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NONEXCLUDABLE SURGICAL METHOD PATENTS

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ABSTRACT

A patent consists of only one right: the right to exclude others from practicing the patented invention. However, one class of patents statutorily lacks the right to exclude direct infringers: surgical method patents are not enforceable against medical practitioners or health care facilities, which are the only realistic potential direct infringers of such patents. Despite this, inventors regularly file for (and receive) surgical method patents. Why would anyone incur the expense (more than \$20,000 on average) of acquiring a patent on a surgical method if that patent cannot be used to keep people from using the patent?

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The traditional answer is that although the patent statute forecloses enforcement of surgical method patents against doctors, it does allow for contributory liability of such patents by medical device manufacturers. However, this Article provides evidence of completely nonexcludable surgical method patents—patents in which direct infringers are statutorily protected from liability and contributory infringers do not exist. These nonexcludable patents challenge the widely held view that the only reason an inventor would incur the cost of patenting is to acquire the right to exclude.

To explain the existence and appeal of nonexcludable patents, this Article looks to patent-signaling theory and personhood theory of real property. Essentially, some inventors patent because they want to signal others about some aspect of the invention or the inventor. While other inventors acquire these nonexcludable patents because the invention forms part of the inventor's "public persona."

There are doctrinal payoffs to this theoretical insight as well. For instance, inventors who approach the patent system from a personhood angle bring with them a completely different set of costs and benefits than those traditionally assumed. To these inventors, the primary benefit of the patent system is the public disclosure that patenting provides. This contradicts almost all extant patent theories, which consider disclosure to be the primary cost that inventors seek to avoid. As such, this Article provides a novel understanding about the motivation to patent, an understanding that is much more concerned with knowledge dissemination and recognition for creation of that knowledge than with exclusive rights.

TABLE OF CONTENTS

INTRODUCTION	640
I. THE RIGHT TO EXCLUDE OF A PATENT	648
A. <i>35 U.S.C. § 287(c)</i>	655
1. <i>Enactment</i>	655
2. <i>Litigation Surrounding § 287(c)</i>	659
B. <i>The Existence of Nonexcludable Patents</i>	662
II. WHY DO INVENTORS PURSUE NONEXCLUDABLE PATENTS?	665
A. <i>Exclusive Rights Explanations</i>	665
1. <i>Ignorance of the Law</i>	665
2. <i>Better Safe than Sorry</i>	666
3. <i>Targeting Contributory Infringers</i>	667
B. <i>Nonexclusive Rights Explanations</i>	669
1. <i>Signaling</i>	669
2. <i>Personhood</i>	672
III. THE IMPLICATIONS OF NONEXCLUDABLE PATENTS.	677
A. <i>Theoretical</i>	677
B. <i>Doctrinal</i>	681
1. <i>Operability Doctrine</i>	682
2. <i>Radical Changes to the Patent System</i>	686
CONCLUSION	689

INTRODUCTION

In a well-known article, *Patent Signals*, Clarisa Long attacked the belief that patents are valuable to inventors only as a means of monopolizing an inventive idea.¹ She argued that patents offer more than simply the exclusive right to make and use a patented idea.² Patents, she argued, can serve as a signal of the patent holder's innovative nature, investment-worthiness, or some other difficult to ascertain characteristic.³

Long's conception of a patent's private value has provided depth to our collective understanding of the patent system.⁴ Even so, Long's attack does not go far enough. Long's work challenges the idea that the right to exclude is "the alpha and the omega" of a patent's private value,⁵ but it does not suggest that the right to exclude is irrelevant to patentees.⁶ Far from it, Long, and those who have followed her, assume that inventors primarily desire a patent's right to exclude. Any signaling benefits that a patent possesses are merely extra reasons to patent.⁷ Because of this focus on exclusive

1. Clarisa Long, *Patent Signals*, 69 U. CHI. L. REV. 625, 627 (2002) ("[C]halleng[ing] the traditional assumption that exclusivity is the alpha and the omega of the private value of patent rights.").

2. *Id.* ("The ability to convey information credibly to observers at low cost is a highly valuable function of patents that has been completely overlooked in the literature.").

3. *See id.* at 645-46 (discussing, for example, the conception of a patent as a means of reducing information asymmetries between firms).

4. *See* Annamaria Conti et al., *Patents as Signals for Startup Financing*, 61 J. INDUS. ECON. 592, 594, 618 (2013) (arguing that Long's theory is correct as a means of reducing informational asymmetries for startup financing); Gaétan de Rassenfosse & Timo Fischer, *Venture Debt Financing: Determinants of the Lending Decision*, 10 STRATEGIC ENTREPRENEURSHIP J. 235, 252 (2016) (applying Long's insight to venture debt financing); Gideon Parchomovsky & R. Polk Wagner, *Patent Portfolios*, 154 U. PA. L. REV. 1, 20-22 (2005) (building on Long's theory to arrive at the authors' patent portfolio theory); Dirk Czarnitzki et al., *Patents as Quality Signals? The Implications for Financing Constraints on R&D* 8 (Nat'l Bureau Econ. Research, Working Paper No. 19947, 2014) (finding that Long's theory holds true more for small firms than for larger ones).

5. Long, *supra* note 1, at 627.

6. *See id.* at 679 (concluding that patents have value "above and beyond" the value of the rents obtained through the patent's right to exclude); *id.* at 637 ("I want to make clear at the outset what I am *not* arguing. First, I am not arguing that the right to exclude is not a valuable stick in the proverbial bundle of intellectual property rights.").

7. *See, e.g., id.* at 637; Parchomovsky & Wagner, *supra* note 4, at 20-27 (reviewing scholarly answers to the "patent paradox," all of which involve some desire to obtain a patent's

rights, scholars have generally not considered that some inventors seek nonexcludable patents. Why would anyone go to the expense of acquiring a patent that cannot exclude others from practicing the invention?

This Article suggests that a number of patentees seek out and obtain patents that lack the right to exclude. In order to make this argument, this Article relies on a unique quirk of the United States patent system.⁸ Unlike every other country in the world, the United States grants patents on surgical methods, yet protects direct infringers from liability.⁹ Thus, U.S. surgical method patents are unenforceable against direct infringers. Of course, surgical method patents *may* be enforceable against contributory infringers. Contributory infringement occurs when one supplies a substantial component of the patented invention, where the component has no substantial, noninfringing use.¹⁰ However, some surgical method patents do not have a realistic contributory infringer.¹¹ These surgical method patents, which are unable to snare a contributory infringer, are nonexcludable: that is, they are unable to restrict others from practicing the invention.

Why would an inventor obtain a nonexcludable patent? After all, patents are relatively expensive to obtain.¹² Patent scholars have

right to exclude).

8. See Luis Gil Abinader & Jorge L. Contreras, *The Patentability of Genetic Therapies: CAR-T and Medical Treatment Exclusions Around the World*, 34 AM. U. INT'L L. REV. 705, 729-31 (2019) (surveying the law of other countries and concluding that the United States is unique in its treatment of surgical method patent enforceability); Priyanka Rastogi, *World Wide Legal Status of Medical Method Patents: An Overview*, MONDAQ (May 6, 2014), <http://www.mondaq.com/india/x/311404/Patent/World+Wide+Legal+Stat> [<https://perma.cc/D66P-HXJN>].

9. See 35 U.S.C. § 287(c) (2012); see also Abinader & Contreras, *supra* note 8, at 730-31; Todd Martin, *Patentability of Methods of Medical Treatment: A Comparative Study*, 82 J. PAT. & TRADEMARK OFF. SOC'Y 381, 400-06 (2000) (analyzing the United States' unique treatment of medical treatment patents).

10. 35 U.S.C. § 271(c) (holding liable as a contributory infringer one that (a) practices a "component" of a patented invention, (b) wherein that component is a "material" part of the invention, (c) has knowledge that the component is "especially" made for infringement, and (d) does not produce a staple good with "substantial non-infringing use[s]").

11. For an example of such a patent, see U.S. Patent No. 8,974,442 (filed Mar. 20, 2009); see also *infra* notes 153-62 and accompanying text.

12. See Parchomovsky & Wagner, *supra* note 4, at 15 & n.52 (stating that the cost of filing, attorney fees, and various maintenance fees associated with a patent total between \$10,000 and \$30,000).

not considered the possibility of an inventor knowingly seeking out a nonexcludable patent. In fact, much of patent theory explicitly rejects the idea that an inventor would seek out nonexcludable patents as a mistake. Most commentary on the private value of obtaining patents assumes that the right to exclude is the patentee's objective.¹³ It is thought that without the prospect of obtaining the right to exclude others from the invention (in reality, the rents promised by those exclusive rights), an inventor would be better off keeping his invention a secret or not bothering to invent in the first place.¹⁴ It is odd, therefore, that inventors would seek to obtain these nonexcludable patents on surgical techniques.

This Article examines potential explanations for why patentees obtain nonexcludable surgical method patents, some of which comport with the exclusive rights paradigm and some of which do not. There are some reasons for obtaining these patents which follow the exclusive rights paradigm. For instance, inventors may desire the patent's right to exclude, but are misinformed about the enforceability of surgical method patents against likely infringers.

13. See *Graham v. John Deere Co.*, 383 U.S. 1, 9 (1966) (describing the patent system as “a reward, an inducement, to bring forth new knowledge”); STAFF OF S. COMM. ON PATENTS, TRADEMARKS & COPYRIGHTS, S. COMM. ON THE JUDICIARY, 85TH CONG., AN ECONOMIC REVIEW OF THE PATENT SYSTEM 21 (Comm. Print 1958) (prepared by Fritz Machlup) (discussing the “exchange-for-secrets” theory of the patent system); Colleen V. Chien, *Contextualizing Patent Disclosure*, 69 VAND. L. REV. 1849, 1867 (2016) (stating that “the defining right of a patent” is the right to exclude); John F. Duffy, *Rethinking the Prospect Theory of Patents*, 71 U. CHI. L. REV. 439, 456 (2004) (“Unlike mineral claims, which confer the positive rights of possession and enjoyment, patents grant only the negative right of exclusion.”); Frank H. Easterbrook, *Foreword: The Court and the Economic System*, 98 HARV. L. REV. 4, 21-22 (1984) (observing that inventors would not make information public without the promise of compensation); Oskar Liivak, *Rethinking the Concept of Exclusion in Patent Law*, 98 GEO. L.J. 1643, 1650-53 (2010) (proposing that the scope of the right to exclude ought to be narrower); Long, *supra* note 1, at 628 (“The right to exclude others is frequently described as the most important stick in the bundle of private property rights.”); Carol Rose, *The Comedy of the Commons: Custom, Commerce, and Inherently Public Property*, 53 U. CHI. L. REV. 711, 711 (1986) (“The right to exclude others has often been cited as the most important characteristic of private property.”).

14. See, e.g., J. Jonas Anderson, *Secret Inventions*, 26 BERKELEY TECH. L.J. 917, 956-60 (2011) (discussing why private inventors may choose trade secrecy over patent protection); David D. Friedman et al., *Some Economics of Trade Secret Law*, 5 J. ECON. PERSP. 61, 64 (1991) (“Inventors choose trade secret protection when they believe that patent protection is too costly relative to the value of their invention, or that it will give them a reward substantially less than the benefit of their invention (as reflected, in part, in the length of time before any else [sic] will invent it), either because the invention is not patentable or because the length (or other conditions) of patent protection is insufficient.”).

Or, alternatively, the patentee might be fully aware that her patent is unenforceable, but she acquires it anyway in hopes that a potential infringer will still be dissuaded from infringing. Yet, these explanations fail to give a realistic picture of the typical patentee or the ethical obligations of patent attorneys.¹⁵

A further potential exclusive-rights-based explanation for why parties obtain nonexcludable patents posits that inventors know the law, but patent anyway because they are protecting themselves in the event that the law changes to allow patent suits against physicians.¹⁶ Yet, this too is an unsatisfactory explanation for why inventors obtain surgical method patents, because the cost of obtaining a patent is likely too high to serve merely as a hedge against the unlikely event of congressional modification to the patent statute.¹⁷

More likely explanations exist for the continued interest in obtaining nonexcludable patents, but those explanations exist

15. For a patent attorney, failing to inform one's client (who is seeking a patent on a method of surgery) about the unenforceability of a patent likely amounts to malpractice and is unlikely to explain the amount of unenforceable surgical method patents acquired. See A. Samuel Oddi, *Patent Attorney Malpractice: An Oxymoron No More*, U. ILL. J. L. TECH. & POL'Y 1, 19 (2004) (stating that the malpractice standard for patent attorneys is that they "should exercise the skill and knowledge ordinarily possessed by [patent] attorneys under similar circumstances" (emphasis omitted)).

16. As an interesting example of where the hope for legislative change *has* led to patent filings, consider the recent easing of marijuana prohibitions by states. See, e.g., Christine Hauser, *Marijuana Embraced in Michigan, Utah and Missouri, but Rejected in North Dakota*, N.Y. TIMES (Nov. 7, 2018), <https://www.nytimes.com/2018/11/07/us/politics/michigan-marijuana-legalization.html> [<https://perma.cc/43TB-8P3G>] (reporting on the result of recent ballot initiatives on medical marijuana). This has led to calls for loosening of federal laws. See Naomi Martin & James Pindell, *All 2020 Presidential Candidates Now Support Marijuana Legalization Efforts—Even the Republicans*, BOS. GLOBE (Feb. 26, 2019), <https://www.boston-globe.com/news/marijuana/2019/02/26/all-presidential-candidates-support-legalizing-marijuana-even-republicans/bK4sQjPIgkzm54kl0dmZol/story.html> [<https://perma.cc/GD73-NM2K>]. Patent filings around cannabis have also spiked in the past few years. See, e.g., Alicia Wallace, *Patent No. 6,630,507: Why the U.S. Government Holds a Patent on Cannabis Plant Compounds*, DENV. POST (Aug. 28, 2016), <https://www.denverpost.com/2016/08/28/what-is-marijuana-patent-6630507/> [<https://perma.cc/3DMN-AUGX>] (reporting on the U.S. government's own patent holdings around cannabis). But anticipating that the federal prohibition on marijuana will be repealed, filing for patents on cannabis technology is a much safer bet than doing so on the hope that the surgical method unenforceability will be repealed. There has never, to my knowledge, been a proposed bill that would have rescinded 35 U.S.C. § 287(c) (2012).

17. See Parchomovsky & Wagner, *supra* note 4, at 15 (estimating that the cost of obtaining a patent is between \$10,000 and \$30,000).

outside of the exclusive rights paradigm. These explanations are found in patent-signaling theory as well as personhood theory of property.¹⁸

Signaling theory holds that a patent's private value is measured not only by the rents that can be acquired from the right to exclude, but also by the value that a patent has in conveying hard-to-measure attributes about its owner.¹⁹ This signaling can be valuable in securing investment from outside firms because these firms may have difficulty reliably distinguishing innovative companies from noninnovative ones.²⁰ To the extent that patents serve as a rough proxy for innovativeness, they can be worthwhile to acquire for the ability that they have to attract investors who are seeking innovative investment opportunities.²¹

For surgeons, this signaling benefit of patenting can exist in many forms. For example, surgeons are often "user innovators"—consumers of products or techniques who subsequently reinvent or redesign the techniques used in surgery.²² Because surgeons have firsthand knowledge regarding how to improve the surgical environment, surgeons are oftentimes better sources of surgical improvements than product manufacturers.²³ For surgeons who develop patentable surgical methods, patents may serve as a vehicle for diffusing the knowledge of the new method and identifying the patentee as the source of that knowledge.²⁴ Furthermore, the patent can signal the surgeon's status as an innovator to companies

18. See Long, *supra* note 1, at 637.

19. *Id.* at 627-28.

20. *Id.* at 672-73 ("Because patents are useful in reducing informational asymmetries between firms and capital markets, we would expect firms to care more about patent signaling when informational asymmetries are large and when alternative means of conveying information credibly are limited.")

21. See *id.* at 672 ("Start-up firms and firms engaging in research projects that are difficult to value would particularly benefit from mechanisms that allow them to convey credible information about their positive attributes to their relevant audiences.")

