

Of Fences and Definite Patent Boundaries

Deepa Varadarajan*

ABSTRACT

*Patent claims are supposed to mark the boundaries of a patent clearly so that competitors and follow-on innovators can avoid infringement. But commentators routinely lament the failure of patent claims to adequately perform this notice function. In numerous calls for patent reform, courts and scholars have contrasted the indeterminacy of patent claims with the clarity of real property boundaries. The Supreme Court recently echoed this sentiment in *Nautilus v. Biosig Instruments*. In *Nautilus*, the Court heightened the patent requirement of claim definiteness and reversed Federal Circuit precedent, which had allowed many ambiguous claims to survive invalidity challenges.*

This Article analyzes how the oft-invoked contrast between ambiguous patent claims and clear property boundaries (e.g., “fences”) bears on two controversial issues in patent scholarship: (1) the problem of uncertain claim scope and (2) the role of “property-talk”—using traditional property law as metaphor, rhetorical device, or doctrinal guide—in patent law. Many intellectual property scholars view property-talk suspiciously, because it usually supports strengthening patent holders’ rights at the expense of competitors and follow-on innovators.

This Article’s primary contribution is to complicate the prevailing view of property-talk in patent law as uniformly favoring patent holders. This Article focuses on the claim uncertainty problem and recent changes to patent law’s definiteness requirement. In this context, property-talk—specifically, the metaphor of clear, fixed, and determinate real property boundaries—supports requiring patentees to

* Assistant Professor of Legal Studies, Department of Risk Management and Insurance, J. Mack Robinson College of Business, Georgia State University. For helpful comments and suggestions, I thank Nestor Davidson, Shubha Ghosh, Cynthia Ho, Nirej Sekhon, Peter Yu, and the participants at the 2015 Association for Law, Property & Society Conference, the 2015 Law & Society Conference, and the 2015 Conference of Asian Pacific American Law Faculty. All errors are my own.

draft clearer claims and provide better notice to competitors and follow-on innovators about the boundaries of a patent.

TABLE OF CONTENTS

I.	INTRODUCTION	564
II.	THE UNCERTAINTY AND UNPREDICTABILITY OF PATENT SCOPE.....	567
	A. <i>The Outsized Role of Patent Claims</i>	568
	B. <i>The Historical Shift to Peripheral Claiming: Using Words to Mark the Outer Boundaries of Invention</i>	569
	C. <i>Claim Construction and Various Causes of Patent Uncertainty</i>	571
III.	THE CONTROVERSIAL ROLE OF “PROPERTY-TALK” IN PATENT LAW	573
	A. <i>The Outsized Influence of “Property Absolutism” in IP</i> .	576
	B. <i>The Intersection of Property-Talk and the Claim Uncertainty Problem: Fences and Definite Patent Boundaries</i>	578
IV.	PATENT LAW’S SHIFTING DEFINITENESS REQUIREMENT AND THE PUSH FOR CLEARER CLAIMS	580
	A. <i>Claims Triggering Definiteness Concerns</i>	582
	1. Terms of Degree and Subjective Terms.....	582
	2. Terms with Multiple Plausible Constructions	583
	3. “Means-Plus-Function” Terms and Other Functional Claiming Issues	584
	B. <i>Policing Deliberate Ambiguity</i>	586
	C. <i>The Federal Circuit’s “Insoluble Ambiguity” Standard</i> .	587
	D. <i>Nautilus’s Insistence on “Reasonably Certainty”</i>	589
V.	CONCLUSION	594

I. INTRODUCTION

A patent is “a property right,” and “like any property right, its boundaries should be clear.”¹ Courts and commentators increasingly invoke this line (or some variation) when pushing for patent reforms that aim to lessen patent uncertainty.² Recently, the Supreme Court

1. *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2124 (2014) (quoting *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 730 (2002)).

2. *See id.* (“[A]n ideal patent system features rights that are defined as clearly as the fence around a piece of land.”); *see also* JAMES BESSEN & MICHAEL J. MEURER, PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK 46 (2008).

recited this common refrain in *Nautilus, Inc. v. Biosig Instruments, Inc.*,³ a decision that heightened the requirement of claim definiteness. This Article unpacks this standard mantra and explains how it bears on two problematic issues in patent law and scholarship: (1) the problem of uncertain claim scope and (2) the role of “property-talk” in patent law.

On the one hand, a significant body of literature critiques the ambiguity of patent claims.⁴ Claims are the all-important sentences that end a patent document. They delineate the limits of the patentee’s right to exclude and notify the interested public about the boundaries of a patent. Despite their outsized role in patent law, the scope of claims is often uncertain. In patent disputes, parties often contest the meaning of ambiguous claim terms, and it is hard to predict how courts will interpret them.

On the other hand, a significant body of literature critiques “property-talk”—using traditional property law as metaphor, rhetorical device, or doctrinal guide—in patent law (and intellectual property law generally).⁵ A number of intellectual property (IP) scholars view property-talk suspiciously because it often works to the advantage of IP owners at the expense of the public. Courts and commentators have often invoked property-talk to support expansive rights for intellectual property owners.⁶

Recent debates over claim uncertainty, however, muddy this one-sided picture of property-talk in patent law. This Article’s primary contribution is to highlight another side of property-talk in IP by demonstrating that it does not uniformly favor IP owners at the expense of competitors and follow-on innovators. This Article focuses on recent developments in patent law’s definiteness requirement, where one kind of property-talk—the metaphor of clear, fixed, and determinate real property boundaries (“fences”)—pushes in the opposite direction. Specifically, courts and commentators invoke the ideal of fences and clear, tangible property boundaries to support strengthening patentees’ obligations to draft clearer claims.

3. See *Nautilus*, 134 S. Ct. at 2120.

4. See, e.g., BESSEN & MEURER, *supra* note 2, at 46; Dan L. Burk & Mark A. Lemley, *Fence Posts or Sign Posts? Rethinking Patent Claim Construction*, 157 U. PA. L. REV. 1743, 1744 (2009) (arguing that the modern claiming system “isn’t working”); Tun-Jen Chiang, *Forcing Patent Claims*, 113 MICH. L. REV. 513, 515 (2015) (assessing the various critiques of claim ambiguity).

5. See e.g., Mark Lemley, *Property, Intellectual Property and Free Riding*, 83 TEX. L. REV. 1031, 1032 (2005).

6. See BESSEN & MEURER, *supra* note 2, at 29 (“[S]cholars critical of the recent expansion of intellectual property rights place part of the blame for the expansion on the rhetoric of property.”); Michael A. Carrier, *Cabining Intellectual Property Through a Property Paradigm*, 54 DUKE L. J., 1, 47–48 (2004) (describing this critique); *infra* Part III(A).

Patent law's definiteness requirement stems from statutory language insisting the patent specification "shall conclude with one or more claims *particularly pointing out and distinctly claiming* the subject matter which the inventor . . . regards as the invention."⁷ The definiteness requirement is the "statute's clarity and precision demand."⁸ A lack of claim definiteness (or indefiniteness) is grounds for rejection by the patent office, or, for an issued patent, a court's determination of invalidity.⁹

Until recently, the definiteness requirement was fairly peripheral to debates about enhancing the predictability of patent scope. In 2014, however, the Supreme Court turned its increasingly patent-curious eye¹⁰ to the definiteness requirement. In *Nautilus*, the Court announced a new and heightened requirement for definiteness.¹¹ The Court rejected the Federal Circuit's formulation that claims need only be "amenable to [claim] construction" or not "insolubly ambiguous."¹² Instead, the Court held that claims must inform those skilled in the art about the scope of the invention "with reasonable certainty."¹³ As the *Nautilus* opinion and the scholarly critiques of claim uncertainty demonstrate, the metaphor of clear, fixed, and determinate tangible property boundaries can provide rhetorical and conceptual support for strengthening patentees' obligations to draft unambiguous claims and thus provide better notice to competitors and follow-on innovators regarding the boundaries of a patent.

Part II of this Article reviews the patent uncertainty problem, discussing the role of patent claims, the historical shift to peripheral claiming, and various causes of uncertain claim scope. Part III explores scholarly debates over the use of tangible property law and rhetoric in understanding intellectual property law and the controversial role of property-talk in patent law. Part IV examines an

7. 35 U.S.C. § 112(b) (2012) (emphasis added).

8. *Nautilus*, 134 S. Ct. at 2122.

9. See e.g., *id.*; Ex Parte Miyazaki, 2008 WL 5105055 (Bd. Pat. App. & Interf.) at 4–5.

10. A number of commentators have noted the Supreme Court's recent and significant interest in patent law. See, e.g., Timothy R. Holbrook, *Explaining the Supreme Court's Interest in Patent Law*, 3 IP THEORY 63 (2013) ("Starting in around 2000, the Supreme Court became active, if not even hyperactive, in patent law."); Peter Lee, *Patent Law and the Two Cultures*, 120 YALE L.J. 2, 44–45 (2010) (highlighting the Supreme Court's systematic favoring of "holistic standards over bright-line, formalistic rules" in the patent context); see also Lisa Larrimore Ouellette et al., *Supreme Court Patent Cases*, WRITTEN DESCRIPTION, <http://writtendescription.blogspot.com/p/patents-scotus.html> [perma.cc/4RCQ-7V4R] (listing and summarizing Supreme Court cases concerning patent law since 1952).

11. See *Nautilus*, 134 S. Ct. at 2122.

12. *Id.* at 2124.

13. *Id.*

unappreciated consequence of property-talk in patent law—how the accompanying metaphor of clear, fixed, and determinate tangible property boundaries is impacting debates over claim uncertainty and the evolving definiteness requirement.

II. THE UNCERTAINTY AND UNPREDICTABILITY OF PATENT SCOPE

The American patent system is primarily concerned with stimulating innovation.¹⁴ By allowing inventors to exclude others from imitating their technological advances for limited periods of time, patents are meant to allay inventors' fears of being unable to recoup their costs.¹⁵ Consequently, society benefits from new inventions that would otherwise not be created. To advance this seemingly straightforward goal, a complex body of law has developed.

By statute, to qualify for patent protection, an invention must fall within the definition of protectable subject matter, be useful, novel (different from the prior art), and nonobvious (more than trivially different from the prior art).¹⁶ In addition, the patentee must meet certain disclosure requirements (enablement, written description, and definiteness) meant to apprise the relevant public about the boundaries of the invention and how to replicate it.¹⁷ These statutory requirements for obtaining a patent reflect the uneasy nature of the patent bargain; patents may stimulate innovation, but they also impose certain costs on society.¹⁸ Thus, patent requirements attempt to balance the interests of originators with those of future innovators, who can learn from and build upon patented technologies.¹⁹

However, subsequent innovators can only be expected to avoid intruding on existing patent rights if the boundaries of those rights are reasonably clear. Herein lies a problem because patent scope is

14. This goal is reflected in the Constitution's description of Congress's power to enact patent laws "[t]o promote the Progress of Science and the Useful Arts." U.S. CONST. art. 1, § 8, cl. 8.

15. See, e.g., WILLIAM M. LANDES & RICHARD A. POSNER, *THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY LAW* 74–76 (2003); Lemley, *supra* note 5, at 1053–54 (“[T]he basic economic justification for intellectual property law comes from . . . the risk that creators will not make enough money in a market economy to cover their costs. . .”).

16. 35 U.S.C. §§ 101–103 (2012).

17. 35 U.S.C. § 112 (2012).

18. That is, by preventing others from accessing and using the information, intellectual property rights lead to “static inefficiencies”—“the deadweight loss of monopoly pricing and the resulting limitations of dissemination.” See ROBERT P. MERGES, PETER S. MENELL, AND MARK A. LEMLEY, *INTELLECTUAL PROPERTY IN THE NEW TECHNOLOGICAL AGE* 16 (6th ed. 2012). Intellectual property rights also lead to “dynamic inefficiencies,” because “they interfere with the ability of other creators to work.” See Lemley, *supra* note 5, at 1058.

