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Inventing Norms

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Inventing Norms

WILLIAM HUBBARD

Patent law strives to promote the progress of technology by encouraging invention. Traditionally, scholars contend that patent law achieves this goal by creating financial incentives to invent in the form of exclusive rights to new technology. This traditional view of invention, however, fails to recognize that inventors are motivated by more than money. Like most people, inventors are also motivated by social norms, that is, shared normative beliefs favoring certain actions while disfavoring others. This Article argues that many Americans embrace social norms that favor and encourage successful invention. Because of these “inventing norms” inventors enjoy enhanced personal satisfaction and are esteemed by their friends, family, and peers. Importantly, patent law can strengthen and shape inventing norms by, for example, identifying and validating successful inventions. Patent scholars, however, have largely ignored social norms that motivate people to invent and the effect of patent law on these norms. This Article remedies this oversight by developing a framework for incorporating inventing norms into traditional patent law analysis.

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Inventing Norms

WILLIAM HUBBARD*

I. INTRODUCTION

Michael Jackson dubbed himself the “King of Pop” and arguably deserved the title. He released thirteen number one singles, won eighteen Grammy Awards, and sold approximately 750 million records.¹ His *Thriller* album remains the best-selling album of all time.² He was inducted into the Rock & Roll Hall of fame three times: once as a member of the Jackson 5, once as a solo artist, and once as a songwriter.³ His autobiography was a *New York Times* Best Seller.⁴ President Ronald Reagan gave Jackson a Special Achievement Award for his efforts to reduce drunk driving.⁵ President George H. W. Bush designated Jackson as a “Point of Light Ambassador.”⁶ In light of his extraordinary popularity, when Jackson died on June 25, 2009, his death dominated news headlines for weeks. In light of these accomplishments, it is surprising that many mainstream news sources highlighted a somewhat trivial aspect of Jackson’s career: he invented and patented a system for performing one particular dance move on stage.⁷

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¹ JEL D. LEWIS (JONES), *MICHAEL JACKSON: THE KING OF POP* 101–21 (2005); Mairi Mackay, *Michael Jackson Album Sales Soar*, CNN.com (June 26, 2009), http://articles.cnn.com/2009-06-26/entertainment/michael.jackson.album.sales_1_jackson-s-albums-michael-jackson-sony-music?_s=PM:SHOWBIZ.

² LEWIS, *supra* note 1, at 101–21.

³ *Id.* at 103.

⁴ *Id.* at 114.

⁵ *Id.* at 117.

⁶ *Id.* at 111.

⁷ U.S. Patent No. 5,255,452 (filed June 29, 1992); *see also* Dan Vergano, “Smooth” Leaning Move Really Was Patented, USA TODAY, July 1, 2009, at 2D; CBS Evening News (CBS television broadcast July 7, 2009), http://www.cbsnews.com/video/watch/?id=5130315n&tag=related;photovideo;Law_Students_Study_Jackson's_Dance-Move_Patent, NPR (July 7, 2009), <http://www.npr.org/templates/story/story.php?storyId=106333912>; Ki Mae Heussner, *How MJ Defied Gravity: The Secret to “Smooth Criminal,”* ABC NEWS (June 27, 2009), <http://abcnews.go.com/Technology/MichaelJackson/story?id=7941951&page=1>; Brian Palmer, *Michael Jackson, RIP, FAQ: Lunar Moonwalking, Child Custody, and Made-Up Words*, SLATE (June 26, 2009, 6:38 PM), <http://www.slate.com/id/2221408/>.

The attention that his patent garnered following his death is puzzling. The traditional view is that patent law promotes invention by creating exclusive rights with economic value,⁸ but it is doubtful that Jackson patented his invention to obtain financially lucrative exclusive rights. Jackson's exclusive rights were exceedingly narrow, protecting only the use of special shoes in conjunction with a special stage.⁹ Moreover, even if Jackson hoped to benefit financially from these exclusive rights, the media attention that the patent received following Jackson's death still remains a mystery because any pecuniary benefit from the patent would have been trivial in comparison to Jackson's other successes. In accounts of Jackson's death, would his fans really be interested to learn of his patent because it was a financial asset? Explaining the media's focus on Michael Jackson's patent requires a new, broader understanding of an inventor's motivation to patent and the relationship of patent law to invention.¹⁰

Traditionally, scholars argue that patent law encourages inventors to find new discoveries by rewarding successful invention with economically valuable exclusive rights. These scholars contend that exclusive patent rights are crucial to obtaining monetary reward from invention; without exclusive rights, copying will dissipate any commercial advantage stemming from the discovery. From this perspective, an inventor develops a patentable invention only for the money.¹¹

The media's focus on Jackson's patent suggests that the traditional

⁸ DAN L. BURK & MARK A. LEMLEY, *THE PATENT CRISIS AND HOW THE COURTS CAN SOLVE IT* 7 (2009) ("[T]he idea behind the patent system is simple: invention is a 'public good' because it is expensive to invent but cheap to copy those inventions."); ROBERT P. MERGES ET AL., *INTELLECTUAL PROPERTY IN THE NEW TECHNOLOGICAL AGE* 127 (4th ed. 2007) ("Patent law provides a market-driven incentive to invest in innovation, by allowing the inventor to appropriate the full economic rewards of her invention."); see also MICHELE BOLDRIN & DAVID K. LEVINE, *AGAINST INTELLECTUAL MONOPOLY* 158 (2008) (describing the traditional view of patent law); Clarisa Long, *Patent Signals*, 69 U. CHI. L. REV. 625, 629 n.11 (2002) (collecting numerous citations to "literature modeling intellectual property in terms of rents and product markets," and stating that a complete list of such citations "would be impossible here"); Ted Sichelman, *Commercializing Patents*, 62 STAN. L. REV. 341, 357–58, 377 (2010) (describing the "reward" of exclusive patent rights as a "dominant justificatory theor[y] of patent law" that "largely motivates current patent doctrine"); Katherine J. Strandburg, *Users as Innovators: Implications for Patent Doctrine*, 79 U. COLO. L. REV. 467, 470 (2008) ("[D]iscussions of patent law and policy have for the most part remained rooted in the paradigm of commercial sale as motivation for invention . . .").

⁹ U.S. Patent No. 5,255,452, *supra* note 7.

¹⁰ Some scholars distinguish "invention" and "innovation." See, e.g., Brett M. Frischmann & Mark A. Lemley, *Spillovers*, 107 COLUM. L. REV. 257, 259 n.4 (2007) ("We use the term innovation . . . to refer to the process of research, invention, and development and refinement of new ideas."). Although this distinction is not important for this Article, I have avoided using the term "innovation" where possible.

¹¹ See, e.g., David S. Olson, *Taking the Utilitarian Basis for Patent Law Seriously: The Case for Restricting Patentable Subject Matter*, 82 TEMP. L. REV. 181, 183 (2009) (stating that failure to grant exclusive patent rights will create "copycats [who] will . . . drive down prices below the price at which the inventor can recoup her research and development costs").

explanation of patents is incomplete. Regardless of Jackson's reasons for obtaining his patent, the benefits Jackson received for the patent were not merely the monetary value of his patent rights. Jackson also received praise from the media, albeit posthumously. Indeed, while inventors can be spurred to action by rewards of exclusive rights, those financial inducements are not the only relevant rewards. Inventors, like all people, also seek the rewards of complying with "social norms," that is, "societal attitudes of approval and disapproval, specifying what ought to be done and what ought not to be done."¹²

In particular, many Americans share what this Article calls "inventing norms," which are social attitudes of approval for successful invention. As a result, in addition to the financial benefits of exclusive rights, people invent to obtain personal satisfaction as well as the respect and admiration of others.¹³ Indeed, "a long stream of [sociological] research has documented that inventors are characterized by pecuniary as well as nonpecuniary motives,"¹⁴ and these nonpecuniary motives include the satisfaction of social norms.¹⁵ Moreover, as argued below, patent rights can help to strengthen and enforce inventing norms. As a result, the benefits of obtaining a patent can exceed the monetary value of the exclusive rights conferred by the patent. By overlooking social norms that promote invention and the effects of patents on these norms,¹⁶ the traditional view of patent law omits an important aspect of motivations to invent.¹⁷

¹² Cass R. Sunstein, *Social Norms and Social Roles*, 96 COLUM. L. REV. 903, 914 (1996). Other legal scholars have defined "norm" in various but highly similar ways. Eric Posner defines social norm as a behavior that emerges when a group ascribes a social meaning to an action. ERIC A. POSNER, *LAW AND SOCIAL NORMS* 34 (2000). Similarly, Richard McAdams describes norms as "informal social regularities that individuals feel obligated to follow because of an internalized sense of duty, because of a fear of external non-legal sanctions, or both." Richard H. McAdams, *The Origin, Development, and Regulation of Norms*, 96 MICH. L. REV. 338, 340 (1997).

¹³ See Dotan Oliar & Christopher Sprigman, *There's No Free Laugh (Anymore): The Emergence of Intellectual Property Norms and the Transformation of Stand-Up Comedy*, 94 VA. L. REV. 1787, 1832–34 (2008) (discussing the importance of social norms as incentives to create jokes).

¹⁴ Henry Sauermann & Wesley M. Cohen, *What Makes Them Tick?: Employee Motives and Firm Innovation*, 56 MGMT. SCI. 2134, 2134 (2010); see also *infra* Section II.B.3 (discussing sociological research regarding inventing). Satisfying social norms could have pecuniary effects, too. See *infra* note 114 and accompanying text.

¹⁵ Other nonpecuniary motives also encourage invention. Gregory N. Mandel, *To Promote the Creative Process: Intellectual Property and the Psychology of Creativity*, 86 NOTRE DAME L. REV. (forthcoming 2011) (manuscript at 2) (discussing intrinsic motivation). For example, people may invent merely because they enjoy the creative act. As Yochai Benkler has observed, "[p]eople are creative beings. They will play at creation if given an opportunity" Yochai Benkler, *Coase's Penguin, or, Linux and The Nature of the Firm*, 112 YALE L.J. 369, 424 (2002).

¹⁶ Oliar & Sprigman, *supra* note 13, at 1791 ("Although the law and social norms movement is approximately two decades old, its insights have not yet penetrated deeply into the IP literature.").

¹⁷ POSNER, *supra* note 12, at 169 (noting that "common normative judgments in legal analysis should take account of complexities of nonlegal regulation more often than they do"); Richard H.

This Article provides an argument and framework for correcting the omission of inventing norms from patent law analysis. Part II examines motivations to invent, and argues that the financial rewards touted by the traditional justification for patent law provide some incentive, but that inventing norms also provide important incentives to invent. Part III argues that patent law and social norms are interdependent and that patent law defines, strengthens, and supports inventing norms in various ways. Part IV argues that because of the interrelationship of patent law and inventing norms, patent law analysis should expand to consider both the financial effects of exclusive rights and the effects of social norms. This Part provides a broader framework for patent law analysis by incorporating both traditional and social-norms perspectives. In applying that framework to current controversies in patent law, this Article argues, for example, that the positive impact of inventing norms would be diminished by adopting radical recommendations to abolish patent law altogether. Part V concludes by summarizing and by identifying additional avenues for research.

II. MOTIVATIONS TO INVENT

A. *Financial Rewards and Exclusive Rights*

The traditional view among legal scholars is that patents promote invention by granting exclusive rights that help inventors profit financially from their discoveries.¹⁸ Absent legal protections, competitors may copy new technology—in which case the benefits of an invention are

McAdams, *An Attitudinal Theory of Expressive Law*, 79 OR. L. REV. 339, 373 (2000) (recommending that “economists make the consideration of the expressive consequences of law a standard component of their models”).

¹⁸ See *supra* note 8 and accompanying text. Although this Article focuses on the capacity of patent law to encourage invention, commentators have proposed other functions for the patent system. For example, patent law requires applicants to disclose significant information about their discoveries in order to obtain a patent, see *infra* notes 199–211 and accompanying text, and this disclosure provides technological information that can be used by subsequent inventors. Sichelman, *supra* note 8, at 377–78; see also Jeanne Fromer, *Patent Disclosure*, 94 IOWA L. REV. 539, 542 (2009) (analyzing the disclosure function of patents); Timothy Holbrook, *Possession in Patent Law*, 59 SMU L. REV. 123, 125 (2006) (“Disclosure, therefore, is central to the patent system.”). Edmund Kitch famously argued that patents serve as “prospects” that encourage efficient use of existing discoveries. Edmund W. Kitch, *The Nature and Function of the Patent System*, 20 J.L. & ECON. 265, 266 (1977); see also F. Scott Kieff, *Property Rights and Property Rules for Commercializing Inventions*, 85 MINN. L. REV. 697, 753 (2001) (contending that patent law serves not as an incentive for invention, but rather “to facilitate commercialization of new goods and services”). Even the prospect theory of patent law, however, is focused entirely on the impact of exclusive patent rights. At least one scholar has argued that patents can serve a function conceptually distinct from the scope and duration of exclusive rights. Clarisa Long has argued that patents serve as signals to sources of capital that the patent owner (typically a business) engages in significant research and development. Long, *supra* note 8, at 628. Reliable signaling is important for both economic and norm-based incentives. See *infra* Section III.D.

“externalized” to those copyists rather than being fully “internalized” by the inventor.¹⁹ As Thomas Jefferson noted almost two centuries ago:

If nature has made any one thing less susceptible than all others of exclusive property, it is the action of the thinking power called an idea, which an individual may exclusively possess as long as he keeps it to himself; but the moment it is divulged, it forces itself into the possession of every one, and the receiver cannot dispossess himself of it.²⁰

For example, if a person invented a paper clip with a new shape that was more effective than the traditional paper clip, the inventor could not sell the new paper clip without disclosing its shape to a buyer. Such a buyer might then use a purchased paper clip as a template to copy the new-and-improved paper clip.

The internalization of the benefits of an invention is, traditional scholars argue, crucial to protecting investment in discovering the invention.²¹ To recoup such an investment, an inventor must be able to monetize the invention. One way for an inventor to monetize his invention, is by selling a product incorporating the invention at a price that reflects both the product’s cost (labor, materials, etc.) and the investment in research and development.²² For example, the inventor of a new design for paper clips could sell the new paper clips at a price sufficiently above the costs of production and marketing to recoup the investment in the redesign. Similarly, an inventor could recoup an investment in invention by licensing the new technology.²³ Absent some legal protection, however, neither mechanism will ensure the recovery of investment in invention. Competitors who are able to copy the product can undercut the inventor’s price (or a licensee’s price) because the copies would not need to include a portion of the development costs in their price.²⁴ A rational would-be inventor would foresee these obstacles to recovering an investment in invention, and, absent legal protection, forego investing any resources whatsoever in invention.

¹⁹ Mark A Lemley, *Ex Ante Versus Ex Post Justifications for Intellectual Property*, 71 U. CHI. L. REV. 129, 129–30 (2004); see also MANCUR OLSON, *THE LOGIC OF COLLECTIVE ACTION: PUBLIC GOODS AND THE THEORY OF GROUPS* 9–16 (1971) (describing collective actions problems and public goods).

²⁰ Letter from Thomas Jefferson to Isaac McPherson (Aug. 13, 1813), in 13 *THE WRITINGS OF THOMAS JEFFERSON* 326, 333 (Andrew A. Lipscomb ed., 1904).

²¹ MERGES ET AL., *supra* note 8, at 127; see also BURK & LEMLEY, *supra* note 8, at 7 (describing invention as a “public good”); OLSON, *supra* note 19, at 9–16; Strandburg, *supra* note 8, at 475 (describing the need to recoup inventors’ investment through sales).

²² JAMES BESSEN & MICHAEL J. MEURER, *PATENT FAILURE* 97 (2008).

²³ *Id.*

²⁴ MERGES ET AL., *supra* note 8, at 12.

Patents prevent such a situation from arising because a patent gives an inventor rights to exclude others from making, using, or selling an invention.²⁵ These rights allow an inventor to commercialize an invention free from concern that competitors will copy it.²⁶ In addition, the exclusive rights of a patent apply even when there is no copying—*independent invention* is no defense to a claim of patent infringement.²⁷ Because these rights protect the returns on investments in invention, they provide financial incentives to invent. Such potential financial reward undoubtedly can affect behavior. Subsidizing (or taxing) certain conduct will often make it occur more (or less) frequently. Corporations are particularly subject to economic incentives, given the responsibilities of corporations to enhance returns for their shareholders.

B. *Social Norms and Invention*

Though the economic benefits of exclusive patent rights are important, they are not the whole story. Because people care about societal attitudes of approval and disapproval concerning which actions and outcomes to pursue and which to avoid, individual behavior is also shaped by social norms.²⁸ Etiquette, for example, is a system of norms. A person who slurps his soup risks social sanction from fellow diners even though slurping may be an effective way to cool soup. Other norms may be more important to maintaining social order.²⁹ For example, because the enforcement of law is expensive, norms favoring lawful behavior are vital to our society.³⁰ Some norms are widely embraced but are satisfied by only a comparatively small group of people—such as norms promoting

²⁵ 35 U.S.C. § 271 (2006). A patent also gives the owner the right to prevent another from offering to sell an invention, or importing an invention into the United States. *Id.* When a patent is infringed, however, a patent owner is not automatically entitled to injunctive relief. *eBay v. MercExchange*, 547 U.S. 388, 391–92 (2006).