22. See ERIC VON HIPPEL, *DEMOCRATIZING INNOVATION 1* (2005) ("[U]sers of products and services—both firms and individual consumers—are increasingly able to innovate for themselves.")

23. See *id.* at 30 (reporting on the findings of a survey of surgeons, in which "22 percent reported developing or improving some item(s) of medical equipment for use in their own practices")

24. For more on patent law's knowledge dissemination, see Sean B. Seymore, *The Teaching Function of Patents*, 85 NOTRE DAME L. REV. 621, 656-57 (2010) (discussing patents as a source of technical knowledge).

interested in collaborating with an innovative surgeon, either to develop and market new products or to design courses to convey knowledge about the patented method to colleagues.²⁵

The widespread adoption of a new surgical technique can have pecuniary benefits, as well as psychic ones, for the inventor.²⁶ Often, surgeons who develop a new way of performing surgery offer classes that demonstrate the new technique for other surgeons in the field.²⁷ These courses can be very profitable.²⁸ A patent can serve as a signal to course participants that the instructor is the inventor of the technique and therefore the best source for information about the intricacies of the surgery.²⁹

The personhood theory of real property law provides another explanation for the appeal of nonexcludable patents. First proposed by Freidrich Hegel³⁰ and later expanded upon by Margaret Jane Radin,³¹ personhood theory has been used by scholars to explain other areas of intellectual property (particularly copyright),³² but

25. See, e.g., Christopher Lettl et al., *Users' Contributions to Radical Innovation: Evidence from Four Cases in the Field of Medical Equipment Technology*, 36 R&D MGMT. 251, 259 (2006) (finding that surgeons possess “sticky” knowledge that product manufacturers cannot acquire on their own without substantial investment).

26. See Ofer Tur-Sinai, *Beyond Incentives: Expanding the Theoretical Framework for Patent Law Analysis*, 45 AKRON L. REV. 243, 280-81 (2012).

27. For example, Dr. John Chao is the inventor of Patents 8,007,278 and 8,202,092. U.S. Patent Nos. 8,007,278 & 8,202,092 (filed Aug. 3, 2006 & Sept. 17, 2008, respectively). These patents cover a method for performing periodontal surgery and an instrument for performing such surgery. See *A Quick and Easy Option to Correct Gum Recession*, CHAO PINHOLE, <https://pinholesurgicaltechnique.com> [<https://perma.cc/4M9V-GH3H>]. Dr. Chao offers a course for dentists interested in his technique. The cost of the two-day seminar is \$6500. *Register/Program Overview*, CHAO PINHOLE, <https://pinholesurgicaltechnique.com/register/> [<https://perma.cc/4E6U-QQWV>].

28. *Register/Program Overview*, *supra* note 27.

29. See, e.g., John K. Zalesky, *A Team Effort, Part 1*, AESTHETICDENTISTRY (Nov. 22, 2018), <https://adentmag.com/a-team-effort-part-1/> [<https://perma.cc/ZUE3-JUU4>].

30. G.W.F. HEGEL, PHILOSOPHY OF RIGHT § 45 (S. W. Dyde trans., Prometheus Books 1996) (1896).

31. See, e.g., Margaret Jane Radin, *Property and Personhood*, 34 STAN. L. REV. 957, 957 (1982) (proposing a personhood theory of property, wherein some control over resources in a person's external environment is necessary for proper self-development and noting how such a theory is often implicit in court opinions and commentaries, yet ignored in legal thought).

32. See, e.g., Justin Hughes, *The Philosophy of Intellectual Property*, 77 GEO. L.J. 287, 329 (1988) (stating his personal belief that intellectual property “need[s] the support of a personality theory, such as the one proposed by Hegel, in which property is justified as an expression of the self”); Madhavi Sunder, *IP³*, 59 STAN. L. REV. 257, 257-58 (2006) (urging a “cultural” theory of intellectual property, partially relying on Radin's personhood theory).

the theory has received only passing treatment in patent law.³³ The few treatments of personhood theory and patent law focus on the right to exclude as enhancing the inventor's persona.³⁴

The few extant treatments of personhood theory can provide insights into why inventors obtain nonexcludable surgical method patents. If an inventor views herself as an inventor, a patent (even a nonexcludable one) is a means of "developing and realizing one's personality."³⁵ For some surgeons, it is irrelevant that surgical patents lack the right to exclude. These patentees may be searching for nonpecuniary benefits when they file a patent application. The realization of a surgeon's persona that occurs through recognition from the United States Patent and Trademark Office (USPTO) as an inventor may be of such worth that those surgeon-inventors are willing to go to the expense of patenting.³⁶

Interestingly, if the existence of certain patents is best explained by signaling or personhood theory, then the disclosure theory of patents has a much larger role to play in patent doctrine than it currently enjoys.³⁷ The disclosure theory adopts the classic *quid pro quo* narrative of why we have a patent system: the inventor informs the public of how the invention works and in exchange, the public offers a limited-in-time right to exclude.³⁸ Here, too, the excludability of patents is thought to be essential.³⁹

However, there is no reason to so limit disclosure theory to the pursuit of exclusive rights. As long as the public is getting its part

33. See Ayn Rand, *Patents and Copyrights*, in *CAPITALISM: THE UNKNOWN IDEAL* 125 (5th ed. 1966) ("Patents and copyrights are the legal implementation of the base of all property rights: a man's right to the product of his mind."); Oskar Liivak & Eduardo M. Peñalver, *The Right Not to Use in Property and Patent Law*, 98 *CORNELL L. REV.* 1437, 1466-70 (2013) (analyzing whether the personhood theory supports nonuse of a patented invention); Tur-Sinai, *supra* note 26, at 276-81 (stating the case for the application of personality theory to patents).

34. See Tur-Sinai, *supra* note 26, at 281 ("The personality theory thus provides an additional justification for the exclusive rights granted to an inventor under the patent system.").

35. *Id.* at 274.

36. See *infra* note 197 and accompanying text.

37. See, e.g., CRAIG ALLEN NARD, *THE LAW OF PATENTS* 35 (4th ed. 2017) (describing the disclosure theory of patent law).

38. *Id.*

39. *Id.* ("[T]he prospect of a property right will induce inventors to seek patent protection, and thereby disclose their inventions in accordance with patent law's disclosure requirements.").

of the bargain (the quid), what the patentee receives from the public (the quo) ought to be irrelevant. By simply enlarging the range of possible motivations for seeking patent protection beyond merely exclusive rights,⁴⁰ disclosure theory comports with signaling and personhood patents.

By envisioning a broader spectrum of motivations to acquire patents, however, we must enforce more strictly the doctrines that police the amount of disclosure required in a patent.⁴¹ If the government is granting nonexcludable rights that nonetheless signal something to the public or that are imprimaturs of the inventor's innovativeness, we ought to require more proof of the operability and value of the invention than we currently require. Thus, the USPTO ought to raise the utility standard and, in particular, the doctrine of patent operability in areas that have a high rate of signaling or personhood patents.⁴²

This Article proceeds in three Parts. Part I introduces the non-excludable surgical method patent. This Part provides an overview of 35 U.S.C. § 287(c): both its enactment by Congress and the subsequent litigation over the statute. This overview demonstrates that surgical method patents cannot exclude those who directly practice the invention (by statute)⁴³ nor do they exclude contributory infringers in some cases.⁴⁴ This Part concludes with examples of non-excludable surgical method patents.

Then, Part II turns to the question of why patentees would obtain such nonexcludable patents. After finding that traditional exclusive rights theories lack explanatory power, this Part turns to two theories (one from patent law and one from property law) to

40. *See id.*

41. *See* 35 U.S.C. § 101 (2012); *see also* J. Jonas Anderson, *Applying Patent-Eligible Subject Matter Restrictions*, 17 VAND. J. ENT. & TECH. L. 267, 286-93 (2015) (listing potential theories for subject matter eligibility that would promote innovation).

42. *See In re Swartz*, 232 F.3d 862, 864 (Fed. Cir. 2000) (holding that the USPTO has the initial burden of challenging the operability of an invention); *In re Brana*, 51 F.3d 1560, 1566 (Fed. Cir. 1995) (“[T]he PTO has the initial burden of challenging a presumptively correct assertion of utility in the disclosure.” (citing *In re Marzocchi*, 439 F.2d 220, 224 (C.C.P.A. 1971))). For a good overview of the utility standard (including operability), see Michael Risch, *A Surprisingly Useful Requirement*, 19 GEO. MASON L. REV. 57, 65-68 (2011).

43. 35 U.S.C. § 287(c). Surgical method patents are also statutorily unenforceable against inducers. *Id.*; *see also id.* § 271(b).

44. *Id.* § 271(c).

explain the existence of nonexcludable surgical method patents. Patent law's signaling theory and property law's personhood theory serve as this Article's theoretical foundation. Part III of this Article then examines the doctrinal and theoretical implications of signaling and personhood patents.

I. THE RIGHT TO EXCLUDE OF A PATENT

Academic scholarship on patent law has been very interested with the question of "why do inventors patent?"⁴⁵ Yet, generally, there is little mystery as to why someone would desire to obtain a patent: a patent grants to the inventor an exclusive right over the invention.⁴⁶ The predominant theories about the patent system predict that without rights to exclude, inventors will choose not to enter the patent system.⁴⁷ Without rights to exclude, inventors would either (a) rely on trade secret protection for their inventions,⁴⁸ or (b) not invent in the first place because others will copy their inventions.⁴⁹

This Article asks a different version of that fundamental question: Why would an inventor patent if the patent is nonexcludable?⁵⁰

45. See generally Stuart J.H. Graham & Ted Sichelman, *Why Do Start-Ups Patent?*, 23 BERKELEY TECH. L.J. 1063 (2008) (asking why start-ups patent); Petra Moser, *How Do Patent Laws Influence Innovation? Evidence from Nineteenth-Century World's Fairs*, 95 AM. ECON. REV. 1214 (2005) [hereinafter Moser, *How Do Patent Laws Influence Innovation?*] (asking why inventors from certain countries patent more frequently than inventors from other countries); Jason Owen-Smith & Walter W. Powell, *To Patent or Not: Faculty Decisions and Institutional Success at Technology Transfer*, 26 J. TECH. TRANSFER 99 (2001) (asking why some universities patent more than others); Petra Moser, *Why Don't Inventors Patent?* (Nat'l Bureau of Econ. Research, Working Paper No. 13,294, 2007) [hereinafter Moser, *Why Don't Inventors Patent?*] (asking why certain industries prefer trade secrecy to patents).

46. See, e.g., Alfred E. Kahn, *Fundamental Deficiencies of the American Patent Law*, 30 AM. ECON. REV. 475, 476 (1940) ("To encourage invention, the State grants to the inventor a monopoly right to manufacture, use, and sell his creation.").

47. See Anderson, *supra* note 14, at 928.

48. If trade secret protection is available, it is oftentimes preferable to patent protection for a number of reasons: (1) to claim a trade secret an inventor need not (in fact, cannot) disclose her invention, whereas patent protection requires disclosure; and (2) a trade secret can potentially last forever, whereas patents are limited to twenty years. See *id.* at 923-27 (listing the legal differences between patent protection and trade secret protection).

49. See Jonathan M. Barnett, *Cultivating the Genetic Commons: Imperfect Patent Protection and the Network Model of Innovation*, 37 SAN DIEGO L. REV. 987, 991 (2000).

50. See Herbert Hovenkamp, *Antitrust and the Movement of Technology*, 19 GEO. MASON L. REV. 1119, 1135-36 (2012) (defining "worthless" patents as those with such amorphous

The U.S. patent system is a voluntary regime.⁵¹ The patent system's very existence depends upon inventors choosing to publicly divulge valuable secrets about their inventions and paying for the privilege to do so.⁵² The cost of doing so can be very high: the cost of developing individual inventions (a new drug, for instance) can be in the tens of millions of dollars.⁵³ Furthermore, the cost of obtaining the patent can exceed \$20,000.⁵⁴

Without the patent system, many inventions would remain secrets.⁵⁵ With no promise of a patent, inventors would prefer to practice the invention in secret rather than inform the public of the invention's existence.⁵⁶ Inventions that could not be kept as trade secrets would be underproduced or, worse, not invented at all.⁵⁷ This

boundaries that identifying and defending those boundaries would cost more than the value of the patent); Edmund W. Kitch, *Elementary and Persistent Errors in the Economic Analysis of Intellectual Property*, 53 VAND. L. REV. 1727, 1736 (2000) (describing worthless patents as those dealing with obsolete technology); Kimberly A. Moore, *Worthless Patents*, 20 BERKELEY TECH. L.J. 1521, 1529, 1551-52 (2005) (describing as "worthless" those patents that expire before the first maintenance fee period). By "nonexcludable patents," I am not referring to the all-too-common situation in which the marketplace places no value on an invention. This is a situation where nonexcludability arises because there is no one to exclude: no one desires to practice the patent. See Kitch, *supra*, at 1729-30 (explaining the assumption that valuable patents create monopolies); Moore, *supra*, at 1548, 1550-51 (explaining that maintenance of the patent indicates value to the patent holder). Instead, this Article defines a nonexcludable patent as a patent that is unenforceable against any realistic infringer. Thus, in contradistinction to all other extant literature, this Article examines patents that are unenforceable before they are filed. See, e.g., Moore, *supra*, at 1551.

51. See Anderson, *supra* note 14, at 922-23.

52. See Seymore, *supra* note 24, at 622 n.1 ("[C]ourts often refer to disclosure as the quid pro quo for the inventor's right to exclude." (citing *Pfaff v. Wells Elecs., Inc.*, 525 U.S. 55, 63 (1998))).

53. Indeed, for pharmaceuticals the number may be even higher. The Tufts Center for the Study of Drug Development estimates that new drugs cost \$1.4 billion to develop. See Rick Mullin, *Tufts Study Finds Big Rise in Cost of Drug Development*, CHEMICAL & ENGINEERING NEWS (Nov. 20, 2014), <https://cen.acs.org/articles/92/web/2014/11/Tufts-Study-Finds-Big-Rise.html> [<https://perma.cc/TFU4-RS5A>] (estimating that new drug development costs are \$2.6 billion, \$1.4 billion of which are examining new drug candidates and \$1.2 billion of which are opportunity costs).

54. See *supra* note 12.

55. See Anderson, *supra* note 14, at 928; Moser, *How Do Patent Laws Influence Innovation?*, *supra* note 45, at 1233 (suggesting that "the introduction of strong patent laws may trigger changes in the direction of innovative activity"); see also *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 487-88 (1974) (discussing what factors influence an inventor's choice of patenting or secrecy).

56. See Moser, *Why Don't Inventors Patent?*, *supra* note 45, at 1-2.

57. See, e.g., Parchomovsky & Wagner, *supra* note 4, at 13-14 (stating that the standard

is because without the patent system, there would be no reward for the costly process of inventing in the first place.⁵⁸ The inventor would bear the costs of discovery and invention, while free riders would quickly copy and produce identical products without the up-front invention costs.⁵⁹

Besides motivating inventors to invent, the patent system also facilitates public disclosure of those inventions.⁶⁰ The patent system performs its public disclosure function by offering a limited-in-time monopoly over the right to make, use, offer to sell, sell, or import the invention.⁶¹ Obviously, this right to exclude is appealing to inventors and potential investors.⁶² The right to exclude is thus thought to be fundamental to a functioning patent system.⁶³ Inventors desire the right to exclude and they are willing to publicly disclose their inventions.⁶⁴ Courts often refer to this exchange of exclusive rights for inventive knowledge as the patent *quid pro quo*.⁶⁵

justification for the patent system supposes that in the absence of the patent system, “inventors would likely put their creative skills to rest and too few inventions would be produced”).

58. See, e.g., Mark A. Lemley, *Property, Intellectual Property, and Free Riding*, 83 TEX. L. REV. 1031, 1054-55 (2005).

59. See, e.g., Barnett, *supra* note 49, at 991 (“The incentive theory correctly states that patent protection stimulates private investment by warding off low-cost imitators and promising monopolistic profits that will at least cover product development costs.”).