19. See, e.g., Mark A. Lemley, *The Economics of Improvement in Intellectual Property Law*, 75 TEX. L. REV. 989, 991 (1997).

notoriously uncertain. For many users and improvers of patented technologies, it is difficult to predict how courts will interpret patent claims in advance of litigation.²⁰ The Sections that follow briefly describe the pivotal role of patent claims in patent law, the historical evolution of claiming, and various causes of claim scope uncertainty in modern times.

A. *The Outsized Role of Patent Claims*

In popular discourse, the “invention” is a tangible thing: the Wright brothers’ plane, Thomas Edison’s light bulb, Steve Jobs’ iPad. In patent law, the invention embodied in a patent is not a single, tangible thing made by the inventor. Instead, a patent owner’s right to exclude corresponds to the patent’s claims—highly stylized sentences that come at the end of the patent document. The claim language, rather than what the inventor has actually built, delineates the scope of the patentee’s right to prevent others from making, using, selling, or importing a patented technology.²¹

The two most significant parts of the patent document are the written description of the invention (usually called the “specification”) and the claims. These two parts have different functions.²² The specification describes examples of the invention in great technical detail so others in the field can replicate it.²³ By contrast, the claims try to distill the invention’s key inventive features that go beyond the specific examples described in the specification. For instance, even if the actual airplane the Wright brothers created and described in their specification was made with cloth-covered wings and a certain type of wood, the patent claims cover a broader legal scope than this specific instantiation of their invention.²⁴

Since the claims correspond to the protected invention, patent infringement analysis focuses on claim language rather than the specific embodiments described in the specification or what the patentee has actually built. To infringe a patent, the accused product or process must contain each and every element identified in a patent claim (or the equivalent).²⁵ As a result, an accused product can

20. See *supra* note 4.

21. 35 U.S.C. § 271 (2012).

22. While, the term “specification” formally includes both the written description and the claims, the term “specification” is commonly used to refer only to the written description part of the patent. See CRAIG ALLEN NARD, *THE LAW OF PATENTS* 40 (2d ed. 2011).

23. 35 U.S.C. § 112(a) (2012).

24. See, e.g., Tun-Jen Chiang & Lawrence B. Solum, *The Interpretation-Construction Distinction in Patent Law*, 123 *YALE L.J.* 530, 539–40 (2013).

25. See *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17 (1997).

“literally infringe”—fall within the literal language of a claim—even if the defendant is selling a different product than the inventor or if the defendant did not rely on the patented invention in creating the accused device. Notably, patent law does not recognize independent creation as an infringement defense.²⁶ And even where a product or process does not literally infringe the claims of a patent, the doctrine of equivalents can expand the reach of a patent to encompass insubstantial differences.²⁷ In this way, patent claims “may reach new and unanticipated inventions made after the patent issues.”²⁸

B. The Historical Shift to Peripheral Claiming: Using Words to Mark the Outer Boundaries of Invention

Claims did not always play such a fundamental role in patent law. Patent law’s modern focus on claims—specifically, “peripheral claiming,” whereby patentees mark the outer bounds of their inventions by “listing necessary and sufficient characteristics”²⁹—is of relatively recent vintage. Early American patent law did not require claiming by patent applicants. The earliest national patent law, enacted in 1790, required only a written description of the invention.³⁰ Thus, most early patents did not include claims, and courts assessed validity and infringement based on the written description.³¹

The absence of claims, however, made it difficult for courts to distinguish the applicant’s contribution from the prior art.³² As the

26. See Clarissa Long, *Information Costs in Patent and Copyright*, 90 VA. L. REV. 465, 525–33 (2004).

27. The doctrine of equivalents originated to provide patentees with relief against those imitators who would avoid literal infringement by changing an insubstantial aspect of the invention. In recent years, a number of scholars have noted the doctrine’s decreased application. See John R. Allison and Mark A. Lemley, *The (Unnoticed) Demise of the Doctrine of Equivalents*, 59 STAN. L. REV. 955 (2007) (concluding from their empirical study that “the doctrine of equivalents was largely dead by 1998”).

28. Lemley, *supra* note 19, at 1004.

29. Jeanne C. Frommer, *Claiming Intellectual Property*, 76 U. CHI. L. REV. 719, 721 (2009).

30. See Patent Act of 1790, ch. 7 ¶ 2, 1 Stat. 109, 110 (requiring “a specification in writing, containing a description, accompanied with drafts or models, and explanation and models . . . of the thing or things, by him or them invented or discovered and described as aforesaid in the said patents”).

31. See Karl B. Lutz, *Evolution of the Claims of U.S. Patents*, 20 J. PAT. OFF. SOC’Y 134, 134–35 (1938); see also Burk & Lemley, *supra* note 4, at 1767.

32. See, e.g., *Evans v. Eaton*, 20 U.S. 356, 435 (1822) (upholding the trial court’s decision to invalidate Evans’s patent for failing to describe his improvement in a way that distinguished it from the prior art); *Whittlemore v. Cutter*, 29 F. Cas. 1123, 1124 (C.C.D. Mass. 1813) (Story, J., noting the difficulties of distinguishing “the exact boundaries between what was known and used before, and what is new”); see also J. Jonas Anderson & Peter S. Menell, *Informal Deference: A Historical, Empirical, and Normative Analysis of Patent Claim*

nineteenth century progressed, many patent applicants voluntarily began including claims at the end of their applications in order to avoid invalidation by courts.³³ During this early claiming period, however, claims were used more as “devices for clarifying the grant of a patent for validity purposes” rather than marking the outer boundaries of an invention for infringement purposes.³⁴ This early claiming convention was of the “central claiming” variety, rather than the modern peripheral claiming approach. In a central claiming approach, the patentee does not delineate the outer reach of what the patent claims, but instead states the central features of the invention.³⁵ Thus, nineteenth century courts often compared the defendant’s device to the patentee’s actual device to determine infringement rather than fixating on claim language.³⁶

The text of the Patent Act mostly followed the lead of these patent-drafting conventions.³⁷ The 1836 Patent Act did not explicitly require claims, but instead required the patentee to “particularly specify and point out” the central features of the invention.³⁸ The 1870 Patent Act explicitly required claims; applicants had to “particularly point out and distinctly claim the part, improvement, or combination which he claims as his invention or discovery.”³⁹ Much of this latter language survives today in the 1952 Patent Act, which requires patentees to end their specification with “one or more claims particularly pointing out and distinctly claiming the subject matter that the applicant regards as his invention.”⁴⁰

The exact timing of the shift to our modern system of peripheral claiming is debatable. Some commentators link it to the

Construction, 108 NW. U. L. REV. 10–11 (2013) (“[E]arly judicial focus on patent clarity was directed to questions of patent validity.”).

33. See, e.g., Burk & Lemley, *supra* note 4, at 1767; Anderson & Menell, *supra* note 32, at 11.

34. Burk & Lemley, *supra* note 4, at 1767.

35. Burk & Lemley, *supra* note 4, at 1746; see also John M. Golden, *Construing Patent Claims According to their “Interpretive Community”: A Call for an Attorney-Plus-Artisan Perspective*, 21 HARV. J. L. & TECH 321, 348–49 (2008) (“In central claiming, claims describe or point to representative embodiments of the inventive idea. In peripheral claiming, claims indicate the literal boundaries of patent rights.”).

36. See Anderson & Menell, *supra* note 32, at 15 (“During the period when central claiming predominated, courts did not view claim language as a restriction on a patent’s scope. Rather, courts used claims as well as the specification to ascertain the patent’s underlying inventive principle, which provided the baseline for evaluating whether the defendant’s device embodied this principle, either identically or in a substantially equivalent manner.”).

37. See Burk & Lemley, *supra* note 4, at 1769 (“It is clear that the Patent Act followed, rather than drove, these changing practices of courts and patent drafters.”).

38. Patent Act of 1836, ch. 357, § 6, 5 Stat. 117, 119.

39. Patent Act of 1870, ch. 230, § 26, 16 Stat. 198, 201.

40. 35 U.S.C. § 112 (b) (2012).

1870 Act and suggest that by the end of the nineteenth century, our patent system had decisively embraced peripheral claiming.⁴¹ Other observers argue that the real shift to peripheral claiming did not occur until well into the twentieth century.⁴² Regardless of the precise timing of the shift, our modern day patent system is undoubtedly premised on peripheral claiming.

This shift has had a number of consequences, both for the practice of drafting claims and for the importance of claims in infringement disputes. Notably, patentees or their attorneys:

produce[] not only more elaborate and convoluted claims attempting to anticipate possible equivalents of the disclosed embodiment, but also a greater number of claims per patent . . . [each] directed to different variations of the invention that were to be covered by the patent.⁴³

Thus, the modern day patent is often a remarkably complex document teeming with numerous, complicated claims. Moreover, claim language, which once upon a time merely helped courts understand the novel aspects of the invention for validity determinations, has decidedly become the focal point of the infringement analysis.⁴⁴

C. Claim Construction and Various Causes of Patent Uncertainty

Since claims are crucial to patent infringement disputes, parties often dispute the meaning of claim terms. In the litigation context, judges perform this task of claim construction, not juries.⁴⁵ Outside of the patent litigation context, however, various parties—including US Patent and Trademark Office (USPTO)

41. See, e.g., Anderson & Menell, *supra* note 32 at 13–14 (observing the “transformation” from central to peripheral claiming “was almost entirely complete by the turn of the twentieth century” and noting that the “Patent Office had already begun the push toward peripheral claiming well before” the passage of the 1870 Act); Michael J. Meurer & Craig Allen Nard, *Invention, Refinement and Patent Claim Scope: A New Perspective on the Doctrine of Equivalents*, 93 GEO. L. J. 1947, 1962 n.69 (2005) (suggesting that as of the 1870 Patent Act, “[c]entral claiming was officially dead, and the patent claim from 1870 to the present day has held center stage”); see also *Merrill v. Yeomans*, 94 U.S. 568, 570 (1877) (observing the “primary importance” of claim language in determining patent scope).

42. Burk & Lemley, *supra* note 4, at 1770–71 (suggesting that it was not until *Markman v. Westview Instruments, Inc.*, 517 U.S. 370 (1996), that “we turned the definition of patent boundaries into a legal decision . . . and thus turned patent scope into an exercise in the interpretation of words”); see also Golden, *supra* note 35, at 360–61 (arguing that the “1970s may mark a true breakpoint . . .”).

43. Burk & Lemley, *supra* note 4, at 1769–70; see also Frommer, *supra* note 29, at 734 (“To maximize the possibility of broad patent scope, patentees began drafting increasing numbers of claims per patent.”).

44. See *supra* notes 25–28 and accompanying text.

45. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370 (1996) (holding that judges, not juries, interpret claims in patent litigation).

examiners, competitors, investors, and the like—must understand the meaning of claim terms.⁴⁶

The Federal Circuit explained the methodology for claim interpretation in *Phillips v. AWH Corp.*⁴⁷ Claim terms are to be given their “ordinary” meaning—the meaning claim terms would have to persons having ordinary skill in the art (PHOSITAs).⁴⁸ *Phillips* also emphasized the value of “intrinsic evidence,” such as the specification and claims, over “extrinsic evidence” from outside sources like expert testimony.⁴⁹ By following this process of claim construction, judges are supposed to “neutrally interpret the text and then allow the infringement chips to fall where they may.”⁵⁰

Despite “routine pronouncements by courts that they are rigidly adhering to claim text,” however, claim scope is far from predictable.⁵¹ The causes of this unpredictability are debated. Depending on whom you ask, uncertain claim scope is primarily attributable to one (or some combination) of the following: (1) the inherently indeterminate nature of language,⁵² (2) patentees’ incentives to draft deliberately ambiguous claims in the hopes of gaming the system and getting unduly broad coverage later on,⁵³ (3) the Federal Circuit’s claim construction framework that deemphasizes evidence extrinsic to the patent document like expert testimony,⁵⁴ and (4) underlying policy disputes about the goals of

46. See e.g., R. Polk Wagner & Lee Petherbridge, *Did Phillips Change Anything? Empirical Analysis of the Federal Circuit’s Claim Construction Jurisprudence*, in INTELLECTUAL PROPERTY AND THE COMMON LAW 123, 125 (S. Balganesh ed., 2012) (observing that “claim construction is conducted by all players in the patent system . . .”).