²⁶ Recent scholarship indicates, however, that copying is uncommon. See Christopher A. Contropia & Mark A. Lemley, *Copying in Patent Law*, 87 N.C. L. REV. 1421, 1457, 1458 tbl.4 (2009) (concluding, “copying is indeed rare in patent litigation”).

²⁷ *Id.* at 1460. If independent invention were a defense, the initial inventor would not enjoy the full benefit of the invention and therefore might invest inefficiently few resources in discovery. For example, if the benefit of an invention were \$200, investing \$190 in discovering it would be efficient. If independent invention were a defense to patent infringement, however, a first inventor could not capture any portion of the \$200 benefit accruing to an independent inventor. For example, the first inventor might only receive half the benefit, that is, \$100. A rational inventor would therefore invest less in discovery than the invention is ultimately worth in total. See also Samson Vermont, *Independent Invention as a Defense to Patent Infringement*, 105 MICH. L. REV. 475, 484–89 (2006) (describing a limited defense to patent infringement claims for subsequent independent invention).

²⁸ See *supra* note 12 and accompanying text.

²⁹ See generally ROBERT C. ELLICKSON, *ORDER WITHOUT LAW: HOW NEIGHBORS SETTLE DISPUTES* (1991) (arguing that social norms can displace law at times).

³⁰ See Sunstein, *supra* note 12, at 916–17 (noting that obedience of the law is partly due to a desire to maintain reputation).

military heroism.

Attitudes of approval and disapproval can affect an individual's valuation of a behavior in two respects. First, social norms can be "internalized" so that a person feels guilt or pride if the behavior violates or satisfies the social norm.³¹ For instance, a person who has internalized a norm against lying may feel guilt following a lie even if the falsehood is never detected. Such guilt may deter a person from lying. Second, social norms may be "external."³² Richard McAdams has noted that behavior can be affected by the pursuit of "the respect and admiration of . . . peers."³³ Likewise, Eric Posner has argued that "much of our sense of accomplishment and well-being comes from our considered approval or rejection of values to which others expect us to conform"³⁴ Thus, a person may give up a lucrative career as a lawyer in order to be a judge because judges are highly respected.³⁵ Because the enforcement of externalized norms depends on the capacity of people to learn of one's behavior, a person may seek to publicize behavior that satisfies a norm or hide behavior that violates a norm. One example of such publicizing of norm compliance is the practice of universities naming buildings after generous alumni donors. The name of the building broadcasts a donor's exceptional compliance with norms of success, generosity, loyalty, and school spirit. Similarly, soldiers who display exceptional bravery receive medals and other commendations.

Numerous social norms can affect invention. Some norms may support invention, such as norms favoring hard work,³⁶ and norms among

³¹ Lawrence Lessig, *The Regulation of Social Meaning*, 62 U. CHI. L. REV. 943, 997 (1995); see also Sunstein, *supra* note 12, at 936 (noting that internal mental states can be complex). Internalized social norms are similar to what psychologists describe as "introjected regulation," which involves motivation premised on "internal pressure [that] arises out of a sense of externally related obligation." Mandel, *supra* note 15, (manuscript at 9).

³² Some scholars have argued that "people gradually internalize norms to which they initially adhere for reputational reasons." POSNER, *supra* note 12, at 44; see also McAdams, *supra* note 12, at 380–81 (explaining that people follow behavioral norms in order to adhere to societal obligations).

³³ McAdams, *supra* note 12, at 356; see also POSNER, *supra* note 12, at 41 ("[P]eople conform to social norms because they care about their reputation"); Richard L. Hasen, *Voting Without Law?*, 144 U. PA. L. REV. 2135, 2149 (1996) ("[P]eople in social relationships care about others' opinions of them"); McAdams, *supra* note 17, at 343 (noting that people may act to obtain the approval of others); Cass R. Sunstein, *On the Expressive Function of Law*, 144 U. PA. L. REV. 2021, 2032 (1996) ("People act in accordance with their perceptions of what other people think."); Sunstein, *supra* note 12, at 916 ("Social norms are a key determinant in reputational benefit or cost.").

³⁴ POSNER, *supra* note 12, at 208. McAdams has noted that "[a]n individual may value approval intrinsically because it satisfies a preference for esteem or instrumentally because it helps to achieve other ends." McAdams, *supra* note 17, at 343.

³⁵ See McAdams, *supra* note 12, at 342, 355–57 (discussing the importance of esteem in social norms).

³⁶ See Scott A. Shane, *Why Do Some Societies Invent More than Others?*, 7 J. BUS. VENTURING 29, 29 (1992) (concluding that individualism and lack of power distance explain differences in national rates of inventiveness); see also Benkler, *supra* note 15, at 378 (noting that humans are motivated by

scientists encouraging the sharing of research results.³⁷ Other social norms may hamper invention.³⁸ For example, social norms based on erroneous stereotypes may dissuade women and minorities from pursuing careers in science and invention.³⁹ As an empirical matter, demonstrating the net effect of these social norms on invention is difficult and requires further study.⁴⁰

Although many social norms can impact invention, this Article focuses on “inventing norms,” which are norms that endorse invention itself as something that “ought to be done.”⁴¹ By definition, inventing norms promote invention, at least to the extent that people embrace them. Despite this salutary effect of inventing norms, patent scholars have generally ignored these norms. The following subsections argue that inventing norms are present in two overlapping social groups: general society and technologically sophisticated colleagues.⁴²

1. *Inventing Norms in General Society*

One challenge in analyzing social norms is identifying them. Because norms are enforced through *non-legal* mechanisms, they are not usually codified.⁴³ Evidence of norms is often reflected in circumstantial evidence of behavior patterns. As a result, they “are hard to describe; they are fuzzy; they drift.”⁴⁴ Moreover, distinguishing internalized social “attitudes of approval and disapproval” vis-à-vis individual personal preferences is

different rewards); Jeanne C. Fromer, *A Psychology of Intellectual Property*, 104 NW. U. L. REV. 1441, 1462–63 (2010) (describing the work and time required to produce a creative product); Sauermann & Cohen, *supra* note 14, at 2136 (describing the difficulty in observing the work necessary to produce a creative product); cf. Oliar & Sprigman, *supra* note 13, at 1833–34 (noting that social norms may provide an incentive to develop new jokes).

³⁷ Katherine J. Strandburg, *User Innovator Community Norms: At the Boundary Between Academic and Industry Research*, 77 FORDHAM L. REV. 2237, 2239 (2009).

³⁸ Social norms against failure may deter would-be inventors from pursuing risky projects. See DAVID BROOKS, *ON PARADISE DRIVE* 42 (2004) (asserting that the modern American suburb “is not a social order oriented around creativity, novelty, and excitement”).

³⁹ Studies demonstrate that women are rarely patentees. See, e.g., John P. Walsh & Sadao Nagaoka, *Who Invents?: Evidence from the Japan-US Inventor Survey 9* (RIETI discussion paper series, 09-E-034, 2009), available at <http://www.rieti.go.jp/jp/publications/dp/09e034.pdf> (reporting that only five percent of U.S. patentees are women); see also GAMBARDILLA ET AL., *THE VALUE OF EUROPEAN PATENTS: EVIDENCE FROM A SURVEY OF EUROPEAN INVENTORS* 20 (2005), available at <http://www.alfonso.gambardella.it/PATVALFinalReport.pdf> (reporting that only 2.82% of European patentees are female).

⁴⁰ Financial incentives exhibit a similar indeterminacy because improved financial incentives in one context raise the opportunity costs of another.

⁴¹ Sunstein, *supra* note 12, at 914.

⁴² Olav Sorenson & Jasjit Singh, *Science, Social Networks and Spillovers*, 14 INDUS. & INNOVATION 219, 220 (2007) (noting that “inventors, like most people, primarily interact with others that live and work in close proximity to them”).

⁴³ Some norms, however, may be codified. For example, rules of etiquette are compiled into books. See, e.g., PEGGY POST, *EMILY POST’S ETIQUETTE* (17th ed. 2004).

⁴⁴ POSNER, *supra* note 12, at 221.

difficult. Nevertheless, considerable evidence indicates that there is, in the words of one commentator, a “uniquely American innovative spirit.”⁴⁵ At the very least, it appears that many people share norms favoring invention and that norms opposing invention are rare.

Studies related to national pride indicate that social norms lauding invention are present in the United States.⁴⁶ In a study conducted in 1995 and 1996, more than 30,000 people from twenty-four different countries were asked whether they were “very proud,” “proud,” “not very proud,” or “not proud at all” of their countries’ scientific and technological achievements.⁴⁷ Fifty-one percent of American interviewees declared they were “very proud” of U.S. scientific and technological achievements.⁴⁸ In other English-speaking countries, only thirty-seven percent of interviewees were “very proud” of such achievements. Americans also displayed far less pride in other types of achievements. Only twenty-nine percent of American subjects stated that they were “very proud” of U.S. economic accomplishments, and only thirty-one percent of American subjects stated they were “very proud” of U.S. achievements in art and literature.⁴⁹ The study concluded that “Americans take more pride in science and technology than do the citizens of *any* other nation in the study.”⁵⁰

The inclusion of invention in the U.S. Constitution establishes invention as a core American value. Article I, Section 8, Clause 8 of the Constitution—the so-called “IP Clause”—gives Congress the power “[t]o promote the Progress of . . . useful Arts, by securing for limited Times to . . . Inventors the exclusive Right to their respective . . . Discoveries.”⁵¹

⁴⁵ Dennis Crouch & Jason Rantanen, *Does the Wall Street Journal Understand Patent Law?*, PATENTLYO (Mar. 1, 2006), http://patentlaw.typepad.com/patent/2006/03/does_the_wall_s.html. There is some evidence that inventing norms are different in the United States than in other places. For example, academic science and commercial invention have closer ties in the United States than in Europe. See BROOKS, *supra* note 38, at 80 (“Three-quarters of recent years’ Nobel laureates in economics and the sciences live and work in the United States.”); Partha Dasgupta & Paul A. David, *Toward a New Economics of Science*, 23 RES. POL’Y 487, 489 (1994). But see POSNER, *supra* note 12, at 146 (noting that discussions of norms can suffer from “exaggeration and myth-making”).

⁴⁶ ROBERT K. MERTON, *THE SOCIOLOGY OF SCIENCE* 296 (Norman W. Storer ed., 1973).

⁴⁷ M.D.R. Evans & Jonathan Kelley, *National Pride in the Developed World: Survey Data from 24 Nations*, 14 INT’L J. OF PUB. OPINION RES. 303, 312 tbl.1 (2002).

⁴⁸ *Id.* at 312. It is likely that the success of the United States in developing technology has contributed to this pride. *Id.* at 309.

⁴⁹ *Id.* at 312.

⁵⁰ *Id.* at 316 (emphasis added); see also SCOTT BERKUN, *THE MYTHS OF INNOVATION* 113 (Mary Treseler ed., 2010) (“Americans hold ingenuity to be one of the best kinds of goodness . . .”).

⁵¹ U.S. CONST. art I, § 8, cl. 8. In *The Federalist Papers*, James Madison noted:

The utility of this power, will scarcely be questioned. The copyright of authors has been solemnly adjudged in Great Britain, to be a right of common law. The right to useful, inventions seems with equal reason to belong to the inventors. The public good fully coincides in both, cases with the claims of individuals.

The IP Clause is unusual in that, unlike some other powers granted in Section 8, the IP Clause not only grants Congress a "Power," namely the power to "secur[e] for limited Times to . . . Inventors the exclusive Right to their . . . Discoveries," but also explicitly states the policy goal for the exercise of that power, that is, "promot[ing] the Progress of Science and useful Arts." In other clauses in Section 8, the policy goals for the grants of congressional powers are largely implicit.⁵²

National leaders, from the time of James Madison,⁵³ George Washington,⁵⁴ Alexander Hamilton,⁵⁵ and Thomas Jefferson,⁵⁶ to the present, often lauded the role and importance of invention. Fifteen of the

THE FEDERALIST NO. 43 (James Madison). Apart from such statements by Madison and others, see *infra* notes 53–56 and accompanying text, there is little contemporaneous information regarding the reasons for including this clause in the Constitution. The provision was adopted without disagreement or debate. *Bilski v. Kappos*, 130 S. Ct. 3218, 3242 (2010) (Stevens, J., concurring). At least one scholar has suggested that delegates to the Constitutional Convention may have focused their attention on more contentious issues. Edward C. Walterscheid, *To Promote the Progress of Science and Useful Arts: The Background and Origin of the Intellectual Property Clause of the United States Constitution*, 2 J. INTEL. PROP. L. 1, 26–27 (1994). Nevertheless, the inclusion of this provision in the Constitution should not be dismissed. The committee at the Constitutional Convention that drafted the clause strived "[t]o insert essential principles only." 2 RECORDS OF THE FEDERAL CONVENTION 137 (Max Farrand ed., 1911) (recounting the explanation of Edmund Randolph).

⁵² For example, the Interstate Commerce Clause merely provides that Congress shall have the power "[t]o regulate Commerce . . . among the several States." U.S. CONST. art. I, § 8, cl. 3. This clause does not suggest a goal for regulation. Certain other clauses in Section 8 suggest a goal for the use of congressional power. For instance, Clause 6 gives Congress the power to "provide for the Punishment of counterfeiting." U.S. CONST. art. I, § 8, cl. 6. The goal of this power is implicit: to use punishment to reduce counterfeiting of "Securities and current Coin of the United States." *Id.*

⁵³ See THE FEDERALIST NO. 43 (James Madison).

⁵⁴ George Washington lauded invention in the nation's first state of the union address in 1790:

The advancement of agriculture, commerce and manufactures by all proper means, will not, I trust, need recommendation; but I cannot forbear intimating to you the expediency of giving effectual encouragement as well to the introduction of new and useful inventions from abroad, as to the exertions of skill and genius in producing them at home . . .

Nor am I less persuaded that you will agree with me in opinion that there is nothing which can better deserve your patronage than the promotion of science and literature. Knowledge is in every country the surest basis of public happiness.

President George Washington, *State of the Union Address* (Jan. 8, 1790) (transcript available at <http://www.presidency.ucsb.edu/ws/index.php?pid=29431>).

⁵⁵ As treasury secretary, Alexander Hamilton stated in his *Report on Manufactures*, "[t]he propriety of stimulating by rewards, the invention and introduction of useful improvements, is admitted without difficulty." Alexander Hamilton, *Report on Manufactures*, in 3 THE FOUNDERS' CONSTITUTION 41 (Philip B. Kurland & Ralph Lerner eds., 1987).

⁵⁶ Letter from Thomas Jefferson to Isaac McPherson, *supra* note 20, at 334. The United States Supreme Court has recognized that Jefferson's statements regarding patents are "worthy of note." *Graham v. John Deere Co.*, 383 U.S. 1, 7 (1966); see also *infra* note 80 and accompanying text (discussing the importance of inventing norms to Jefferson's own inventing).

eighteen most recent presidents have celebrated invention, science, or technological progress in their inaugural addresses or State of the Union speeches.⁵⁷ Congress has designated February 11 as “National Inventors’ Day.”⁵⁸ President Reagan described inventors as “the keystone of the technological progress that is so vital to the economic, environmental, and social well-being of this country.”⁵⁹ More recently, President Obama described invention as the “first step in winning the future.”⁶⁰ Every year the President of the United States awards the National Medal of Science and the National Medal of Technology and Innovation to exceptional scientists and inventors.⁶¹ The U.S. Patent Office, which is an agency under the executive branch, also oversees a National Inventors Hall of Fame and Museum.⁶²

Popular media also demonstrate the existence of inventing norms. Advertisers frequently tout their products to consumers as “new,” “improved,” “patented,” or “patent pending.”⁶³ *Time* recently quipped that

⁵⁷ The presidents who did not laud invention or technological progress in their inaugural addresses or State of the Union Addresses are Woodrow Wilson, Harry Truman, and Lyndon B. Johnson. In his inaugural speech in 2009 President Obama lauded the “inventive[ness]” of the minds of the American people and promised to “restore science to its rightful place and [to] wield technology’s wonders.” President Barack Obama, Inaugural Address (Jan. 20, 2009) (transcript available at <http://www.whitehouse.gov/blog/inaugural-address/>).

⁵⁸ See, e.g., Designating February 11, 1983, “National Inventors’ Day,” Pub. L. No. 97-198, 96 Stat. 120 (1982). In dedicating this day to inventors, Congress highlighted “the important role played by inventors in promoting progress in the useful arts and . . . the invaluable contribution of inventors to the welfare of our people.” *Id.* Not coincidentally, February 11 is also the birthday of Thomas Edison. RANDALL E. STROSS, *THE WIZARD OF MENLO PARK: HOW THOMAS ALVA EDISON INVENTED THE WORLD* 3 (2007).

⁵⁹ Proclamation No. 5013, 48 Fed. Reg. 1677 (Jan. 12, 1983). The federal government also gives tax benefits to patentees. Long, *supra* note 8, at 663 n.108.

⁶⁰ President Barack Obama, State of the Union Address (Jan. 25, 2011) (transcript available at <http://www.presidency.ucsb.edu/ws/index.php?pid=88928>).