60. See Anderson, *supra* note 14, at 928.

61. See 35 U.S.C. § 154 (2012). For the majority of patents issued nowadays, the patent lasts for twenty years from the earliest U.S. or international date of filing. *Id.* § 154(a)(2). There may be extensions beyond the twenty-year period for certain patents that experience processing delays at the USPTO. See *id.* § 154(b)(1)(A). Or, in order to compensate for related Food and Drug Administration approval, see *id.* § 156. See also *Merck & Co. v. Kessler*, 80 F.3d 1543, 1546-47 (Fed. Cir. 1996). Conversely, there are certain patents that have a shorter life than twenty years from filing. See, e.g., U.S. PATENT & TRADEMARK OFFICE, MANUAL OF PATENTING EXAMINING PROCEDURE § 2701 (9th ed. 2014) (explaining that if a patent is obvious in light of an earlier-issued patent (so-called “double patenting”), then the patent expires on the date of expiration of the earlier-issued patent).

62. See Lemley, *supra* note 58, at 1054.

63. See *id.*

64. See Moore, *supra* note 50, at 1550-51 (noting that patent maintenance fees are indicative of the long-term value of patents); Petra Moser, *What Do Inventors Patent?* 16 (March 24, 2006) (unpublished manuscript), <http://web.mit.edu/moser/www/patrat603.pdf> [<https://perma.cc/JHP7-8QSV>].

65. See Timothy R. Holbrook, *Possession in Patent Law*, 59 SMU L. REV. 123, 125 (2006) (“One fundamental premise of patent law, according to the courts, is that the system is a *quid pro quo* between the state and the inventor; in exchange for disclosing his invention in the patent itself, the inventor is granted the right to exclude others from practicing the invention

The patent quid pro quo is fundamental to courts' understanding of why the patent system exists.⁶⁶ Despite the importance of the patent quid pro quo, courts rarely analyze the presence of the exclusive rights in the exchange (the *quo* in the patent quid pro quo).⁶⁷ Courts spend a great deal of time analyzing whether the patentee has something of value to exchange, rigorously examining the doctrines of written description, utility, and enablement.⁶⁸ Yet courts do not have any doctrines that analyze the sufficiency of the exclusive rights given to the patentee.

That courts ignore the quo that the inventor receives in the patent bargain actually makes some sense. After all, why would someone incur the expense of acquiring a patent and disclosing the process of making the invention unless the inventor were getting something of greater value in exchange? The patent system is a voluntary system; thus, if the inventor is receiving a lesser value than he is providing, he can simply choose not to participate.⁶⁹ It costs around \$20,000 to file and prosecute a patent⁷⁰ and about two years for the USPTO to examine and (potentially) grant a patent.⁷¹ It makes sense that there would need to be some monetary reward at the end of such an arduous process to justify the expense. Courts have merely assumed that the reward is the right to exclude and that reward is present in every patent.⁷²

for a limited time.”); see also John F. Duffy, *Reviving the Paper Patent Doctrine*, 98 CORNELL L. REV. 1359, 1361 (2013) (stating that the quid pro quo of the patent system has been confused by courts during the last fifty years).

66. See *Pfaff v. Wells Elecs., Inc.*, 525 U.S. 55, 63 (1998) (“[T]he patent system represents a carefully crafted bargain that encourages both the creation and the public disclosure of new and useful advances in technology, in return for an exclusive monopoly for a limited period of time.”).

67. See *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 497 n.2 (1974) (Douglas, J., dissenting) (citing “the economic *quid pro quo* underlying patent protection; i. e., a monopoly limited in time, in return for full disclosure of the invention” as an incentive to patent inherent in patent law).

68. See John R. Allison & Lisa Larrimore Ouellette, *How Courts Adjudicate Patent Definiteness and Disclosure*, 65 DUKE L.J. 609, 612 (2016).

69. See Anderson, *supra* note 14, at 922-23.

70. See Parchomovsky & Wagner, *supra* note 4, at 28 n.100.

71. According to the USPTO, the average patent spends twenty-two months in examination. *How Long Does It Take to Get a Patent: Everything You Need to Know*, UPCOUNSEL, <https://www.upcounsel.com/how-long-does-it-take-to-get-a-patent> [<https://perma.cc/D58R-DBDY>].

72. See *Sears, Roebuck & Co. v. Stiffel Co.*, 376 U.S. 225, 229 (1964) (“Patents are not

Patent scholars, with few exceptions, have also focused on the patent's right to exclude as the primary motivator for inventors choosing to undertake the expensive process to acquire a patent.⁷³ There are various (often contradictory) utilitarian explanations for the existence of the patent system.⁷⁴ However, all of these utilitarian-based approaches assume that the patent's right to exclude is the prize that inventors are seeking when they patent. All utilitarian theories of the patent system presuppose that the inventor seeks the patent's right to exclude. The various theories differ only in how they describe the benefits that the public acquires from patenting. In essence, the various theories are unanimous about what the patentee receives (exclusive rights) but differ in what they view as the benefit to the public in the patent *quid pro quo*.⁷⁵

For example, let us examine the various utilitarian theories for the patent system. One prominent theory that is especially popular with courts—disclosure theory—says that the public gains new knowledge because of inventors' desire to acquire the right to exclude.⁷⁶ Disclosure theorists posit that the benefit of having a

given as favors ... but are meant to encourage invention by rewarding the inventor with the right, limited to a term of years fixed by the patent, to exclude others from the use of his invention.”).

73. See, e.g., F. Scott Kieff, *Property Rights and Property Rules for Commercializing Inventions*, 85 MINN. L. REV. 697, 697-98 & n.2 (2001) (stating that the “consensus” among patent scholars is a utilitarian-based approach, and that such an approach depends on the patent's right to exclude to incentivize creation, disclosure, and commercialization of the invention); Sean B. Seymore, *Patenting the Unexplained*, 96 WASH. U. L. REV. 707, 713 (2019) (“What the patentee gets [from patenting] is the limited period of exclusivity conferred by the patent grant.”).

74. See Stephanie Plamondon Bair, *The Psychology of Patent Protection*, 48 CONN. L. REV. 297, 303-09 (2015) (describing various utilitarian-based theories supporting the existence of the patent system).

75. See, e.g., *id.*; Seymore, *supra* note 73, at 713 (“What the patentee gets is the limited period of exclusivity conferred by the patent grant.”).

76. See Jeanne C. Fromer, *Patent Disclosure*, 94 IOWA L. REV. 539, 548 (2009) (arguing that patents benefit society economically because they reward inventors for both inventing and disclosing information to the public); Mark A. Lemley, *The Myth of the Sole Inventor*, 110 MICH. L. REV. 709, 745 (2012) (“The benefit the public gets from the bargain, on [disclosure] theory, is not (or not just) a new invention but the publication of new learning that might otherwise have been kept secret.”); Seymore, *supra* note 73, at 713 (stating that the benefit to the public of the patent system is “detailed knowledge about the invention as soon as the patent document publishes”).

patent system “is not (or not *just*)” that the public gains new inventions.⁷⁷

This differs from another prominent theory—*invention theory*.⁷⁸ Invention theorists claim that incentivizing new inventions is the primary purpose of having a patent system. Invention theorists take issue with disclosure theorists’ focus on the benefits of patent disclosure (which is overly narrow, invention theorists would argue).⁷⁹

Still another school of thought—often called *prospect theory*—holds that the real public benefit of the patent system is not the inventions it incentivizes or the information it discloses. Rather, according to prospect theorists, the primary public benefit of the patent system is in establishing clearly delineated research rights among firms.⁸⁰ Strong and broad property rights in inventions are necessary to encourage exploitation and commercialization of the inventive idea, and they are the primary benefit that the public receives in the patent *quid pro quo*.⁸¹

However, for all of the disagreements between the various theories, they are all in accord about what the benefits of the patent system are for the patentee.⁸² Theorists of all stripes point to the patent’s right to exclude as the reason that an inventor chooses to enter the patent system.⁸³

77. Lemley, *supra* note 76, at 745 (emphasis added).

78. See Peter Lee, *Toward a Distributive Commons in Patent Law*, 2009 WIS. L. REV. 917, 928-29 (explicating that inventors have the “requisite incentives” to invent because the patent system’s right to exclude eliminates free riders); Mark A. Lemley, *Ex Ante Versus Ex Post Justifications for Intellectual Property*, 71 U. CHI. L. REV. 129, 129-30 (2004) (“Absent intellectual property protection, most would prefer to copy rather than create ideas.”).

79. See, e.g., Lemley, *supra* note 76, at 745 (“Disclosure theory cannot, however, support the modern patent system. Simply put, inventors don’t learn their science from patents.”).

80. See Edmund W. Kitch, *The Nature and Function of the Patent System*, 20 J.L. & ECON. 265, 268-69 (1977).

81. See *id.* In this sense prospect theory is similar to the commercialization theory. For ease of reference, I will refer to these sets of theories as prospect theory throughout. For more on the commercialization theory of patents, see Michael Abramowicz, *The Danger of Underdeveloped Patent Prospects*, 92 CORNELL L. REV. 1065, 1073-78 (2007); Ted Sichelman, *Commercializing Patents*, 62 STAN. L. REV. 341, 347-53 (2010).

82. There are hosts of other utilitarian-based theories of the patent system. See, e.g., Lemley, *supra* note 76, at 753-56 (proposing the “patent race” theory). But all these theories share the view that the patentee’s benefit from the *quid pro quo* is exclusive rights.

83. See Dan L. Burk, *The Role of Patent Law in Knowledge Codification*, 23 BERKELEY TECH. L.J. 1009, 1010 (2008) (stating that the “long favored” judicial explanation of the patent

Some scholars, however, have sought to examine alternative motivations for patenting.⁸⁴ These scholars have looked beyond the patent's right to exclude for explanations into why people patent.⁸⁵ For example, some scholars have examined the psychological aspects of why inventors choose to patent, concluding that the right to exclude is not the only way to encourage inventive activity.⁸⁶ Other scholars have looked at possible marketing purposes of patents as potential incentives that encourage the patenting of the invention in the first place.⁸⁷ Still others have looked at patents as signals to investors.⁸⁸ However, all of these studies' critiques of the exclusive rights paradigm in patent law are partial. All extant accounts assume that the exclusive rights of a patent are at least partially, if not fully, responsible for the patentee seeking patent protection.⁸⁹

To be sure, there are a host of theories for why people patent that are not based on the desire to obtain exclusive rights. Scholars have theorized that inventors may acquire patents for a variety of

system is an "exchang[e] [of] public disclosure of the claimed invention in return for the grant of a period of exclusive rights"); Lee, *supra* note 78, at 928 ("The patent system promotes innovation by conferring time-limited exclusive rights to new inventions."); Seymore, *supra* note 73, at 728-29.

84. See, e.g., Ann Bartow, *Separating Marketing Innovation from Actual Invention: A Proposal for a New, Improved, Lighter, and Better-Tasting Form of Patent Protection*, 4 J. SMALL & EMERGING BUS. L. 1, 2-3 (2000) (explaining how corporations use patents as "competitive weapon[s]" and marketing tools); Mark A. Lemley, *Reconceiving Patents in the Age of Venture Capital*, 4 J. SMALL & EMERGING BUS. L. 137, 137-48 (2000) (suggesting multiple "new uses" of patents as "defense ... against litiga[tion]" and "financing tools").

85. This does not include those scholars who have analyzed whether the patent *quid pro quo* is the only justification for the existence of the patent system. Many scholars have analyzed whether the patent system is more fully explained by natural rights theories than by economics. See, e.g., ROBERT P. MERGES, *JUSTIFYING INTELLECTUAL PROPERTY* 4, 32, 71 (2011) (justifying intellectual property rights through a natural rights lens).

86. See, e.g., Bair, *supra* note 74, at 348 ("Though psychology research suggests that desert, personality, and social planning values are significant human concerns which, if respected, have the potential to promote innovative behavior, there is little evidence to suggest that a financial reward is the best, or even an effective, way to satisfy these concerns.").

87. See J. Jonas Anderson, *Nontechnical Disclosure*, 69 VAND. L. REV. 1573, 1593-94 (2016) (highlighting the use of patents as marketing tools); Bartow, *supra* note 84, at 3 ("[P]atents may be good marketing tools."); see also Neel U. Sukhatme & Maxwell Gregg Bloche, *Health Care Costs and the Arc of Innovation*, 104 MINN. L. REV. 955 (2019).

88. See Lemley, *supra* note 84, at 137-44; Long, *supra* note 1, at 646.

89. *But see* Sukhatme & Bloche, *supra* note 87, at 975-76. Although this piece is about the use of patents beyond the right to exclude, it is silent about the motivations to patent in the first place.

nonpecuniary reasons. For instance, they may be in search of the prestige that a patent gives.⁹⁰ Alternatively, they may be attempting to signal to some third party that they or their company is innovative.⁹¹ However, none of these previous studies have contemplated that one might seek a nonexcludable patent.

This Part will detail a conundrum for extant patent theories. Why would an inventor seek a patent if the law does not permit them to enforce that patent? Utilitarian patent theory predicts that without the exclusive rights granted by a patent, inventors will opt for trade secrecy or simply will not invent in the first place.⁹² Yet some inventors do patent despite not being able to enforce the patent. Section A will set up the problem, discussing a provision in the U.S. Code that creates immunity from direct patent infringement of surgical method patents. Section B will then demonstrate that despite this provision, surgical method patents continue to be acquired. The following Sections of this Article are devoted to the question of why these patents are obtained.

A. 35 U.S.C. § 287(c)

1. *Enactment*

Twenty years ago, Congress amended the Patent Act to shield doctors and hospitals, among others, from infringement liability for practicing a patented medical procedure.⁹³ Congress adopted the statute in response to physicians and medical associations that had become concerned about the impact that patents might have on medical practitioners.⁹⁴ This concern came to a head on July 6,

90. See Toby E. Stuart, *Technological Prestige and the Accumulation of Alliance Capital*, in *CORPORATE SOCIAL CAPITAL AND LIABILITY* 376, 382-83, 388 (Roger Th.A.J. Leenders & Shaul M. Gabbay eds., 1999) (demonstrating the prestige factor in patent grants).

91. See Long, *supra* note 1, at 637, 651-52.

92. See, e.g., *id.* at 627 (challenging “the traditional assumption that exclusivity is the alpha and the omega of the private value of patent rights”).

93. See 35 U.S.C. § 287(c) (2012). For more on the physician immunity statute, see generally Cynthia M. Ho, *Patents, Patients, and Public Policy: An Incomplete Intersection at 35 U.S.C. § 287(c)*, 33 U.C. DAVIS L. REV. 601 (2000).

94. See Eric M. Lee, *35 U.S.C. § 287(c)—The Physician Immunity Statute*, 79 J. PAT. & TRADEMARK OFF. SOC’Y 701, 702-04 (1997) (tracing the medical communities’ lobbying efforts around 35 U.S.C. § 287(c)). For more on lobbying done by judges, see J. Jonas Anderson,

1993, when a surgeon filed a patent infringement lawsuit against another surgeon.⁹⁵ In that suit, Dr. Samuel Pallin had acquired a patent on a new method of performing cataract surgery.⁹⁶ Dr. Pallin sued Dr. Jack Singer for infringement, alleging that Dr. Singer had performed the patented procedure on patients without Dr. Pallin's permission.⁹⁷ The United States District Court for the District of Vermont eventually entered a consent judgment declaring the patent claims invalid.⁹⁸ Nevertheless, the prospect of liability for performing a medical procedure was a frightening reality for medical practitioners. So much so that while the *Pallin* case was still in litigation, the American Medical Association (AMA) adopted a resolution condemning the patenting of medical procedures.⁹⁹

Under intense pressure from the AMA and other physician groups, Congress carved out immunity from patent litigation for medical practitioners and any related health care entity (such as the hospital where the infringing activity occurs).¹⁰⁰ That immunity statute was codified as 35 U.S.C. § 287(c). That section states: "With respect to a medical practitioner's performance of a medical activity that constitutes an infringement under section 271(a) or (b), the provisions of sections 281, 283, 284, and 285 shall not apply against the medical practitioner or against a related health care entity with respect to such medical activity."¹⁰¹

Congress was also conscious that other interest groups (primarily the pharmaceutical and biotechnology industries) would object to

Judicial Lobbying, 91 WASH. L. REV. 401, 432-35 (2016) (documenting the extensive lobbying done by the chief judge of the Federal Circuit during the period of legislative action preceding the America Invents Act).