47. 415 F.3d 1303 (2005).

48. *Id.* at 1313–14. *But see*, e.g., GILES S. RICH, FORWARD TO DONALD S. CHISUM, CRAIG A. NARD, HERBERT F. SCHWARTZ, PAULINE NEWMAN & E. SCOTT KIEFF, PRINCIPLES OF PATENT LAW, at iii, v–vi (2d ed. 2001) (questioning whether PHOSITAs are able to glean any useful information from claims).

49. 415 F.3d at 1315 (explaining that the specification is the “single best guide” and usually dispositive in claim interpretation).

50. Chiang & Solum, *supra* note 24, at 540.

51. *Id.*

52. See BESSEN & MEURER, *supra* note 2, at 56; Dan L. Burk, *Dynamic Claim Interpretation*, in INTELLECTUAL PROPERTY AND THE COMMON LAW 107, 112 (Shyamkrishna Balganesh ed., 2013) (“Due to the inherent ambiguity of language, the boundary remains necessarily indeterminate . . .”); Burk & Lemley, *supra* note 4, at 1745 (“[C]aim construction may be inherently indeterminate: it may simply be impossible to cleanly map words to things.”).

53. See BESSEN & MEURER, *supra* note 2, at 57; Burk & Lemley, *supra* note 4, at 1762; Chiang, *supra* note 4, at 515 (arguing that while patentees have incentives to overclaim, “patentee-drafted claims are socially valuable because they force patentees to disclose an imperfect approximation of the correct scope of a patent . . .”).

54. See, e.g., Craig Allen Nard, *A Theory of Claim Interpretation*, 14 HARV. J.L. & TECH. 1, 6 (2000).

claim construction.⁵⁵ The Federal Circuit’s de novo standard of review for claim construction—which the Supreme Court recently reversed in *Teva Pharmaceuticals, Inc. v. Sandoz, Inc.*⁵⁶—was also a frequent target for complaint because it extended problems of claim uncertainty into later stages of litigation.⁵⁷

Despite scholarly disagreement over the primary drivers of claim uncertainty, however, there is widespread agreement that this uncertainty is a significant problem.⁵⁸ Claim scope uncertainties deter efficient investment in innovation in a number of problematic ways.⁵⁹ Notably, the unpredictability of claim scope means that the interested public (e.g., potential improvers of patented technology) cannot predict in advance of litigation whether their actions invade the metaphorical boundaries of a patentee’s right to exclude.

III. THE CONTROVERSIAL ROLE OF “PROPERTY-TALK” IN PATENT LAW

Can patents adequately function as a type of property when patent boundaries are so uncertain? That is the question many courts, scholars, and practitioners have raised when lamenting the sorry, unpredictable state of claim language and interpretation.⁶⁰ However, that question assumes patents are property—or short of

55. See, e.g., Chiang & Solum, *supra* note 24, at 530 (2013) (“[L]inguistic ambiguity is not a major cause of the uncertainty in patent law today.”).

56. 135 S. Ct. 831, 836 (2015) (holding that the Federal Circuit must apply the clear error standard when reviewing district court’s resolution of subsidiary factual matters during patent construction).

57. See Peter Lee, *Substantive Claim Construction as Patent Scope Lever*, 1 IP THEORY 100, 104 (2010) (“[T]he current framework for claim construction simply isn’t working . . . even after a district court has issued a claim construction ruling, the Federal Circuit’s de novo standard of review extends this uncertainty deep into the latter stages of patent litigation.”).

58. See *supra* note 4.

59. See, e.g., BESSEN & MEURER, *supra* note 2, at 9 (“Poor notice causes harm because it subjects technology investors to an unavoidable risk of disputes and litigation.”); Golden, *supra* note 35, at 323 (“The certainty with which patent scope is defined is a crucial variable in determining whether the net impact of patents is positive or negative. Relative certainty regarding a patent’s scope can promote the development and dissemination of related technology by providing a sense of security both to investors in patent rights and to investors in activities that might be vulnerable to charges of patent infringement. Greater certainty may also facilitate licensing that promotes efficient levels of inventive and productive activity. Parties may be more likely to avoid expensive litigation and agree to licensing terms if they can first agree on a patent’s scope. Further, probable correlates of certainty—such as the coherence of claim construction law and the predictability of courts’ constructions—are likely to make processes of construing claims, forecasting court constructions, and drafting claims that adequately cover an invention less taxing and less error-prone.”).

60. See, e.g., BESSEN & MEURER, *supra* note 2, at 8 (lamenting of patents, “[i]f you can’t tell the boundaries it ain’t property”); Burk & Lemley, *supra* note 4, at 1754 (arguing the modern peripheral claiming system has “provided none of the certainty associated with the definition of boundaries in real property law”).

that, assumes “property” is an appropriate analogy for patents.⁶¹ This issue, too, has triggered much controversy and debate in patent scholarship.

Patents today are considered a form of property. Courts and commentators routinely use the language of property to describe patents.⁶² But this was not always the case. As William Fisher observes, in early American patent law, eighteenth-century courts and commentators were more likely to refer to patents as “monopolies” than property.⁶³ By the early twentieth century, however, a discourse centered on patents as property rights was becoming increasingly common.⁶⁴ Even the phrase “intellectual property”—to describe patents and other rights to control the use and dissemination of information, such as copyrights—only came into vogue during the latter half of the twentieth century.⁶⁵

The shift to property terminology and rhetoric when describing patents (and other intellectual property rights) has provoked much scholarly debate. While some have celebrated the “propertization” of

61. BESSEN & MEURER, *supra* note 2, at 6, 29 (noting that “[m]ost people understand patents to be a type of property,” but “most lawyers and legal scholars—perhaps because they have endured at least a semester of property in property law and are therefore aware that things might not be so neat—tend to speak of patents not as a form of property, but as *analogous to other forms of property*”).

62. See 35 U.S.C. § 261 (2000) (“[P]atents shall have the attributes of personal property.”); see, e.g., Fla. Prepaid Postsecondary Educ. Expense Bd. v. Coll. Sav. Bank, 527 U.S. 627, 642 (1999) (noting patents “have long been considered a species of property”); Hartford-Empire Co. v. United States, 323 U.S. 386, 415 (1945) (noting it “has long been settled” that “a patent is property, protected against appropriation both by individuals and by government”); Patlex Corp. v. Mossinghoff, 758 F.2d 594, 599 (Fed. Cir. 1985) (explaining that “[i]t is beyond reasonable debate that patents are property”); Carrier, *supra* note 6, at 10–11.

63. WILLIAM W. FISHER III, THE GROWTH OF INTELLECTUAL PROPERTY: A HISTORY OF OWNERSHIP OF IDEAS IN THE UNITED STATES 20 (1999) (“In England, patents in the modern sense originated in Section 6 of the 1623 Statute on Monopolies, which both described patents as “monopolies” and exempted them from the general ban on royal grants of such rights. But the currency of the term also derived partly from—and helped to reinforce—a substantive position: like other “monopolies,” patents and copyrights were dangerous devices that should be deployed only when absolutely necessary to advance some clear public interest.”). See generally Edward C. Walterscheid, *Patents and the Jeffersonian Mythology*, 29 J. MARSHALL L. REV. 269 (1995); Edward C. Walterscheid, *To Promote the Progress of Science and the Useful Arts: The Background and Origin of the Intellectual Property Law Clause of the United States Constitution*, 2 J. OF INTELL. P. L. 16 (1994).

64. See, e.g., FISHER, *supra* note 63, at 20–21 (observing this transition in the context of patent, copyright, and trademark law); Orly Lobel, *The New Cognitive Property: Human Capital Law and the Reach of Intellectual Property*, 93 TEX. L. REV. 789, 844 (2015) (“By the twentieth century however, ‘framing arguments in terms of property rights became increasingly common’ in patent, copyright, and trademark disputes. Still, the term itself, ‘intellectual property,’ was rare until the second half of the twentieth century.”).

65. FISHER, *supra* note 63, at 22 (observing that use of this term was rare before the Second World War, and its usage by federal courts “steadily increase[d]” thereafter).

patent and copyright,⁶⁶ others have criticized property-talk in IP.⁶⁷ Eric Claeys describes the clash of views as between “property skeptics,” who “are skeptical that property concepts can help institute sensible IP policies,” and “property essentialists,” who “understand IP as a sensible and specialized application of property law.”⁶⁸ David Fagundes labels those who use the “language and emotional force of property [to] resolve difficult questions of patent or copyright doctrine” as “property romantics.”⁶⁹ Conversely, those chafing at any equation of traditional property and intellectual property suffer from “property anxiety.”⁷⁰

To be sure, there are notable differences between intangible information (the subject of intellectual property) and tangible property. Unlike tangible property, information exhibits public goods characteristics; it can be “copied freely and used by anyone who is aware of [it] without depriving others of [its] use.”⁷¹ The primary justification for patents (and copyrights) in the United States is to correct for this public goods problem by granting inventors and creators limited rights to exclude.⁷² Another difference from tangible property is that non-rivalrous information does not provoke scarcity concerns. Thus, the “tragedy of the commons” justification⁷³ undergirding tangible property rights does not apply to IP.⁷⁴ To some critics, such differences make property-talk in the IP context unhelpful at best.

66. See, e.g., LANDES & POSNER, *supra* note 15, at 74–76 (2003). See generally Frank H. Easterbrook, *Intellectual Property Is Still Property*, 13 HARV. J.L. & PUB. POL’Y 108, 113 (1990).

67. See, e.g., Lemley, *supra* note 5, at 1032. See generally NEIL WEINSTOCK NETANEL, *COPYRIGHT’S PARADOX* (2008).

68. Eric R. Claeys, *On Cowbells in Rock Anthems (and Property in IP): A Review of Justifying Intellectual Property*, 49 SAN DIEGO L. REV. 1033, 1035 (2012); see also BESSEN & MEURER *supra* note 2, at 29 (explaining that “scholars in intellectual property law are not completely comfortable applying the property label to patents”).

69. David Fagundes, *Property Rhetoric and the Public Domain*, 94 MINN. L. REV. 652, 662, 701 (2010).

70. *Id.* at 677.

71. Mark A. Lemley, *Ex Ante Versus Ex Post Justifications for Intellectual Property*, 71 U. CHI. L. REV. 129 (2004). These characteristics are referred to as non-excludability and non-rivalrousness, respectively.

72. For a general discussion of the public goods characteristics of intellectual property, see MERGES, MENELL, & LEMLEY, *supra* note 18, at 12–13.

73. Efficiency justifications for a system of property focus primarily on externalities and transaction costs. For example, Garrett Hardin’s oft-invoked “tragedy of the commons” emphasizes the unavoidable overuse of tangible resources held in common because no user has an incentive to consider the impact of her use on others. Garrett Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243, 1244 (1968).

74. See MERGES, MENELL, & LEMLEY, *supra* note 18, at 21. *But see* Edmund Kitch, *The Nature and Function of the Patent System*, 20 J.L. & ECON. 265, 271 (1977) (analogizing the patent system to a “prospect” system used for mineral claims).