⁶¹ These medals “represent the highest honors for achievement in science & technology bestowed by the President of the United States.” *About the Medals*, NAT’L SCI. & TECH. MEDALS FOUND., <http://www.nationalmedals.org/medals/index.php> (last visited Sept. 15, 2010); *The Laureates*, NAT’L SCI. & TECH. MEDALS FOUND., <http://www.nationalmedals.org/medals/laureates.php> (last visited Oct. 28, 2011).

⁶² *Welcome to the National Inventors Hall of Fame and Museum*, U.S. PATENT AND TRADEMARK OFFICE, <http://www.uspto.gov/about/offices/opa/museum.jsp> (last visited Sept. 15, 2011). Every year, the Hall of Fame inducts new members, whose names are prominently featured in the museum. An explicit requirement of being inducted into the Hall of Fame is that the inductee must hold a U.S. Patent for the invention. *Nomination for Induction into the National Inventors Hall of Fame*, U.S. PATENT AND TRADEMARK OFFICE, <http://www.invent.org/pdfs/ihof.pdf> (last visited Oct. 28, 2011).

⁶³ ROBERT C. DORR & CHRISTOPHER H. MUNCH, *PROTECTING TRADE SECRETS, PATENTS, COPYRIGHTS, AND TRADEMARKS* 216 (2d ed. 1995) (“[T]he words patent pending may have substantial psychological or marketing value.”); see also Sunstein, *supra* note 12, at 925–26 (discussing advertisers attempts to utilize social norms). In fact, the Patent Act encourages patent owners to provide “notice to the public that [a product] is patented, either by fixing thereon the word ‘patent’ or the abbreviation ‘pat.’, together with the number of the patent . . .” 35 U.S.C. § 287(a) (2006).

"[i]nnovation is as American as apple pie."⁶⁴ Indeed, some inventors obtain celebrity status.⁶⁵ Alexander Graham Bell is famous for inventing the telephone.⁶⁶ When he died, the United States and Canada observed a moment of telephonic silence. For one minute, there were no calls on thirteen million telephones.⁶⁷ Conversely, some celebrities obtain patents even though those patents likely provide relatively little financial reward. Celebrity patentees include Abraham Lincoln,⁶⁸ Eddie Van Halen,⁶⁹ Marlon Brando,⁷⁰ and, as indicated above, Michael Jackson.⁷¹ Public praise, medals, and museums all indicate the presence of general social norms favoring invention.⁷²

Finally, empirical studies of juries confirm that the general public lauds inventors. These studies reveal that in patent infringement lawsuits juries disproportionately find in favor of inventors.⁷³ Attorneys involved in these cases attribute this success to the jurors' perceptions of inventors: "Many attorneys believe that juries are mesmerized by the inventor's story and tend to favor the [inventor]. Juries respond well to descriptions of the inventive process and the inventor's flash of genius or slow methodical trial and error."⁷⁴ In short, "juries appear to love inventors."⁷⁵

⁶⁴ Fareed Zakaria, *Innovate Better*, TIME, June 13, 2011, at 30, 30.

⁶⁵ SCOTT BERKUN, *THE MYTHS OF INNOVATION* 141 (2010) ("In our religions, histories, and mythologies, we hold innovators to be great heroes . . .").

⁶⁶ U.S. Patent No. 174,465 (filed Feb. 14, 1876); see also CHARLOTTE GRAY, *RELUCTANT GENIUS: ALEXANDER GRAHAM BELL AND THE PASSION FOR INVENTION* 117–38 (2006).

⁶⁷ GRAY, *supra* note 66, at 423; Randy Alfred, *Aug. 4, 1922: For Whom the Bell Tolls Not*, WIRED (Aug. 4, 2010), <http://www.wired.com/thisdayintech/2010/08/0804alexander-graham-bell-funeral-silence>.

⁶⁸ Abraham Lincoln is the only United States president to obtain a patent. WILLIAM ROSEN, *THE MOST POWERFUL IDEA IN THE WORLD* 322 (2010); see also Thomas Astebro, *The Return to Independent Invention: Evidence of Unrealistic Optimism, Risk Seeking or Skewness Loving?*, 113 ECON. J. 226, 237 (2003). U.S. Patent No. 6,469 was issued to Abraham Lincoln on May 22, 1849. ROSEN, *supra* note 68, at 322. Presidential Patent Model and Drawing on Display, U.S. PATENT & TRADEMARK OFFICE (Feb. 17, 1998), available at <http://www.uspto.gov/news/pr/1998/98-03.jsp>.

⁶⁹ U.S. Patent No. 4,656,917 (filed Apr. 14 1987).

⁷⁰ U.S. Patent No. 6,812,392 (filed Nov. 2, 2004).

⁷¹ See *supra* note 7 and accompanying text.

⁷² Similar norms may exist regarding the creation of expressive works, which are often protected through copyright law. For example, musicians may be motivated not only by financial gain but also by the rewards of fame and critical acclaim. Jon M. Garon, *Normative Copyright: A Conceptual Framework for Copyright Philosophy and Ethics*, 88 CORNELL L. REV. 1278, 1312 (2003). Likewise, "many artists create from an endogenous desire rather than external motivations . . ." Ben Depoorter & Sven Vanneste, *Norms and Enforcement: The Case Against Copyright Litigation*, 84 OR. L. REV. 1127, 1138 (2005).

⁷³ See Kimberly A. Moore, *Judges, Juries, and Patent Cases—An Empirical Peek Inside the Black Box*, 99 MICH. L. REV. 365, 386 (2001) (reporting that patentees prevail in sixty-eight percent of cases tried to juries and prevail in only fifty-one percent of bench trials).

⁷⁴ *Id.* at 372.

⁷⁵ *Id.*; see also Jonathon Taylor Reavill, Note, *Tipping the Balance: Hilton Davis and the Shape of Equity in the Doctrine of Equivalents*, 38 WM. & MARY L. REV. 319, 366 (1996) ("[J]uries also tend to idealize inventors."); Barry S. Wilson, Comment, *Patent Invalidity and the Seventh Amendment: Is the*

2. *Inventing Norms in Technical Subgroups*

Inventing norms are particularly strong among technological sophisticates, including both inventors and their technological peers.⁷⁶ For example, Thomas Edison once said: "One might think that the money value of an invention constitutes its reward to the man who loves his work. But . . . I continue to find my greatest pleasure, and so my reward, in the work that precedes what the world calls success."⁷⁷ Indeed, the decision by some inventors not to obtain financially rewarding patent rights to their discoveries suggests that inventing norms are important. Following Benjamin Franklin's invention of the Franklin stove, he eschewed patent protection, stating later that "we should be glad of an Opportunity to serve others by any Invention of ours."⁷⁸ Likewise, Thomas Jefferson invented an improved plow that won international acclaim,⁷⁹ but did not patent it because he considered patent rights to be a "public . . . embarrassment."⁸⁰ Jonas Salk invented the polio vaccine, but did not patent it.⁸¹ The inventors of gene splicing also did not want to patent their discovery.⁸² Numerous winners of the Nobel Prize have similarly avoided patenting their discoveries,⁸³ while other inventors have patented their work only "to ensure its being made available for *public* use."⁸⁴ Indeed, inventors invent even though the decision to invent is financially costly and provides less

Jury Out?, 34 SAN DIEGO L. REV. 1787, 1787 n.4 (1997) ("Lay juries may be inherently biased towards the patentee because they hold the U.S. Patent Office in high regard.").

⁷⁶ See McAdams, *supra* note 12, at 389 (noting that members of a group often "value the esteem of fellow members more highly than that of strangers"); see also Hasen, *supra* note 33, at 2149–51 ("[P]eople in social relationships care about others' opinions of them . . ."). Inventors may also enjoy inventing because they simply enjoy the intellectual challenge or the creative endeavor. See *supra* note 15 and accompanying text.

⁷⁷ MICHAEL GELB & SARAH MILLER CALDICOTT, *INNOVATE LIKE EDISON* 48 (2007).

⁷⁸ BRUCE W. BUGBEE, *GENESIS OF AMERICAN PATENT AND COPYRIGHT LAW* 72 (1967).

⁷⁹ DAVID G. POST, *IN SEARCH OF JEFFERSON'S MOOSE: NOTES ON THE STATE OF CYBERSPACE* 195–96 (2009).

⁸⁰ *Graham v. John Deere Co.*, 383 U.S. 1, 9 (1966); see also POST, *supra* note 79, at 196 n.9; Letter from Thomas Jefferson to Isaac McPherson, *supra* note 20, at 334.

⁸¹ JANE S. SMITH, *PATENTING THE SUN* 220 (1990). Salk may have believed that he could not patent his vaccine. Lawyers had advised Salk that his invention could not be patented "since neither the processes nor the materials Salk used were new discoveries." *Id.* Regardless of whether Salk believed patenting was impossible, he did not publicly rely on this legal advice in explaining why he would not pursue a patent. When asked about patent protection on national television, Salk replied, "There is no patent. Could you patent the sun?" *Id.* at 338.

⁸² Arti Kaur Rai, *Regulating Scientific Research: Intellectual Property Rights and the Norms of Science*, 94 NW. U. L. REV. 77, 93 (1999). Stanley Cohen and Herbert Boyer invented gene splicing at Stanford University. *Id.* Ultimately, at the "strenuous urging" of Stanford, Cohen and Boyer patented their discovery. *Id.*

⁸³ *Id.* at 94. Yochai Benkler has noted that in certain information production activities, "[s]ome contributors have made billions, while some . . . have earned nothing but honor." Benkler, *supra* note 15, at 440.

⁸⁴ MERTON, *supra* note 46, at 275 (emphasis added).

financial reward than other investment opportunities.⁸⁵ By one estimate, “[i]nventors typically forgo more than one-third of their lifetime earnings.”⁸⁶

Social norms favoring the discovery of new ideas have also been well-documented in academic science.⁸⁷ Robert Merton, one of the founders of the sociology of science, observed that scientists adhere to norms regarding “priority.” Under those norms, “recognition and esteem accrue to those who have . . . made genuinely original contributions to the common stock of knowledge.”⁸⁸ To contribute to this “common stock,” one must add knowledge that was previously unknown, “[f]or it is through originality, in greater or smaller increments, that knowledge advances.”⁸⁹ Having made discoveries, scientists often obtain esteem when their discoveries, including natural laws, mathematical constants, heavenly bodies, and animals, are named after their discoverers.⁹⁰ Indeed, scientists are often powerfully motivated by the desire for esteem.⁹¹ As Charles Darwin once stated, “[m]y love of natural science has been much aided by the ambition to be esteemed by my fellow naturalists.”⁹² Many scientists thus exhibit “an unquenched thirst for original discovery and ensuing praise.”⁹³

Similar inventing norms exist among private industry—in part because there are often close connections between academic science and industry.⁹⁴ Frequently, inventors are former members of scientific academies that have

⁸⁵ See Astebro, *supra* note 68, at 227 (arguing that many low value inventions are identifiable ex ante, yet inventors persist in trying to commercialize them).

⁸⁶ ROSEN, *supra* note 68, at 122–23; see also Astebro, *supra* note 68, at 237 (“[Fifty percent] of inventors with very poor quality ideas continued to pursue efforts even when the paid advice strongly argued against it.”); cf. Garon, *supra* note 72, at 1313–14 (“[S]uccessful and unsuccessful authors may have elected to forego more predictable rewards for the incentives that arise from copyright’s protection of exclusive rights.”).

⁸⁷ Dasgupta & David, *supra* note 45, at 491.

⁸⁸ MERTON, *supra* note 46, at 293; see also Margo A. Bagley, *Academic Discourse and Proprietary Rights: Putting Patents in Their Proper Place*, 47 B.C. L. REV. 217, 226 (2006) (discussing the benefits of academic freedom to ideas and research); Dasgupta & David, *supra* note 45, at 498 (“[P]riority of discovery or development is the basis for legitimate reputation-building claims”); Rebecca S. Eisenberg, *Proprietary Rights and the Norms of Science in Biotechnology Research*, 97 YALE L.J. 177, 183 (1987) (discussing the scientific reward structure); Rai, *supra* note 82, at 92 (“[P]erhaps the strongest norm is that of invention itself.”). Merton also documented norms regarding the sharing of information among academics. MERTON, *supra* note 46, at 273–75.

⁸⁹ MERTON, *supra* note 46, at 293.

⁹⁰ See *id.* at 297–305 (noting the practice of naming discoveries after scientists).

⁹¹ *Id.* at 293; Jeremy M. Grushcow, *Measuring Secrecy: A Cost of the Patent System Revealed*, 33 J. LEGAL STUD. 59, 75 (2004).

⁹² MERTON, *supra* note 46, at 293 (internal quotations and alterations omitted).

⁹³ *Id.* at 320; see also Sorenson & Singh, *supra* note 42, at 220 (“[Scientists] do indeed wish to disseminate their discoveries widely to gain recognition.”).

⁹⁴ Strandburg, *supra* note 37, at 2254 (“Industry scientists have many of the same preferences for participation in research that academic scientists do.”). Some scholars have described science and technology as “interrelated areas of study.” Dasgupta & David, *supra* note 45, at 489.

joined private industry.⁹⁵ The transfer of scientific personnel from the academy into applied technology is “potentially the most important and salutary among the mechanisms available for effecting knowledge transfers” from academic research centers to private enterprises.⁹⁶ This transfer likely includes the transfer of social norms. In addition, this collaboration between industry researchers and academic scientists is increasing, so there will be more opportunities for private researchers to encounter academic norms.⁹⁷ Indeed, “peer recognition may be increasingly important as a metric for private sector scientists’ success.”⁹⁸

A recent advertisement by the computer chip manufacturer Intel illustrates the role of inventing norms among technical groups.⁹⁹ The commercial opens with a man walking in slow motion through a doorway. Hard-hitting rock music begins to play. Incongruously, the man wears a tie and a sweater vest. He is middle aged, has a mustache, and does not appear to be particularly tall, athletic, or handsome. Nevertheless, the people in the room turn to him and their faces brighten, revealing a mixture of elation and hysteria. The man points both index fingers at the adoring crowd. Women begin to scream, although there is no sound other than the sound of guitars and drums. Text appears on the screen, identifying the man as “Ajay Bhatt co-inventor of the USB.” Bhatt winks and nods his head, while a man in the background unbuttons his shirt to reveal a t-shirt with Bhatt’s picture on it.¹⁰⁰ Bhatt pours himself some coffee while the crowd continues to adore him. Bhatt signs autographs, and onlookers photograph Bhatt with their mobile phones. The screen turns blue and text appears: “Our rock stars aren’t like your rock stars.” In certain technical circles, successful inventors are, in a sense, rock stars.

⁹⁵ See Dasgupta & David, *supra* note 45, at 511 (“[P]rivate producers . . . transfer scientific personnel from the academy to their [private industry].”); Strandburg, *supra* note 37, at 2254 (discussing the relationship between academic and industry scientists). One difference between science and industry, however, may be that academic scientists may be less likely to claim exclusive rights to their discoveries through patenting. Eisenberg, *supra* note 88, at 182, 203. Alternatively, scientists may patent their discoveries, but not assert their exclusive rights. Strandburg, *supra* note 37, at 2257.

⁹⁶ Dasgupta & David, *supra* note 45, at 511.

⁹⁷ Strandburg, *supra* note 37, at 2256, 2260, 2264; see also Bagley, *supra* note 88, at 217–18 (noting that patent license revenues for universities increased eightfold from 1991 to 2004).

⁹⁸ Grushcow, *supra* note 91, at 75 n.31. In addition, inventors may rely on scientific literature in developing their inventions. See GAMBARDILLA ET AL., *supra* note 39, at 30 (finding that approximately fifty-eight percent of inventors rated scientific literature “important” as a source of innovation).

⁹⁹ Sponsors of Tomorrow—Rock Star (Intel Commercial 2009), available at <http://www.intel.com/content/www/us/en/sponsors-of-tomorrow/sot-ad-rockstar-video.html?wapkw=rockstar+tv+ad> (last visited Aug. 24, 2011).

¹⁰⁰ Intel later offered 100 of these t-shirts as prizes in a contest. Michael Brito, *Ajay Bhatt T-Shirt Give-a-Way*, INTEL (June 1, 2009), http://scoop.intel.com/ajay_bhatt_t-shirt_give-a-way.

3. *Inventor Surveys and Inventing Norms*

Sociological surveys exploring the motivations of inventors corroborate the existence and importance of inventing norms.¹⁰¹ For example, these studies suggest that internalized inventing norms provide substantial incentives to invent. One study asked inventors, “[w]hat motives or incentives cause you to invent?”¹⁰² The most common answer in this study was “[l]ove of inventing.”¹⁰³ Similarly, in a study conducted in 2007, more than eighty-six percent of inventors in the United States responded that “[s]atisfaction from solving technical problems” was at least “moderately important” in motivating their efforts to discover their inventions.¹⁰⁴ This response was, by a considerable margin, the most commonly identified motivation for invention. Another important motivation identified by the inventors was “[s]atisfaction from contributing [to] science.”¹⁰⁵ Similarly, in a study published in 2010, inventors were asked to identify benefits that would be important “[w]hen thinking about a job.”¹⁰⁶ The most frequently identified attractive workplace attribute was “intellectual challenge.”¹⁰⁷

Sociological surveys also demonstrate the presence of externally enforced inventing norms: Inventors invent to obtain the respect and admiration of their peers.¹⁰⁸ In one early study asking inventors to identify “motives or incentives . . . to invent,” many of the respondents identified “prestige” as a motive to invent.¹⁰⁹ In another study, more than thirty-six percent of inventors stated that “prestige” and “reputation” were at least “moderately important” motivations supporting their inventions.¹¹⁰

¹⁰¹ Sauermann & Cohen, *supra* note 14, at 2135 (discussing intrinsic and extrinsic motivations).