95. *Pallin v. Singer*, No. 5:93-22, 1995 WL 608365, at *1 (D. Vt. May 1, 1995).

96. *Id.*

97. *Id.*

98. *Pallin v. Singer*, No. 2:93-CV-202, 1996 WL 274407, at *1 (D. Vt. Mar. 28, 1996).

99. See John Glasson, *Reports of Council on Ethical and Judicial Affairs: Patenting of Medical Procedures*, 144 AMA PROC. H. DEL. 200 (1995).

100. For more on the legislative battle over 35 U.S.C. § 287(c) (2012), see Lee, *supra* note 78, at 704-08 (chronicling the "stealth legislation" that led to the physician immunity statute).

101. *Id.* Section 287 is not the only exception to the general rules of infringement that exists in Title 35 of the U.S. Code. For example, the temporary presence exception to infringement (35 U.S.C. § 272) exempts from infringement the use of a patent in any vehicle that temporarily enters into the United States. See J. Jonas Anderson, *Hiding Behind Nationality: The Temporary Presence Exception and Patent Infringement Avoidance*, 15 MICH. TELECOMM. & TECH. L. REV. 1, 12-17 (2008).

the breadth of § 287(c).¹⁰² To assuage these industries' concerns about their patents being unenforceable against direct infringers, Congress defined a "medical activity" as excluding (1) the use of a patented composition of matter during the procedure and (2) the use of a "biotechnology patent."¹⁰³

Section 287 is a strange compromise. It shields surgeons, doctors, nurses, hospitals, and health maintenance organizations (HMOs) from patent infringement liability.¹⁰⁴ Nevertheless, § 287(c) does not invalidate surgical method patents nor restrict the ability to obtain such patents. Indeed, the original bill would have made medical procedures unpatentable, unless the patent also claimed a machine or "composition of matter."¹⁰⁵ The biotech industry vehemently opposed that version of the bill, ultimately killing it.¹⁰⁶

Although § 287(c) forecloses patentees from suing the most likely infringers (doctors, hospitals, HMOs), the possibility of suing a party for contributory infringement remains.¹⁰⁷ A recent case out of the United States District Court for the District of Delaware dealt with such a scenario.¹⁰⁸ Johns Hopkins University (JHU) obtained a patent on surgical techniques and related equipment for eye surgery.¹⁰⁹ According to JHU's patent, openings are made in the eye, which are then filled with "cannulas," which are essentially tubes through which surgical instruments pass.¹¹⁰ After the surgery is completed, the cannulas are removed and the openings heal

102. See *infra* note 106 and accompanying text.

103. 35 U.S.C. § 287(c)(2)(A). Unfortunately, Congress did not define "biotechnology patent," a definition that has not been supplied by the courts at the time this Article was written.

104. *Id.* § 287(c).

105. Medical Procedures Innovation and Affordability Act, H.R. 1127, 104th Cong. (1995).

106. See *Medical Procedures Innovation and Affordability Act and Inventor Protection Act of 1995: Hearing on H.R. 1127 and H.R. 2419 Before the Subcomm. on Courts & Intellectual Prop. of the H. Comm. on the Judiciary*, 104th Cong. 92-106 (1995) (statement of Dr. Frank Baldino, Jr., President and CEO of Cephalon, Inc.).

107. See ROBERT PATRICK MERGES & JOHN FITZGERALD DUFFY, *PATENT LAW AND POLICY: CASES AND MATERIALS* 195-96 (6th ed. 2013) (stating that the value of medical procedure patents likely lies in the ability to sue manufacturers of medical devices required in the surgery).

108. *Johns Hopkins Univ. v. Alcon Labs., Inc.*, No. 15-525-SLR-SRF, 2018 U.S. Dist. LEXIS 70403, at *3 (D. Del. Apr. 5, 2018).

109. *Id.* at *2-3.

110. *Id.* at *2.

naturally.¹¹¹ JHU sued Alcon—a manufacturer of surgical instruments—for contributory patent infringement.¹¹² On a motion for summary judgment, the court found that Alcon could be liable for contributory infringement of the patent, even though § 287(c) protected the direct infringers (in this case, doctors).¹¹³ Because § 287(c) did not protect Alcon as a manufacturer, Alcon could be found to be contributorily liable.¹¹⁴

In sum, the medical procedure space is available for patenting, but those patents are not enforceable against direct infringers. Of course, through contributory liability, patentees can (and do) target device manufacturers for infringement.¹¹⁵ However, contributory liability is only available when the device manufacturer “know[s]” that its product is “especially made or especially adapted” for infringement of the patent and the device is not “suitable for ... noninfringing use.”¹¹⁶ In other words, to be liable for contributory infringement, a manufacturer’s device must (1) be used to commit acts of direct patent infringement, (2) constitute “a material part of the invention,” and (3) not be a “staple article or commodity of commerce suitable for substantial noninfringing use.”¹¹⁷ In addition, the manufacturer must (4) know that the product is “especially made or especially adapted for use” in infringing the patent.¹¹⁸ None of these things is necessary to demonstrate direct infringement.¹¹⁹

Thus, § 287 grants immunity to defendants accused of directly infringing a patent covering a medical procedure. It does not limit the contributory liability to patent infringement.

111. *Id.*

112. *Id.*

113. *Id.* at *75-76.

114. *Id.* at *40-41.

115. *Id.*

116. 35 U.S.C. § 271(c) (2012); see *Fujitsu Ltd. v. Netgear Inc.*, 620 F.3d 1321, 1326 (Fed. Cir. 2010) (stating the standard for contributory liability).

117. *Arris Grp., Inc. v. British Telecomms. PLC*, 639 F.3d 1368, 1376 (Fed. Cir. 2011) (quoting 35 U.S.C. § 271(c)) (listing the factors that a party asserting contributory infringement must prove).

118. *Global-Tech Appliances, Inc. v. SEB S. A.*, 563 U.S. 754, 764, 768 (2011) (quoting 35 U.S.C. § 271(b)) (holding that the standard for scienter in contributory liability cases is “willful blindness” (emphasis omitted)).

119. Dmitry Karshtedt, *Causal Responsibility and Patent Infringement*, 70 VAND. L. REV. 565, 568-69 (2017) (explaining that patent infringement is much more difficult to prove against manufacturers (contributory liability) than against end users (direct liability)).

2. *Litigation Surrounding § 287(c)*

A review of the sparse litigation that has arisen in the twenty years since § 287(c) became law reveals just how limited a surgical method patent's rights to exclude are. The cases also demonstrate the broad reach that courts have given to § 287(c)'s immunity.

The first time that a court ruled on the application of § 287(c) was in 2008, over a decade after Congress passed the statute.¹²⁰ In that case, *Emtel, Inc. v. Lipidlabs, Inc.*, Emtel accused various physician groups of infringing its patent on videoconferencing between medical care facilities.¹²¹ In response, the defendants claimed immunity under § 287(c).¹²²

As a first step in the court's analysis of the case, the court interpreted § 287(c)'s requirement that the allegedly infringing acts must involve "the performance of a medical or surgical procedure on a body."¹²³ It interpreted the "medical procedure" requirement broadly.¹²⁴ The court ruled that doctors who were videoconferencing about a patient's care were performing a "medical procedure[]," as § 287(c) defines it.¹²⁵ According to the court, "[d]iagnosing a medical condition, providing instructions to a different medical caregiver," and "aiding" in treatment were all activities covered by § 287(c).¹²⁶

Furthermore, the court held that "related health care entity" covered a wide variety of entities.¹²⁷ Because the doctors in this case had agreements that dealt with medical care, they were all "related health care entities," even though they did not work in the same facility or necessarily meet the patient who was to receive the medical care.¹²⁸

Ultimately, the court denied the defendants' claim that § 287(c) granted them immunity.¹²⁹ The patent claims in the case required the use of videoconferencing to diagnose a patient's medical

120. *Emtel, Inc. v. Lipidlabs, Inc.*, 583 F. Supp. 2d 811 (S.D. Tex. 2008).

121. *Id.* at 814.

122. *Id.* at 818.

123. *Id.* at 819-24.

124. *Id.* at 823-24.

125. *Id.* at 824.

126. *Id.*

127. *Id.* at 824-25.

128. *Id.*

129. *Id.* at 826.

condition.¹³⁰ While the court found that the doctors were performing a “medical procedure” as defined by § 287(c), that medical procedure did not constitute infringement of the claim.¹³¹ Further steps (i.e., setting up videoconferencing between hospitals) were needed to infringe the patent.¹³² Therefore, § 287(c) did not cover the activities in the case.¹³³ In essence, the court found that the patent covered more than the medical activity in which the doctors were engaged in this case; therefore, the doctors could not claim § 287(c)’s protection.

Emtel demonstrates the broad scope of the immunity provision of § 287(c) while also highlighting the limited usefulness of the immunity for most defendants. The court interpreted “medical activities” as encompassing more than the surgical techniques that caused Congress to enact the statute.¹³⁴ Similarly, the court said that a broad cast of characters fit under § 287(c)’s ambit: not only were the doctors performing surgery and the hospitals in which the patients were treated covered, but also anyone affiliated with the doctor (including nurses and other doctors who were consulted) or hospitals that were contracted to perform any part of the medical procedure.¹³⁵ Ultimately, the court made it clear that although § 287(c)’s immunity can protect any affiliated entity, the scope of the patent limits § 287(c)’s role. The more steps that the patent has that do not constitute medical activity, the less likely that infringers will be immune from infringement liability.

Further cases have clarified that § 287(c) is available to the U.S. government,¹³⁶ as well as sketched out the contours of contributory infringement liability under § 287(c).¹³⁷ In total, there have been

130. *Id.* at 825-26.

131. *Id.* This holding (that the “medical activity” is not the infringing act) is highly dependent on claim construction, the doctrine that permits judges to interpret the meaning of claims. See J. Jonas Anderson & Peter S. Menell, *Informal Deference: A Historical, Empirical, and Normative Analysis of Patent Claim Construction*, 108 NW. U. L. REV. 1 (2014); J. Jonas Anderson & Peter S. Menell, *Restoring the Fact/Law Distinction in Patent Claim Construction*, 109 NW. U. L. REV. 187 (2015). The uncertainty surrounding claim construction makes analogizing this case to future cases difficult.

132. *Emtel, Inc.*, 583 F. Supp. 2d at 825-26.

133. *Id.* at 826.

134. See *Pallin v. Singer*, No. 5-22, 1995 WL 608365, at *1 (D. Vt. May 1, 1995).

135. *Emtel, Inc.*, 583 F. Supp. 2d at 824-25.

136. See, e.g., *Lamson v. United States*, 117 Fed. Cl. 755, 762 (2014).

137. *Johns Hopkins Univ. v. Alcon Labs., Inc.*, No. 15-525-SLR-SRF, 2018 U.S. Dist. LEXIS

only four written cases addressing § 287(c) since the provision was passed by Congress over two decades ago.¹³⁸ In those cases, courts have defined “medical activity” very broadly.¹³⁹ They have also broadly defined who is a “medical practitioner” and therefore eligible for § 287(c) protection.¹⁴⁰ Courts have construed § 287(c) to cover a broad range of medical activities, including teleconferencing between hospitals.¹⁴¹

70403, at *76 (D. Del. Apr. 5, 2018). See *supra* Part I.A.1 for more about contributory liability.

138. A recent case out of the U.S. District Court for the Eastern District of Texas confirms the limited applicability of § 287 protection. In *Viveve, Inc. v. Thermigen, LLC*, a doctor was accused of infringing a patented method for vaginal reconstruction. No. 2:16-CV-1189-JRG, 2017 WL 1425604, at *1 (E.D. Tex. Apr. 20, 2017). The accused infringer, Dr. Alinsod, appeared on the daytime television show *The Doctors* to demonstrate the procedure, and to promote his own device used in the procedure. *Id.* at *3. I have written extensively elsewhere about the Eastern District of Texas’s proclivity to expand the rights of patent holders. See J. Jonas Anderson, *Court Capture*, 59 B.C. L. REV. 1543, 1585-86 (2018) (arguing that the court exhibits signs of “capture”); J. Jonas Anderson, *Court Competition for Patent Cases*, 163 U. PA. L. REV. 631, 651-54 (2015) (documenting the ways that the Eastern District of Texas has tried to attract patent plaintiffs to file in the district); J. Jonas Anderson, *Judge Shopping in the Eastern District of Texas*, 48 LOY. U. CHI. L.J. 539, 555 (2016) (criticizing the Eastern District of Texas for “ero[ding] ... the public perception of the patent system”); J. Jonas Anderson, *Reining in a “Renegade” Court: TC Heartland and the Eastern District of Texas*, 39 CARDOZO L. REV. 1569, 1576 (2018) (noting the various procedural advantages that the Eastern District of Texas offers patent plaintiffs).

The court in *Viveve* examined § 287(c)(3) and found that section precluded Dr. Alinsod’s defense of immunity. 2017 WL 1425604, at *5. 35 U.S.C. § 287(c)(3) states:

This subsection does not apply to the activities of any person ... who is engaged in the commercial development, manufacture, sale, importation, or distribution of a machine, manufacture, or composition of matter ... where such activities are: (A) directly related to the commercial development, manufacture, sale, importation, or distribution of a machine, manufacture, or composition of matter ... and (B) regulated under the Federal Food, Drug, and Cosmetic Act, the Public Health Service Act, or the Clinical Laboratories Improvement Act.

35 U.S.C. § 287(c)(3) (2012). Section 287(c)(3) excludes from immunity (1) medical activities that are directly related to the commercial development, manufacture, sale, importation, or distribution of a medical device and (2) medical activities that are regulated under certain federal statutes. *Id.* The court in *Viveve* found that Dr. Alinsod’s appearance on *The Doctors* was purely for product promotion and therefore satisfied “the first element of the exception contained in c(3).” *Viveve*, 2017 WL 1425604, at *4. Therefore, Dr. Alinsod could not claim § 287(c) immunity.

139. See, e.g., *Emtel*, 583 F. Supp. 2d at 824.

140. See, e.g., *id.* at 819.

141. See, e.g., *id.* at 826.

However, courts have been strict about which patents are covered under § 287(c).¹⁴² Courts have rejected some § 287(c) defenses because the patent claims covered more than the protected medical activities.¹⁴³ In addition, a district court recently determined that “medical activity” may not be covered by § 287 if the purpose of the surgery is to promote sales of a surgical device.¹⁴⁴

Thus, the few cases involving § 287(c) reinforce Congress’s desire to create a safe haven from infringement liability for medical practitioners and medical institutions, while simultaneously restricting which patents fall under the provision.

B. The Existence of Nonexcludable Patents

To get a better sense of the number of patents that are non-excludable due to § 287(c), one need look no further than the USPTO. The USPTO’s database of issued patents in classes 600, 604, and 606 is a helpful starting point. These are all “surgery” patent subclasses, and they do not necessarily (although many do) require a “device,” unlike many of the other surgery classes.¹⁴⁵ Therefore, patents within these classes do not automatically lend themselves to a contributory infringement claim.¹⁴⁶

But I am interested in those patents that do not have the ability to exclude anyone, whether the infringers are infringing directly or indirectly. Thus, I looked for nonexcludable patents in three steps. First, I discarded any patent that is directed to a device or composition of matter. This is because patents on devices or compositions of matter are expressly enforceable against direct infringers under

142. See, e.g., *id.*

143. See, e.g., *id.*

144. *Viveve, Inc. v. Thermigen, LLC*, No. 2:16-CV-1189-JRG, 2017 WL 1425604, at *5 (E.D. Tex. Apr. 20, 2017).