A. The Outsized Influence of “Property Absolutism” in IP

That property-talk is unhelpful in the IP context is one thing. More dangerous, these critics say, is the distorting, expansive effect of property-talk on IP rights. Over the past few decades, the breadth, scope, duration, and strength of intellectual property rights have expanded in well-documented ways.⁷⁵ Proponents and defenders of this expansion have successfully used property rhetoric to bolster their arguments.⁷⁶ In response, IP scholars critical of this expansion lament the “unjustified formalistic use of property metaphors and doctrines” in the IP sphere.⁷⁷

Digging deeper into the criticism, however, one quickly realizes that the perceived problem is not property-talk in and of itself. Instead, it is the outsized influence of a particular kind of property-talk in IP: “property absolutism.” Namely, when courts, policymakers, and commentators invoke property rhetoric in IP, they often rely on a simplistic and expansive conception of what property ownership means.

Like any other legal concept, property has triggered different formulations at different points in time. In the nineteenth century, William Blackstone provided a definition “that eventually became the rallying cry of an expansive understanding of property.”⁷⁸ “Property,” he famously observed, is “that sole and despotic dominion which one man claims and exercises over the external things of the world, in total exclusion of the right of any other individual in the universe.”⁷⁹ But the reality of property law—with its various exceptions and limitations on owners’ exclusive rights—is a far cry from this caricature of “sole and despotic dominion.”⁸⁰ Amongst property scholars, such an absolutist definition of property that emphasizes the

75. See, e.g., FISHER, *supra* note 63, at 2 (observing that the overall trend in all IP doctrines is “expansion”); Carrier, *supra* note 6, at 10.

76. See Carrier, *supra* note 6, at 10, n.14 (citing numerous examples); BESSEN & MEURER, *supra* note 2, at 29 (“Scholars critical of the recent expansion of intellectual property rights place part of the blame for the expansion on the rhetoric of property.”).

77. Henry E. Smith, *Intellectual Property as Property: Delineating Entitlements in Information*, 116 YALE L.J. 1742, 1756 (2007) (describing, but not agreeing with, the sentiment). See generally LAWRENCE LESSIG, *THE FUTURE OF IDEAS: THE FATE OF THE COMMONS IN A CONNECTED WORLD* 161 (2001) (critiquing the proprietization of information and its stifling effects on innovation).

78. See Abraham Bell & Gideon Parchomovsky, *A Theory of Property*, 90 CORNELL L. REV. 531, 543 (2005).

79. See WILLIAM BLACKSTONE, 2 COMMENTARIES ON THE LAWS OF ENGLAND, Chap. 1, 3 (Wayne Morrison ed., 2001) (1765–1769).

80. See Carol M. Rose, *Canons of Property Talk, or, Blackstone’s Anxiety*, 108 YALE L.J. 601, 631 (1998) (noting that the “notion of property as exclusive dominion is at most a cartoon or trope”).

primacy of the right to exclude gave way in the twentieth century to a more malleable, less exclusion-focused conception of property: property as a “bundle of rights” that could be disaggregated.⁸¹

However, the caricatured, absolutist conception of property has long captured the lay imagination. As Stephen Carter has observed, “[O]ur legal theory is premised on the instrumental conception of property rights, but our conversational habits are not”—“[w]hat’s mine is mine.”⁸² When employing property rhetoric, proponents of more expansive IP rights have used the simplified, absolutist conception of property ownership quite effectively to convince legislatures and courts that longer periods of IP duration and fewer limits on the exclusive rights of IP owners are justified.⁸³

It is this particular vein of property-talk in IP that many IP scholars dislike. Mark Lemley, for example, offers such a critique:

The rhetoric of property has a clear meaning in the minds of courts, lawyers and commentators as “things that are owned by persons,” and that fixed meaning will make it all too tempting to fall into the trap of treating intellectual property as an absolute right to exclude.⁸⁴

Thus, one much-observed (and lamented) impact of property-talk has been its role in bolstering normative claims that intellectual property rights should confer strict exclusive rights. The solution, these critics say, is to stop the property-talk in IP altogether because the simplified and distorted myth of property absolutism has an outsized influence.⁸⁵

In response, other IP scholars (this author included) have argued that property-talk can be useful in IP so long as the actual complexity of property ownership—rather than the absolutist caricature of it—is emphasized.⁸⁶ Borrowing from the insights of

81. See THOMAS W. MERRILL & HENRY E. SMITH, PROPERTY: PRINCIPLES AND POLICIES 1 (observing that under the bundle of rights metaphor, no single “incident” of property ownership, such as the right to exclude, achieves primacy). Many regard the “bundle of rights” conception as the prevailing view (at least, among academics). In recent years, however, the influential work of Thomas Merrill and Henry Smith has shifted definitional focus once again to the in rem nature of the property right, emphasizing its informational advantages for owners and non-owners. See Thomas W. Merrill & Henry E. Smith, *What Happened to Property in Law and Economics?*, 111 YALE L.J. 357, 357 (2001).

82. Stephen Carter, *Does it Matter Whether Intellectual Property is Property*, 68 CHIKENT L. REV. 715, 717 (1993).

83. See Fagundes, *supra* note 69, at 655 (observing that “property romance is almost invariably used to militate in favor of broadening copyright and patent owners’ rights”).

84. Lemley, *supra* note 5, at 1033 (arguing that the “rise of property rhetoric in intellectual property cases is . . . closely identified . . . with a particular view of property rights as the right to capture or internalize the full social value of property”).

85. See, e.g., *id.*; Lawrence Lessig, *The Architecture of Innovation*, 51 DUKE L.J. 1783, 1798 (2002) (arguing that “IP is not P, but this truth is lost on us”).

86. See generally ROBERT MERGES, JUSTIFYING INTELLECTUAL PROPERTY 295 (2012) (“Conventional wisdom repeated ad nauseum emphasizes that the essence of property is the right to exclude In truth . . . the supposedly exclusive right of property is actually bound up

traditional property scholarship, they emphasize the reality of property ownership is not fixated on absolute rights of exclusion. Instead, property law balances the exclusionary rights of owners against competing equity and efficiency concerns in a number of contexts.⁸⁷

B. The Intersection of Property-Talk and the Claim Uncertainty Problem: Fences and Definite Patent Boundaries

Despite this abundant literature, however, one consequence of property-talk in IP has gone largely unexamined. Specifically, how has the rhetoric of clear, fixed, and determinate tangible property boundaries (like fences) influenced the debate over patent uncertainty and the definiteness requirement in particular?

Last year, in *Nautilus*, the Supreme Court reiterated that the patent “is a property right, and like any property right, its boundaries should be clear.”⁸⁸ In a number of decisions, judges have invoked the imagery of fences and other clear boundary markers of real property when describing the notice function of patent claims.⁸⁹ Moreover, in much of the outcry over the claim uncertainty problem, courts, scholars, and commentators have pointed to real property’s clear, fixed, and determinate boundaries as a source of comparison, invoking fences as the ideal.⁹⁰ For example, James Bessen and Michael Meurer argue in their influential book *Patent Failure* that “[a]n ideal patent system features rights that are defined as clearly as the fence around

with various forms of inclusion.”); Carrier, *supra* note 6, at 47–48; Claey, *supra* note 68, at 1035; Peter Lee, *The Accession Insight and Patent Infringement Remedies*, 110 MICH. L. REV. 175, 193 (2011); Molly S. Van Houweling, *The New Servitudes*, 96 GEO. L.J. 885, 888–89 (2008); Deepa Varadarajan, *Improvement Doctrines*, 21 GEO. MASON L. REV. 657, 658 (2014).

87. See, e.g., Varadarajan, *supra* note 86.

88. *Nautilus*, 134 S. Ct. at 2124 (quoting *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 730 (2002)).

89. See, e.g., *Kara Tech. Inc. v. Stamps.com Inc.*, 582 F.3d 1341, 1347 (Fed. Cir. 2009) (“It is the claims that define the metes and bounds of the patentee’s invention.”); *Scaltech Inc. v. Retec/Tetra, L.L.C.*, 178 F.3d 1378, 1383 (Fed. Cir. 1999) (“[A] claim in a patent provides the metes and bounds of the right”) (citing *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605, 607 (1950)); *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 997 (Fed. Cir. 1995) (Mayer, J., concurring) (“[A] patent may be thought of as a form of deed which sets out the metes and bounds of the property.”).

90. See, e.g., Burk & Lemley *supra* note 4 at 1754 (arguing the modern peripheral claiming system has “provided none of the certainty associated with the definition of boundaries in real property law”); Tun-Jen Chiang, *Fixing Patent Boundaries*, 108 MICH. L. REV. 523, 525 (2010) (comparing the patent system to a “real property system with such constantly moving fences”); Craig Allen Nard, *Certainty, Fence Building, and the Useful Arts*, 74 IND. L.J. 759, 759 (1999) (“Patent law is about building fences. The demarcation of one’s proprietary interest is facilitated by requiring the inventor . . . to point out distinctly and with particularity what he regards as his invention. Concomitant with this type of fence building are notions of certainty and predictability.”).

a piece of land”⁹¹ and “[r]eform should push the patent system toward the real property system by making patent claims more similar to the boundaries of land.”⁹²

Perhaps like property-talk in general, this species of property-talk also oversimplifies a messier reality. In a recent essay, Adam Mossoff criticizes patent literature’s depiction of real property boundaries as being clear.⁹³ He argues that even if the geographic boundaries of a particular parcel of land are apparent, the legal concept of an “estate in land”—the more appropriate basis for comparing patent boundaries—is not.⁹⁴ For an estate in land not only has geographical boundaries, but also temporal boundaries and various use restrictions that are often less clear and may be disputed by parties. He labels as a “trespass fallacy”⁹⁵ patent scholars’ “fixat[ion] on the trespass analogy and on the related simile that patent claims are the equivalent of fences around a parcel of land.”⁹⁶

Here may be another instance where an oversimplified conception of tangible property boundaries, rather than the reality, has an outsized influence in patent law. But interestingly, this particular vein of property-talk seems to push in the opposite direction, cutting against the oft-levied criticism that property talk in IP *always* leads to more favorable treatment of IP owners. Part IV further highlights this irony: that while the rhetoric of property ownership (which relies on an oversimplified conception of absolute ownership) has provided support for strengthening the exclusive rights of patent owners, the accompanying rhetoric of tangible property boundaries (which relies on an oversimplified conception of clear, fixed, and determinate physical boundaries) seems to push in

91. BESSEN & MEURER, *supra* note 2, at 46.

92. *Id.* at 239.

93. Adam Mossoff, *The Trespass Fallacy in Patent Law*, 65 FLA. L. REV. 1687, 1691–92 (2015).

94. *Id.* at 1698–99 (“[T]he physical boundaries of a parcel of land are not the same thing as the legal boundaries of an estate.”).

95. *Id.* at 1695 (“In sum, commentators and judges employ a trespass standard to evaluate, or more precisely to criticize, the operation of the patent system today. It is alleged that . . . patent claims, should be as equally clear as fences and thus as equally determinate as trespass doctrine.”).

96. *Id.* at 1694. Mossoff argues such a comparison is normatively undesirable absent empirical proof “that boundary disputes of real estate are clear, determinate and efficient.” Otherwise, the patent “indeterminacy critique is based on a fallacy . . . and thus it should not be used to justify judicial or legislative reforms of the patent system.” *Id.* at 1696. Unlike Mossoff, I do not argue that the fence metaphor is normatively undesirable. If it lends conceptual or rhetorical support to patent reforms that deter ambiguous claiming by patentees, then it may well be normatively desirable—even if it relies on an oversimplified notion of property boundaries. The goal of this Article is not, however, to make such a normative argument. Instead, this Article seeks to illustrate how all property-talk paths in IP do not always lead to an expansion of patent owners’ rights.

the opposite direction, providing support for more demanding patent claiming requirements.