¹⁰² JOSEPH ROSSMAN, *INDUSTRIAL CREATIVITY: THE PSYCHOLOGY OF THE INVENTOR* 152 (1964).

¹⁰³ *Id.* at 152 tbl.9.

¹⁰⁴ Walsh & Nagaoka, *supra* note 39, at 22, 61 fig.21.

¹⁰⁵ *Id.* at 61 fig.21 (reporting that 62.4% of American inventors were motivated by this factor).

¹⁰⁶ Sauermann & Cohen, *supra* note 14, at 2137.

¹⁰⁷ *Id.* at 2138 tbl.1, 2151. Studies of inventors in other countries have produced similar results. For example, in a survey of more than 9000 European inventors, the most important motivator for invention was “[s]atisfaction to show that something was technically possible.” GAMBARDELLA ET AL., *supra* note 39, at 36.

¹⁰⁸ Peer approval may be particularly important for subsequent invention, as many patents issued today list multiple inventors. See GAMBARDELLA ET AL., *supra* note 39, at 26 fig.4.1 (showing the percentage of patents with more than one inventor for different countries in the European Union). Those who are respected may be more likely to be invited to collaborate. See MIHALY CSIKSZENTMIHALYI, *CREATIVITY: FLOW AND THE PSYCHOLOGY OF DISCOVERY AND INVENTION* 227, 283, 334 (1996) (discussing the importance of prestige to creative people).

¹⁰⁹ ROSSMAN, *supra* note 102, at 152.

¹¹⁰ Walsh & Nagaoka, *supra* note 39, at 61. European inventors are also substantially motivated by prestige. In a recent survey, European inventors considered “[p]restige/reputation” to be the second most important motivator for invention; “[s]atisfaction to show that something [was] technically possible” was the primary motivation. GAMBARDELLA ET AL., *supra* note 39, at 36 tbl.5.1. In the United Kingdom, “[p]restige/reputation” was the most important motivator for invention. *Id.*

Significantly, this study compared the responses of U.S. inventors with those of more than 3600 Japanese inventors.¹¹¹ Japanese inventors and U.S. inventors responded similarly regarding many motivations to invent,¹¹² but were markedly different regarding one factor: “US inventors rate prestige/reputation (social motivations) relatively highly among all motivations, while this motivation ranks relatively low among Japanese inventors”¹¹³

Finally, sociological studies indicate that financial rewards to invention are often less important than non-pecuniary rewards, including the satisfaction of inventing norms.¹¹⁴ One study identified “[f]inancial gain” as the third most important incentive to invent, behind “[l]ove of inventing” and “[d]esire to improve” existing technology.¹¹⁵ In another study, only 22.1% of U.S. inventors responded that “[m]onetary rewards” were “moderately important” in motivating their invention.¹¹⁶ In contrast, 36.8% of those inventors stated that “prestige” and “reputation” were important incentives to invent.¹¹⁷ This study also identified motivations to invent that were tangentially related to monetary rewards, such as “[g]enerating value for my firm,” which more than seventy-eight percent of inventors considered an important incentive.¹¹⁸ Nevertheless, even that indirect financial reward was less important than the satisfaction of internal goals. In this study, the most commonly stated incentive was “[s]atisfaction from solving techn[ological] problems.”¹¹⁹

These studies indicate that widely shared norms encourage inventors to invent. Some of these norms may be internally applied, such as the enhanced satisfaction that an inventor feels from pursuing a “love of inventing.” Other norms, however, provide external benefits, including the respect and admiration of peers. Significantly, these norms-based incentives to invent can be more influential than some pecuniary incentives to invent.¹²⁰ Nonetheless, even when pecuniary benefits are more

¹¹¹ Walsh & Nagaoka, *supra* note 39, at 4.

¹¹² *Id.* at 22–23, 61 fig.21.

¹¹³ *Id.* at 23.

¹¹⁴ Moreover, even these financial motivations may be affected by inventing norms because these norms provide both non-pecuniary and pecuniary incentives to invent. For example, a successful inventor may obtain the admiration of peers (a non-pecuniary reward) and that admiration could lead to additional job opportunities (a pecuniary reward). In contrast, the traditional justification of patent law focuses exclusively on pecuniary rewards for inventing, that is, the economic value of exclusive patent rights.

¹¹⁵ ROSSMAN, *supra* note 102, at 152 tbl.9.

¹¹⁶ Walsh & Nagaoka, *supra* note 39, at 22, 61 fig.21.

¹¹⁷ *Id.* at 61 fig.21.

¹¹⁸ *Id.*

¹¹⁹ *Id.*

¹²⁰ Cf. Depoorter & Vanneste, *supra* note 72, at 1139 (“Empirical research on legitimacy reveals that norm-based factors are sometimes stronger determinants of behavior than formal sanctions.”). Non-pecuniary incentives to invent also impact European inventors more than pecuniary rewards. In a

influential, non-pecuniary incentives can still play a role.

C. *Potential Objections to Inventing Norms*

This section responds to two potential objections to the claim that inventor motivation depends in part on social norms. The first potential objection is that, even if social norms affect the behavior of people, the impact of social norms is irrelevant because most patents are owned by corporations,¹²¹ and corporations are indifferent to social norms. Recent empirical data demonstrates, however, that corporate management may obtain patents in part to “[e]nhance company reputation/product image,” thus suggesting that corporate leadership can be affected by inventing norms even if compliance with norms is simply a way of increasing prestige and thus profits.¹²² Moreover, although many corporations obtain patents to acquire exclusive rights,¹²³ corporations rely on people to invent. By law, patent ownership begins with the inventor.¹²⁴ Corporations

comprehensive study of more than 9000 European inventors, “[m]onetary rewards” was the fourth most frequently identified incentive to invent. GAMBARDILLA ET AL., *supra* note 39, at 17, 36 tbl.5.1. European inventors considered the following non-pecuniary incentives to be the two most important: “[s]atisfaction to show that something is technically possible” and “[p]restige/reputation.” *Id.*

¹²¹ Corporations own eighty percent of all U.S. patents. Long, *supra* note 8, at 636 (internal citation omitted).

¹²² Stuart J.H. Graham et al., *High Technology Entrepreneurs and the Patent System: Results of the 2008 Berkeley Patent Survey*, 24 BERKELEY TECH. L.J. 1255, 1299 fig.2 (2009); accord Wesley M. Cohen et al., *Protecting Their Intellectual Assets: Appropriability Conditions and Why U.S. Manufacturing Firms Patent (or Not)* 18 figs.7 & 8 (Nat’l Bureau of Econ. Research, Working Paper No. 7555, 2000), available at <http://ssrn.com/abstract=214952> (reporting that a survey found that many firms patent to “enhance reputation”); see also GAMBARDILLA ET AL., *supra* note 39, at 35, 36 tbl.5.1 (reporting that European companies sometimes obtain patents to improve their “reputation”). Entrepreneurs in one study considered reputational effects to be more important than other significant motivations to patent. Graham et al., *supra*, at 1301 fig.3. Indeed, for software companies, reputation effects were the second most important reason to patent. *Id.* These reputation effects may have a financial component because a better “reputation” and “product image” may lead to greater sales. See Cohen et al., *supra*, at 8 n.41 (suggesting that some inventors may use a patent’s reputation-enhancing effect as a basis to sell the firm outright). Nevertheless, even if companies’ focus on reputation has financial benefits, this justification for patenting is distinct from the assertion of exclusive rights.

¹²³ See GAMBARDILLA ET AL., *supra* note 39, at 43 (reporting that “organisations patent mainly because they seek exclusive rights”); Graham et al., *supra* note 122, at 1299 fig.2 (reporting that companies obtain patents to “[p]revent others from copying [their] products or services”); Cohen et al., *supra* note 122, at 17 figs.7 & 8 (reporting that prevention of copying was the most frequent response when companies were asked to indicate their reasons for applying for a patent).

¹²⁴ Bd. of Trs. of Leland Stanford Junior Univ. v. Roche Molecular Sys., Inc., 131 S. Ct. 2188, 2195 (2011) (“[A]lthough others may acquire an interest in an invention, any such interest—as a general rule—must trace back to the inventor.”); see also 35 U.S.C. § 101 (2006) (“Whoever invents . . . may obtain a patent”); *id.* § 152 (stating that a patent can issue to the assignee of a patent application); Long, *supra* note 8, at 636 n.32 (“Only individuals—not corporations—may be inventors.”). In this respect, patent law is markedly different from copyright law, which states that a work made in the course of employment is owned by the company *ab initio*. 17 U.S.C. § 201(b) (“The employer or other person for whom the work was prepared is considered the author for purposes of this title, and . . . owns all of the rights comprised in the copyright.”).

typically obtain patents through assignment by employees.¹²⁵ Because of this central role of individuals, it is necessary to consider not only corporate profit motives but also “individual-level motives,” particularly inventing norms.¹²⁶

These motives to invent can be crucial because employee-inventors typically receive little, if any, direct financial reward for their discoveries.¹²⁷ Many employment contracts obligate employees to assign later-developed inventions to their employer.¹²⁸ Even without such a contractual provision, common-law default rules in many circumstances require employees to assign patents to their employers, particularly if the employee’s job focuses on research and development.¹²⁹ Some corporations give bonuses to employees who obtain patents, but many do not.¹³⁰ Although employees may worry about job security or advancement, “corporate [research] personnel generally receive their salary whether or not a particular line of research pans out.”¹³¹

The second potential objection to this Article’s claim concerning inventing norms is that even if inventors pursue their discoveries for non-financial reasons, those reasons are unrelated to social norms. Instead, inventors invent to satisfy their personal preferences. They simply enjoy the process of discovery and invention and would do the same thing if there were no social norm favoring invention. Just as some people enjoy cooking or gardening, some people enjoy being inventors.¹³² Inventors, it seems, may be divinely called to their work.

This potential criticism clearly fails to address norms under which inventors are respected and esteemed by their peers, which are inherently interpersonal and thus cannot reflect merely one inventor’s valuation of invention. Moreover, even internal preferences may stem from social

¹²⁵ Long, *supra* note 8, at 636 n.32.

¹²⁶ Sauermann & Cohen, *supra* note 14, at 2134–35.

¹²⁷ INTELLECTUAL PROP. OWNERS ASS’N, EMPLOYEE INVENTOR COMPENSATION PRACTICES SURVEY 1–4 (2004) available at http://www.ipo.org/AM/Template.cfm?Section=Business_Issues&Template=/CM/ContentDisplay.cfm&ContentID=22948; see also GAMBARDILLA ET AL., *supra* note 39, at 36 (stating that many European inventors do not receive financial rewards from their employers for their inventions).

¹²⁸ Long, *supra* note 8, at 636 n.32; Robert Merges, *The Law and Economics of Employee Inventions*, 13 HARV. J.L. & TECH. 1, 7 (1999); see also *Roche Molecular Sys., Inc.*, 131 S. Ct. at 2189 (discussing a patent assignment agreement).

¹²⁹ MERGES ET AL., *supra* note 8, at 86; Merges, *supra* note 128, at 5.

¹³⁰ Merges, *supra* note 128, at 38–40 (addressing a variety of reward plans offered by employers, but noting that only a few, very large corporations offer patent-based bonuses).

¹³¹ *Id.* at 31.

¹³² See, e.g., Sauermann & Cohen, *supra* note 14, at 2136 (explaining, “stronger preferences for particular extrinsic or intrinsic reward increase the marginal utility of a given unit of reward and will increase optimal effort”). Of course, cooks and gardeners may also be responding to “cooking norms” and “gardening norms.”

norms because inventing norms can be internalized.¹³³ The environment in which a person develops can substantially affect her actions and abilities as an adult.¹³⁴ Scholars exploring intelligence and creativity consistently highlight the importance of a person's "social environment—parents, family, friends, teachers—[in which] some habits are strengthened, others weakened or repressed."¹³⁵ Admittedly, people may also invent to satisfy innate, immutable preferences. Motivation may "arise[] from an individual's internal inherent interest, involvement, or challenge found in a given task or project."¹³⁶ Nevertheless, both of these types of internal motivation—inherent and norms-based—can motivate a person to invent. In other words, love of inventing can simultaneously stem from a person's inherent "nature" as well as from the "nurturing" inventing norms that a person has internalized. At most, this potential criticism simply shows that internal mental states can be extremely complex, involving both environmental and inherent factors.¹³⁷

III. THE EFFECT OF PATENT LAW ON INVENTING NORMS

Law and social norms are interrelated. Legal scholars have long understood that social norms affect law.¹³⁸ For instance, racist social norms likely contributed to the passage of laws requiring racial segregation in education, while egalitarian social norms contributed to desegregation.¹³⁹ More recently, legal scholars have argued that law may affect social norms.¹⁴⁰ For example, *de jure* racial segregation in education

¹³³ See *supra* notes 31–32 and accompanying text.

¹³⁴ See DAVID SHENK, *THE GENIUS IN ALL OF US: WHY EVERYTHING YOU'VE BEEN TOLD ABOUT GENETICS, TALENT, AND IQ IS WRONG* 37–40 (2010) (arguing that individuals are a product of complex interactions between genes and environmental factors including mentorship).

¹³⁵ CSIKSZENTMIHALYI, *supra* note 108, at 358–59; see also *id.* at 155–67 (discussing the impact of childhood development on creativity); SHENK, *supra* note 134, at 121 ("The much larger point is that a person's internal motivation is highly malleable and is closely tied to social reality.").

¹³⁶ Mandel, *supra* note 15, (manuscript at 8). Internal motivations may be particularly important with creative endeavors like inventing, because psychological research has demonstrated that "intrinsically motivated work is more likely to produce more creative output than extrinsically motivated work." *Id.*

¹³⁷ See Sunstein, *supra* note 12, at 936 (noting the complexity of internal mental states).

¹³⁸ See McAdams, *supra* note 12, at 347–48 ("Legal scholars have always paid some attention, sometimes enormous attention, to social or business customs, conventions, mores, and the like.").

¹³⁹ For a single example of both of these competing norms at work, see 1928 Va. Acts 1213 § 680 (repealed 1971), the Virginia law requiring racial segregation in education.

¹⁴⁰ See, e.g., Alex Geisinger, *A Belief Change Theory of Expressive Law*, 88 IOWA L. REV. 35, 68 (2002) (noting the effect of motorcycle helmet laws on individual certainty of helmet safety); Timothy R. Holbrook, *The Expressive Impact of Patents*, 84 WASH. U. L. REV. 573, 591 (2006) (describing the social impact of racial segregation on understandings of race relationships); Lessig, *supra* note 31, at 965, 1016 (describing specifically the efforts by the Soviet government to transform the social meaning of wearing a helmet and generally the negative social meaning ascribed to those attempting to change social norms); McAdams, *supra* note 12, at 349 (stating that laws can both intentionally and unintentionally affect social norms); Rai, *supra* note 82, at 86–88 (enumerating ways in which

likely affected behavior outside of schools by reinforcing racist social norms.¹⁴¹

In the patent context, scholars have largely ignored the impact of law on social norms.¹⁴² In the limited circumstances in which patent scholars have examined the interaction between patents and social norms, they have focused on the capacity of patent rights to undermine social norms that promote invention. For example, some scholars have argued that granting patents for academic discoveries undermines social norms that encourage scientists to collaborate with each other.¹⁴³ The following sections argue that awarding patent rights can actually strengthen and support certain social norms that promote invention, particularly inventing norms. As a result, the capacity of patent rights to motivate inventors may extend beyond the financial rewards of exclusive rights.¹⁴⁴

A. Patent Law and Value Judgments

Law can affect social norms by expressing a value judgment.¹⁴⁵

normative behavior and positive laws are interrelated); Sunstein, *supra* note 33, at 2043 (noting the effect of civil rights laws on the social meaning of nondiscrimination).

¹⁴¹ See *Brown v. Bd. of Educ.*, 347 U.S. 483, 494 (1954) (“Segregation of white and colored children in public schools has a detrimental effect upon the colored children. The impact is greater when it has the sanction of the law; for the policy of separating the races is usually interpreted as denoting the inferiority of the negro group.”) (internal citation omitted).

¹⁴² See Oliar & Sprigman, *supra* note 13, at 1791 (“Although the law and social norms movement is approximately two decades old, its insights have not yet penetrated deeply into the IP literature.”); see also Holbrook, *supra* note 140, at 578–79 (noting that patent scholars have largely ignored the expressive function of law). Timothy Holbrook has examined whether allowing patents on certain technology supports norms related to that technology. *Id.* at 579. Similarly, Shubha Ghosh has argued that “racial categories” should not be allowed in patents because “[v]alidating racial categories in patents may validate racist or racialist social practices.” Shubha Ghosh, *Race-Specific Patents, Commercialization, and Intellectual Property Policy*, 56 BUFF. L. REV. 409, 416 (2008).

