective investment levels by anticipating how much the other party will invest.

A. *Notation*

Define the following notation:

- |     |   |  |
|-----|---|--|
| $w$ | — | the value of the information to O conditional on O successfully maintaining exclusivity over the information. $w > 0$ .  |
| $v$ | — | the value of the information to each of O and S conditional on disclosure, i.e., if the information is known to both. On the assumptions above, O and S are duopolists and so would receive less than the monopoly value of the information. $0 < v < w$ . |
| $x$ | — | the amount O invests in precaution. $x \geq 0$ .   |
| $y$ | — | the amount S invests in seeking the information from O. $y \geq 0$ .   |

- $\alpha(x,y)$  — the probability of disclosure when O invests  $x$  in precaution and S invests  $y$  in seeking.  $0 \leq \alpha(x,y) \leq 1$ .  $\alpha_x < 0$ ,  $\alpha_y > 0$ ,  $\alpha_{xx} > 0$ ,  $\alpha_{yy} < 0$ .
- $H_{w/o}$  — total social cost without trade secret law. I assume for simplicity that the social cost of X's precautions and Y's efforts to obtain the information just equal the private costs to X and Y respectively, that is,  $x$  and  $y$ .

### B. Solution

This is a static game of complete information over a continuous strategy space (amount of investment) and we solve for a Nash Equilibrium. An equilibrium consists of a value for  $x$  and a value for  $y$  that are mutual best responses.

Let  $O(x,y)$  be the payoff to O and  $S(x,y)$  be the payoff to S when O invests  $x$  and S invests  $y$ . Then, we have:

$$\begin{aligned} O(x,y) &= w - \alpha(x,y)(w-v) - x \\ S(x,y) &= \alpha(x,y)v - y \end{aligned} \tag{1}$$

For fixed  $y$ ,  $O(x,y)$  is maximized when  $O_x(x,y) = 0$ , or:

$$-\alpha_x(w-v) - 1 = 0 \tag{2}$$

Similarly, for fixed  $x$ ,  $S(x,y)$  is maximized when  $S_y(x,y) = 0$ , or:

$$\alpha_y v - 1 = 0 \tag{3}$$

Rearranging (2) and (3), one gets the following two equations:

$$\begin{aligned} \alpha_x &= -1/(w-v) \\ \alpha_y &= 1/v \end{aligned} \tag{4}$$

Therefore, the Nash Equilibrium consists of the values  $x^*$  and  $y^*$  that satisfy the two equations in (4) simultaneously. The precise values depend on the form of the function  $\alpha(x,y)$ . The total social cost is:

$$H_{w/o} = x^* + y^* \tag{5}$$

## II

### WITH TRADE SECRET LAW

In a world with trade secret law, O has two options: invest in precautions, or rely on trade secret rights to recover from S in litigation.

Both options are costly. In particular, O incurs litigation costs in bringing a trade secret lawsuit, which has less than a certain chance of success. By the same token, S anticipates litigation costs as well if O sues.

Moreover, in order for O to bring a trade secret lawsuit against S, O must detect S's appropriation of its secret information. O can improve its likelihood of detection by investing more in detection techniques or devices, such as installing more sophisticated computer monitoring devices, bribing S's employees to supply information, or using high powered telescopes to search for over-flights. Similarly, S can reduce the likelihood of detection by investing in detection avoidance, such as more careful efforts to penetrate a computer network or even higher over-flights with more powerful cameras.

Thus, with trade secret law, O and S must make two choices. They must choose how much to invest in precaution and seeking, and they must also choose how much to invest in detection and avoiding detection. More investment in detection (or avoiding detection) enhances (or reduces) the likelihood of detection should S obtain the information, but the marginal benefit declines with the amount of investment. It is also possible that sometimes more intensive efforts on the part of S might increase the likelihood that S will be detected. For example, S might conduct more than one over-flight, thereby giving O more than one chance to notice the intrusion.

As above, O and S choose how much to invest in precaution or seeking, and in detection or avoiding detection, without observing how much the other party invests. However, they do know how the probability of disclosure and the probability of detection vary with the amount of investment. Moreover, both parties know the objective likelihood of O's winning a trade secret lawsuit, the expected trial award if O wins, and the litigation costs for both parties.

#### A. *Additional Notation*

In addition to the notation defined above, we define the following:

- s — the amount O invests in detection.  $s \geq 0$ .
- t — the amount S invests in avoiding detection.  $t \geq 0$ .
- $\Theta(s, t, y)$  — the probability of detection when O invests  $s$  and when S invests  $t$  in avoiding detection and  $y$  in seeking.  $0 \leq \Theta(s, t, y) \leq 1$ .
- p — the probability O succeeds in establishing S's liability at trial in a trade secret lawsuit, conditional on S having misappropriated the trade secret.  $0 \leq p < 1$ .