IV. PATENT LAW'S SHIFTING DEFINITENESS REQUIREMENT AND THE PUSH FOR CLEARER CLAIMS

One requirement imposed on patentees is that their claims be sufficiently definite. The definiteness requirement stems from Section 112 of the Patent Act, which states: “[T]he specification shall conclude with one or more claims *particularly pointing out and distinctly claiming* the subject matter which the inventor . . . regards as the invention.”⁹⁷ A lack of claim definiteness (or indefiniteness) is grounds for rejection by the USPTO or a court’s subsequent determination of invalidity.⁹⁸ While Section 112’s other requirements, such as “enablement” and “written description,” are concerned with the adequacy of the teaching in the specification,⁹⁹ the definiteness requirement is concerned with how clearly the claims inform the PHOSITA about the scope of the invention. As the Supreme Court has explained, the definiteness requirement is intended to be the “statute’s clarity and precision demand,”¹⁰⁰ meant to ensure that a “patent is precise enough to afford clear notice of what is claimed.”¹⁰¹

Despite this goal of “clear notice,” however, issued patents have claim terms whose meaning is contested, and judges often disagree when construing claims.¹⁰² When assessing claim definiteness, courts apply the same general principles of claim construction—for example, using the vantage point of the PHOSITA and giving primary consideration to intrinsic evidence, such as the specification.¹⁰³

97. 35 U.S.C. § 112(b) (2012) (emphasis added).

98. 35 U.S.C. § 282 (2012) (establishing that issued patents carry a presumption of validity and “the burden of establishing invalidity of a patent or any claim thereof shall rest on the party asserting such invalidity”).

99. 35 U.S.C. § 112(a) (2012) (“[T]he specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same.”).

100. *Nautilus*, 134 S. Ct. at 2122.

101. *Id.* at 2129.

102. For a discussion of claim construction principles and attendant scholarly criticisms, see *supra* Part II(C). Several empirical studies show significant claim construction reversal rates by the Federal Circuit. See, e.g., Kimberley A. Moore, *Are District Court Judges Equipped to Resolve Patent Cases?*, 15 HARV. J.L. & TECH. 1, 2 (2001) (observing that “district court judges improperly construe patent claim terms in 33% of cases appealed to the Federal Circuit”); cf. Anderson & Menell, *supra* note 32, at 6 (observing that the claim construction reversal rate has dropped significantly since the *Phillips* decision: from 38.6 percent to 25.6 percent on a per-claim-term basis).

103. See, e.g., *Enzo Biochem, Inc. v. Applera Corp.*, 599 F.3d 1325, 1332 (Fed. Cir. 2010). Despite references to “public notice” peppered throughout definiteness jurisprudence, it is only

Because of the intertwined relationship between claim construction and definiteness, courts often rule on indefiniteness challenges while construing claims.¹⁰⁴ In a recent empirical study, John Allison, Mark Lemley, and David Schwartz observed, “[T]he single largest category of adjudicated challenges was for indefiniteness”—reflecting a growth they largely attribute to the overlap of definiteness assessments with claim construction.¹⁰⁵

Given the “inherent limitations of language,” an ideal standard of “absolute precision” when drafting claims may be unrealistic.¹⁰⁶ But there is also compelling evidence that patentees purposely inject *avoidable* ambiguity into their claims in the hopes of gaming the system and gaining broader coverage than their inventive contributions deserve.¹⁰⁷ The definiteness requirement attempts to calibrate a desirable threshold for how much imprecision (deliberate or otherwise) the patent system should tolerate. The potency of the property metaphor—and the accompanying ideal of fences and clear, tangible property boundaries—can lend support for strengthening the definiteness requirement. The Sections that follow consider the claiming issues typically policed by the definiteness requirement, the Federal Circuit’s historically lax standard for definiteness, and

PHOSITAs who are considered the relevant public for claims. Some scholars have questioned this portrayal of claim audience as unrealistic. *See, e.g.*, Golden, *supra* note 35, at 568 (“Because ordinary artisans are not typically in the business of interpreting claims . . . efforts to adhere to an artisan’s perspective make a fetish of a phantom by subjecting claim construction to governance by a perspective that likely has no existence outside of litigation.”).

104. After *Markman v. Westview Instruments, Inc.*, 517 U.S. 370 (1996), which required courts to decide claim construction as a matter of law, courts perform this task in a pre-trial “*Markman* hearing.” If, after a judge decides the scope of the claim at issue, there are no remaining issues of material fact, then the case is usually resolved on summary judgment or settled. *See* Jay P. Kesan & Gwendolyn G. Ball, *Judicial Experience and the Efficiency and Accuracy of Patent Adjudication: An Empirical Analysis of the Case for a Specialized Trial Court*, 24 HARV. J.L. & TECH. 393, 415 (2011).

105. John R. Allison, Mark A. Lemley, & David L. Schwartz, *Understanding the Realities of Modern Patent Litigation*, 92 TEX. L. REV. 1769, 1782 (2014) (“Today, however, claim construction is the most likely form of substantive ruling in a patent case because it is a prerequisite to virtually any type of summary judgment motion on validity or infringement. Because courts often decide indefiniteness issues while construing claims, they are likely to see more indefiniteness motions than other forms of invalidity issues. Cases that settle after claim construction, for instance, never reach the merits of other arguments but will decide indefiniteness.”).

106. *Nautilus*, 134 S. Ct. at 2128–29 (quoting *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 732 (2002)) (“On the one hand, the definiteness requirement must take into account the inherent limitations of language. Some modicum of uncertainty . . . is the ‘price of ensuring the appropriate incentives for innovation.’”). While a number of scholars recognize this issue of linguistic indeterminacy, some suggest its responsibility for the scope uncertainty problem has been exaggerated. *See* Chiang & Solum, *supra* note 24, at 543.

107. *See infra* Part IV(B).

possible implications of the Supreme Court's new and seemingly stricter standard in *Nautilus*.

A. Claims Triggering Definiteness Concerns

Patent law is unitary—patent statutes do not differentiate between technologies or industries. Statutory requirements like definiteness are the same, regardless of the type of technology or industry at issue. In practice, however, patent requirements affect different industries and technologies differently.¹⁰⁸ Recent empirical evidence shows that the definiteness requirement poses a more frequent hurdle for software patents than for other kinds of technologies.¹⁰⁹ Disparities in definiteness outcomes suggest patents are “less clear in the information technology industries than in other industries.”¹¹⁰ Across the various technology types, however, the claim terms that typically raise definiteness concerns include: (1) terms of degree and subjective terms, (2) terms with multiple plausible constructions, and (3) functional terms.

1. Terms of Degree and Subjective Terms

Definiteness concerns arise when claims use “terms of degree” (like “substantially equal to”)¹¹¹ or subjective terms that depend on a person’s “subjective opinion.” For example, in *Datamize, LLC v. Plumtree Software, Inc.*,¹¹² a claim employing the term “aesthetically pleasing” was deemed indefinite because the specification lacked any

108. For a detailed discussion of our unitary patent system’s industry-specific effects, see John R. Allison, Mark A. Lemley, & David L. Schwartz, *Our Divided Patent System*, 82 U. CHI. L. REV. 1073 (2015).

109. See, e.g., *id.* at 1106; John R. Allison & Lisa Larrimore Ouellette, *How Courts Adjudicate Patent Definiteness and Disclosure*, 65 DUKE L.J. (forthcoming 2015) (manuscript at 27), <http://law.stanford.edu/wp-content/uploads/sites/default/files/publication/892329/doc/slspublic/John%20Allison%20and%20Lisa%20Larrimore%20Ouellette%20SSRN%20Working%20Paper%20March%202015.pdf> [<https://perma.cc/H2Z6-ZZMT>] (“[P]atents in the mechanics, electrical, chemistry, biotechnology and optics technology fields performed the best in . . . claim indefiniteness challenges, with software having fared less well, and software’s business method subset performing most poorly.”); Mark A. Lemley, *Software Patents and the Return of Functional Claiming*, 2013 WIS. L. REV. 905, 930 (2013) (contrasting software patents with chemical patents, where there is a “clear scientific language for delineating what a patent claim does and doesn’t cover”).

110. Allison et. al., *supra* note 108, at 1106, 1119–20 (observing also that in terms of industry, “[i]ndefiniteness arguments were primarily successful in the computer and electronics, communications, and industrial goods industries”).

111. Cf. ROBERT P. MERGES & JOHN F. DUFFY, PATENT LAW & POLICY: CASES AND MATERIALS 319 (6th ed. 2013) (explaining that where “vague-sounding phrase[s]—such as ‘substantially equal to’ or ‘closely proximate to,’ or the like—translates into a workable distinction for artisans in the field, chances are it is not indefinite”).

112. 417 F.3d 1342 (2005).

“objective standard” which would enable a PHOSITA to understand the scope of the claim.¹¹³ Absent some “objective anchor,” the term was “completely dependent on a person’s subjective opinion.”¹¹⁴ Thus, for terms of degree and subjective terms, a patent will trigger definiteness concerns unless the specification provides some objective standard for measurement.

2. Terms with Multiple Plausible Constructions

Even when a claim term is not one of degree or purely subjective, it may nonetheless have multiple plausible constructions, making it difficult for PHOSITAs to comprehend claim scope.¹¹⁵ Interestingly, the USPTO and the courts have historically applied the definiteness requirement differently on this issue. Unlike the Federal Circuit (whose insoluble ambiguity standard is discussed below), the USPTO has long deemed claims indefinite if they are “amenable to two or more plausible constructions.”¹¹⁶ As the Board of Patent Appeals and Interferences (now called the Patent Trial and Appeal Board) recently explained, “[I]f a claim is amenable to two or more plausible claim constructions, the USPTO is justified in requiring the applicant to more precisely define the metes and bounds of the claimed invention by holding the claim . . . indefinite.”¹¹⁷ In allowing the USPTO to apply a different standard for indefiniteness, the Federal Circuit has emphasized the presumption of validity that comes with an issued patent.¹¹⁸ As Jonathan Masur and Lisa Larrimore Oullette point out, however, the existence of a different USPTO standard has not prevented examiners from “improperly import[ing]” the Federal Circuit’s standard into the examination context.¹¹⁹

113. *Id.* at 1350.

114. *Id.*

115. *See, e.g.,* Teva Pharmaceuticals USA, Inc. v. Sandoz, Inc., 789 F.3d 1335, 1341 (2015) (finding claim indefinite where there were three plausible ways of measuring “molecular weight,” and there was “no express definition of ‘molecular weight’ in the specification”).

116. *See* Ex Parte Miyazaki, 2008 WL 5105055 (B.P.A.I. 2008), at 4–5.

117. *Id.* at 5.

118. *See, e.g.,* In re Packard, 751 F.3d 1307, 1312 (2014) (“[I]ndefiniteness rejections by the USPTO arise in a different posture from that of indefiniteness challenges to an issued patent.”); Exxon Engineering & Research Co. v. U.S., 265 F.3d 1371, 1384 (Fed. Cir. 2001) (“If this case were before an examiner, the examiner might well be justified in demanding that the applicant more clearly define [the disputed term] and thereby remove an degree of ambiguity. However, we are faced with an issued patent that enjoys a presumption of validity.”).

119. Jonathan S. Masur & Lisa Larrimore Oullette, *Deference Mistakes*, 82 U. CHI. L. REV. 643, 692 (2015) (observing that the USPTO “regularly rel[ies] on precedents involving granted patents (which are presumed valid) to justify granting new patents (which are not entitled to that presumption)”); *see infra* text accompanying notes 146–147.