¹⁴³ See Bagley, *supra* note 88, at 239 (arguing that there is a correlation between the rise in patent law and the continual decline in the quantity and quality of scientific discourse); Eisenberg, *supra* note 88, at 216 (recognizing the disincentive for researchers guided by scientific norms to publish prior to patent protection); Grushcow, *supra* note 91, at 78 (attributing the increased secrecy by professors not seeking patents to a shift in normative attitudes toward reciprocity and collegiality). The results of these studies are inconclusive. See Strandburg, *supra* note 37, at 2239 (“[S]cholars may have been overly concerned about the potential erosion of academic sharing norms . . .”). The National Research Council recently issued a report that concluded that “the expansion of faculty entrepreneurial activity and institutional technology transfer activity at U.S. research universities has not seriously undermined the core missions of knowledge generation and dissemination.” NAT’L RESEARCH COUNCIL, *MANAGING UNIVERSITY INTELLECTUAL PROPERTY IN THE PUBLIC INTEREST* 40 (2011).

¹⁴⁴ Importantly, patent law can affect the impact inventing norms have on people who do not read statutes, regulations, and judicial opinions. For people who lack first-hand familiarity with the law, politicians and the media provide second-hand accounts. Sunstein, *supra* note 33, at 2050–51.

¹⁴⁵ The extent to which law affects norms is often called the “expressive” impact of the law to distinguish the impact on norms from the explicit costs and benefits imposed by the law. *Id.* at 2024 (noting that the expressive theory of law is concerned with “making statements” as opposed to controlling behavior directly).

Depending upon the credibility and legitimacy of the lawmakers and the extent to which an individual already has internalized a contrary norm, an individual may adopt the value judgment espoused by the law.¹⁴⁶ For example, a law criminalizing tax evasion may cause people to condemn tax evasion more strongly. Even when a person has internalized a norm that is contrary to the law, a law expressing a different value judgment may undermine the intensity of the internalized norm.¹⁴⁷ Empirical studies confirm that law can affect value judgments. For example, in one study a first group of subjects was told that Congress had passed a certain law, while a second group of subjects was merely told that “[s]ometimes you hear it said” that there should be such a law.¹⁴⁸ When the subjects were asked whether the law was a “good idea,” the answers in the two groups differed dramatically. In the group that had been told that the law had already passed, fifty-seven percent of subjects responded that the law was a “good idea,” while in the group told that the law was being considered only forty-three percent of subjects considered the law a “good idea.”¹⁴⁹ Admittedly, law sometimes may be unable to affect value judgments, particularly when the law is perceived as lacking legitimacy.¹⁵⁰ Lawrence Lessig has argued that when government attempts to change social norms, there is a risk of causing an “Orwell effect: when people see that the government or some relatively powerful group is attempting to manipulate [norms], they react strongly to resist any such manipulation.”¹⁵¹

Some aspects of patent law are well suited to expressing an endorsement of invention. In particular, the broad constitutional aspects of patent law convey a positive evaluation of invention in general. As noted above, the IP Clause of the U.S. Constitution gives Congress the power “[t]o promote the Progress of . . . useful Arts, by securing for limited Times to . . . Inventors the exclusive Right to their respective . . . Discoveries.”¹⁵² Statutes implementing the general features

¹⁴⁶ See, e.g., POSNER, *supra* note 12, at 99 (discussing the relationship between the distrust of the government and the internalization of the values of a law in the context of shaming punishments); Geisinger, *supra* note 140, at 68 (describing the process of norm internalization associated with popular understandings of wearing a motorcycle helmet); Holbrook, *supra* note 140, at 592 (noting the impact laws can have on individual perceptions of societal norms); McAdams, *supra* note 17, at 358–59 (discussing the importance of “legitimacy” in the expressive theory of law); see also Depoorter & Vanneste, *supra* note 72, at 1139–40 (discussing law, norms, and legitimacy in the copyright context).

¹⁴⁷ See Sunstein, *supra* note 12, at 939–40 (noting that social norms can have different intensities).

¹⁴⁸ McAdams, *supra* note 17, at 368.

¹⁴⁹ *Id.*

¹⁵⁰ Depoorter & Vanneste, *supra* note 72, at 1139 (“[P]eople obey a law less when it is considered ‘unjust’ or when a lawmaker is perceived as ‘illegitimate.’”).

¹⁵¹ Lessig, *supra* note 31, at 1017; see also *id.* at 963, 1008 (noting that the perceived legitimacy of a law affects its capacity to connect specific actions to broad norms). As a result of the Orwell Effect, the government may have an incentive to minimize the extent to which its message seems to be from the government. *Id.* at 1017–18.

¹⁵² U.S. CONST. art I, § 8, cl. 8; see also *supra* note 51 and accompanying text.

of patent law may increase the likelihood that people embrace the value judgment that invention is an important and worthwhile endeavor.¹⁵³ In this respect, patent law supports inventing norms, while radical changes to patent law, such as abolishing patent law altogether as discussed below, are likely to undermine inventing norms.¹⁵⁴ Patent laws regarding specific technologies may also express judgments. Indeed, in the past, patent law protection was unavailable for “inventions viewed as immoral.”¹⁵⁵ This requirement has largely disappeared from patent law, though some scholars have argued for restrictions on “immoral patents.”¹⁵⁶

Finally, technical, fine-grained details of patent law may be less likely to shape values, in part because they are less value-laden. For example, patent law currently requires the Patent Office to publish most patent applications after eighteen months.¹⁵⁷ Changing that time period to nineteen months is not likely to convey a particularly meaningful shift in values.¹⁵⁸

B. Patent Law and Information

Law can also shape social norms by providing more information regarding the views of other persons. A law issued from a majoritarian government can indirectly signal the values of numerous voters, thereby providing information regarding a widely held norm.¹⁵⁹ A person can expect to encounter others embracing a norm embodied in a law, and others may sanction a person for failure to comply with such a norm.¹⁶⁰ For example, the Fair Housing Act’s prohibition of discrimination in real estate transactions on the basis of race may indicate that a person is likely to encounter norms against racism not only in real estate transactions but also in other contexts.¹⁶¹ In contrast, a law reflecting the work of a special interest group provides less information regarding widely shared norms.

¹⁵³ This effect may stem from perceptions about the views of other persons. See *infra* Section III.B. By making invention a form of “property,” patent law may also strengthen inventing norms via the endowment effect, under which people value property they own more than property they do not. Christopher J. Buccafusco & Christopher Jon Sprigman, *The Creativity Effect*, 78 U. CHI. L. REV. 31, 32–34 (2011).

¹⁵⁴ See *infra* Section IV.A.1.

¹⁵⁵ Holbrook, *supra* note 140, at 601.

¹⁵⁶ See Ghosh, *supra* note 142, at 449 (arguing against the issuance of patents that mention racial categories); Holbrook, *supra* note 140, at 592–94 (arguing against the issuance of patents regarding sexual orientation).

¹⁵⁷ 35 U.S.C. § 122(b) (2006).

¹⁵⁸ The impact of law on norms can be marginal at times. Lessig, *supra* note 31, at 963, 1008; McAdams, *supra* note 17, at 369.

¹⁵⁹ Geisinger, *supra* note 140, at 64–65, 70; McAdams, *supra* note 17, at 358. This inference is undermined if some people cannot or do not vote or if the validity of the vote count is suspect.

¹⁶⁰ Geisinger, *supra* note 140, at 64–65, 70.

¹⁶¹ 42 U.S.C. § 3604.

Once again, the constitutional aspects of patent law are especially good evidence of widely held inventing norms. These broad contours of patent law have the iconic imprimatur of the “Founders” and do not appear to be the product of the actions of special interests. Similarly, the long histories of some aspects of patent law, whether as a result of statute or case law, suggest that these provisions are not the work of legislative capture by a particular industry. Indeed, as illustrated by the IP Clause, many aspects of patent law date back more than two centuries, and few, if any, industry groups boast a combination of such a lengthy history with a static view of self-interest.

Fine-grained aspects of patent law are less likely to provide substantial information regarding inventing norms. For example, since 1952 the Patent Act¹⁶² has stated that a patent shall not issue for an “obvious” improvement on existing technology,¹⁶³ and numerous judicial opinions have interpreted this word.¹⁶⁴ In 2007, the Supreme Court adjusted the already complicated interpretation of the word “obvious” as used in the Patent Act.¹⁶⁵ Such an adjustment on a narrow legal topic provides little information regarding widely held values and beliefs. In contrast, broader changes to patent law might impact inventing norms by indicating that many people share the judgments underlying those changes. For instance, in the fall of 2011, Congress enacted the most significant changes to U.S. patent law in more than fifty years.¹⁶⁶ Notably, when this act was initially introduced in the Senate, it was called the “Patent Reform Act of 2011,” but the title of the Act was later changed changed to a more pro-invention value-laden designation: the “Leahy-Smith America Invents Act.”¹⁶⁷ By associating fundamental changes to patent law with the phrase “America Invents,” the pending legislation may signal that many people consider boosting American invention an important goal.

C. Patent Law and Social Meaning

Law can also interact with social norms by impacting the “social

¹⁶² Act of July 19, 1952, ch. 950, 66 Stat. 792 (codified as amended in scattered sections of 35 U.S.C.).

¹⁶³ 35 U.S.C. § 103(a), *amended by* Pub L. 112-29, 125 Stat. 284 (2011).

¹⁶⁴ *See, e.g.,* *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966) (“The emphasis on non-obviousness is one of inquiry, not quality, and, as such, comports with the constitutional strictures.”).

¹⁶⁵ *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 427 (2007) (construing the word “obvious” in 35 U.S.C. § 103, and holding, “[t]he ultimate judgment of obviousness is a legal determination”).

¹⁶⁶ *See* Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011); *see also* Press Release, Office of the Press Secretary, President Obama Signs America Invents Act, Overhauling the Patent System to Stimulate Economic Growth, and Announces New Steps to Help Entrepreneurs Create Jobs (Sept. 16, 2011), *available at* <http://www.whitehouse.gov/the-press-office/2011/09/16/president-obama-signs-america-invents-act-overhauling-patent-system-stim> (stating that “the *America Invents Act* represents the most significant reform of the Patent Act since 1952”).

¹⁶⁷ 157 CONG. REC. S979 (daily ed. Feb. 28, 2011) (statement of Sen. Leahy).

meaning” of an action.¹⁶⁸ Many actions convey a social meaning in that performing the action expresses certain attitudes and commitments.¹⁶⁹ Social norms define this social meaning. For example, the social meaning of smoking has changed over time. At one point, smoking may have expressed sensuality or independence.¹⁷⁰ Today, however, some interpret smoking to indicate that a person is selfish, indulgent, and short-sighted.¹⁷¹ Thus, social meanings are part of the costs and benefits associated with an action, and some people will avoid performing an action in order to avoid expressing the character traits or commitments connected to that action.¹⁷²

One way norms define social meaning is by classifying specific actions as supporting or conflicting with broad, ambiguous values.¹⁷³ Some norms are broadly phrased but do not specify which particular actions support the broad norm.¹⁷⁴ Law can affect social meaning by providing “concrete guidelines for determining when a general norm has been satisfied.”¹⁷⁵ For example, there is a general norm encouraging people to be a “good friend,”¹⁷⁶ but there can be uncertainty regarding which actions support that norm. A specific social norm may categorize “supporting a friend’s decision” as behavior that demonstrates a person is “being a good friend.” To the extent that someone wants to be a good friend, the specific norm

¹⁶⁸ See Lessig, *supra* note 31, at 951, 965 (suggesting that these laws can be used by individuals or groups “to advance individual or collective ends”); see also Holbrook, *supra* note 140, at 591 (“[I]t is beyond cavil that ‘the linguistic meaning of governmental action can have a moral impact.’”) (quoting Matthew D. Adler, *Expressive Theories of Law: A Skeptical Overview*, 148 U. PA. L. REV. 1363, 1494 (2000)); Sunstein, *supra* note 12, at 949 (noting that government may use vivid images and rhetoric as a means of affecting social norms).

¹⁶⁹ Lessig, *supra* note 31, at 951 (defining “social meaning[]” as the “semiotic content attached to various actions”); see also Sunstein, *supra* note 12, at 925–28.

¹⁷⁰ See Meghan Daum, *Smoking’s Sinful Sensuality in Movies*, L.A. TIMES, May 19, 2007, at A23 (discussing the connection between the portrayal of smoking and sensuality in film).

¹⁷¹ See Sunstein, *supra* note 12, at 926 (explaining that in the United States, as opposed to other countries, smoking cigarettes may signal “something relatively precise and very bad” about an individual’s “self-conception” and “concern for others”).

¹⁷² Lessig, *supra* note 31, at 956–58, 1001; see also Harry Surden, *Structural Rights in Privacy*, 60 SMU L. REV. 1605, 1610 (2007) (“[S]ocial norms impose social costs . . .”).

¹⁷³ McAdams, *supra* note 12, at 383–86, 407–08 (suggesting that abstract norms can often be internalized); see also Lessig, *supra* note 31, at 965 (explaining how government propaganda can quickly change, thereby rapidly affecting social meaning); Sunstein, *supra* note 12, at 949 (noting that government propaganda can change social meaning). Such propaganda may produce an “Orwell Effect.” See *supra* note 145 and accompanying text.

¹⁷⁴ McAdams, *supra* note 12, at 382–86 (“Narrow, concrete norms based solely on esteem—which are not internalized—often define the meaning of a specific behavior by defining that behavior as complying with or violating an internalized abstract norm.”); see also *id.* at 408 (stating that a vague abstract norm may be “easily internalized but provides little concrete behavioral guidance,” allowing the norm to be widely shared).

¹⁷⁵ POSNER, *supra* note 12, at 110–11 (noting that law may help to inform the public of how harmful an activity is to society); McAdams, *supra* note 12, at 345–49.

¹⁷⁶ See McAdams, *supra* note 12, at 383 (stating that to be “a loyal friend” is a sentiment that garners unanimous agreement).

encourages friends to support each others' decisions.

Changing a norm that specifies which actions support the general norm can change behavior. This is particularly true if a specific behavior is re-characterized as conflicting with the general norm. For instance, in an effort to discourage drunk driving, the National Highway Traffic Safety Administration effectively sought to affect the social meaning of "supporting a friend's decision" by developing public service announcements stating that "Friends Don't Let Friends Drive Drunk."¹⁷⁷ By characterizing the specific action of supporting a friend's decision to "drive drunk" as not being a "good friend," the government attempted to use social norms to reduce drunk driving. Whether such efforts succeed depends in part upon the perceived legitimacy of the re-characterization.¹⁷⁸

Law can also affect social meaning (and be affected by social meaning) in the legislative context, as particular legislation is often evaluated in terms of its impact on broader political values. For example, a proponent of a ban on flag burning may claim that the ban will promote a widely held value like patriotism. Similarly, opponents to such a ban may claim that the ban would undermine the different goal of free speech. Even if neither claim is correct (or both claims are), support for the ban can be impacted by its perceived connection to the norms favoring patriotism or free speech.

This framework of the interrelationship of laws, norms, and social meaning can be used to identify ways that patent law can support inventing norms by providing concrete guidelines for encouraging "good" inventions.¹⁷⁹ For instance, the Patent Office recently implemented a program to accelerate the patenting of discoveries "pertaining to green technologies including greenhouse gas reduction (applications pertaining to environmental quality, energy conservation, development of renewable energy resources or greenhouse gas emission reduction)."¹⁸⁰ The program is intended to "accelerate the development and deployment of green

¹⁷⁷ *Drunk Driving Prevention (1983–Present)*, AD COUNCIL, <http://www.adcouncil.org/default.aspx?id=137> (last visited Sept. 13, 2011).

¹⁷⁸ See *supra* note 151 and accompanying text.

¹⁷⁹ Holbrook, *supra* note 140, at 598 ("Patents undisputedly can serve as the government's 'stamp of approval.'"); see also Benkler, *supra* note 15, at 426–27 (noting that the reward for creation of information may be a function of "the cultural meaning associated with the act and may take the form of actual effect on . . . status perception by others or on the internal satisfaction from one's social relations or the culturally determined meaning of one's actions"); Depoorter & Vanneste, *supra* note 72, at 1162 (arguing that litigation regarding copyright infringement through peer-to-peer networks "can be viewed as a struggle to influence the social meaning of downloading and the sharing of copyrighted work"). But see *Diamond v. Chakrabarty*, 447 U.S. 303, 317 (1980) (suggesting that the "grant or denial of patents" on certain technology will not significantly impact the extent to which that technology is pursued).

¹⁸⁰ *Green Technology Pilot Program*, U.S. PATENT & TRADEMARK OFFICE, http://www.uspto.gov/patents/init_events/green_tech.jsp (last visited Oct. 28, 2011).

technology, create green jobs, and promote U.S. competitiveness in this vital sector.”¹⁸¹ If this program is not perceived as industry capture,¹⁸² patent law may be interpreted as declaring that “green inventions” are particularly important to invention in our country.¹⁸³

Alternatively, patent law may reduce the extent to which some activities are interpreted as promoting general invention goals. For example, the Supreme Court has recently considered whether methods of conducting business should be patent eligible.¹⁸⁴ A one-vote majority declined to hold that business methods were per se ineligible for patent protection, eschewing bright-line rules and preferring instead to hold that broad standards define the circumstances in which business methods can be patented.¹⁸⁵ A decision holding that business methods were not patent eligible might have reduced the extent to which the development of new business methods would be perceived as furthering the broad goal of invention. In that case, the social meaning of developing a new business model would, to a lesser extent, include “inventing,” and as a result, a would-be developer of new business methods would have reduced incentives stemming from inventing norms.¹⁸⁶

D. Patent Law and the Enforcement of Norms

Identifying compliance or non-compliance with norms is central to

¹⁸¹ Press Release, U.S. Patent & Trademark Office, The U.S. Commerce Department’s Patent and Trademark Office (USPTO) Will Pilot a Program to Accelerate the Examination of Certain Green Technology Patent Applications (Dec. 7, 2009), available at http://www.uspto.gov/news/pr/2009/09_33.jsp.