$z$	—	the expected trial award conditional on $O$ establishing liability. $z \geq 0$ .
$c_p$	—	the private cost of a lawsuit to $O$ . $c_p > 0$ .
$c_D$	—	the private cost of a lawsuit to $S$ . $c_D > 0$ .
$d$	—	the public cost of a lawsuit. $d > 0$ .
$H_w$	—	total social cost with trade secret law.

### B. Solution

This is a static game of complete information, and we solve for a Nash Equilibrium. An equilibrium consists of values of  $x$  and  $s$  for  $O$  and values of  $y$  and  $t$  for  $S$  that are mutual best responses. We assume that  $pz - c_p > 0$ , so  $p$  is bounded below at  $c_p/z$ , which is greater than 0. This assumption assures that  $O$  will sue whenever it detects an appropriation, so there is some reason to have trade secret law.

The payoff functions,  $O(x, y, s, t)$  and  $S(x, y, s, t)$  are:

$$\begin{aligned} O(x, y, s, t) &= w - \alpha(x, y)(w - v) + \alpha(x, y)\Theta(s, t, y)(pz - c_p) - x - s \\ S(x, y, s, t) &= \alpha(x, y)v - \alpha(x, y)\Theta(s, t, y)(pz + c_D) - y - t \end{aligned} \quad (6)$$

We have the following four first order conditions:

$$\begin{aligned} O_x(x, y, s, t) &= -\alpha_x(w - v) + \alpha_x\Theta(s, t, y)(pz - c_p) - 1 = 0 \\ S_y(x, y, s, t) &= \alpha_y v - [\alpha_y\Theta(s, t, y) + \Theta_y\alpha(x, y)](pz + c_D) - 1 = 0 \\ O_s(x, y, s, t) &= \Theta_s\alpha(x, y)(pz - c_p) - 1 = 0 \\ S_t(x, y, s, t) &= -\Theta_t\alpha(x, y)(pz + c_D) - 1 = 0 \end{aligned} \quad (7)$$

Rearranging (7), we get four equations:

$$\begin{aligned} \alpha_x &= -1/[w - v - \Theta(s, t, y)(pz - c_p)] \\ \alpha_y &= [1 + \Theta_y\alpha(x, y)(pz + c_D)]/[v - \Theta(s, t, y)(pz + c_D)] \\ \Theta_s &= 1/[\alpha(x, y)(pz - c_p)] \\ \Theta_t &= -1/[\alpha(x, y)(pz + c_D)] \end{aligned} \quad (8)$$

Since the equilibrium values must maximize the party's payoffs for fixed equilibrium values of the other variables, the Nash Equilibrium consists of the values  $x^*$ ,  $y^*$ ,  $s^*$ , and  $t^*$  that satisfy the four equations in (8) simultaneously. The precise values depend on the form of the functions

$\alpha(x,y)$  and  $\Theta(s,t,y)$ . Since a lawsuit occurs whenever there is a disclosure and it is detected, the total social cost of this equilibrium is:

$$H_w = x^* + y^* + s^* + t^* + \alpha(x^*, y^*) \Theta(s^*, t^*) (c_p + c_d + d) \quad (9)$$

### III

#### AN EXAMPLE

It is difficult to make any generalizations about whether trade secret law increases or decreases social costs just by comparing (4) and (5) with (8) and (9). To see what can happen, let us examine a concrete situation. Suppose that  $\alpha(x,y)$  and  $\Theta(s,t,y)$  take the following forms:

$$\alpha(x,y) = y/(x+y)$$

$$\Theta(s,t,y) = s/(s+t)$$

$$\text{for all nonzero vectors } (x,y) \text{ and } (s,t,y), \text{ and} \quad (10)$$

$$\alpha(0,0) = 0$$

$$\Theta(0,0,0) = 0$$

These particular functional forms assume that O and S have symmetric and equivalent power to affect the probability of disclosure and detection. Thus, if O and S start with investments that produce a probability of 0.5, each additional dollar that one invests just offsets the dollar the other invests, so with equal investments the probability remains 0.5. In addition, the functional form of  $\Theta$  assumes, for simplicity, that the probability of detection is not affected by the amount S invests in seeking. This is a reasonable assumption for many situations, although similar results hold even when y influences  $\Theta$  so long as the influence is not too strong.