3. “Means-Plus-Function” Terms and Other Functional Claiming Issues

Finally, functional terms have long been a particular concern of definiteness jurisprudence.¹²⁰ Functional terms express the invention in terms of its function or goal, as opposed to a particular machine or structure.¹²¹ Functional terms have inspired more consternation than most, because by their very nature, they tend to sweep broadly and raise notice concerns. To illustrate, the term “latch” or “clamp” describes a structural feature of the invention. By contrast, the phrase “means for attaching” describes the same feature in terms of what it does. The latter casts the claim’s exclusive net more broadly and less clearly. A “means for attaching” includes far more than a “latch” or “clamp”; it includes “a nail, a Velcro enclosure, and indeed any way of attaching something to something else.”¹²²

Because of these notice and over-breadth concerns, early patent law prohibited the use of functional language in claims.¹²³ The 1952 Patent Act resuscitated functional claiming in Section 112(f), which allows claim elements to be “expressed as a means or a step for performing a specified function.”¹²⁴ However, the reach of such “means-plus-function” claims is limited to “the corresponding structure, material, or acts described in the specification and equivalents thereof.”¹²⁵ If the patentee does not disclose corresponding structures in the specification, then the claim is deemed indefinite.¹²⁶ In this way, “means-plus-function” claims have long

120. See, e.g., *United Carbon Co. v. Binney & Smith Co.*, 317 U.S. 228, 235–36 (1942) (invalidating claims for running “afoul of the rule that a patentee may not broaden his claim by describing the product in terms of function”); *Electric Co. v. Wabash Appliance Corp.*, 304 U.S. 364, 368 (1938) (invalidating claim to a lighting filament written in functional terms: “comparatively large grains of such size and contour as to prevent substantial sagging and offsetting”).

121. See Mark A. Lemley, *supra* note 109, at 905, 907 (“[M]ost software patents today are written in functional terms.”).

122. MERGES & DUFFY, *supra* note 111, at 331.

123. *Id.*

124. “Means-plus-function” claim terms were governed by Section 112 para. 6 of the 1952 Act, which states: “An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.” After the passage of the America Invents Act (AIA), this provision has become § 112(f).

125. 35 U.S.C. § 112(f) (2012).

126. The Federal Circuit has explained the relationship between Section 112’s “means-plus-function” provision and the definiteness requirement:

[I]n return for generic claiming ability, the applicant must indicate in the specification what structure constitutes the means [I]f the specification is not clear as to the structure that the patentee intends to correspond to the claimed function, then the patentee has not paid the price but is rather attempting to claim in functional terms

been subjected to a separate definiteness inquiry—one that has been harder to satisfy than for other kinds of claims.¹²⁷ The definiteness inquiry for means-plus-function claims remains more-or-less unchanged after *Nautilus*.¹²⁸

Since the scope of means-plus-function claims is limited to the particular technologies laid out in the specification, they are viewed as “narrow and easy for potential infringers to evade.”¹²⁹ As a result, “patent lawyers tend to avoid means-plus-function claim language, except as an ‘extra’ put in a separate claim to hedge risk.”¹³⁰ Even outside of the “means-plus-function” format, however, patentees have been able to benefit from functional language.¹³¹

Consequently, the definiteness requirement has been invoked to police patentees’ use of functional language outside of the “means-plus-function” format. For example, definiteness concerns have loomed large in the software context, where patentees have been able to evade the constraints of “means-plus-function” claiming by including structural elements in the claim, such as “computer” or “processor”—“computer hardware elements [that] impose no real limitation on an invention that must, of necessity, be implemented in

unbounded by any reference to structure in the specification . . . [and] the applicant has in effect failed to particularly point out and distinctly claim the invention as required by the second paragraph of section 112.

Biomedino, LLC v. Waters Techs. Corp., 490 F.3d 946 (Fed. Cir. 2007) (internal quotations and citations omitted).

127. Jason Rantanen, *Teva, Nautilus, and Change Without Change*, 18 STAN. TECH. L. REV. 430, 446 (2015) (observing that this “alternate framework” for means-plus-function claim terms “make[s] it much easier to challenge such a claim for indefiniteness” and suggesting that the Federal Circuit found MPF claims “indefinite 65% of the time when indefiniteness was argued, compared with non-means claims which were indefinite only 23% of the time”); Allison & Oullette, *supra* note 109, at 33 (“[A] claim with an MPF element was far more likely to succumb to an indefiniteness challenge.”); Allison, et. al, *supra* note 105, at 1783, n 54.

128. See Rantanen, *supra* note 127, at 446.

129. Lemley, *supra* note 109, at 917–18.

130. *Id.* at 918.

131. The Federal Circuit has held that when a claim uses the term “means” to describe an element, “a presumption inheres that the inventor used the term to invoke section 112, para 6.” However, “[t]his presumption can be rebutted when the claim, in addition to the functional language, recites structures sufficient to perform the claimed function in its entirety.” *Biomedino*, 490 F.3d at 950. The Federal Circuit has also held the converse—“that the failure to use the word ‘means’ also creates a rebuttable presumption—this time that § 112, para. 6 does not apply.” *Williamson v. Citrix Online LLC*, 792 F.3d 1339, 1348 (Fed. Cir. 2015) (en banc). In *Williamson*, the en banc Federal Circuit recently clarified that this presumption against applying Section 112, para 6 when the claim does not use the word “means” was not a strong one. The court explained, “In making the assessment of whether the limitation in question is a means-plus-function term subject to the strictures of § 112, para. 6, our cases have emphasized that the essential inquiry is not merely the presence or absence of the word ‘means’ but whether the words of the claim are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure.”

a computer.”¹³² Alternatively, the patentee might not use a functional term in the claim itself, but instead, define an ambiguous claim term in “purely functional terms” that do little to clarify the ambiguity.¹³³ In *Haliburton Energy Servs. Inc. v. M-I LLC*, for example, the Federal Circuit held the patentee’s functional definition of the claim term “fragile gel” to be indefinite, because “it is ambiguous as to the requisite degree of fragileness of the gel” or “gel strength.”¹³⁴

B. Policing Deliberate Ambiguity

Undoubtedly, for many of the situations described above, the patent drafter is best situated to resolve the claim ambiguity. For example, with terms of degree or subjective terms, nothing stops a patentee from including some objective standard of measurement in the specification. Similarly, a “patent drafter could resolve the ambiguities of a functional limitation in a number of ways . . . [for example,] using a quantitative metric . . . rather than a qualitative functional feature . . . [or] a formula for calculating a property along with examples that meet the claim limitation and examples that do not.”¹³⁵ As for claim terms with multiple plausible constructions,

132. See Lemley, *supra* note 109, at 924–28 (explaining that while the Federal Circuit has been “vigilant in limiting software patentees who write claims in means-plus-function format to the particular algorithms that implement those claims . . . the presence of a structure like ‘a computer’ or ‘a processor’ or even ‘the Internet’ has led the Federal Circuit to give these claims control over the claimed function however implemented”). Compare *Aristocrat Techs. Austl. Pty Ltd. v. Int’l Game Tech.*, 521 F.3d 1328, 1337–38 (Fed. Cir. 2008) with *Inventio AG v. ThyssenKrupp Elevator Ams. Corp.*, 649 F.3d 1350, 1359–60 (Fed. Cir. 2011) (noting that “computing unit” was sufficiently definite structure such that the “means-plus-function” analysis of Section 112(f) did not apply).

133. *Haliburton Energy Servs. Inc. v. M-I LLC*, 514 F.3d 1244, 1253 (Fed. Cir. 2008) (observing that “[w]hen a claim limitation is defined in purely functional terms, the task of determining whether that limitation is sufficiently definite is a difficult one”); see also *Biosig Instruments, Inc. v. Nautilus, Inc.*, 715 F.3d 891, 903–04 (observing that “functional language may also be used to limit the claims without having the means-plus-function format”); *Moore USA, Inc. v. Standard Register Co.*, 229 F.3d 1091, 1111 (Fed. Cir. 2000) (“We note that there is nothing wrong with defining the dimensions of a device in terms of the environment in which it is to be used.”).

134. *Haliburton*, 514 F.3d at 1256. The patentee’s specification defined “fragile gels” as follows: “A ‘fragile gel’ as used herein is a ‘gel’ that is easily disrupted or thinned, and that liquifies or becomes less gel-like and more liquid-like under stress” *Id.* at 1246–47. *Haliburton*’s claims were “distinguishable from the prior art only because they are ‘fragile gels.’” Thus, the court observed, “By failing to identify the degree of fragility of its invention, *Haliburton*’s proposed definition would allow the claims to cover not only that which it invented that was superior to the prior art, but also all future improvements to the gel’s fragility.” *Id.* at 1253 (emphasis added).

135. *Id.* at 1253–55.

nothing stops a patentee from defining claim terms in the specification (i.e., from acting as her own “lexicographer”).¹³⁶

So why do patentees fail to avoid these easily avoidable ambiguities? While some claim ambiguities may be a function of oversight or sloppy drafting, a good deal of evidence suggests that patentees (or rather, their lawyers) deliberately inject ambiguity into claims in the hopes of enforcing them broadly later on against competitors.¹³⁷

The next Section highlights the Federal Circuit’s historically lax standard for assessing claim definiteness (outside of the “means-plus-function” context). If good fences make good neighbors, then the Federal Circuit’s “not insolubly ambiguous” standard seemed to condone sloppy fence building. In announcing a new and stricter standard in *Nautilus*, the Supreme Court echoed similar concerns.¹³⁸

C. The Federal Circuit’s “Insoluble Ambiguity” Standard

Inventors may need wiggle room when using language to describe a particular invention. But how much imprecision should the definiteness requirement tolerate, given the notice function of claims? For many years, the Federal Circuit’s answer seemed to be: a whole lot.

Prior to the Supreme Court’s recent *Nautilus* decision, the Federal Circuit invalidated claims for indefiniteness only where they were “insolubly ambiguous” or not “amenable to [claim] construction.”¹³⁹ In embracing this lax standard for definiteness and rejecting a higher one, the Federal Circuit explained:

136. See, e.g., *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316 (“[O]ur cases recognize that the specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor’s lexicography governs.”).

137. See, e.g., Peter F. Menell, Brief *Amicus Curia* of Professor Peter S. Menell in Support of Neither Party in *Nautilus Inc. v. Biosig Instruments, Inc.* No. 13-369 at 3 (“By obfuscating the scope of rights . . . patentees can gain greater flexibility in targeting new ventures as well as an element of surprise in later asserting their rights.”). Menell surveys an extensive literature by patent prosecutors encouraging these strategies of obfuscation. *Id.* at 10; see also Stephen M. McJohn, *Patents: Hiding from History*, 24 SANTA CLARA COMPUT. & HIGH TECH L.J. 961, 971 (2008) (observing that “experts in claim drafting offer the following advice to inventors and patent drafters: Do not define the terms used in your claims”); R. Polk Wagner, *Understanding Patent-Quality Mechanisms*, 157 U. PA. L. REV. 2135, 2149 (2009) (“[A] patentee will almost certainly seek substantial vagueness, thus gaining flexibility to effectively alter the scope and description of the patent according to changing circumstances.”); cf. Chiang, *supra* note 4, at 513 (arguing that a better framing of the problem is “not that patent claims are ambiguous but that [self-serving patentees] write claims in an overbroad manner”).

138. *Nautilus*, 134 S. Ct. at 2123.