¹⁸² See *supra* note 151 and accompanying text.

¹⁸³ The Leahy-Smith America Invents Act will increase the capacity of the Patent Office to declare that certain technological areas are particularly important. The Act will give the Director of the Patent Office the power to prioritize the “examination of applications for products, processes, or technologies that are important to the national economy or national competitiveness.” Leahy Smith America Invents Act, Pub. L. No. 112-29 § 25, 125 Stat. 284 (2011). The Act does not go into effect until 2012. *Id.* § 35.

¹⁸⁴ *Bilski v. Kappos*, 130 S. Ct. 3218, 3230–31 (2010).

¹⁸⁵ *Id.* at 3228–29.

¹⁸⁶ Government can also affect social meaning through “tying,” which occurs when the law associates one action with an established social meaning with another action with a more plastic social meaning. Lessig, *supra* note 31, at 1009. For example, tying is evident with celebrity endorsements of products. Perhaps the clearest and most important example of tying in terms of patent law results from the fact that patent law is closely “tied” to the Constitution, see U.S. CONST. art. I, § 8, cl. 8., which itself enjoys significant positive social meaning. By grounding patent law in the Constitution, the Framers ensured that invention would be an aspect of national identity. Furthermore, the patent laws are “tied” to the other basic congressional powers listed in Section 8 of Article I, such as the power “[t]o make all Laws which shall be necessary and proper for carrying into Execution the foregoing Powers” *Id.*, cl. 18. By associating the patent laws with the most fundamental powers of Congress, the Constitution helps to define the social meaning of invention as positive.

their enforcement.¹⁸⁷ For example, norms promoting sharing, patience, and mutual respect may have little effect when driving because there is little opportunity to enforce those norms; norm violators simply drive away. Drivers may be more likely to comply with norms near their houses, where their neighbors can easily spot violations.¹⁸⁸ Identification of norm compliance is crucial where external norms are involved because an actor may be unlikely to comply with a norm if others are unaware of violations of the norm.¹⁸⁹ Obtaining information necessary to enforce norms is important even where norms are internalized because of the need to apply and to reinforce internalized norms.

By addressing this problem of identifying and publicizing conduct that is subject to social norms,¹⁹⁰ law can facilitate the enforcement of norms.¹⁹¹ For example, a conviction of reckless driving demonstrates a failure to comply with norms regarding safety, responsibility, and consideration of the safety of others. Many individuals would be embarrassed if such a conviction became public. On the other hand, privacy laws may conceal departures from social norms, undermining their enforcement. For example, privacy rights related to sexual orientation can limit the enforcement of social norms against homosexuality held by some people.¹⁹²

One way patent law provides information that facilitates the enforcement of inventing norms is by identifying meaningful inventions.¹⁹³ To obtain a patent, an inventor must submit an application to the Patent Office, where it will be reviewed by a patent examiner with experience and training in the technological field to which the invention relates.¹⁹⁴ The

¹⁸⁷ See McAdams, *supra* note 12, at 358, 361 (arguing that individuals are more likely to comply with norms when there is a risk that their non-compliance will be detected by others); Orlitzky & Sprigman, *supra* note 13, at 1812–13 (stating that the first stage in enforcing norms is detection).

¹⁸⁸ See POSNER, *supra* note 12, at 91 (noting the advantages of norm enforcement regimes where enforcement costs are low); Long, *supra* note 8, at 664 (“For a particular behavior to be a signal, it is only necessary for observers to believe that it serves as a signal.”).

¹⁸⁹ McAdams, *supra* note 12, at 358, 361–62. For example, driving patterns may be different the closer people get to their homes not only because of the availability of information but also because their neighbors have better opportunity to sanction behavior.

¹⁹⁰ In Italy, for example, the names of people who do not vote are publicly displayed. POSNER, *supra* note 12, at 125.

¹⁹¹ See *id.* at 34; McAdams, *supra* note 12, at 358 (explaining that when there is a risk that others will know of their conduct, individuals are more likely to conform their behavior to social norms because of a desire for esteem); Sunstein, *supra* note 12, at 910 (noting that norms can “operate as ‘taxes’ or ‘subsidies’” for certain conduct).

¹⁹² McAdams, *supra* note 12, at 429.

¹⁹³ Eisenberg, *supra* note 88, at 225–26; Holbrook, *supra* note 140, at 581. That patents also provide exclusive rights facilitates the use of patents to enforce norms. “[A] norm may . . . arise . . . if the necessary information is acquired as a byproduct of some other activity.” McAdams, *supra* note 12, at 361.

¹⁹⁴ Admittedly, the examiner may not spend much time on the application. Mark Lemley estimates that on average examiners spend only eighteen hours on a patent application. Mark A.

applicant must convince the examiner that the application represents the first discovery of the invention.¹⁹⁵ The invention cannot have been publicly “known or used by others in this country . . . before the invention thereof by the [patent] applicant”¹⁹⁶ The applicant must also demonstrate that the invention is “useful.”¹⁹⁷ Furthermore, the patent applicant must demonstrate that the invention significantly contributes to progress—even if the invention is new, it must not have been an “obvious” extension of existing technology.¹⁹⁸ Trivial novelty does not merit patent protection. Patent law also requires inventors to disclose substantial amounts of information regarding their inventions.¹⁹⁹ For example, inventors must disclose sufficient information for a peer of “ordinary skill” in the relevant technical art to be able to practice the invention without undue experimentation.²⁰⁰ Because a patent issues only after administrative examination, the patent indicates with at least modest credibility that these requirements for patentability have been met and thus identifies the patentee as the creator of a meaningful new invention.²⁰¹

Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495, 1500 (2001) This undermines the credibility of the examiner’s decision to issue the patent to some degree. Nevertheless, even on this account, examiners provide a nontrivial amount of time on each patent, and the decisions of patent examiners are therefore entitled to some nontrivial amount of credibility. Indeed, examiners are sufficiently credible that their determinations that patents are valid are granted judicial deference; a patent can only be held invalid by clear and convincing evidence. *Microsoft Corp. v. i4i Ltd. P’ship*, 131 S. Ct. 2238, 2242 (2011). Moreover, many people affected by inventing norms will know little about the thoroughness of patent examination.

¹⁹⁵ For patents that issue after September 16, 2012, the new Leahy-Smith America Invents Act will alter this feature of patent law so that the first person to discover an invention will only receive a patent on that invention if that first discoverer was also the first person to file a patent application for the invention. Pub. L. No. 112-29 §§ 3, 35, 125 Stat. 284 (2011). As a result, a patent will not always identify the first discovery of an invention. Sometimes, a patent may identify a second discovery by an inventor who filed a patent application before the first inventor. As an empirical matter, however, the first inventor usually is the first to file a patent application. WENDY H. SCHACHT & JOHN R. THOMAS, CONG. RESEARCH SERV., R41638, PATENT REFORM IN THE 112TH CONGRESS: INNOVATION ISSUES 7 (2011). Consequently, even under the new law, patents likely will remain useful mechanisms for enforcing inventing norms because patents typically will identify the first person to discover an invention. Moreover, under the new law, patents will only issue for inventions that were not “patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention.” *Id.* Patents therefore will remain useful mechanisms for identifying inventions that are new to the public.

¹⁹⁶ 35 U.S.C. § 102(a) (2006).

¹⁹⁷ *Id.* § 101.

¹⁹⁸ *Id.* § 103, amended by Pub L. 112-29, 125 Stat. 284.

¹⁹⁹ *Id.* § 112, amended by Pub L. 112-29, 125 Stat. 284.

²⁰⁰ See *id.* (stating that “any person skilled in the art” should be able to carry out the invention); Long, *supra* note 8, at 678 (“[E]valuating the information contained in a patent requires special skills that can ordinarily be obtained only through investment in expensive training.”).

²⁰¹ Holbrook, *supra* note 140, at 577; Long, *supra* note 8, at 650, 667–68. Eric Posner has discussed the use of law to detect norm compliance and to communicate compliance to community members who then enforce the norm as follows: “This division of labor might seem to make sense if the government has a comparative advantage in detecting and communicating [norm compliance],

Patent law also helps ensure that the correct inventor is credited with an invention.²⁰² If a dispute arises regarding who was the first to discover an invention, the Patent Office provides administrative procedures for resolving the dispute.²⁰³ Some inventors have “initiated [such] legal proceedings to establish . . . priority of invention for purposes of both patent rights and scientific credit.”²⁰⁴

This identification of inventions and inventors both reinforces internalized inventing norms and facilitates external enforcement by publicizing discoveries to inventors’ friends and colleagues.²⁰⁵ Non-technical audiences, like friends and family members, can understand the simple fact that a patent has been granted even if the person lacks the technical background to understand the details of the discovery.²⁰⁶ Patents are also important in professional circles, and patentees often treat issued patents as a credential—like a degree.²⁰⁷ When a patent is granted, the

while the community has a comparative advantage in [enforcement].” POSNER, *supra* note 12, at 94. With patents, the government has a clear advantage in credibly identifying invention.

²⁰² As noted above, The America Invents Act will change this aspect of patent law. See *supra* note 195.

²⁰³ See 35 U.S.C. § 135 (“The Board of Patent Appeals and Interferences shall determine questions of priority of the inventions and may determine questions of patentability.”). Starting in September 2012, the new Leahy-Smith America Invents Act will change these proceedings. Pub. L. No. 112-29 §§ 3, 35. Under the new legislation, patents will issue to the first inventor to file a patent application rather than the first person to discover an invention. See *supra* note 195. As a result, the new Act will abolish the current administrative procedure for resolving disputes between two inventors who both claim to be the first inventor of a discovery. *Id.* § 3. In place of the abolished procedure, the Act will create a new administrative procedure to resolve claims by one inventor that another person who filed an earlier application actually “derived” his or her discovery from the first inventor. *Id.* § 3. A “derivation” proceeding must be filed within one year of the issuance of a challenged patent. *Id.* Thus, this new administrative procedure will provide a limited mechanism for ensuring that the correct inventor will be credited with an invention. Furthermore, in most cases the first inventor is also the first person to file a patent application on the discovery. SCHACHT & THOMAS, *supra* note 195, at 7. In the future, however, if patents frequently issue to second discoverers, patents may become less effective mechanisms for enforcing inventing norms.

²⁰⁴ Eisenberg, *supra* note 88, at 228.

²⁰⁵ See Long, *supra* note 8, at 627, 647 (“Patents can serve as a means of reducing informational asymmetries between patentees and observers.”).

²⁰⁶ Holbrook, *supra* note 140, at 576 (“[P]atents act as intermediaries, translating otherwise complicated information into simpler forms”); see also Dasgupta & David, *supra* note 45, at 505 (noting that members of the public are “incapable of evaluating the relative importance of scientific discoveries; not only does one scientist look much like another, one publication looks pretty much like another as well”). Indeed, a recent study reports that patents are often used to convince “friends and families” to help fund a new business. Graham et al., *supra* note 122, at 1307.

²⁰⁷ See Long, *supra* note 8, at 641 n.49 (noting that companies can use patents to measure employee productivity). The capacity of patents to facilitate the enforcement of norms evidently applies to patent law scholars, too. For example, some patent law professors mention in their online biographies that they are named inventors on patents. The online biography of Margo A. Bagley of the University of Virginia Law School mentions that she “was co-inventor on a U.S. patent for improved peanut butter.” See Margo A. Bagley, UNIV. OF VA. SCH. OF LAW, <http://www.law.virginia.edu/lawweb/faculty.nsf/FHPbl/1143058> (last visited Sept. 12, 2011) (referencing U.S. Patent No. 5,230,919 (filed July 27, 1993)). Sadly, the Author currently has no patents to include in his own biography.

Patent Office provides a cover sheet with a metallic seal and ribbon.²⁰⁸ There is a robust market selling specialty frames to inventors for these certificates.²⁰⁹ In addition to identifying the inventor, patents also provide greater detail regarding the discovery to technologically sophisticated persons.²¹⁰ In these ways, patents cheaply and effectively communicate a significant amount of information regarding attributes of the invention (and thus of the inventor), and thereby help identify persons worthy of respect and esteem pursuant to inventing norms.²¹¹ For example, Thomas Edison was hailed for decades as America's most prolific inventor, in part because Edison was a named inventor on more than 1000 patents.²¹²

Another manner in which patent law supports the enforcement of inventing norms is by facilitating the use of another mechanism for enforcing those norms: publication.²¹³ Like patents, publication is an effective mechanism for identifying someone who was the first to discover a useful invention.²¹⁴ Technological publications contain detailed information, and publication dates are easily verifiable.²¹⁵ Moreover, technical publications reach an important group of people who enforce inventing norms: an inventor's professional peers. The esteem granted by those peers for the discovery of an important invention subsidizes

²⁰⁸ See, e.g., *File: US Patent cover.jpg*, WIKIMEDIA COMMONS, http://commons.wikimedia.org/wiki/File:US_Patent_cover.jpg (last visited Sept. 6, 2011) (displaying an image of a patent cover sheet).

²⁰⁹ Various websites offer special frames for patents. See, e.g., *Iplax Patent Plaques & Trademark Plaques*, IPLAX.COM, <http://www.iplax.com/> (last visited Sept. 6, 2011); PATENT AWARDS, <http://www.patentawards.com/> (last visited Sept. 6, 2011); PATENTPLAQUES.COM, <http://www.patentplaques.com/> (last visited Sept. 6, 2011); PROFESSIONAL AWARDS OF AMERICA, LLC, <http://www.uspc.com/> (last visited Sept. 6, 2011).

²¹⁰ See *supra* notes 199–201 and accompanying text; cf. Dasgupta & David, *supra* note 45, at 513 (discussing the use of academic research as a signal of inventive potential).

²¹¹ Long, *supra* note 8, at 637; see also POSNER, *supra* note 12, at 33 (“[T]he law can cause changes in the inferences that people draw about a person on the basis of his actions . . .”); Benkler, *supra* note 15, at 424–25 (suggesting that some people may create to improve their reputations); Sunstein, *supra* note 12, at 925 (“[C]onduct . . . has an expressive function . . . in the sense that people will take the conduct to be expressing certain attitudes and commitments.”). In fact, at some universities, patenting is required for some researchers to obtain “the recognition and reward of inventorship.” Brief of Amici Curiae the Regents of the University of California, et al. at 17, *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336 (Fed. Cir. 2010) (No. 2008–1248).

²¹² Kevin Maney, *Search for the Most Prolific Inventors Is a Patent Struggle*, USA TODAY, Dec. 7, 2005, at 3B.

²¹³ See Grushcow, *supra* note 91, at 75 (“Historically, publication has been the primary metric of academic success.”).

²¹⁴ MERTON, *supra* note 46, at 305–08, 316 (discussing the impact of prior publication on a claim of priority); Eisenberg, *supra* note 88, at 183 (discussing scientific rewards and esteem for original contributions); Sorenson & Singh, *supra* note 42, at 222 (“[P]ublished materials offer many useful features for establishing priority . . .”).

²¹⁵ Sorenson & Singh, *supra* note 42, at 222.

invention.²¹⁶ Without patent protection, however, publication might be less frequent because competitors could copy technology from such publication. Fear of such copying could prompt some inventors to protect their discoveries by utilizing the protections of trade secret law.²¹⁷ To claim trade secret protection, an inventor must demonstrate the use of reasonable measures to maintain secrecy,²¹⁸ and the inventor therefore would not publicize a discovery.²¹⁹ That secrecy would undermine the application of inventing norms because it “deprives the crowd of information it needs to [enforce norms].”²²⁰ In contrast, patent protection does not require secrecy and is available to an inventor even if he publishes his discovery. In fact, the inventor can wait for up to a year after publication before filing the patent application.²²¹

By improving the enforcement of inventing norms, patent law can intensify the effect of these norms by increasing standards for compliance with them. People laud inventors who succeed in satisfying inventing norms, which causes potential inventors to compete for esteem. Those who excel at satisfying inventing norms receive more respect, admiration, and esteem than others.²²² When more persons are identified as satisfying inventing norms—whether through patenting or related publication—even greater success is required to be exceptional. As “one person’s norm compliance raises the average [level of compliance] and lowers everyone else’s relative position,”²²³ “competition for esteem can progressively raise

²¹⁶ See Oliar & Sprigman, *supra* note 13, at 1832 (noting that some people create intellectual property for non-pecuniary reasons, including to gain “prestige and celebrity”); see *supra* note 108 and accompanying text.