145. For instance, class 602 is entitled “Surgery: Splint, Brace, or Bandage.” *Patents Counts by Year—January 1977-December 2015*, U.S. PATENT & TRADEMARK OFF., <http://www.uspto.gov/web/offices/ac/ido/oeip/taf/cbcbby.htm#PartA> [<https://perma.cc/9N56-C3XS>] [hereinafter *Patent Counts by Year*]. While it is possible to have a completely unenforceable patent in this class because of § 287(c) (imagine a new technique of using a known bandage), I think most of these patents are directed to a *new* splint, brace, or bandage. Therefore, such patents would be enforceable against the manufacturers of the splint, brace, or bandage.

146. See *supra* Part I.A for more on contributory infringement.

§ 287(c).¹⁴⁷ Second, I discarded any “biotechnology” patent. This is because “biotechnology” patents are similarly expressly outside of § 287(c)’s coverage.¹⁴⁸ In essence, patents that require a drug are not properly characterized as nonexcludable patents.¹⁴⁹ Third, and the most difficult task in my search for nonexcludable patents, I determined whether the patent required an “especially made” device.¹⁵⁰ To evaluate this, I often had to research the particular device to determine whether the device was produced especially for the surgical method described in the patent or whether the device was used for other, “noninfringing use[s].”¹⁵¹ If such a device is required by the patent claim, the patent is not properly characterized as nonexcludable, because a contributory infringer might be excluded.

To summarize, in the search for nonexcludable patents, one must ignore patents that claim a device, patents that require or cover a composition of matter, and patents that require a device that is “especially made” for the infringing act.¹⁵² Any surgical method patent that meets all of those three criteria (no device, not a composition of matter, does not have “especially made” device) is a nonexcludable patent. That is, inventors know (or at least should know) that the patent is nonexcludable before filing.

For example, patent number 8,974,442, covering a method of facial rejuvenation, is a nonexcludable patent.¹⁵³ The ‘442 Patent

147. 35 U.S.C. § 287(c)(2)(A) (2012) (defining “medical activities” to not include patented machines or compositions of matter).

148. *Id.*; see *supra* Part I.A.

149. Courts have not defined what a “biotechnology” patent is and neither did Congress when they passed 35 U.S.C. § 273(c). But the statutory history of § 273(c) indicates that Congress was mainly concerned with patents that encompassed a pharmaceutical coming under § 273(c)’s immunity.

150. This is to avoid the contributory infringement problem. Section 287(c) does not shield makers of surgical devices from infringement liability. Thus, if the method requires a device that is “especially made or especially adapted” for the infringing use, *id.* § 271(c), the patentee could potentially sue the manufacturer of the device for contributory liability. Note, that under § 287(c), a medical practitioner is still a direct infringer, thus allowing contributory liability. Section 287(c) merely limits the remedies that can be sought against a medical practitioner that infringes a surgical method patent.

151. *Id.*

152. This last exclusion is to rule out those patents that *might* be acquired in the hopes of targeting a surgical device manufacturer under a theory of contributory infringement. For an example of this, see *Johns Hopkins Univ. v. Alcon Labs., Inc.*, No. 15-525-SLR-SRF, 2018 U.S. Dist. LEXIS 70403, at *76 (D. Del. Apr. 5, 2018).

153. See U.S. Patent No. 8,974,442 (filed Mar. 20, 2009).

was issued to William K. Boss, Jr., of Hackensack, New Jersey on March 10, 2015.¹⁵⁴ The '442 Patent claims priority back to a patent application filed in March of 2009.¹⁵⁵ The patent claims a method for rejuvenating a facial area that comprises the steps of making an incision in the skin, separating the skin from the underlying tissue, and then applying heat from a laser under the skin.¹⁵⁶ After applying the heat from the laser, the surgeon applies sutures, causing a tightening of the treated area.¹⁵⁷ Then follows a second round of tightening with sutures.¹⁵⁸ Finally, the surgeon cuts off the excess skin.¹⁵⁹

It is virtually impossible to find infringement liability against anyone on this patent: § 287(c) protects the surgeon and her medical staff, the hospital or office where the procedure would take place, and even the insurance company that would pay for such a procedure.¹⁶⁰ Furthermore, no one else could be contributorily liable; the manufacturer of the sutures used in the technique would not be liable because the sutures are a staple commodity with substantial noninfringing uses.¹⁶¹ So too is any producer of lasers which are incidentally used in the procedure.¹⁶²

The Boss patent, among others, demonstrates that nonexcludable patents exist. That revelation goes against bedrock patent doctrine that posits that inventors only seek patents that can exclude others. The next Part will theorize about why inventors obtain such patents.

154. *Id.*

155. *Id.*

156. *Id.* at cl. 1.

157. *Id.*

158. *Id.*

159. *Id.*

160. *See supra* Part II.A.

161. *See supra* Part II.A.

162. Of course, one could imagine a set of highly specific (not to mention odd) facts which might incur contributory liability. For example if a manufacturer created sutures that were *only* suitable for this specific method of facial rejuvenation surgery and knew that the sutures were used to infringe this patent. Even in that highly unlikely scenario, such a producer of sutures would escape liability if he could show that the sutures did not comprise a "material part of the invention." 35 U.S.C. § 271(c) (2012).

II. WHY DO INVENTORS PURSUE NONEXCLUDABLE PATENTS?

Knowing that nonexcludable patents exist raises an obvious question: Why are these patents obtained? This Part will approach this question in two ways. The first is by appeal to traditional right-to-exclude notions. The second examines theories from patent law and real property that are not based on exclusive rights. Ultimately, the nonexclusive rights theories have more explanatory power for the phenomenon of patentees obtaining patents on nonexcludable surgical method patents.

A. *Exclusive Rights Explanations*

1. *Ignorance of the Law*

Some inventors may not be aware that they cannot enforce their surgical method patent. The circumstances that can lead inventors to unknowingly obtain a nonexcludable patent vary. One way that this may occur might be due to the fact that some patentees file their patent applications pro se.¹⁶³ Filing a patent as a nonattorney has a number of potential pitfalls.¹⁶⁴ An inventor who files a patent pro se is much more likely to abandon the patent application unknowingly or to end up with narrower claims, and is less likely to take advantage of examiner interviews than is a patentee represented by an attorney.¹⁶⁵ Representing oneself before the USPTO has additional risks.¹⁶⁶ Pro se patentees of surgical methods may

163. See Kate S. Gaudry, *The Lone Inventor: Low Success Rates and Common Errors Associated with Pro-Se Patent Applications*, PLoS ONE, Mar. 2012, at 2 (finding that pro se patent applicants more frequently abandon their patents than those applicants who are represented by a patent attorney). For more about pro se patent litigants, see John P. Flannery & Ira P. Robbins, *The Misunderstood Pro Se Litigant: More than a Pawn in the Game*, 41 BROOK. L. REV. 769, 772 (1975) (including patent cases among the federal cases that are frequently litigated pro se).

164. Gaudry, *supra* note 163, at 2.

165. *Id.* at 3-4, 8.

166. See generally Flannery & Robbins, *supra* note 163, at 773 (stating that most pro se litigants “proceed without counsel for the former reason, and most, although their injury is real, fail—notwithstanding the maxim, ‘ubi injuria, ibi remedia’—because there is no remedy, at least in federal court, for the injury sustained” (footnote omitted)).

have little knowledge about the complexities of patent law. These patentees may not realize that the patents they receive are not enforceable against any realistic infringer. In fact, they might not know about the very existence of § 287(c).

Nevertheless, pro se applicants' ignorance of the physician immunity statute cannot explain why inventors obtain patents on surgical methods. Pro se applications represent an extremely small subset of all patent applications.¹⁶⁷

The mere fact that an attorney prosecutes a patent does not tell us anything about what the inventor thought her options would be once she obtained a patent. For instance, one could imagine an attorney filing and prosecuting a patent without ever informing the patentee of the limited enforcement options that § 287(c) imposes. However, it does appear to be malpractice for an attorney to fail to inform a client seeking a surgical method patent that surgical method patents are not enforceable against the most likely group of infringers. This would seem to be well below the professional standard of care for patent attorneys.¹⁶⁸

Ultimately, while it is conceivable that a few surgical method patentees may not know of § 287(c), it is unlikely that lack of knowledge is a systemic problem among this class of patentees.

2. *Better Safe than Sorry*

Another potential explanation for acquisition of nonexcludable surgical method patents is that patentees patent with full knowledge of the nonexcludability of their patents in the hopes that U.S. law will change in the future. After all, § 287(c) is a recent phenomenon.¹⁶⁹ Just as the law changed to protect physicians from infringement lawsuits, it can always change back.

167. See U.S. PATENT & TRADEMARK OFFICE, PERFORMANCE AND ACCOUNTABILITY REPORT 50 (2017), <http://uspto.gov/sites/default/files/documents/USPTOFY17PAR.pdf> [<https://perma.cc/46DM-J6SZ>] (reporting that from October 2014 to 2017 the Pro Se Art Unit of the USPTO issued only 525 patents from inventors representing themselves before the USPTO).

168. See Oddi, *supra* note 15, at 19 (stating that the malpractice standard for patent attorneys is that they "should exercise the skill and knowledge ordinarily possessed by *patent* attorneys under similar circumstances").

169. The law was passed in 1996. Omnibus Consolidated Appropriations Act, Pub. L. No. 104-208, § 616, 110 Stat. 3009 (1996).

Congress has not indicated, however, that removing the physician immunity statute is a priority. While Congress is very active in other areas of patent law (particularly patent-eligible subject matter), it does not appear to have expressed any interest in modifying the surgical method patent regime.¹⁷⁰ Therefore, this explanation seems unlikely.

3. Targeting Contributory Infringers

A much more likely solution to the mystery of why inventors obtain nonexcludable patents is that the patents are, in fact, excludable. Section 287(c) covers most would-be infringers from patent infringement liability but still leaves open the possibility of suing medical device manufacturers.¹⁷¹ Patentees rarely accuse device manufacturers of directly infringing a patent. It would be difficult to do so. Direct patent infringement of a method requires that the defendant practice each step of the method.¹⁷² For surgical method patents, these usually involve the actual steps involved in surgery.

Medical device manufacturers are more often involved in suits alleging contributory infringement. Although § 287(c) forecloses patentees from suing the most likely infringers (doctors, hospitals, and HMOs), there remains the possibility of suing a noncovered party—such as a medical device manufacturer—for contributory infringement.¹⁷³ For example, the case of *Johns Hopkins University v. Alcon Laboratories* is illustrative of how surgical method patents

170. See, e.g., Press Release, Sens. Tillis and Coons and Reps. Collins, Johnson, and Stivers Release Draft Bill Text to Reform Section 101 of the Patent Act (May 22, 2019), <https://www.tillis.senate.gov/2019/5/sens-tillis-and-coons-and-reps-collins-johnson-and-stivers-release-draft-bill-text-to-reform-section-101-of-the-patent-act> [<https://perma.cc/B769-N4J7>] (proposing changes to 35 U.S.C. § 101). For an in-depth look at how Congress gets signals about issues in patent law that need reform from the courts (and vice-versa), see J. Jonas Anderson, *Congress as a Catalyst of Patent Reform at the Federal Circuit*, 63 AM. U. L. REV. 961 (2014) (positing that congressional action on a patent topic pushes the Federal Circuit to modify its precedents); J. Jonas Anderson, *Patent Dialogue*, 92 N.C. L. REV. 1049 (2014) (theorizing about the dialogic interplay between Congress, the Supreme Court, and the Federal Circuit).

171. See 35 U.S.C. § 287(c)(1) (2012).

172. See *Joy Techs., Inc. v. Flakt, Inc.*, 6 F.3d 770, 773 (Fed. Cir. 1993) (stating that the patentee must prove that every step of the patented method was performed by the defendant in order to hold the defendant liable for infringing a method claim).

173. See MERGES & DUFFY, *supra* note 107, at 195.

can be used to stop an indirect infringer.¹⁷⁴ JHU obtained a patent on surgical techniques and related equipment for eye surgery. Then, when JHU felt that its patent was being infringed, it sued the manufacturer of the “tubes” used during such a surgery.¹⁷⁵ Had JHU sued the surgeons performing the surgery, JHU would not have been able to proceed with such a suit due to § 287(c).¹⁷⁶ Thus, patents on surgical methods can be very excludable, as long as there is a manufacturer that contributorily infringes the patent.

This monetization strategy (targeting the device manufacturers for contributory infringement) is probably responsible for much of the patenting that takes place in the surgical method space. After all, if a new surgical method involves a device that is specially adapted for use in the method, a court is very likely to find that device “especially made” for infringing the patent, a necessity for a finding of contributory infringement.¹⁷⁷ For inventors of surgical methods that require a specialized tool, therefore, targeting the tool’s manufacturer is a realistic and perhaps profitable way to monetize the patent.

Yet this cannot explain all of the patenting of surgical methods. Indeed, by my method for finding nonexcludable patents,¹⁷⁸ the third step is to reject any patent that has a likely contributory infringer.¹⁷⁹ Although secondary liability is a major (if not *the* major) incentive for patentees to seek surgical method patent protection, there are some patents for which finding contributory liability is virtually impossible. For the patentees of these patents, there must be some nonexclusive rights explanation for their activity.

174. For more on this case, see *supra* notes 108-14 and accompanying text.

175. See *supra* notes 108-14 and accompanying text.

176. 35 U.S.C. § 287(c).

177. Contributory infringement requires (1) that the product be used in direct infringement, (2) that the product constitutes a “material part of the invention,” (3) the supplier knew that the product was “especially adapted” for an infringing use, and (4) the product is not a “staple article.” *Arris Grp., Inc. v. British Telecomms. PLC*, 639 F.3d 1368, 1376 (Fed. Cir. 2011) (quoting 35 U.S.C. § 271(c)).

178. See *supra* Part I.B. for an explanation of my method of identifying nonexcludable patents.

179. See *supra* notes 150-51 and accompanying text.

B. *Nonexclusive Rights Explanations*

1. *Signaling*

We can say with some certainty that the inventors of non-excludable surgical method patents were not motivated to patent by the rights to exclude. This is because there are no rights to exclude in these patents.¹⁸⁰ Some surgical method patentees may want rights to exclude but not be aware of § 287(c), while some others may be hedging against the possibility that the law will change to allow them to sue surgeons for infringing their patents. However, for most surgical method patents, these motivations add little, if any, explanatory power.

The literature on patent signaling offers a better theory for why inventors seek nonenforceable patents. Clarisa Long was the first academic to bring the financial and corporate literature to bear on the question of what private value a patent imparts on its owner.¹⁸¹ In so doing, she moved away from all previous patent scholarship, with its singular focus on the exclusive rights of a patent.¹⁸² Key to Long's theory was the insight that a patent's private value is not measured only by the rents that can be acquired from the rights to exclude, but also by the value that a patent has in conveying hard-to-measure attributes about its owner.¹⁸³ Thus signaling theory represents an acknowledgment of a patent's usefulness as a means of overcoming informational asymmetries between patentees and observers.¹⁸⁴

This signaling can be valuable in securing investment from outside firms.¹⁸⁵ Outside firms may have trouble reliably distinguishing innovative companies from noninnovative ones.¹⁸⁶ To the extent that patents serve as a rough proxy for innovativeness, they

180. See *supra* notes 9-10 and accompanying text.

181. See Long, *supra* note 1, at 627 ("In the following Article, I will build on the finance and corporate law literature to provide a new general framework for analyzing the function and effect of intellectual property rights.").

182. See *id.* (stating that *Patent Signaling* signaled a move beyond a singular focus on "rights and rents").

183. See *id.* at 627-28.

184. *Id.*

185. *Id.*

186. *Id.*

can be worthwhile to acquire for the ability to attract investors who are seeking innovative investment opportunities.