139. *Exxon Engineering & Research Co. v. U.S.*, 265 F.3d 1371, 1375 (Fed. Cir. 2001). Peter Menell observes that the Federal Circuit’s insoluble ambiguity standard “made its debut”

We engage in claim construction every day, and cases frequently present close questions of claim construction on which . . . judges . . . may disagree. Under a broad concept of indefiniteness, all but the clearest claim construction issues could be regarded as giving rise to invalidating indefiniteness . . . [W]hat we have asked is that claims be amenable to construction, however difficult that task may be. If a claim is insolubly ambiguous, and no narrowing construction can properly be adopted, we have held the claim indefinite. If the meaning of the claim is discernible, even though the task may be formidable and the conclusion may be one over which reasonable persons may disagree, we have held the claim sufficiently clear to avoid invalidity on indefiniteness grounds.¹⁴⁰

Under the Federal Circuit's insoluble ambiguity standard, claims (outside of the "means-plus-function" variety) routinely survived definiteness challenges.¹⁴¹ In fact, claims were deemed sufficiently definite, even when the patentee could have easily avoided the ambiguity, the custom in the field of art was to include the information that the patentee neglected to include, or when multiple constructions were plausible and the patentee failed to indicate which definition governed.¹⁴² As Jason Rantanen recently observed, "In light of the court's low standard for claim definiteness and the low rate at which definiteness challenges succeeded at the Federal Circuit, the signal being sent by the court was clear—do not bring definiteness

in the 2001 *Exxon* case, and that prior to this case, "the Federal Circuit required that one 'skilled in the art' would understand what is claimed when the claim is read in light of the specification." Menell, *supra* note 137, at 33–34 (citing cases).

140. *Exxon*, 265 F.3d at 1371, 1375. In embracing this lax standard for indefiniteness, the Federal Circuit not only invoked the doctrine's close relationship with claim construction, but also the statutory presumption of patent validity in Section 282: "By finding claims indefinite only if reasonable efforts at claim construction prove futile, we accord respect to the statutory presumption of patent validity, and we protect the inventive contribution of patentees, even when the drafting of their patents has been less than ideal." *Id.*

141. *See e.g.*, CRAIG NARD, *THE LAW OF PATENTS* (3rd ed. 2014) (noting the Federal Circuit's insoluble ambiguity standard had not been a "significant hurdle for patentees"); Patti B. Saris, *The Indefinite Role of the Trial Judge in Patent Litigation*, 18 LEWIS & CLARK L. REV. 751, 763 (2014) (observing that under the insolubly ambiguous standard, the "average patent tended to survive indefiniteness challenges quite readily"); Rantanen, *supra* note 127, at 6.

142. *See, e.g., Exxon*, 265 F.3d at 1376, 1383. In *Exxon*, for example, the Federal Circuit held the claims sufficiently definite under the insolubly ambiguous standard, even though "[t]he trial court was correct to fault the Exxon patents as lacking in specificity in several respects—*specificity that in some instances would have been easy to provide* and would largely have obviated the need to address the issue of indefiniteness. But . . . we disagree the flaws were fatal." *Id.* at 1376 (emphasis added). The Federal Circuit further observed, "The patentee could easily have cured the ambiguity by adding a single word or phrase to the claims or specification of the '982 patent stating which method of measuring liquid velocity the patentee was using. In fact, *much of the extrinsic evidence suggests that the practice in this field of art is to state specifically whether velocity is interstitial or superficial.*" *Id.* at 1383. Even so, the Federal Circuit found that the claims were not "rendered so ambiguous that one of skill in the art could not reasonably understand their scope." *Id.* at 1383; *see also* Saris, *supra* note 141, at 763 ("Under the 'insolubly ambiguous' test, even if the scope of a claim is not plain on its face, even if the task to discern the scope is 'formidable,' even if 'some experimentation may be necessary,' and even if 'reasonable persons will disagree,' the claim still may not be indefinite!").

challenges except in the most extreme of cases.”¹⁴³ The Federal Circuit’s lax definiteness standard garnered much scholarly and judicial criticism.¹⁴⁴

The insoluble ambiguity standard also differed from the USPTO’s more onerous one—as previously noted.¹⁴⁵ The USPTO’s more exacting standard for definiteness might help resolve claim ambiguities in the first instance. But as Jonathan Masur and Lisa Larrimore Oullette recently observed, USPTO examiners “improperly imported” the Federal Circuit’s insoluble ambiguity standard into their own assessments of indefiniteness during patent prosecution.¹⁴⁶ Such a “deference mistake” by USPTO examiners creates a vicious circle, because once these ambiguous patents are granted, they are presumed valid, making courts less likely to invalidate them on definiteness grounds.¹⁴⁷ Thus, the definiteness standard applied by courts and embraced by the Federal Circuit is an important check on ambiguous claims¹⁴⁸—a concern the Supreme Court recently emphasized in *Nautilus*.

D. Nautilus’s Insistence on “Reasonably Certainty”

In the 2014 *Nautilus* decision, the Supreme Court rejected the Federal Circuit’s insoluble ambiguity standard and imposed a

143. See Rantanen, *supra* note 127, at 379.

144. See, e.g., *Enzo Biochem, Inc. v. Applera Corp.*, 599 F.3d 1325, 1348 (Fed. Cir. 2010) (Plager, J., dissent from denial of rehearing en banc) (“[T]he general conclusion of our law seems to be this: if a person of ordinary skill in the art can come up with a plausible meaning for a disputed claim term in a patent, that term, and therefore the claim, is not indefinite.”); *BESSEN & MEURER*, *supra* note 2, at 46; Menell, *supra* note 137, at 3–4; Saris, *supra* note 142, at 763.

145. See *supra* text accompanying notes 116–18.

146. Masur & Oullette, *supra* note 119, at 692–93 (explaining that “[e]ven after the PTO explicitly clarified that examiners should use a lower threshold of ambiguity, such that claims are indefinite if ‘amenable to two or more plausible constructions,’ other PTO decisions continued to improperly apply the higher standard”); see, e.g., *Ex parte Coble*, 2012 WL 4483292, *2 (BPAI) (reversing an examiner’s rejection for indefiniteness because the claims were not “insolubly ambiguous”); *Ex parte Dionne*, 2012 WL 3613695, *4 (BPAI) (same); *Ex parte Golle*, 2012 WL 5937546, *4–5 (PTAB) (same); *Ex parte Kessel*, 2012 WL 4165616, *3 (BPAI) (same); *Ex parte Crenshaw*, 2008 WL 6678100, *8 (BPAI) (same); *Ex parte Machida*, 2008 WL 4449324, *2, 5 (BPAI) (same); *Ex parte Saaski*, 2008 WL 4752052, *4–5 (BPAI) (same); *Ex parte Spina*, 2008 WL 4768094, *2–3 (BPAI) (same).

147. See Masur & Oullette, *supra* note 119, at 693.

148. Given the resource realities of the USPTO, a patent examiner has little time to examine each patent. See Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495, 1500 (2001) (noting that an examiner spends an average of eighteen hours on the prosecution of a patent). Thus, the patent system relies on courts to invalidate patents that were wrongly issued by the USPTO. See, e.g., John R. Allison & Mark A. Lemley, *Empirical Evidence on the Validity of Litigated Patents*, 26 AIPLA Q.J. 185, 205 (1998) (observing that courts invalidate nearly half of all patents litigated to final judgment); Allison et al., *supra* note 105, at 1801 (placing the invalidation rate today at 43 percent).

seemingly stricter one—requiring claims to inform PHOSITAs about the scope of an invention with “reasonable certainty.”¹⁴⁹ The Court concluded that “the Federal Circuit’s formulation, which tolerates some ambiguous claims but not others, does not satisfy the statute’s definiteness requirement.”¹⁵⁰

The Court’s decision to wade into the claim uncertainty conversation is itself telling, perhaps underscoring the perceived magnitude of the patent boundary problem. Notably, the Court’s last treatment of definiteness occurred well over half a century ago.¹⁵¹ *Nautilus* has focused new attention on the definiteness requirement, which over the last few decades had become increasingly tangential to conversations about patent uncertainty.¹⁵²

In *Nautilus*, the contested patent claims concerned heart rate monitors on exercise equipment.¹⁵³ The claims included, among other elements, that electrodes be “mounted . . . in *spaced relationship* with each other.”¹⁵⁴ The specification did not, however, define “spaced

149. *Nautilus*, 134 S. Ct. at 2123.

150. *Id.*

151. Before *Nautilus*, the Supreme Court’s last treatment of definiteness was in *United Carbon Co. v. Binney & Smith Co.*, 317 U.S. 228 (1942). There, the Court explained:

The statutory requirement of particularity and distinctness in claims is met only when they clearly distinguish what is claimed from what went before in the art and clearly circumscribe what is foreclosed from future enterprise. A zone of uncertainty which enterprise and experimentation may enter only at the risk of infringement claims would discourage invention only a little less than unequivocal foreclosure of the field.

Id. at 236.

152. See e.g., Greg Reilly, *Completing the Picture of Uncertain Patent Scope*, 91 WASH. U. L. REV. 1353 (2014) (“[B]efore *Nautilus*, the indefiniteness doctrine as largely an afterthought in the debate over uncertain patent scope.”); Allison et. al., *supra* note 102, at 1784 (observing that “the indefiniteness doctrine plays a larger role than previously recognized in patent law”).

153. See *Nautilus*, 134 S. Ct. at 2125. Unlike existing heart rate monitors, Biosig’s patented invention was able to eliminate electrical signals given off by the skeletal muscles (“electromyograms” or “EMG signals”) that interfered with electrical signals given off by the heart (“electrocardiographs” or “ECG signals”), thereby getting a more accurate reading. EMG signals are generated, for example, when a person moves her arms during exercise. EMG signals can “mask” ECG signals, making heart rate measurement during exercise difficult. Biosig’s patented

invention focuses on a key difference between EMG and ECG waveforms: while ECG signals detected from a user’s left hand have a polarity opposite to that of signals detected from her right hand, EMG signals from each hand have the same polarity. The patented device works by measuring equalized EMG signals detected at each hand and then using circuitry to subtract the identical EMG signals from each other, thus filtering out the EMG interference.

Id. at 2126.

154. *Id.* (emphasis added) (The claim read, in relevant part, as follows: “A heart rate monitor for use by a user in association with exercise apparatus and/or exercise procedures, comprising: an elongate member; electronic circuitry . . . ; a first live electrode and a first common electrode mounted on said first half in *spaced relationship* with each other; a second live electrode and a second common electrode mounted on said second half in *spaced relationship*

relationship” or provide specific “parameters for determining the appropriate spacing.”¹⁵⁵ The specification did not, for instance, say that the space between the electrodes should be one inch. The patent owner, Biosig, brought a patent infringement suit against Nautilus for selling exercise machines that included its patented heart rate monitor technology. Nautilus argued that Biosig’s patent was invalid, because the term “spaced relationship” was indefinite. The district court agreed. However, the Federal Circuit reversed and remanded, holding that the term was “amenable to construction” or “not insolubly ambiguous.”¹⁵⁶

The Supreme Court subsequently rejected the Federal Circuit’s insoluble ambiguity standard.¹⁵⁷ The Court replaced the Federal Circuit’s standard with a new and stricter one: “Claims, viewed in light of the specification and prosecution history, [must] inform those skilled in the art about the scope of the invention with *reasonable certainty*.”¹⁵⁸ Thus, it no longer suffices that a court can merely “ascribe *some* meaning” to patent claims during claim construction.¹⁵⁹ In rejecting the Federal Circuit’s formulation, the Court invoked the property “clear boundar[y]”¹⁶⁰ comparison. The Court also highlighted the deliberate ambiguity problem: “[A]bsent a meaningful definiteness check . . . patent applicants face powerful incentives to inject ambiguity into their claims.” Since the “patent drafter is in the best position to resolve” claim ambiguity, the Court sought to “eliminat[e] th[e] temptation” to draft ambiguous claims.¹⁶¹

The *Nautilus* decision is indeed notable—especially against the backdrop of claim uncertainty literature that routinely contrasts ambiguous claims (and permissive claiming requirements) with clear property boundaries. Two caveats are in order, however, lest this Article be accused of over-claiming. First, this Article does not make a causal claim that the claim-fence equation caused the Supreme Court

with each other; said first and second common electrodes being connected to each other and to a point of common potential”).