²¹⁷ Such secrecy prevents inventors from attaining recognition for their discoveries. Eisenberg, *supra* note 88, at 185, 194. Some scholars argue that patent law undermines disclosure because inventors delay publication in order to apply for patents. *Id.* at 216. Under U.S. patent law, an invention cannot be patented if it was disclosed in a publication more than a year before the inventor files the patent application. 35 U.S.C. § 102(b) (2006). Other scholars contend that patents are “a compromise solution that is more compatible with the academic science community’s norms of disclosure than the alternative of protecting innovation rents by recourse to secrecy.” Dasgupta & David, *supra* note 45, at 516. Moreover, patent law may allow some inventors to publish who otherwise would have opted for trade secret protection. In addition, the disclosure requirements of patent law may be more robust than required by scientific norms. Eisenberg, *supra* note 88, at 229.

²¹⁸ Uniform Trade Secrets Act § 1(4)(ii) (1985); Eisenberg, *supra* note 88, at 191.

²¹⁹ Eisenberg, *supra* note 88, at 194.

²²⁰ POSNER, *supra* note 12, at 221; McAdams, *supra* note 12, at 425–27 (noting that secrecy is a way of reducing the effect of a norm).

²²¹ See, e.g., 35 U.S.C. § 102(b). Under the Leahy-Smith America Invents Act, this one-year grace period will continue to apply to publications by the inventor. Pub. L. No. 112-29 § 3, 125 Stat. 284 (2011).

²²² McAdams, *supra* note 12, at 357, 366–69.

²²³ *Id.* at 369.

the standard the norm imposes.”²²⁴ Such competition for esteem can increase inventing activity and thus can progressively magnify the effect that patents have on people’s efforts to comply with inventing norms.²²⁵

IV. INCORPORATING INVENTING NORMS INTO PATENT LAW ANALYSES

Because inventors are motivated by social norms and because patent law can affect those norms, scholars and policymakers should consider social norms when evaluating the merits of proposed changes to patent law.²²⁶ As part of this consideration, social norms must be integrated with traditional economic analysis.²²⁷ At times, the impact of law on social norms is marginal,²²⁸ and law can be effectively evaluated using only the traditional economic analysis. Often, however, the interaction between law and social norms will be nontrivial. In particular, as described above, inventing norms may be affected by patent law.²²⁹

In general, social norms can inform patent law analysis in three respects. First, where social norms conflict with traditional economic incentives, policymakers should proceed more cautiously than recommended by traditional analyses alone. Second, if social norms and traditional financial incentives both support the same policy, there is a stronger basis for adopting that policy. Finally, when traditional economic analysis of the exclusive rights of patents is only minimally relevant, norms-based analysis can provide needed guidance for determining patent

²²⁴ *Id.* at 366; see also SHENK, *supra* note 134, at 105 (“In any competitive arena, the single best way to inspire better performance is to be surrounded by the fiercest possible competitors and a culture of extreme excellence.”).

²²⁵ That norms intensify does not mean that such a change is efficient. Competition could push norm compliance to inefficient levels. Competition to satisfy inventing norms could prompt investment of resources into invention even though those resources could produce greater returns in other areas.

²²⁶ Bagley, *supra* note 88, at 219–23; Eisenberg, *supra* note 88, at 231; see also Rai, *supra* note 82, at 152 (“Properly understood and applied, law-and-norms analysis cautions against a mechanical reliance on either private ordering or public regulation.”). Scholars have argued that economic analysis that ignores the impact of norms is “essentially compromised.” Lessig, *supra* note 31, at 1020; see also McAdams, *supra* note 17, at 373–74 (“[E]conomists [should] make the consideration of the expressive consequences of law a standard component of their models.”).

²²⁷ There is a substantial body of scholarship arguing that social norms sometimes promote economic efficiency. See, e.g., ELLICKSON, *supra* note 29, at 9–10 (examining the informal rules that govern the cattle herders of Shasta County, California in order to illustrate the way in which social norms can be more effective than laws in promoting mutual advantage among neighbors); Sunstein, *supra* note 12, at 918 (stating that social norms can solve collective action problems). Nevertheless, other social norms scholars argue that the economic efficiency of social norms is indeterminate. POSNER, *supra* note 12, at 176 (“In sum, one can make no presumptions about whether group norms are efficient”); McAdams, *supra* note 12, at 424 (“[A]lthough esteem norms can be efficient, there is no reason to think, on average, that they are.”). Whether inventing norms promote efficient innovation is a topic left for future research.

²²⁸ McAdams, *supra* note 17, at 369; Lessig, *supra* note 31, at 963, 1008.

²²⁹ See *supra* notes 219–22 and accompanying text.

policy. The next subsection explores each of these possibilities using inventing norms, but a similar analysis would apply with other social norms related to inventing.

A. *Conflicts Between Inventing Norms and Financial Incentives*

At times, concern for the effect of patent law on inventing norms may conflict with analyses based solely on the economic value of exclusive patent rights. For example, increasing protection afforded by patent law could actually reduce the effect of inventing norms.²³⁰ Legal changes strengthening exclusive rights and thereby increasing the financial benefits of patenting could change the social meaning of inventing so that people interpret patents as a signal of self-interested greed, rather than praiseworthy invention.²³¹ Undermining inventing norms may also impact different types of technology in different ways if the strength of those norms varies between different technologies. For instance, inventing new medical products may yield more esteem than the development of new business methods. If so, a change in patent law that undermines inventing norms might affect invention incentives in medicine more than in business.

Addressing these conflicts is challenging because of the difficulty of measuring the comparative costs and benefits related to inventing norms vis-à-vis those related to exclusive rights.²³² However, in at least one important context, a consideration of inventing norms recommends caution. Specifically, an analysis based on inventing norms challenges recent scholarship recommending the most radical change to patent law possible: abolishing patents altogether.²³³

²³⁰ See POSNER, *supra* note 12, at 4 (“[L]egal intervention will undermine or enhance the background norms of nonlegal cooperation in complex ways.”); Oliar & Sprigman, *supra* note 13, at 1835 (“[E]ffective norms sometimes thrive in the absence of formal law . . .”). The extent to which law affects norms may be unclear. POSNER, *supra* note 12, at 8.

²³¹ This problem may already have arisen in copyright law. Some scholars argue that Congress and the courts have “provid[ed] an ever increasing amount of control to the copyright owner” that has contributed to a “public[] loss of faith in copyright.” Garon, *supra* note 72, at 1283, 1338. “The divergence between the legal protections and the social expectations are what drive the worst of the modern Internet piracy rhetoric and further alienate the Internet users from the copyright owners.” *Id.* at 1339; see also *supra* note 141 (discussing the impact of patent law on academic norms of sharing information).

²³² Some scholars have argued that social norms should not be considered in legal analysis because predicting outcomes based on social norms is difficult. Geisinger, *supra* note 140, at 50–55; see also Sunstein, *supra* note 12, at 936 (“[A]n excessively detailed account of [human motivation] may make predictions impossible.”).

²³³ E.g., ADAM B. JAFFE & JOSH LERNER, INNOVATION AND ITS DISCONTENTS: HOW OUR BROKEN PATENT SYSTEM IS ENDANGERING INNOVATION AND PROGRESS, AND WHAT TO DO ABOUT IT 35 (2004).

1. *Arguments for Abolishing or Radically Restructuring Patent Law*

Recently, some patent scholars have argued that the costs of exclusive rights exceed the benefits and that, therefore, patent law should be abolished or at least radically restructured.²³⁴ Almost certainly, exclusive rights impose three types of costs on invention. First, there are the administrative costs of operating the patent system. Currently, the fees paid by the applicants fund the operations of the Patent Office.²³⁵

Second, one person's independent efforts to invent may infringe on existing patent rights, so that the first inventor faces costs from the exclusionary rights of others.²³⁶ As a result of concerns regarding infringement, inventors may be deterred from pursuing new inventions or improving existing inventions, particularly in technologically crowded fields.²³⁷ Consequently, patents may "increase[] the cost of creation."²³⁸ Because of this type of cost, some scholars have questioned whether patent law actually encourages invention. For example, Michele Boldrin and David K. Levine have argued that this cost is not justified by sufficient concomitant gain resulting from economic incentives to invent provided by the exclusive rights of patents.²³⁹ In their view, patent law is "an unnecessary evil,"²⁴⁰ and "abolishing intellectual property protection is the only socially responsible thing to do."²⁴¹

Third, patent infringement lawsuits impose substantial legal costs on all parties,²⁴² and some scholars assert that these costs exceed the benefits provided by patent law. For example, James Bessen and Michael J. Meurer argue that during the late 1990s, patents "likely provided a net disincentive for innovation" outside of the chemical and pharmaceutical industries.²⁴³ They conclude that without the then-existing patent system, "the rate of innovation and technological progress might have been even greater, perhaps much greater."²⁴⁴ Their data "suggest the rather remarkable conclusion that in most industries innovators as a whole would be better off without a patent system."²⁴⁵ In light of their analysis, Bessen

²³⁴ *Id.*

²³⁵ See *infra* notes 268–72 and accompanying text.

²³⁶ BESSEN & MEURER, *supra* note 22, at 130 ("[A]n innovator might inadvertently infringe upon someone else's patent.").

²³⁷ JAFFE & LERNER, *supra* note 233, at 76 (noting that patents may force a person to "abandon particular products").

²³⁸ BOLDRIN & LEVINE, *supra* note 8, at 11.

²³⁹ *Id.*

²⁴⁰ *Id.*

²⁴¹ *Id.* at 243–44.

²⁴² BESSEN & MEURER, *supra* note 22, at 131–32. The Patent Act does provide for fee shifting in limited circumstances. 35 U.S.C. § 285 (2006).

²⁴³ BESSEN & MEURER, *supra* note 22, at 141–42.

²⁴⁴ *Id.* at 146.

²⁴⁵ BURK & LEMLEY, *supra* note 8, at 31.

and Meurer declare current patent law to be a “failure”²⁴⁶ and contend that “fundamental institutional deficiencies call for fundamental institutional change.”²⁴⁷

2. *The Incompleteness of Arguments Against Current Patent Law*

Boldrin, Levine, Bessen, and Meurer are not alone in their claims that the current patent system is fundamentally flawed. Other prominent scholars also conclude that the patent system is “in crisis”²⁴⁸ and “broken.”²⁴⁹ All of these critiques compare economic costs and benefits of the patent system, but these scholars quantify benefits based solely on the economic value of exclusive patent rights. Inventing norms are ignored. As a result, the analyses underlying the attacks on the efficacy of the patent system are incomplete.²⁵⁰

For example, in arguing that the net cost of the patent system is less than the net benefits, Bessen and Meurer calculate the value of patents by using the rate at which patent owners pay maintenance fees to maintain their patents.²⁵¹ To maintain their patent rights, patent owners must pay fees after 3.5, 7.5, and 11.5 years.²⁵² These fees currently range from \$490 to \$4110. Bessen and Meurer note that the majority of patents expire prematurely because patent owners do not pay renewal fees even though the fees are not large. From these data, Bessen and Meurer conclude that most patents “are not worth more than a few thousand dollars.”²⁵³ Comparing the total value of patents (as determined by this approach) to the total costs of litigation, Bessen and Meurer conclude that “patents likely provided a net *disincentive* for innovation for the firms who fund the lion’s share of industrial [research and development]; that is, patents tax [research and development].”²⁵⁴

This analysis is incomplete, and thus potentially invalid, because it ignores inventing norms and considers only the economic value of

²⁴⁶ In fact, Bessen and Meurer titled their book *Patent Failure*. BESSEN & MEURER, *supra* note 22.

²⁴⁷ *Id.* at 231. Bessen and Meurer, however, stop short of recommending that patent law be abolished. They argue instead that substantially revised patent law can promote invention even if current laws fail to meet that goal. *Id.* at 167, 173, 216.

²⁴⁸ BURK & LEMLEY, *supra* note 8, at 3.

²⁴⁹ JAFFE & LERNER, *supra* note 233, at 18–19.

²⁵⁰ See Eisenberg, *supra* note 88, at 231 (“Legal rules are more likely to succeed in influencing the behavior of scientists if they resonate with scientists’ conception of appropriate behavior than if they call for counterintuitive departures from the norms of science.”); Long, *supra* note 8, at 635 (“[A] view that defines the value of patent rights solely in terms of the use and control of resources rests on an impoverished understanding of the role patents can play.”).

²⁵¹ BESSEN & MEURER, *supra* note 22, at 99–100.

²⁵² 37 C.F.R. § 1.20(e)–(g) (2010).

²⁵³ BESSEN & MEURER, *supra* note 22, at 100.

²⁵⁴ *Id.* at 144.

exclusive rights. This omission is important because a patent helps to enforce inventing norms regardless of whether it expires early because of failure to pay maintenance fees. For example, a patent can signal to an inventor's friends and family that the inventor should be esteemed even if it expires years before its maximum term of twenty years from the date of application.²⁵⁵ Moreover, the potential esteem from social norms may be substantial and may extend for many years beyond the maximum term because the extent to which an inventor is esteemed likely correlates to the lasting significance of the invention, not the patent. Thomas Edison and Alexander Graham Bell are still lauded for their pioneering inventions even though the patents on the light bulb and the telephone expired long ago. Likewise, Michael Jackson's patent expired early because he failed to pay modest maintenance fees,²⁵⁶ but journalists nevertheless reported on the existence of the expired patent in accounts of Jackson's death. Because of such continuing effects, inventing norms lack the temporal limitation of the exclusive rights granted by patent law. Indeed, a patent often will not allow an inventor to fully capture the economic benefits of the invention because patents last for only a "limited period,"²⁵⁷ which under current law is typically limited to twenty years after the filing of the patent application.²⁵⁸ But the benefits of the invention based on inventing norms supplement the economic value during the patent term and may extend well beyond that time.

Although empirical measurement of the impact of patent law on social norms is likely impossible, there are at least two reasons to believe that patents may provide nontrivial encouragement to invention via inventing norms. First, many patents produce no direct revenue whatsoever,²⁵⁹ yet inventors continue to seek patent protection in record numbers.²⁶⁰

²⁵⁵ Bessen and Meurer also value patents based on "the market value of public firms to their assets, including their stock of patents." *Id.* at 104. Norms favoring invention, however, bestow social subsidies on inventors, not shareholders. Even after a patent is assigned to a corporation, the inventor is credited in the patent document itself with the discovery. See *supra* notes 210–12 and accompanying text. Shareholders cannot appropriate the respect and admiration an inventor receives from friends, families, and colleagues.

²⁵⁶ Vergano, *supra* note 7, at 2D.

²⁵⁷ U.S. CONST. art. I, § 8, cl. 8; see also Benkler, *supra* note 15, at 430 (noting that the marginal value of an agent's action can sometimes wind up less than the transaction costs).

²⁵⁸ 35 U.S.C. § 154(a)(2) (2006).

²⁵⁹ See Lemley, *supra* note 194, at 1507 (suggesting that only a small percentage of the patents issued each year are licensed in exchange for royalties); Long, *supra* note 8, at 626 (arguing that poor appropriability is likely to lead to little private value); Sichelman, *supra* note 8, at 343 ("About half, probably more, of all patented inventions in the United States are never commercially exploited.").

²⁶⁰ See U.S. PATENT & TRADEMARK OFFICE, U.S. PATENT STATISTICS (2010) [hereinafter U.S. PATENT STATISTICS] (showing the number of patent applications and grants every year since 1963 including 520,277 applications in 2010), available at http://www.uspto.gov/web/offices/ac/ido/oeip/taf/us_stat.pdf.

Alternate explanations exist for the explosion in patent applications,²⁶¹ but one plausible explanation is that the value of patents based on inventing norms is sufficient to encourage patenting, at least in combination with the chance of other financial benefits.²⁶² Second, as noted above, many patents are assigned to corporations by employees, and those employee-inventors receive little, if any, financial reward for their discoveries.²⁶³ As a result, even when patents yield some financial gain, inventors frequently do not enjoy those benefits. Nevertheless, partly because of inventing norms, employees invent.²⁶⁴

To determine the efficacy of patent law in promoting invention, all costs and benefits, including those related to social norms, must be considered.²⁶⁵ Moreover, although the net effects of substantial changes to patent law on all social norms are uncertain, such changes could undermine inventing norms.²⁶⁶ Abolishing patent law could be viewed as evidence that invention is no longer important in America, thereby reducing the social incentives to pursue technological discoveries. Scholars like Bessen and Meurer may ultimately be correct that, all things considered, current patent law provides a disincentive to invent. However, because these analyses ignore the interplay between patent law and inventing norms, additional research and analysis is needed before their arguments can be used as the basis for abolishing or substantially restructuring patent law.²⁶⁷

B. *Harmony Between Inventing Norms and Financial Incentives*

In some instances, an inventing-norms analysis of patent law can reinforce a traditional economic analysis, providing greater confidence in the recommendations of both analyses. For example, both analytical approaches recommend giving the Patent Office greater control over its own funding. Currently, the Patent Office is funded solely through “user

²⁶¹ For example, even if the expected value for patents is negative, people may obtain them due to game-theoretic effects.

²⁶² Some scholars suggest that when the financial effects of law are unclear, the normative concerns may become more prominent. Cass Sunstein notes that “good statements are worth supporting when judgments about consequences are unclear.” Sunstein, *supra* note 33, at 2047.

²⁶³ See *supra* notes 122, 126–30 and accompanying text.

²⁶⁴ See *supra* notes 126–30 and accompanying text. As noted above, internal motivation unrelated to social norms may also encourage employees to invent. See *supra* note 132 and accompanying text.