For surgeons, this signaling can take various forms. Surgeons are often “user-innovator[s]”—consumers of products or techniques who subsequently reinvent or redesign the techniques used in surgery.¹⁸⁷ Because surgeons often have better knowledge of what a surgeon needs during surgery than the product manufacturers, surgeons are optimally situated to improve existing techniques, products, or processes.¹⁸⁸ For surgeons who develop patentable surgical method improvements, patents may serve as a vehicle for promoting the knowledge of the new technique and the identity of that technique’s inventor to the world.¹⁸⁹ Furthermore, the patent can signal the surgeon’s status as an innovator to companies interested in collaborating with an innovative surgeon.¹⁹⁰

Other aspects of signaling theory may serve as motivations to patent surgical method innovations. Surgeons, like other professionals, value recognition from their peers for achievements.¹⁹¹ A patent can signal to other surgeons that the holder of a patent on a surgical technique is the leader in the technique’s field.¹⁹² Further, recognition as the method’s creator is another benefit of obtaining a patent, especially once the technique or method is adopted widely. Often, surgeons that develop a new way of performing surgery demonstrate the surgery for other surgeons in the field.¹⁹³ A patent may serve as a marker to others that the presenter of a new technique has the bona fides to which he claims.¹⁹⁴

A surgeon may be interested in a patent for the prestige it confers, another form of signaling.¹⁹⁵ Having a number of patents on

187. See VON HIPPEL, *supra* note 22, at 3.

188. See Lettl et al., *supra* note 25, at 259 (finding that surgeons possessed “sticky” knowledge that product manufacturers cannot acquire on their own without substantial investment).

189. See *id.* at 265.

190. *Id.* at 251.

191. See, e.g., Ali Azizzadeh et al., *Factors Influencing Career Choice Among Medical Students Interested in Surgery*, 60 CURRENT SURGERY 210, 212 (2003) (stating that recognition from peers is a motivating factor when medical students decide to pursue surgery).

192. See *supra* notes 25-29 and accompanying text.

193. See *supra* note 27 and accompanying text.

194. See *supra* note 29 and accompanying text.

195. See, e.g., Azizzadeh et al., *supra* note 191, at 212.

one's wall (next to a number of fancy diplomas) can create a sense of prestige.¹⁹⁶ Having a number of patents can also lead to prestige among consumers: as the patentee of a surgical method, consumers may view a surgeon-patentee as a prestigious alternative to other surgeons performing the very same surgical technique.¹⁹⁷ The new prevalence of medical advertising can also be a prestige driver; the most prestigious doctor can likely charge a premium for his services.¹⁹⁸

There are also signaling functions of patents that are not directed towards the surgeon's peers or the surgeon's customers. Acquiring patents may be beneficial to the surgeon's employer. Many surgeons also have appointments at medical schools.¹⁹⁹ With the constant pressure to publish in order to gain tenure, some schools consider patents along with peer-reviewed publications when making tenure decisions.²⁰⁰ Similarly, patents serve as evidence of having met funding requirements for some medical faculty.²⁰¹ Texas

196. I will admit to having a lawyer's version of the doctor's "prestige wall" in my office. I am not proud of it.

197. Many surgeons are motivated to give pride of place to their patents. Brian Weiner, a doctor at University of Florida Medical School, mentions his patents on his UF Medicine page, but also has an article about his patents. See Mickie Anderson, *Survey Says ...*, GAINESVILLE SUN (July 23, 2016), <https://www.gainesville.com/news/20160723/survey-says-> [<https://perma.cc/YAR8-UXYP>]; see also Boaz Avitall, MD/PhD, UI HEALTH, <https://hospital.uillinois.edu/find-a-doctor/boaz-avitall> [<https://perma.cc/WMW4-8X6N>]; John Conn, MD, CENTURA HEALTH, <https://www.centura.org/provider-search/john-conn-md> [<https://perma.cc/A6QB-SJLT>]; Nicholas Theodore, M.D., M.S., JOHNS HOPKINS MED., <https://www.hopkinsmedicine.org/profiles/results/directory/profile/10003384/nicholas-theodore> [<https://perma.cc/L7XK-36DQ>].

198. For more on the ethical issues with marketing and the medical field, see Eugene M. Bricker, *Industrial Marketing and Medical Ethics*, 320 NEW ENG. J. MED. 1690, 1690-92 (1989).

199. See Paul J. Schenarts, *Surgeons as Educators Faculty*, AM. C. SURGEONS, <https://www.facs.org/education/division-of-education/courses/surgeons-as-educators/faculty> [<https://perma.cc/5AT2-JJRB>].

200. See, e.g., Kevin A. Morano, *Promotion and Tenure*, U. TEX. MCGOVERN MED. SCH., <https://med.uth.edu/faculty-affairs/files/2015/10/PT-Talk-faculty-2017-final.pdf> [<https://perma.cc/VF8S-7V4L>] ("Evidence of scholarly activity can be in many forms, e.g., peer-publications, invited articles, awards and honors, participation on grants, patents issued/licensed, etc.").

201. See, e.g., GEISEL SCH. OF MED. AT DARTMOUTH, ACADEMIC APPOINTMENTS, PROMOTIONS AND TITLES 46-47 (2017), https://geiselmed.dartmouth.edu/faculty/pdf/geisel_faculty_appt.pdf [<https://perma.cc/SBF6-C7FZ>]; STRITCH SCH. OF MED., FACULTY APPOINTMENT, PROMOTION AND TENURE GUIDELINES 5 (2017), https://ssom.luc.edu/media/stritchschoolofmedicine/cart/pdfs/current_promotion_and_tenure_guidelines.pdf [<https://perma.cc/84KL-N9E7>] (such evidence can include that the researcher was "[g]ranted substantive patents based on his or her research as evidenced by likelihood to lead to licensing agreements and

A&M created quite a stir in May 2006 when it added commercialization considerations as a factor to be taken into account when faculty are evaluated for tenure.²⁰² Somewhat surprisingly, other major institutions have not followed Texas A&M, at least publicly.²⁰³ However, there is some indication that other institutions have followed Texas A&M privately.²⁰⁴

Some surgeons place a high value on the signaling function of patents. At times, the signals that a patent communicates are proxies for harder to verify information.²⁰⁵ For example, a patent may signal to an employer that the surgeon who developed a new technique is an active researcher.²⁰⁶ Alternatively, a patent may signal to potential customers that a particular surgeon-patentee is the best in his field.²⁰⁷ More to the point, a surgical method patent may signal to device manufacturers that the surgeon-patentee is innovative in his field.²⁰⁸ That sort of signal often leads to monetary rewards that are not dependent on the excludability of the patent.

2. Personhood

Aside from signaling theory, personhood theory also explains the appeal of nonexcludable patents. Friedrich Hegel's "personhood theory" relies on the premise that property provides the mechanism

royalties to the University"). At the Northwestern Feinberg School of Medicine, patents and licenses are included under research/publications portfolios. NORTHWESTERN UNIV. FEINBERG SCH. OF MED. INFORMATION GUIDE FOR APPOINTMENTS, PROMOTION AND TENURE (APT) 20-21 (2019), <https://www.feinberg.northwestern.edu/fao/docs/admin-general/Information-Guide-for-APT.pdf> [<https://perma.cc/D6EC-C6FZ>].

202. Sara Lipka, *Texas A&M: Patents to Count for Tenure*, CHRON. HIGHER EDUC. (June 9, 2006), <https://www.chronicle.com/article/Texas-A-M-Patents-to-Count/20735> [<https://perma.cc/66E4-BWMH>].

203. See Ashley J. Stevens et al., *The Role of Patents and Commercialization in the Tenure and Promotion Process*, 13 TECH. & INNOVATION 241, 243 (2011).

204. See *id.* at 242-44 (finding that 25 percent of survey respondents include commercialization when making tenure decisions).

205. See Long, *supra* note 1, at 627.

206. For an example of how patents signal research activity, see Steven Ross Pomeroy, *Business and Patent Activities Should Count Towards Academic Tenure*, FORBES (May 5, 2014, 12:49 PM), <https://www.forbes.com/sites/rosspomeroy/2014/05/05/business-and-patent-activities-should-count-towards-academic-tenure/> [<https://perma.cc/2PLU-2M27>].

207. See Anderson, *supra* note 197.

208. See *supra* note 190 and accompanying text.

by which humans achieve self-actualization.²⁰⁹ Hegel proposed that a person's core is found in her will, yet the will needs material objects to express itself.²¹⁰ Therefore, private property is necessary to provide external manifestations of the will.²¹¹ Thus, Hegel wrote that there can be no individual freedom without private property.²¹²

Margaret Jane Radin has built on Hegel's theory to create a much more elaborate theory about the way that the law of property should treat personhood interests.²¹³ Radin's basic argument, on the normative level, is that legal rules should be designed with sensitivity to fungible/personal property distinctions.²¹⁴ In general, the more an object has personal value to its owner (i.e., it cannot be replaced by the value of the object), the more the entitlement should be protected.²¹⁵ On the contrary, where an object is fungible (i.e., it can be replaced by the value of the object), its protection by liability rules would generally suffice.²¹⁶

Personhood theory has been used in scholarly discussions of intellectual property law in general and copyright law in particular.²¹⁷ Scholars commonly use Radin's fungible/personal dichotomy to argue that some intellectual products created by the owner are closer to the personal end of the spectrum.²¹⁸ Thus, various scholars use the personality theory in support of arguments calling for the strengthening of authors' rights.²¹⁹

Patent law has been a less fruitful space for scholars writing about personhood interests, but treatments of the topic do exist.²²⁰

209. HEGEL, *supra* note 30, at 52.

210. *See id.*

211. *See id.*

212. *See id.*; *see also* Abraham Bell & Gideon Parchomovsky, *A Theory of Property*, 90 CORNELL L. REV. 531, 542 (2005).

213. *See, e.g.*, Radin, *supra* note 31, at 957 (proposing a personhood theory of property, wherein some control over resources in a person's external environment is necessary for proper self-development and noting how such a theory is often implicit in court opinions and commentaries, yet ignored in legal thought).

214. *Id.* at 959-60.

215. *Id.* at 986.

216. *Id.* Radin even suggests that sometimes the taking of fungible property without any compensation at all may be permitted. *Id.* at 1014-15.

217. *See, e.g.*, Justin Hughes, *The Personality Interest of Artists and Inventors in Intellectual Property*, 16 CARDOZO ARTS & ENT. L.J. 81, 81 (1998).

218. *Id.* at 85-86.

219. *Id.* at 165 (calling for the strengthening of the attribution right).

220. *See* Tur-Sinai, *supra* note 26, at 276-81; *see also* Steven Cherenksy, *A Penny for Their*

Yet, in those limited instances where patent law is assessed through a personhood lens, the focus remains on the right to exclude as the means by which personality is protected by the law.²²¹ Yet, personhood theory *can* provide insights into why inventors obtain non-excludable patents.

If an inventor views herself as an inventor, a patent (even a non-excludable one) is a means of “develop[ing] and realiz[ing] one’s personality.”²²² In the surgical method field, many inventors are, in fact, surgeons.²²³ Patent classes 600 and 606 (surgery) are two of the highest for total number of small inventors.²²⁴ Surgery is the area that has the most individual inventors, which indicates that user innovation plays an outsized role in this field.²²⁵ Studies have concluded that physician-patentees make up nearly 20 percent of patents in the medical device field,²²⁶ 57 percent of existing drugs’ new uses originate through clinical practice,²²⁷ and up to 80 percent of scientific instrument innovations originate from physician-users.²²⁸

Surgeons tend to have a personality type, often referred to as the “surgical personality.”²²⁹ Surgical residents (as compared to other

Thoughts: Employee-Inventors, Preinvention Assignment Agreements, Property, and Personhood, 81 CALIF. L. REV. 595, 648-52 (1993) (discussing personhood theory as the basis for granting employees some property rights over inventions created while employed).

221. See Tur-Sinai, *supra* note 26, at 281 (“The personality theory thus provides an additional justification for the exclusive rights granted to an inventor under the patent system.”).

222. *Id.* at 274.

223. See generally Mareike E. Hinsch et al., *User Innovation in Techniques: A Case Study Analysis in the Field of Medical Devices*, 23 CREATIVITY & INNOVATION MGMT. 484 (2014).

224. That is, those patents that are owned, upon grant, by individuals. See *Patent Counts by Year*, *supra* note 145.

225. The other subclasses that exhibit a lot of individual patenting cover “low-level” technology: static structures, games using tangible projectiles, etc. See *id.*

226. Aaron K. Chatterji, et al., *Physician-Industry Cooperation in the Medical Device Industry*, 27 HEALTH AFF. 1532, 1538 (2008).

227. Thomas Sullivan, *The Significant Physician Contribution to the Development of Medical Devices*, POL’Y & MED. (May 6, 2018), <https://www.policymed.com/2013/10/the-significant-physician-contribution-to-the-development-of-medical-devices.html> [<https://perma.cc/A4CA-NEVA>].

228. VON HIPPEL, *supra* note 22, at 22.

229. Joseph M. Drosdeck et al., *Surgeon and Nonsurgeon Personalities at Different Career Points*, 196 J. SURGICAL RES. 60, 64 (2015) (“Comparisons between surgeons and nonsurgeon physicians have led credence to the popular belief that there exists a set of personality traits common to surgeons—the ‘surgical personality.’”).

residents and medical students) typically score higher on tests of “conscientiousness.”²³⁰ Conscientiousness refers to the tendency to control impulses in pursuit of goals.²³¹ Additionally, surgeons are more likely to score higher on “decisiveness, forcefulness, and authoritativeness” than other types of medical doctors.²³² These traits of conscientiousness and decisiveness are beneficial to surgeons that have to make life-altering decisions very quickly.

Additionally, surgeons are prime candidates to be user innovators.²³³ Eric von Hippel has shown that users of products are often better positioned to create innovations that improve upon existing products.²³⁴ Furthermore, studies have shown that surgeons are a fruitful source of surgical technique innovations.²³⁵

Surgeons possess numerous attributes that make them good sources of innovations. First, the aforementioned personality traits of surgeons also make for great attributes for innovators.²³⁶ Surgeons have to be goal oriented to succeed during their undergraduate, medical, and fellowship studies. As with surgeons, inventors also display high levels of conscientiousness.²³⁷ The

230. Benson M. Hoffman et al., *Personality Differences Between Surgery Residents, Non-surgery Residents, and Medical Students*, 148 *SURGERY* 187, 188-90 (2010) (“Conscientiousness refers to the tendency to regulate and control impulses in pursuit of our goals. Individuals who are high in Conscientiousness tend to be organized, efficient, and thorough, whereas individuals who are low in this trait tend to be more careless and disorderly.”).

231. *Id.*

232. *Id.* at 191; see also Nicole J. Borges & Mark L. Savickas, *Personality and Medical Specialty Choice: A Literature Review and Integration*, 10 *J. CAREER ASSESSMENT* 362, 372 (2002); J Herman Gilligan et al., *Square Pegs in Round Holes: Has Psychometric Testing a Place in Choosing a Surgical Career? A Preliminary Report of Work in Progress*, 81 *ANNALS ROYAL C. SURGEONS ENG.* 73, 78 (1999).

233. Eric von Hippel et al., *The Age of the Consumer-Innovator*, 53 *MIT SLOAN MGMT. REV.* 27, 28 (2011) (finding that if a consumer is male, highly educated, and technically trained, “the likelihood that he will innovate in consumer products is ... 210% higher” than it is for the general population in the United States).

234. See generally VON HIPPEL, *supra* note 22, at 1 (“[U]sers of products and services—both firms and individual consumers—are increasingly able to innovate for themselves.”).

235. See HINSCH et al., *supra* note 223, at 486 (stating that the surgical field exhibits “a lot of innovation over the last few years” and much of the innovation in the field is “user innovation in particular”).