155. *Id.* at 2127.

156. *Id.*

157. *Id.* at 2131.

158. *Id.* at 2129.

159. *Id.* at 2123 (“It cannot be sufficient that a court can ascribe some meaning to a patent’s claims; the definiteness inquiry trains on the understanding of a skilled artisan at the time of the patent application, not that of a court viewing matters post hoc. To tolerate imprecision just short of that rendering a claim ‘insolubly ambiguous’ would diminish the definiteness requirement’s public-notice function and foster the innovation-discouraging ‘zone of uncertainty,’ against which this Court has warned.”).

160. *Id.* at 2124.

161. *Id.* at 2129 (citing *Hormone Research Foundation, Inc. v. Genentech, Inc.*, 904 F.2d 1558, 1563 (Fed. Cir. 1990)) (“It is a well established axiom in patent law that a patentee is free to be his or her own lexicographer.”).

to up the definiteness ante in *Nautilus*. Property-talk may be a supporting actor in the definiteness debate, providing rhetorical weight for increasing patentees' notice obligations. While property rhetoric can sometimes mask the complexity of certain issues in IP,¹⁶² it can also be a persuasive tool for reform "by calling up particular associations that generate visceral reactions in listeners."¹⁶³ Typically, it is a tool that has been used to push for broad IP rights.¹⁶⁴ In debates over claim uncertainty and definiteness, however, property-talk has played a notably different role—a fact that has gone unexamined thus far in the patent literature. The Article's main contribution is to highlight this important area of patent law where property-talk defies the standard critique.

Second, it is too early to tell whether *Nautilus* has, in fact, led to less claim ambiguity and better notice of patent boundaries. An empirical assessment of *Nautilus*'s effect on courts' definiteness outcomes or patentees' claiming practices is beyond the scope of this Article. On the face of it, requiring claims to delineate patent boundaries with "reasonable certainty" certainly seems to ask more of patentees than requiring claims to not be "insolubly ambiguous." In the wake of *Nautilus*, many commentators surmised that patentees would have less leeway to claim ambiguously.¹⁶⁵ But it is yet unclear whether the new standard will reduce patent uncertainty in practice.¹⁶⁶ Even the Supreme Court announced its new reasonable certainty standard without applying it¹⁶⁷ (as the Court is wont to do in the patent context¹⁶⁸). Thus, lower courts must apply the new standard with little guidance from the Court.¹⁶⁹

162. See *supra* Part III(A).

163. See Fagundes, *supra* note 69, at 660 (discussing the role of property rhetoric in IP law and offering a vision for how it can be used to lobby for a robust public domain).

164. *Id.* at 663.

165. See *e.g.*, Allison & Ouellette, *supra* note 109, at 6 ("Although the Court's [reasonable certainty] language seems to call for imposition of a stricter definiteness requirement, its actual impact largely remains to be seen."); Camilla Hrdy & Ben V. Picozzi, *Claim Construction or Statutory Construction?: A Response to Chiang & Solum*, 124 YALE L.J. FORUM 208, 217 (2014) (observing that in *Nautilus*, "the Court announced a different, apparently stricter standard" for definiteness).

166. See, *e.g.*, Allison and Ouelette, *supra* note 109, at 6.

167. See *Nautilus*, 134 S. Ct. 2120, 2131 ("Mindful that we are a court of review, not of first view, we decline to apply the standard we have announced to the controversy between *Nautilus* and *Biosig*.").

168. See *e.g.*, Peter Lee, *Patent Law and the Two Cultures*, 120 YALE L.J. 2, 63–64 (2010) (noting that because of its "small patent docket, Supreme Court Justices themselves rarely have to apply" the standards they announce; "[t]hus, the Court is free to announce broad, policy-oriented standards without considering the difficulties of applying them in myriad technological contexts.").

169. The Supreme Court noted that the Federal Circuit's application of its previous standard might track "reasonable certainty" in some cases, but criticized the "insoluble

Nautilus's actual impact will likely depend in part on the Federal Circuit's willingness to embrace a stricter definiteness standard. The Federal Circuit's post-*Nautilus* case law is fairly meager.¹⁷⁰ However, at least one commentator has already concluded that no meaningful change in definiteness jurisprudence has taken place at the Federal Circuit post-*Nautilus*.¹⁷¹ The Federal Circuit's decision in *Nautilus*, on remand from the Supreme Court, seems to support this characterization. On remand, the Federal Circuit once again found the disputed claims definite, this time "steer[ing] by the bright star of 'reasonably certainty' rather than the unreliable compass of 'insoluble ambiguity.'"¹⁷² On the other hand, a more recent Federal Circuit decision in *Dow Chemical Co. v. Nova Chemicals Corp.*¹⁷³ suggests that the Federal Circuit does recognize a stricter—or

ambiguity" standard for "breed[ing] lower court confusion." See *Nautilus*, 134 S. Ct. at 2130. The Court noted, "[S]uch terminology can leave courts and the patent bar at sea without a reliable compass." *Id.*

170. A Westlaw search of Federal Circuit opinions reveals approximately thirteen post-*Nautilus* cases where the court assessed definiteness and the claim terms at issue were not in the means-plus-function form. See e.g., *Akzo Nobel Coatings, Inc. v. Dow Chem. Co.*, ___ F.3d ___, 2016 WL 363443 (Fed. Cir. 2016) (holding claims not indefinite); *Cioffi v. Google, Inc.*, 2015 WL 7254039, at *11 (Fed. Cir. 2015) (holding claims not indefinite); *Dow Chemical Co. v. Nova Chemicals Corp.*, 803 F.3d 620, 635 (Fed. Cir. 2015) (holding claims indefinite); *Ethicon Endo-Surgery, Inc. v. Covidien, Inc.*, 796 F.3d 1312, 1338 (Fed. Cir. 2015) (holding claims not indefinite); *Biosig Instruments v. Nautilus Inc.*, 783 F.3d 1374, 1384 (Fed. Cir. 2015) (holding claims not indefinite); *Teva Pharmaceuticals v. Sandoz, Inc.*, 723 F.3d 1363, 1375 (Fed. Cir. 2015) (holding claims indefinite); *Apple Inc. v. Samsung Electronics Co.*, 786 F.3d 983, 1003 (holding claims not indefinite); *Warsaw Orthopedic, Inc. v. Nuvasive, Inc.*, 778 F.3d 1365, 1371 (Fed. Cir. 2015) (holding claims not indefinite); *Eidos Display, LLC v. Au Optronics Corp.*, 779 F.3d 1360, 1368 (Fed. Cir. 2015) (holding claims not indefinite); *Lexington Luminance LLC v. Amazon.com Inc.*, 601 F. App'x 963 (Fed. Cir. 2015) (holding claims not indefinite); *H-W Technology, L.C. v. Overstock.com, Inc.*, 758 F.3d 1329, 1335–6 (Fed. Cir. 2014); *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1265 (Fed. Cir. 2014) (holding claims not indefinite); *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1371 (Fed. Cir. 2014) (holding claims indefinite).

171. See Rantanen, *supra* note 127, at 377. Rantanen argues that outside of the "means-plus-function" context, the Federal Circuit's "post-*Nautilus* decisions follow the same pattern: a boilerplate recitation of *Nautilus* followed by actual analysis under [the Federal Circuit's] own precedent." *Id.* at 382. Rantanen does, however, acknowledge the "potential for movement" in the Federal Circuit's indefiniteness jurisprudence. See *id.* at 390.

172. *Biosig Instruments Inc. v. Nautilus Inc.*, 783 F.3d 1347, 1379. I leave it to the reader to decide how much sarcasm drips from that statement.

173. See *Dow Chem. Co. v. Nova Chemicals Corp.*, 803 F.3d 620 (2015). In *Dow*, Dow's patent claims concerned an improved plastic with "a slope of strain hardening coefficient greater than or equal to 1.3." *Id.* at 624–25. The term strain hardening refers to "a property wherein a material becomes harder as it is stretched." *Id.* at 631. Nova had argued that Dow's claims were indefinite because they failed to teach PHOSITA how to measure the "slope of strain hardening." *Id.* at 625. In a previous appeal, after a jury trial, the Federal Circuit had held the claims not indefinite, applying their pre-*Nautilus* insoluble ambiguity standard. *Id.* The district court then held a bench trial on supplemental damages and granted Dow supplemental damages, leading to a subsequent appeal. See *id.* While the subsequent appeal to the Federal Circuit was pending, the Supreme Court decided *Nautilus*. On appeal, the Federal Circuit concluded that the

at least, changed—standard post-*Nautilus*. In *Dow*, the Federal Circuit observed, “[T]here can be no serious question that *Nautilus* changed the law of definiteness. This was indeed the very purpose of the *Nautilus* decision.”¹⁷⁴ Thus, while the practical impact of *Nautilus* remains to be seen, the Supreme Court’s goal of improving patent boundary notice with a heightened definiteness standard is hard to deny—even for the Federal Circuit.¹⁷⁵

V. CONCLUSION

Claims often fail to notify interested parties about the boundaries of a patent. In advocating for reforms designed to improve patent clarity and notice, courts and commentators routinely contrast ambiguous patent claims with clear tangible property boundaries. This Article has sought to examine an unappreciated consequence of this vein of “property-talk” in patent law. Many intellectual property scholars view property-talk suspiciously, because it often supports strengthening patent owners’ rights at the expense of competitors and follow-on innovators. This Article complicates the standard critique of property-talk in patent law by focusing on debates over claim uncertainty and the new definiteness standard in *Nautilus*. In this area of patent law, courts and commentators invoke the ideal of clear, fixed, and determinate real property boundaries (e.g., “fences”) to support requiring patentees to draft clearer claims.

While the equation of fences and claims may mask the complexity of both patent and property boundaries, it is nonetheless an interesting example of property-talk’s double edge. Property-talk has helped expand the rights of patent holders, but it can also support

supplemental damages award had to be reversed because of the intervening decision in *Nautilus*. The Federal Circuit held that *Nautilus*’s change in the law of indefiniteness provided an exception to issue preclusion and that *Dow*’s claims were invalid for indefiniteness under the new *Nautilus* standard. *Id.* at 625–26. As to the latter, the Federal Circuit explained that there were four ways to measure the slope of strain hardening, each of which could produce different results, and “neither the patent claims nor the specification here . . . provides any guidance as to which method should be used.” *Id.* at 633–34. The Federal Circuit explained, “[B]efore *Nautilus*, a claim was not indefinite if someone skilled in the art could arrive at a method and practice that method. In our previous opinion, relying on this standard, we held that the claims were not indefinite . . . Under *Nautilus*, this is no longer sufficient . . . Here, the required guidance is not provided by the claims, specification, and prosecution history.” *Id.* at 634.

174. *Id.* at 630. The Federal Circuit noted that “*Nautilus* emphasizes ‘the definiteness requirement’s public-notice function.’” *Id.*

175. Robin Feldman has pointed to *Nautilus* as part of the Supreme Court’s “strong message” to the Federal Circuit. See Robin Feldman, *Coming of Age at the Federal Circuit*, 18 GREEN BAG 2D 27, 28 (2014). She observes, “Much of the Federal Circuit’s tinkering over the decades has been in the service of an expansive interpretation of patent law and patent holder right. In case after case this term, however, the Supreme Court cut back on the broad roaming range that patent holders have come to enjoy and expect from the Federal Circuit.” See *id.* at 34.

erecting hurdles meant to improve the notice function of claims. In the context of patent definiteness, time will tell whether the Supreme Court's new reasonable certainty standard imposes a real hurdle or merely a theoretical one.