With the functions specified as in (10), we have for all vectors  $(x,y)$  other than  $(0,0)$ :

$$\begin{aligned} \alpha_x &= -y/(x+y)^2 \\ \alpha_y &= x/(x+y)^2 \\ \Theta_s &= t/(s+t)^2 \\ \Theta_t &= -s/(s+t)^2 \end{aligned} \quad (11)$$

### A. Without Trade Secret Law

To solve for the equilibrium, we substitute the expressions for  $\alpha_x$  and  $\alpha_y$  from (11) into (4) to get:

$$-y/(x+y)^2 = -1/(w-v)$$

$$x/(x+y)^2 = 1/v$$

Solving these two equations simultaneously yields:

$$\begin{aligned} x^* &= v(w-v)^2/w^2 \\ y^* &= vx^*/(w-v) = v^2(w-v)/w^2 \end{aligned} \quad (12)$$

It is easy to confirm that O does better investing at  $x^*$  rather than switching to 0, assuming S invests at  $y^*$ —and vice versa. Therefore  $\{x^*, y^*\}$  in (12) is a Nash Equilibrium.

Substituting the expressions for  $x^*$  and  $y^*$  from (12) into (5), and simplifying, we get:

$$H_{w/o} = v(w-v)/w \quad (13)$$

### B. With Trade Secret Law

Let  $f = pz - c_p$  and  $k = pz + c_d$ . Then substituting the expressions for  $\Theta_s$  and  $\Theta_t$  from (8) into (11), we get:

$$1/\alpha f = t/(s+t)^2$$

$$-1/\alpha k = -s/(s+t)^2$$

Solving these two equations simultaneously, and letting  $h = f/k = (pz - c_p)/(pz + c_d)$ , yields:

$$\begin{aligned} s^* &= \alpha k h^2 / (1+h)^2 \\ t^* &= \alpha k h / (1+h)^2 \\ \Theta(s^*, t^*) &= h / (1+h) \end{aligned} \quad (14)$$

We now substitute into (8) the expressions for  $\alpha_x$  and  $\alpha_y$  from (11) and the expression for  $\Theta$  from (14), remembering that  $\Theta_y = 0$ , to get:

$$-y/(x+y)^2 = -1/[w-v-hf/(1+h)]$$

$$x/(x+y)^2 = 1/[v-hk/(1+h)]$$

Solving these two equations simultaneously for  $x$  and  $y$ , and letting  $g = h/(1+h) = f/(f+k)$  yields:

$$x^* = (w-v-gf)^2(v-gk)/[w-f]^2$$

$$y^* = (v-gk)x^*/(w-v-gf) \quad (15)$$

$$\alpha(x^*, y^*) = y^*/(x^* + y^*) = (v-gk)/(w-f)$$

Substituting the expression for  $\alpha$  from (15) into (14), we get:

$$s^* = (v-gk)kg^2/(w-f)$$

$$t^* = s^*/h \quad (16)$$

It is easy to confirm that  $O$  does better playing  $x^*$  and  $s^*$  than switching to zero for either value, assuming that  $S$  plays  $y^*$  and  $t^*$ —and vice versa. Therefore, combining (15) and (16), we get the following Nash Equilibrium results with trade secret law:

$$x^* = (v-gk)(w-v-gf)^2/[w-f]^2$$

$$y^* = (v-gk)x^*/(w-v-gf)$$

$$s^* = (v-gk)kg^2/(w-f)$$

$$t^* = s^*/h \quad (17)$$

$$\alpha(x^*, y^*) = (v-gk)/(w-f)$$

$$\Theta(s^*, t^*) = g$$

where  $f = pz - c_p$ ;  $k = pz + c_D$ ;  $h = f/k$ ; and  $g = h/(1+h) = f/(f+k)$

Substituting these values in (9) and simplifying, we get:

$$H_w = (v-gk)[w-v+g(2c_p+2c_D+d)]/(w-f) \quad (18)$$

### C. Comparing Social Costs With and Without Trade Secret Law

Comparing (18) with (13), it is immediately obvious that  $H$  can increase with the addition of trade secret law for suitable ranges of parameter values. In particular, consider the following three propositions based on the functional forms for  $\alpha$  and  $\Theta$  given in (10).

**PROPOSITION 1**—If  $f < w < v(1+h)$ , then  $H_{w/} > H_{w/o}$  even ignoring litigation costs (i.e., assuming  $c_p = c_d = d = 0$ ).

*Proof:* Suppose  $w > f$ . Then (18) is always greater than (13) whenever  $(v-gk)/(w-f) > v/w$ . But  $(v-gk)/(w-f) > v/w$  if and only if  $vw-gkw > vw-vf$ , or  $gkw < vf$ , or  $w < vf/gk = vh/g = v(1+h)$ . Therefore, (18) is always greater than (13) whenever  $f < w < v(1+h)$ . ■

Proposition 1 is not likely to hold, however, because the monopoly value of the secret will be greater than the duopoly value, i.e.,  $w > 2v$ . However, it is possible to show that the same result holds in a much broader class of cases. The following two propositions assume, for simplicity, that  $O$  and  $S$  split the monopoly value of the information equally when it is disclosed (i.e.,  $w = 2v$ ); that the private cost of litigation increases linearly with the stakes, and that public litigation costs are zero (i.e.,  $c_p = c_d = \pi z$  and  $d = 0$ ).