236. See DROSDECK et al., *supra* note 229, at 65.

237. See ALLAN H. CHURCH & JANINE WACLAWSKI, *The Relationship Between Individual Personality Orientation and Executive Leadership Behavior*, 71 *J. OCCUPATIONAL & ORGAN. PSYCHOL.* 99, 121 (1998) (finding that inventors are more “driven” in their leadership styles than other sorts of executives).

authoritativeness and decisiveness of surgeons are also traits of inventors, who need both vision and decisiveness to achieve their goals.²³⁸ As one scholar has summarized the literature about surgeon personality traits, “[S]urgeons are among other things intellectually curious, highly disciplined, organised[,] and assertive.”²³⁹

Furthermore, user innovators tend to have better access to what von Hippel calls “context-of-use information” regarding surgical techniques and instruments.²⁴⁰ Although manufacturers of surgical devices have extensive knowledge about generic solution information, they lack particularized knowledge about how their devices are used and, by correlation, how they could be improved.²⁴¹ Surgeons, on the other hand, have extensive real-world practice with the various tools. Therefore, surgeons are much better positioned to know what devices or techniques that have not yet been developed would be beneficial to other surgeons.²⁴² Put simply, surgeons have better access to information about surgical needs than do manufacturers.²⁴³

Given the personality characteristics of surgeons and the access to information about the requirements and deficiencies in existing surgical techniques, surgeons are likely to be user innovators. Surgeons generate a great deal of medical device innovation and surgical technique innovation.²⁴⁴ Surgeons are often responsible for developing game-changing surgical techniques that greatly reduce the time of surgery, the time needed for recovery, or some other aspect of surgery.²⁴⁵

238. *See id.*

239. Matthew Whitaker, *The Surgical Personality: Does It Exist?*, 100 ANNALS ROYAL C. SURGEONS ENG. 72, 77 (2018).

240. VON HIPPEL, *supra* note 22, at 8 (distinguishing between “context-of-use-information” and “generic solution information” before stating that both types of knowledge are needed in product development).

241. *Id.*

242. *See* Hinsch et al., *supra* note 223, at 486-89 (studying four cases of user innovation in the medical device field).

243. VON HIPPEL, *supra* note 22, at 8.

244. *See* Chatterji et al., *supra* note 226, at 1538 (finding that 20 percent of patents on medical devices are issued to physicians).

245. *See, e.g.*, Edmund Andrews, *Why Doctors Can Be Good at Inventing but Bad for Innovation*, INSIGHTS BY STAN. BUS. (Nov. 16, 2016), <https://www.gsb.stanford.edu/insights/why-doctors-can-be-good-inventing-bad-innovation> [<https://perma.cc/NPB8-BKED>] (detailing the

Thus, patents (whether excludable or not) may serve a personhood function to surgeons. Surgeons may view part of their persona as an innovator or an inventor. Acquiring a patent can further this personhood function by serving as recognition from the U.S. government of the surgeon's inventiveness. This recognition is not signaling: no signal is provided to the outside world, necessarily.²⁴⁶ What is important is that the surgeon's personality as an inventor is allowed to flourish.

III. THE IMPLICATIONS OF NONEXCLUDABLE PATENTS

A. *Theoretical*

The fact that some surgeons obtain patents for reasons other than the right to exclude has vast implications for patent theory. A familiar narrative runs through patent theory, namely the narrative of the incentivized inventor.²⁴⁷ Let us take, for example, the incentive-to-invent theory. The incentive-to-invent theory tells us that we have a patent system in order to encourage innovation.²⁴⁸ By promising exclusive rights to make and use any invention, the patent system serves as a "carrot," encouraging inventors to invent.²⁴⁹ Under the incentive-to-invent theory, inventor's desire for the exclusive rights of the patent are the key part of how innovation occurs.

Similarly, the prospect theory depends on the incentives created by a patent's right to exclude. The prospect theory puts the patent system's incentive effect earlier in the innovation timeline than does the incentive-to-invent theory.²⁵⁰ By creating property rights in inventive ideas and granting those rights to inventors, prospect

story of Thomas Fogarty, the inventor of the balloon catheter in 1961).

246. Of course, the world is informed of the fact that a patent has been issued to a particular surgeon.

247. See Kenneth W. Dam, *The Economic Underpinnings of Patent Law*, 23 J. LEGAL STUD. 247, 251 (1994) ("[T]he R&D that led to the invention might never have occurred in the absence of the incentive of patentability."); Kitch, *supra* note 80, at 266.

248. See Dam, *supra* note 247, at 247 ("[T]he 'appropriability problem'—is that, if a firm could not recover the costs of invention because the resulting information were available to all, then we could expect a much lower and indeed suboptimal level of innovation.").

249. See *id.*

250. See Kitch, *supra* note 80, at 289.

theory envisions that a patent demarcates the boundary between what has been invented and what has not.²⁵¹ Patents serve much the same role as land grants in the western United States in the 1800s: identifying an area and placing property rights on that area.²⁵² Then, the theory goes, anyone who desires to innovate in a patented space knows who to contact about purchasing that right: the patent holder.²⁵³ Prospect theorists surmise that this also has the benefit of avoiding costly duplicative research, as someone wanting to innovate in an area has notice that the patent holder can exclude them from the patent's area of research.²⁵⁴ Here too, the prospect theory depends upon inventors valuing the right to exclude. If that right to exclude is not included in the patent grant, there would be no reason to prospect areas of inventive activity.

The third main theory of patent law—the disclosure theory—differs from the prospect and incentive-to-invent theories. In contrast to the other two theories of patent law, disclosure theory does not demand that the patent serve as the carrot to inventors.²⁵⁵ Disclosure theory concerns itself more with encouraging the disclosure of inventive ideas, ideas that may already have been created but not revealed to the public.²⁵⁶ Incentive-to-invent and prospect theories, on the other hand, are concerned with *ex ante* inventor behavior *based* on the prospect of a patent right. For example, an inventor would be incentivized to invent in a given area or take on the financial risk of inventing *only* if he were assured of the availability of a patent before taking those steps. Disclosure theory deals with inventors that already have an invention and now have to decide between keeping that invention as a trade secret and disclosing that invention to the public.²⁵⁷

251. *Id.* at 266.

252. *Id.* at 271.

253. See 1 JOSEPH SCHUMPETER, BUSINESS CYCLES 84-129 (1939); JOSEPH A. SCHUMPETER, CAPITALISM, SOCIALISM, AND DEMOCRACY 87-106 (3d ed. 1950).

254. See Duffy, *supra* note 13, at 444-45 (“channel[ing] rivalry” in order to get innovations sooner, is one of the primary aims of prospect theorists).

255. See NARD, *supra* note 37, at 35.

256. See *id.* (describing the disclosure theory as “informed in part by the availability of trade secret protection”).

257. See *id.*

The evidence of patents serving a primarily signaling function challenges all three theories.²⁵⁸ For example, the prospect theory views a patent's right to exclude as necessary for the functioning of the patent system.²⁵⁹ Prospect theory envisions the right to exclude as fundamental to the narrative of the patent system, serving as a means of granting rights in technological prospects.²⁶⁰ Without the right to exclude, there would be no point in granting patents because the patents would not stop anyone else from treading on the technological space. Thus, there would be no way to coordinate inventive activity because one could not exclude others.

Imagining patents as signals, or as serving a personhood interest, undercuts the incentive-to-invent theory. Under this theory, the inventor is incentivized to undertake the costly process of innovation by the patent's right to exclude.²⁶¹ Without the right to exclude, the patent would not be attractive to prospective inventors.²⁶² Thus, those inventors would choose to not invent or at least do so privately.

However, this undermining of traditional incentive-to-invent theory need not be a wholesale dismissal of that theory. For surgeons, a patent might provide sufficient nonmonetary incentives to invent despite the lack of accompanying rights to exclude. The benefits that a surgeon gains from a patent are likely enough to incentivize him to invent in the first place. The reputational effects of the patent plus any personhood benefits (pride, self-worth, etc.) may spur surgeon-inventors towards the goal of invention.²⁶³

Furthermore, one prominent critique of the incentive-to-invent theory is that the doctrine fails to analyze whether the possibility of a patent is necessary to encourage the innovation in a particular instance.²⁶⁴ Granting patents that do not incentivize innovation is

258. See Kitch, *supra* note 80, at 266 ("That the patent system achieves [its] ends by awarding exclusive and publicly recorded ownership" of a patent).

259. See *id.*

260. For further discussion of patents being used as signals, see Anderson, *supra* note 87, at 1592.

261. See Dam, *supra* note 247, at 247.

262. See *id.*

263. See *supra* Part II.B.

264. See David S. Olson, *Taking the Utilitarian Basis for Patent Law Seriously: The Case for Restricting Patentable Subject Matter*, 82 TEMP. L. REV. 181, 191-97 (2009) (leveling this critique against the incentive-to-invent theory).

socially costly because the patent restricts others from using the innovation.²⁶⁵ That cost is generally thought to be acceptable when a patent is responsible for incentivizing the invention, but is a burden when the invention would have happened without the patent.²⁶⁶ Yet in the case of surgical method patents, the cost to society of granting a patent (even a patent that does not incentivize invention) is much, much smaller because the patents are not enforceable against the likely infringers. Therefore, whatever private value the patent has (i.e., as a signal) more than offsets the minimal social cost.

Disclosure theory, unlike the other two theories of patent law, does not depend on the existence of the right to exclude. The theory holds that an inventor is only willing to publicly disclose his invention if, in exchange, he receives a patent right.²⁶⁷ Theorists assume the exchanged patent rights are synonymous with exclusive rights, but they need not be.²⁶⁸ Inventors may obtain patents for a number of reasons such as marketing, prestige, and pride.²⁶⁹ Disclosure theory does not care *why* the patentee is willing to make the exchange, but rather the theory concerns itself with *how* the exchange occurs. As long as information about how the invention works is disclosed to the public, disclosure theorists are satisfied that granting a patent is beneficial.

Disclosure theorists have thought about the proper scope of the patent quid pro quo. These theorists have written about the precise thing that the public is acquiring in the exchange—disclosure—and have lobbed various critiques at the current disclosure regime and called for reform.²⁷⁰ Those calls for enablement reform have particular relevance in the case of patents acquired for signaling value (less so for patents acquired for personhood interests), as the following Section will address.

265. *Id.* at 195-97; see also William Hubbard, *The Debilitating Effect of Exclusive Rights: Patents and Productive Inefficiency*, 66 FLA. L. REV. 2045, 2073-77 (2014).

266. Olson, *supra* note 264, at 189.

267. See *supra* notes 255-57 and accompanying text.

268. See *supra* notes 75-77 and accompanying text.

269. See *supra* notes 90-91 and accompanying text.

270. See generally Anderson, *supra* note 87; Sean B. Seymore, *Reinvention*, 92 NOTRE DAME L. REV. 1031 (2017).

The existence of patents that owe their existence to personhood or signaling incentives should make us question the assumptions of traditional patent theories. It might suggest the need for a fourth patent theory, one in which the patent does not encourage invention in the first place, but rather is a benefit that is acquired *after* the invention is made. The extant theories of patent law all place the patent as the reason for inventing or at least the reason for disclosing. In the incentive-to-invent and prospect theories, the inventor engages in pursuit of his inventive idea because the patent reward is available. In the disclosure theory, the invention is disclosed in exchange for a patent.²⁷¹

However, the scenario when a patent is granted for an invention that was created without the incentives of patenting is thought to be socially costly.²⁷² So, too, is a patent that issues for an invention that would have been fully disclosed in the absence of patent protection. Why grant a patent, it is thought, when we already have the invention and/or the disclosure? This Article suggests that there are patents that are privately valuable that do not have the typically assumed social costs: exclusive rights. That scenario has not been pursued in the literature.

Therefore, while traditional scholarship suggests that we should not grant patents that do not induce the invention or that do not induce disclosure, the findings here suggest that there is a place for such patents. These patents are almost socially costless (i.e., they do not restrict anyone from using the invention).²⁷³ Moreover, these patents have some social benefits; they increase the storehouse of knowledge, signal innovative activity, and are a reward for accomplishing the invention.

B. Doctrinal

The existence of personhood and signaling patents also has numerous doctrinal implications. This Section will focus on two such

271. See *supra* note 38 and accompanying text.

272. See Olson, *supra* note 264, at 195-97.

273. Personhood and signaling patents do have costs, of course. Examining patents is not costless. However, those costs are borne by the private patentee, not by the government. See *supra* text accompanying notes 265-66 for more on the potential social costs of signaling patents.

implications: one that involves a shift in the USPTO's review of patents, and one that involves the fundamental reshaping of the patent system as a whole. For prudential reasons, I support the smaller, incremental doctrinal shift while rejecting creating a new patent-like system. However, perhaps we should rethink why we have the system at all and whether some other property rights system should be created for inventors who do not value the rights to exclude of a patent.

1. Operability Doctrine

Courts view the patent system to be a quid pro quo between the inventor and the public.²⁷⁴ In exchange for exclusionary rights, the inventor informs the public about how to make and use the invention.²⁷⁵ As detailed in Part III.A, this view of the patent system can still work in the absence of exclusive rights. As long as the inventor is getting something that he deems sufficiently valuable in exchange for knowledge of his invention, the public should be satisfied with the exchange.

Enablement is the doctrine that polices the sufficiency of a patent's disclosure. Only patentees who provide sufficient details about the invention are eligible for a patent.²⁷⁶ Enablement requires that a patent disclosure enable any person skilled in the art of the patented technology to practice the patent without "undue experimentation."²⁷⁷ Related to enablement is the doctrine that the patent must be useful.²⁷⁸ Together, the enablement doctrine and the doctrine of

274. See Holbrook, *supra* note 65, at 125 ("One fundamental premise of patent law, according to the courts, is that the system is a quid pro quo between the state and the inventor; in exchange for disclosing his invention in the patent itself, the inventor is granted the right to exclude others from practicing the invention for a limited time."); see also Duffy, *supra* note 65, at 1361 (stating that the quid pro quo of the patent system has been confused by courts during the last fifty years).

275. See Holbrook, *supra* note 65, at 125.

276. 35 U.S.C. § 112(a) (2012).

277. See, e.g., *Cedarapids, Inc. v. Nordberg, Inc.*, No. 95-1529, 1997 WL 452801, at *3 (Fed. Cir. Aug. 11, 1997) (finding that if "some experimentation is necessary [that] does not preclude enablement; all that is required is that the amount of experimentation 'must not be unduly extensive'" (quoting *Atlas Powder Co. v. E.I. DuPont De Nemours & Co.*, 750 F.2d 1569, 1576 (Fed. Cir. 1984))).

278. See 35 U.S.C. § 101; see also Risch, *supra* note 42, at 57.

utility ensure that a patentee is giving the public something of value in the patent bargain.²⁷⁹

Also within the utility doctrine is a requirement that a patent work as it claims.²⁸⁰ This “operability” doctrine, however, is not a significant hurdle to patentability.²⁸¹ Patent applications enjoy a presumption of operability.²⁸² Indeed, for a patent examiner to reject a patent on operability grounds, he must affirmatively introduce evidence that the invention will *not* work as described.²⁸³ This heavy burden means that in practice, most patents are never challenged on operability grounds.²⁸⁴

Generally, the assumption that a patent works as described is not problematic.²⁸⁵ If a patent is granted to an invention that does not work, the thinking goes, the existence of that erroneously granted patent does no harm to the public.²⁸⁶ This is because a non-functioning patent presumably has no value on the market; therefore, there is no social cost in granting a patent since there is no possibility that anyone will be excluded from an inventive area that does not work. In a similar vein, there is no risk of those bad patents being involved in costly licensing deals because no one will pay money for an invention that does not work.

279. See Sean B. Seymore, *Making Patents Useful*, 98 MINN. L. REV. 1046, 1051-52 (2014) (noting that the utility requirement ensures that patents benefit the public).

280. See *Mitchell v. Tilghman*, 86 U.S. (19 Wall.) 287, 367-68 (1873).

281. See Seymore, *supra* note 279, at 1052 (noting that operability “is de minimis because an invention is inoperable only if it is ‘totally incapable of achieving a useful result’” (quoting *Brooktree Corp. v. Advanced Micro Devices, Inc.*, 977 F.2d 1555, 1571 (Fed. Cir. 1992))).