²⁶⁵ See Sunstein, *supra* note 33, at 2045–46 (using emission trading laws to illustrate the importance of evaluating the cost and benefits of laws on social norms); see also Long, *supra* note 8, at 637 (arguing that patent analysis should consider both the economic effects of exclusive rights as well as other signaling functions of patent law).

²⁶⁶ See *supra* Sections III.A–C.

²⁶⁷ If scholars demonstrate that patents actually undermine invention, social norms favoring patenting may erode. See McAdams, *supra* note 12, at 395 (discussing two ways that criticism can provoke rapid normative change). In this sense, criticism of the patent system can actually impact norms related to invention.

fees,” including fees paid by patent applicants.²⁶⁸ Congress, however, has the power to divert some of these fees to other parts of government.²⁶⁹ Since 1990, Congress has diverted more than \$700 million in Patent Office fees to other government programs.²⁷⁰ In more recent years, Congress has allowed the patent office to keep substantially all of its fees,²⁷¹ but the threat of fee diversion remains. Indeed, in 2010, Congress initially planned to divert more than \$100 million in Patent Office fees to other areas of government. Ultimately, Congress passed an additional appropriations bill restoring \$129 million to the Patent Office’s budget.²⁷²

A traditional economic analysis of patent law indicates that the Patent Office probably should be able to utilize all of the fees paid by inventors. From an economic perspective, requiring patent applicants and owners to pay for other government programs operates as a tax on one aspect of innovation and thus likely slows technological progress.

An inventing-norms analysis also indicates that the Patent Office should be able to keep its fees. Requiring inventors to subsidize other parts of government may weaken inventing norms by indicating that inventing is less important to society. Indeed, commentators have criticized fee diversions as elevating “pet projects” and congressional “largess” above “an agency that was already incapacitated by more than a decade of congressional raids on its fees.”²⁷³ Halting the diversion of funds from the Patent Office may signal increased value of invention by society.²⁷⁴

²⁶⁸ H.R. REP. NO. 109-372, at 5 (2005); see also *Administration Says Patent Law Change Will Spur U.S. Economy*, BLOOMBERG BUSINESSWEEK (Sept. 16, 2011, 12:46 PM), <http://news.businessweek.com/article.asp?documentKey=1376-LRL22G07SXXK01-0RB7NTKPO04S7925I9LK7EKQO2>.

²⁶⁹ See H.R. REP., *supra* note 268, at 5 (describing one such diversion of the surcharge fees by Congress to other programs).

²⁷⁰ *Id.* at 6.

²⁷¹ Arti K. Rai, *Growing Pains in the Administrative State: The Patent Office’s Troubled Quest for Managerial Control*, 157 U. PA. L. REV. 2051, 2057 (2009); see also Letter from Michael K. Kirk, Exec. Dir., Am. Intell. Prop. Law Ass’n, to Mitch McConnell, Minority Leader, U.S. Senate (Aug. 13, 2007) (advocating for the creation of a revolving fund that would allow the USPTO to continue to retain and use all of its fees), available at http://www.aipla.org/Advocacy%20Shared%20Documents/TES_2007-08-13_110C_McConnell-AdequateFunding-Kirk.pdf.

²⁷² United States Patent and Trademark Office Supplemental Appropriations Act, Pub. L. No. 111-224, 124 Stat. 2385 (2010).

²⁷³ John Schmid, *Congress Deals Funding Blow to Patent Office: Budget Strips \$100 Million Provision for Backlogged Agency*, MILWAUKEE J. SENTINEL, Dec. 29, 2009, at A1. Indeed, fee diversions have “repeatedly outraged the patent community.” Tony Dutra, *House Appropriations Bill Would Give PTO Access to \$2.7 Billion and Excess in FY2012*, 82 PAT., TRADEMARK & COPYRIGHT J. 384, 384 (2011).

²⁷⁴ Indeed, the Leahy-Smith America Invents Act may strengthen inventing norms in this respect. When the Act takes effect in September 2012, it will provide the Patent Office with greater security in retaining fees. Pub. L. No. 112-29 §§ 22, 35, 125 Stat. 284 (2011). The Act will allow Congress to withhold some of the fees from the Patent Office but those fees cannot be spent on other government

Where two traditional analyses conflict with one another, an inventing-norms analysis may help scholars and policymakers by supporting one traditional analysis more than another. For example, some patent scholars criticize the quality of patents issued by the Patent Office on the ground that many issued patents do not address new inventions and instead describe previously known technology or trivial advances over existing technology.²⁷⁵ Some scholars contend that such “low quality” patents are problematic;²⁷⁶ other scholars view these patents as the acceptable result of an efficient use of resources.²⁷⁷ However, the second view relies on the fact that relatively few patents produce financial benefits via litigation or licensing.²⁷⁸ Benefits stemming from inventing norms are not considered. If the benefits of inventing norms are considered, it may become efficient to invest greater resources in improving the quality of patents because, when the Patent Office erroneously issues low quality patents and the existence of such errors becomes known, the patent system may become less effective in supporting inventing norms.²⁷⁹ For example, as patents become less reliable evidence that patentees have satisfied inventing norms, they become less effective in reinforcing those norms.

C. *Inventing Norms and Trivial Financial Incentives*

In those instances where the economic effects of the exclusive rights of patents are only marginally relevant to an issue of patent law, considerations of inventing norms are more essential. One such issue is the role of the independent inventor in patent law politics. Currently, patent law provides independent inventors with assistance in obtaining

programs. *Id.* § 22. Instead, unused fees remain in an account with the Treasury and can only be “expended only for obligation and expenditure by the [Patent] Office.” *Id.*

²⁷⁵ John R. Allison & Mark A. Lemley, *Empirical Evidence on the Validity of Litigated Patents*, 26 AIPLA Q.J. 185, 205 (1998).

²⁷⁶ See Lemley, *supra* note 194, at 1495 n.1 (collecting criticisms of the quality of issued patents).

²⁷⁷ See *id.* at 1531–32.

²⁷⁸ See *id.* at 1501–08 (discussing the fate of unlitigated patents).

²⁷⁹ Eric Posner has argued that social norms associate social signals with information that is difficult to observe. Under a “separating equilibrium,” the social signal is used to differentiate those with hidden “good” characteristics from those with hidden “bad” characteristics. POSNER, *supra* note 12, at 19, 25 (internal quotation marks omitted). To obtain a separating equilibrium, those with disfavored hidden characteristics must be unable or unwilling to send the signal. *Id.* at 21–23, 26. In contrast, with a pooling equilibrium both the “good” and the “bad” send the signal, so that the audience receiving the signal cannot differentiate between the two groups. As a result, to create a separating equilibrium, the signal must be costly to send, particularly for “bad” persons. *Id.* at 26; see also Long, *supra* note 8, at 648–49 (discussing signaling theory). In Posner’s terminology, high-quality patents may serve as signals creating a separating equilibrium between those who excel at satisfying inventing norms and those who do not. Low quality patents, in contrast, create a pooling equilibrium in which patenting provides less information about the patentee.

patents—-independent inventors pay smaller fees in the Patent Office,²⁸⁰ and the Patent Office’s website provides detailed information to assist independent inventors.²⁸¹ This special treatment helps reduce the financial and informational obstacles to independent inventors obtaining patents. Many patent law scholars, however, dismiss the inventive contribution of independent inventors and contend that contrary claims are “frequently hyped and distorted.”²⁸²

Despite these criticisms, references to independent inventors often arise in discussions of patent law, particularly patent reform.²⁸³ Members of Congress often mention “independent inventors” in justifying both opposition to and support of legislative patent reform. For example, in 2010, Senator Mary Landrieu stated that patent reform “is of great importance to small businesses and independent inventors everywhere”²⁸⁴ In contrast, Congressman Dana Rohrabacher argued the same year that “so-called patent reform . . . will undercut America’s independent inventors.”²⁸⁵ When addressing potential changes to patent law, the Patent Office has also focused on independent inventors. In 2007, the Patent Office’s Commissioner for Patents testified before Congress that “[t]he contribution from small and minority business and independent inventors to America’s innovation and technological growth cannot be overstated.”²⁸⁶ In 2010, the Director of the Patent Office likewise declared that that recent proposals to reform patent law are “good for the independent inventor.”²⁸⁷

Social norms analysis provides a way to address this varied and divergent assessment of independent inventors. More specifically, an

²⁸⁰ 35 U.S.C. § 41(h) (2006) (stating that an “independent inventor” shall have fees “reduced by 50 percent”). The Leahy-Smith America Invents Act establishes even lower fees for particularly small and unsophisticated patent applicants. Pub. L. No. 112-29 § 10, 125 Stat. 284 (2011).

²⁸¹ See *Independent Inventors*, U.S. PATENT & TRADEMARK OFFICE, <http://www.uspto.gov/inventors/independent/index.jsp> (last visited Oct. 21, 2011).

²⁸² BESSEN & MEURER, *supra* note 22, at 166; see GAMBARELLA ET AL., *supra* note 39, at 23 (reporting that only 7.81% of European patentees are self-employed).

²⁸³ Independent inventors were also mentioned by members of Congress in connection with the recent act restoring to the Patent Office’s budget the fees it collected. See, e.g., 156 Cong. Rec. E1500 (2010) (statement of Rep. Johnson). Small inventors were also addressed by congresspersons in connection with legislation supporting small businesses. See, e.g., 156 Cong. Rec. S6464 (statement of Sen. Cardin) (“Innovation is the way for America to stay on the cutting edge. More patents and more copyrights are created through small businesses per employee than a larger company.”).

²⁸⁴ 156 Cong. Rec. S1313 (2010) (statement of Sen. Landrieu).

²⁸⁵ *Id.* at H1159-60 (statement of Rep. Rohrabacher).

²⁸⁶ *Full Committee Hearing on the Importance of Patent Reform on Small Business: Hearing Before the H. Comm. on Small Bus.*, 110th Cong. 46 (2007) (Statement of John J. Doll, Comm’r for Patents, U.S. Patent & Trademark Office).

²⁸⁷ David J. Kappos, *Patent Reform: Good for Independent Inventors and Small Businesses*, INVENTORSEYE (Feb. 2010), <http://www.uspto.gov/inventors/independent/eye/201002/kapposletter.html>.

analysis of inventing norms justifies provisions of patent law and political rhetoric favoring independent inventors because the independent inventor plays an iconic role in inventing norms. Though independent inventors may have little direct impact on invention, independent inventors are often widely celebrated in those instances in which they are successful.²⁸⁸ Such personalized tales of invention are more accessible narratives than the accomplishments of faceless corporate research teams; people can empathize with independent inventors. Because inventing norms help foster invention, it is good policy to adopt provisions of patent law that support independent inventors and thus help support inventing norms, regardless of whether such provisions otherwise have any demonstrable effects on invention.²⁸⁹

V. CONCLUSION

Patent law strives to encourage invention. Because invention is a product of human behavior, patent law must consider all factors that motivate humans to invent. Without a doubt, inventors can be motivated by the financial reward of exclusive rights, particularly where corporations are involved. Nevertheless, people are also motivated by evaluative treatments of their behavior—i.e., by social norms. In particular, social norms that label invention as “esteem worthy” can encourage invention.²⁹⁰ Although patent law encourages invention through the economic incentive of exclusive rights, patent law also promotes invention by facilitating the enforcement of inventing norms.²⁹¹ In evaluating the patent system, patent scholars often overlook the role of inventing norms; as a result, scholars have been blind to the effect of patent law on these norms.

Law and social norms often interact in complex ways; determining the impact of law on social norms is difficult.²⁹² Efforts to shape norms through law may backfire.²⁹³ Nevertheless, patent law cannot avoid affecting norms, and ignoring social norms will not make them less

²⁸⁸ For example, Stephen Wozniak and Steve Jobs are often complimented for their invention of a personal computer in a garage. Astebro, *supra* note 68, at 226 n.1.

²⁸⁹ The concept of solo inventors may also resonate with other social norms, such as norms favoring independence and self-sufficiency. See Shane, *supra* note 36, at 30 (arguing that individualism fosters innovation).

²⁹⁰ See McAdams, *supra* note 12, at 358 (explaining how the desire for esteem can produce a norm).

²⁹¹ See Sunstein, *supra* note 12, at 958 (“A well-functioning society needs many norms that make it rational for people, acting in their self-interest, to avoid collective action problems.”).

²⁹² Efforts to shape norms through law may produce unintended consequences. See POSNER, *supra* note 12, at 118, 124, 129. For example, efforts to change norms regarding drug use through Nancy Reagan’s “Just Say No” campaign were unsuccessful. *Id.* at 32.

²⁹³ Sunstein, *supra* note 12, at 919 (“Efforts by private or public authorities to stigmatize certain acts may have the opposite effect.”).

relevant.²⁹⁴ Consequently, scholars and policymakers who seek to promote invention through patent law must consider the impact of legal changes on norms in general and inventing norms in particular. At times, as in the case of proposals to abolish the patent system, analyses of inventing norms will conflict with traditional analyses and recommend caution. In other contexts, analyses of inventing norms strengthen traditional economic analyses and provide added support for policy recommendations. Where the traditional analysis of patent law provides little guidance, an analysis of inventing norms can help determine invention policy.

The impact of these norms on national technology policy goals will likely be at the forefront of future research regarding inventing norms. International treaties have greatly streamlined the procedures that a foreign citizen can use to obtain a U.S. patent,²⁹⁵ and recent statistics released by the Patent Office demonstrate that foreign inventors now receive more U.S. patents than U.S. inventors.²⁹⁶ Allowing foreign inventors to obtain the exclusive rights of a U.S. patent may foster invention, but these rights may be poor mechanisms for helping the United States excel in a global technology market. In contrast to the economic value of exclusive rights, the incentives provided by social norms might be difficult to acquire by foreign inventors. “[D]ifferent populations can have different and conflicting norms.”²⁹⁷ Cultures without strong norms favoring invention

²⁹⁴ See *id.* at 913 (“[G]overnment . . . cannot avoid affecting social norms . . .”).

²⁹⁵ See, e.g., Patent Cooperation Treaty, June 19, 1970, 28 U.S.T. 7645, 1160 U.N.T.S. 231 (providing for initial international patent applications where the actual countries of filing must subsequently be determined within a certain period of time); Paris Convention for the Protection of Industrial Property, Mar. 20, 1883, 21 U.S.T. 1583, 828 U.N.T.S. 305 (allowing applicants to file for patent protection in other contracting states within a certain period of time of filing a first application in a country that is a party to the treaties).

²⁹⁶ In 2009, the Patent Office issued 82,382 patents to U.S. citizens and 84,967 to foreign inventors. See U.S. PATENT STATISTICS, *supra* note 260.

²⁹⁷ McAdams, *supra* note 12, at 388; see also Geisinger, *supra* note 140, at 44 (providing an overview of Lessig and Sunstein’s work on expressive law theories); Lessig, *supra* note 31, at 954–55 (“[Meanings] differ across communities and individuals.”); Sunstein, *supra* note 12, at 926 (stating that the meanings of acts are a “function of context and culture”). Indeed, some parts of the United States are considered more inventive than others even though they are governed by the same substantive patent law. See Ronald J. Gilson, *The Legal Infrastructure of High Technology Industrial Districts: Silicon Valley, Route 128, and Covenants Not to Compete*, 74 N.Y.U. L. REV. 575, 586–88 (1999) (comparing economic activity between the high technology regions of Silicon Valley, California, and Route 128 in Massachusetts). Per capita patenting varies from state to state. Compare *Annual Estimates of the Resident Population for the United States, Regions, States, and Puerto Rico: April 1, 2000 to July 1, 2009*, U.S. CENSUS BUREAU, <http://www.census.gov/popest/states/NST-ann-est.html> (last visited Oct. 1, 2010), with ELEC. INFO. PROD. DIV., U.S. PATENT & TRADEMARK OFFICE, PATENT COUNTS BY COUNTRY/STATE AND YEAR: UTILITY PATENTS JANUARY 1, 1963–DECEMBER 31, 2010 1 (2011), available at <http://www.uspto.gov/web/offices/ac/ido/oeip/taf/cst/utl.pdf>. In the past decade, Idaho has produced the most patents per capita. Social norms also vary from place to place. Geography may be very important to invention because local norms may “matter most.” McAdams, *supra* note 16, at 373. Interestingly, legal scholars have not analyzed from the perspective of social norms whether different places value invention more than others. See Sorenson & Singh, *supra* note

may provide smaller incentives for people to invest in developing new technologies.²⁹⁸ Indeed, one sociological study suggests that U.S. inventors may be affected by inventing norms more than inventors in some other countries.²⁹⁹ Inventing norms, thus, may be part of the “inherited social capital” of the United States,³⁰⁰ and strong inventing norms—as supported by patent law—may help the United States to compete in global technology markets.³⁰¹

42, at 220 (noting that “inventors, like most people, primarily interact with others that live and work in close proximity to them”).

²⁹⁸ In a sense, “culture” is the “collection of incentives presented by different social meanings regulating . . . behavior.” Lessig, *supra* note 31, at 1030.

²⁹⁹ See Walsh & Nagaoka, *supra* note 39, at 23 (contrasting motivations between U.S. inventors and Japanese inventors).

³⁰⁰ Lessig, *supra* note 31, at 1000.

³⁰¹ Some other countries may also benefit from inventing norms. See *supra* notes 106, 109 & 119 and accompanying text.