**PROPOSITION 2**—Suppose  $w = 2v$ ,  $c_p = c_d = \pi z$  and  $d = 0$ . If  $p > \pi$ , then  $H_{w/} > H_{w/o}$  for all  $z < 3pv/2(p^2 - \pi^2)$  and  $z > 2v/p - \pi$ . If  $p \leq \pi$ , then  $H_{w/} = H_{w/o}$ .

*Proof:* If  $p \leq \pi$ , then  $O$  never sues, so trade secret law has no effect on social costs. Assume  $p > \pi$ . Substitute the values for  $w$ ,  $c_p$ ,  $c_d$ , and  $d$  from Proposition 2 into (18) and (13) and simplify. We get:

$$\begin{aligned} H_{w/o} &= v/2 \\ H_{w/} &= (2pv - p^2z + \pi^2z)(2pv + 4\pi pz - 4\pi^2z)/4p^2(2v - pz + \pi z) \end{aligned} \quad (19)$$

Therefore  $H_{w/} > H_{w/o}$  if and only if:

$$(2pv - p^2z + \pi^2z)(2pv + 4\pi pz - 4\pi^2z)/4p^2(2v - pz + \pi z) > v/2 \quad (20)$$

We must distinguish two cases depending on whether  $2v - pz + \pi z$  is greater than or less than zero. Suppose  $2v - pz + \pi z > 0$ . This means that:

$$z < 2v/(p - \pi) \quad (21)$$



Then solving (20) for  $z$  in terms of  $v$ , we get:

$$z < 3pv/2(p^2 - \pi^2) \quad (22)$$

But since  $2v/(p - \pi) > 3pv/2(p^2 - \pi^2)$ , it follows that  $H_{w/} > H_{w/o}$  if  $z$  satisfies (22), i.e.,  $z < 3pv/2(p^2 - \pi^2)$ . Similarly, if we assume that  $2v - pz + \pi z < 0$ , the signs in (21) and (22) are reversed, and it follows that  $H_{w/} > H_{w/o}$  if  $z > 2v/(p - \pi)$ . ■

**PROPOSITION 3 (COROLLARY)**—If  $w = 2v$ ,  $z = w - v = v$ ,  $c_p = c_d = \pi z = \pi v$ , and  $d = 0$ , then adding trade secret law increases total social costs for all  $p > \pi$  and has no effect on social costs for  $p \leq \pi$ .

*Proof:* Proposition 3 follows as a corollary of Proposition 2 if we can show that  $v < 3pv/2(p^2 - \pi^2)$  whenever  $p > \pi$ . If  $p > \pi$ , then  $v < 3pv/2(p^2 - \pi^2)$  reduces to the condition:

$$2p^2 - 3p - 2\pi^2 < 0 \quad (23)$$

The Proposition is proved if (23) holds for all  $p$  such that  $\pi < p \leq 1$ . Let  $f(p) = 2p^2 - 3p - 2\pi^2$ . Then  $f(0) = -2\pi^2 < 0$ ; and  $f(1) = -1 - 2\pi^2 < 0$ . Moreover,  $f_p = 4p - 3$ , so  $f$  achieves a unique global minimum at  $p = 3/4$ , and  $f(3/4) < 0$ . Therefore, since  $f(p)$  is continuous, it follows that  $f(p) < 0$  for all  $\pi < p \leq 1$ . ■

Proposition 3 shows that the addition of trade secret law can increase social costs when the remedy is compensatory. Moreover, Proposition 2 shows that social costs can also increase when relief ( $z$ ) exceeds a compensatory measure. This has obvious implications for punitive damages: if punitive damages are set high enough, they are likely to increase social costs.

### CONCLUSION

The efficiency consequences of adopting trade secret law are indeterminate. Everything depends on the functions  $\alpha(x, y)$  and  $\Theta(s, t, y)$  and the values of the exogenous parameters (i.e.,  $w$ ,  $v$ ,  $p$ ,  $z$ ,  $c_p$ ,  $c_d$ , and  $d$ ). However, for quite plausible functions and parameter values, introducing trade secret law increases expected social costs in the model, and does so even ignoring the effect of public litigation costs. Adding public litigation costs only makes it more likely that the switch to trade secret law will be inefficient.