282. *In re Cortright*, 165 F.3d 1353, 1357 (Fed. Cir. 1999); see also Doug Lichtman & Mark A. Lemley, *Rethinking Patent Law’s Presumption of Validity*, 60 STAN. L. REV. 45, 53-56 (2007) (exploring limitations on the extent and quality of USPTO review); Sean B. Seymore, *Patently Impossible*, 64 VAND. L. REV. 1491, 1500-02 (2011) (stating the two-step test used by the USPTO for operability).

283. See *In re Swartz*, 232 F.3d 862, 864 (Fed. Cir. 2000) (using the modern analytical approach to utility); Seymore, *supra* note 282, at 1501-02 (“[T]he examiner must establish a prima facie case of unpatentability by coming forward with factual evidence of noncredibility.”).

284. See, e.g., U.S. PATENT & TRADEMARK OFFICE, *supra* note 61, § 2107.01 (“Situations where an invention is found to be ‘inoperative’ and therefore lacking in utility are rare, and rejections maintained solely on this ground by a federal court even rarer.”).

285. See Seymore, *supra* note 279, at 1050-51 (arguing that a heightened utility requirement (which includes operability) has negative implications for patent law).

286. See MERGES & DUFFY, *supra* note 107, at 212-13 (suggesting that the lax utility requirement allows the screening out of clearly inoperable inventions at low cost, and leaves the market to winnow out the rest).

However, operability should have an expanded role for patents acquired primarily for their signaling value. If surgeons are acquiring surgical method patents to signal something to the broader community about their technical skill, their innovativeness, or their investment potential, whether that inventive surgical method is viable is very important. Patents can be signals only to the extent that they are better indicators of some underlying, difficult-to-assess value than other signals.²⁸⁷ Therefore, if patents are to serve a purely signaling function, we ought to care that the signal they convey is accurate.

To improve operability, I suggest that the USPTO loosen the presumption that patent applications work as described.²⁸⁸ However, I would suggest making this procedural change to examination only for those patents that have a demonstrably high level of nonexcludable patents.²⁸⁹ Eliminating the presumption of operability will enable patent examiners to file initial rejections for patents they suspect to be inoperable, unless the patent applicant can produce some affirmative evidence of the patent's operability.²⁹⁰

This procedural change to patent examination acknowledges the appeal of patents that have limited ability to exclude. Patentees that seek these sorts of patents do so with an eye towards the signaling value that a patent possesses. These patentees desire the status that a government-issued patent confers on its owner. However, the targets of these signals may differ in sophistication. For example, the sophistication of a venture capital firm that relies

287. See Long, *supra* note 1, at 679 (arguing that patents may “convey credible information at low cost to observers and reduce informational asymmetries between firms and investors”).

288. This would change the approach to operability, announced in *In re Brana*, 51 F.3d 1560 (Fed. Cir. 1995) (discussing the strong presumption in favor of a patentee's claims of operability and utility).

289. Aside from surgical method patents, other areas of patenting that may have large amounts of signaling value are mass consumer goods. See Anderson, *supra* note 87, at 1593-94 (highlighting the use of patents as marketing tools in the automotive industry); Sukhatme & Bloche, *supra* note 87, at 975-76 (arguing that there is a value to consumer products in stating that the item is “patent-protected”).

290. For a suggestion of similar doctrinal change (albeit for very different reasons), see generally Jorge L. Contreras, *Technical Standards, Standards-Setting Organizations and Intellectual Property: A Survey of the Literature (With an Emphasis on Empirical Approaches)*, in 2 RESEARCH HANDBOOK ON THE ECONOMICS OF INTELLECTUAL PROPERTY LAW (Peter S. Menell & David Schwartz eds., Edward Elgar 2019); Joshua D. Sarnoff, *The Patent System and Climate Change*, 16 VA. J.L. & TECH. 301 (2011).

on patent counts as a proxy for the inventiveness of a company in which they are considering investing differs drastically from the sophistication of a patient who selects a doctor because he has patents hanging on his office wall. Eliminating the presumption of patentability in areas that have a high signaling value to consumers would be one way to reduce the use of the USPTO as a means of false advertising.²⁹¹

Of course, one might argue that this proposed change to the presumption of operability will raise the cost of acquiring a patent, as proving an invention's operability can be quite costly in some cases.²⁹² In areas in which the signaling value of patents is low, there is no need to closely examine the operability of inventions. In the surgical method field, for instance, this procedural change to patent examination procedures is likely to introduce substantial new costs to patenting. However, those costs will benefit the public by ensuring patents obtained primarily for their signaling value are accurately conveying the efficacy of their inventions to the public.

New surgical procedures are not subject to the heavy regulatory schemes that new prescription drugs are,²⁹³ and there is no regulatory agency that supervises new surgical techniques like there is for new drugs or medical devices.²⁹⁴ New surgical procedures “are often launched ... on the basis of clinical theories ... [or] weak human [studies] from which no causal inferences should be made.”²⁹⁵ Thus,

291. Of course, one might ask what the specific areas are where the signaling value of patents is high. This Article has identified one such area (surgical method patents), but further research is needed to identify other areas with this same quality.

292. See *In re Citron*, 325 F.2d 248, 251-53 (C.C.P.A. 1963) (rejecting a patent for a cancer treatment, finding the evidence—which included analytical data and a working example that demonstrated the effectiveness of the treatment in rats and humans—insufficient to support the patient's operability claims); see also Seymore, *supra* note 279, at 1055-57 (discussing *In re Citron* as an illustration of the “heavy burden” that therapeutic inventions had to overcome under the court's [mid-twentieth century] operability jurisprudence).

293. See C M Ashton et al., *Ethics and Methods in Surgical Trials*, 35 J. MED. ETHICS 579, 579-80 (2009) (making the case for rigorous randomized trials of new invasive therapeutic procedures).

294. The U.S. Food & Drug Administration oversees approval of new prescription drugs and new medical devices. *Learn About Drug and Device Approvals*, U.S. FOOD & DRUG ADMIN. (Jun. 18, 2018), <https://www.fda.gov/patients/learn-about-drug-and-device-approvals> [<https://perma.cc/L8RK-MKFK>].

295. Ashton et al., *supra* note 293, at 579 (“Conversely, new invasive therapeutic procedures are often launched and widely disseminated on the basis of clinical theories emerging

if one desires a patent for a new surgical method, the USPTO would be wise to demand more proof of the procedure's efficacy. If issued patents are being used to signal something about the patented method's efficacy or safety, the USPTO ought to know something about those things. This change would not transform the USPTO into a regulatory agency, à la the FDA, however. It would merely place on the patent applicant the burden of proving that the method works in the way in which they claim. In the absence of a true regulatory agency demanding definitive proof of the operability of new surgical techniques,²⁹⁶ the USPTO should alter the presumption of operability for signaling patents, such as surgical method patents.

2. *Radical Changes to the Patent System*

A more radical change to the current patent system would be to create a separate patent-like grant that lacks any rights to exclude. In this way, traditional patents (those with a right to exclude) could be separated from signaling and personhood patents (those *without* the right to exclude). Viewing patents as signals rather than as exclusive rights is a radical rethinking of why we have the patent system in the first place.²⁹⁷ So, too, for patents obtained for their personhood interest. Some may argue that instead of tweaking the existing patent system to better accommodate these patents, we should design a system that is explicitly about signaling or personhood.²⁹⁸

from laboratory research, clinicopathological correlations and weak human study designs from which no causal inferences should be made, with no regulatory body in charge of predis-semination oversight.”).

296. *See id.* at 579-80.

297. *See Long, supra* note 1, at 625-27.

298. For a fuller discussion about alternatives to the patent system, see Stephanie Plamondon Bair & Laura G. Pedraza-Fariña, *Anti-Innovation Norms*, 112 NW. U. L. REV. 1069, 1131-35 (2018). Others have called for alternatives to the patent system. For example, Ted Sichelman has called for a new “commercialization patent” in order to encourage the commercialization of patented technologies. Sichelman, *supra* note 81, at 400-10. According to Sichelman’s proposal, one way in which commercialization patents would differ from traditional patents is that they would only last for five to eight years, *id.* at 408, and they would have both negative rights to exclude and positive rights to commercialize the invention, *id.* at 406-07.

A new regime that allows inventors the signaling effects of the patent system but does not have the same exclusionary rights of the patent system has some intuitive appeal. After all, inventors may prefer a system that is explicitly about signaling because such a system furthers the interests of someone wishing to obtain the nonpecuniary benefits of the patent system. Such signaling patents would likely be less costly, as examination of unenforceable patent-like rights would require fewer resources. It also would be cleaner to apply this higher-operability standard with a new regime rather than trying to force it, somewhat uncomfortably, into the traditional patent system.

Ultimately, however, Congress is unlikely to adopt an alternative to the patent system that specifically caters to those desirous to signal their inventiveness to investors.²⁹⁹ Similarly, Congress is highly unlikely to adopt a system that caters to surgeons seeking to further their persona via property rights. There are good reasons, beyond not wanting to disrupt the current patent system, for Congress's hesitation in creating an alternative system. Such a signaling patent system—a system in which all signaling patents lack the right to exclude—would effectively be a regime regulating false advertising. Because signaling patents would do no more than signal something about the patentee to the world, a system that regulates issuance of such patents is regulating the truthfulness of the signal.

However, there is already a system for regulating false advertising.³⁰⁰ The Lanham Act, enacted in 1946 and amended several times since, establishes a private cause of action for false advertising.³⁰¹ Congress confirmed by amendment that the Lanham Act bars both false statements about an advertiser's own goods or services and

299. *But see* Sichelman, *supra* note 81, at 395-96 ("Patent scholars have generally been opposed to proposals for new forms of IP rights for a variety of reasons: they are costly and difficult to implement; needlessly create complexity; encourage legislative rent-seeking; and provide an additional layer of rights when most in the field believe that a contraction of rights is in order.").

300. *See, e.g.*, Rebecca Tushnet, *Running the Gamut from A to B: Federal Trademark and False Advertising Law*, 159 U. PA. L. REV. 1305, 1309-13 (2011) (presenting a brief history of the Lanham Act, the principal way that false advertising is regulated).

301. Lanham Act, 15 U.S.C. §§ 1051-1127 (2012). The Lanham Act also establishes federal trademark law.

false statements about another's goods or services.³⁰² Introducing a wholly new scheme to regulate false claims (or false patents, as the case may be) would only confuse the law.³⁰³ Ultimately, I am dubious that a new regulatory regime is needed for signaling patents or personhood patents. Much of the work to accommodate such patents exists in extant, though underused, doctrines.³⁰⁴

Others may take a different line of attack on the current patent system in light of this Article's findings. If patents are meant to encourage inventors by offering the right to exclude others, then there should not be patents without that right. Some commentators have even suggested that offering surgical method patents while disallowing enforcement amounts to a taking of the property rights acquired in the patent.³⁰⁵ Therefore, surgical method patents ought not to issue in the first place.³⁰⁶ Katherine Strandburg has made a softer version of this same argument. Strandburg has suggested that surgeon-inventors' underuse of the patent system is actually a good thing for the medical community.³⁰⁷ Because surgeons do not need the patent system to motivate the invention of novel surgical procedures, there is no need for the patent system to offer a right to exclude in this area.³⁰⁸ Thus, to Strandburg, § 287 makes sense: offering *enforceable* patents in an area that has other mechanisms

302. 15 U.S.C. § 1125(a)(1)(A)-(B).

303. This is not to suggest that false advertising law does not already have its critics. See Tushnet, *supra* note 300, at 1374-82 (listing the many faults of modern false advertising law, with particular attention paid to the standing doctrine's effect on the law).

304. For further discussion of one of the underused doctrines that could be employed towards policing signaling and personhood patents, see *supra* Section III.B.1.

305. See Scott D. Anderson, Comment, *A Right Without a Remedy: The Unenforceable Medical Procedure Patent*, 3 MARQ. INTELL. PROP. L. REV. 117, 141-44 (1999) (arguing that § 287(c) constitutes a taking).

306. See Leisa Talbert Peschel, *Revisiting the Compromise of 35 U.S.C. § 287(c)*, 16 TEX. INTELL. PROP. L.J. 299, 323 (2008) ("Thus, on balance, removing medical and surgical procedures from the scope of patentable subject matter provides the most appropriate solution to this controversy.").

307. See Katherine J. Strandburg, *Derogatory to Professional Character? The Evolution of Physician Anti-Patenting Norms*, in CREATIVITY WITHOUT LAW: CHALLENGING THE ASSUMPTIONS OF INTELLECTUAL PROPERTY 63, 79 (Kate Darling & Aaron Perzanowski eds., 2017) (hypothesizing that the medical profession is opposed to surgical method patents because the profession wants to preserve the norm of sharing).

308. See *id.* at 79-80. As this Article has demonstrated, sometimes those motivations may come from within the existing patent system. Thus, to the extent that Strandburg and I disagree, our disagreement is confined to whether the patent system ought to award patents that are nonexcludable: I would say yes, I suspect Strandburg might say no.

of incentivizing invention is the sort of thing Congress should be doing more often.³⁰⁹

I tend to agree with Strandburg. However, I would add that although *some* surgeon-inventors do not rely on the patent system for motivation to invent, others do.³¹⁰ Moreover, that use of the patent system has added benefits: principally, the disclosure that comes from the patent system.³¹¹ You might say that Strandburg's position is that of an incentive-to-invent theorist: if the invention is already occurring, there is no reason (from society's perspective) to offer a patent. Whereas my position comes from a disclosure theorist's perspective: the patent is an enticement for the public disclosure of how the invention operates.³¹² Ultimately, our two views are not conflicting but complementary. While Strandburg points out that § 287(c) is a net positive for society, I point out that where surgeon-inventors value the signaling effects of a patent, they still seek patents despite their limitations and costs of patenting. I do not think inventors who want to patent their surgical method inventions should be denied the opportunity to do so. They have their reasons for voluntarily disclosing their inventions to the public; society should not stand in the way.

CONCLUSION

All three major theories of the patent system presuppose that inventors desire a patent's right to exclude. However, in the field of surgical methods, numerous inventors obtain patents that do not have any realistic right to exclude. This Article has advanced two theories for why patentees obtain these patents: signaling theory and personhood theory. First, under signaling theory, inventors obtain nonexcludable patents to send some signal to a third party about themselves or the surgical method. The patent could signal

309. *Id.* at 81 (suggesting that other types of patents, such as tax method, business method, and software patents, are good areas to study whether a § 278-like exemption would be beneficial).

310. *See supra* notes 55-59 and text accompanying.

311. *See supra* notes 60-65 and text accompanying.

312. Although I identify more with the incentive-to-invent theorists, I recognize that disclosure theory has some explanatory power that incentive-to-invent does not, and vice versa.

that the inventor is an innovator and that signal may lead to lucrative opportunities in which the patentee is able to monetize the patent despite the patent's inability to exclude. Alternatively, the patent may signal to the inventor's employer that the invention is noteworthy, which may in turn lead to tenure or some other professional goal. Alternatively still, the patent may attract clients for the surgeon's novel technique.

Second, personhood theory provides alternative answers as to why an inventor would purposively obtain a nonexcludable patent. This theory proposes that human flourishing is the goal behind property in general.³¹³ Patents, even unenforceable ones, may encourage the flourishing of personality that is tied up in inventiveness. Personhood theorists assert that property rights are established so that humans can allow their personas to be fully realized. For surgeons, often their persona is centered on the idea that they are someone who creates new and innovative surgical techniques. Thus, while some of these patents are not enforceable against infringers (and therefore assumed to be worthless), the patents' value to their inventors is not measurable by the ability to exclude others.

The existence of signaling patents (patents that are only obtained for their ability to signal a characteristic about the invention or inventor) and personhood patents (patents that are only obtained for furthering their inventor's persona) upsets nearly all extant theories of patent law. Future research may provide further insight into why inventors value such signaling or personhood patents. However, the very existence of such patents destabilizes the exclusive rights theories that have traditionally dominated patent scholarship.

313. See HEGEL, *supra* note 30, at 52; Radin, *supra* note 31, at 957 (proposing a personhood theory of property, wherein some control over resources in a person's external environment is necessary to proper self-development and noting how such a theory is often implicit in court opinions and commentaries, yet ignored in legal thought).