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Forcing Patent Claims

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FORCING PATENT CLAIMS

Tun-Jen Chiang*

An enormous literature has criticized patent claims for being ambiguous. In this Article, I explain that this literature misunderstands the real problem: the fundamental concern is not that patent claims are ambiguous but that they are drafted by patentees with self-serving incentives to write claims in an overbroad manner. No one has asked why the patent system gives self-interested patentees the leading role in delineating the scope of their own patents.

This Article makes two contributions to the literature. First, it explicitly frames the problem with patent claims as one of patentee self-interest rather than the intrinsic ambiguity of claim language. Second, it provides a counterintuitive answer to the question of why the patent system relies on patentee-drafted claims. Although giving patentees claim-drafting power undoubtedly leads to overbroad patent rights, such an allocation of drafting power is nonetheless socially efficient. This is because the Patent and Trademark Office (“PTO”) and the courts lack the information necessary to determine the correct scope of a patent in the first instance. Requiring patentees to write claims forces them to take a position, a process that discloses some of the patentee’s private information and reduces the complexity of subsequent decisionmaking by courts and the PTO. While patentees will overclaim, they cannot overclaim too much, and relying on an imperfect claim is better than having a court or the PTO make an uninformed guess in the first instance. The Article concludes by explaining the implications of this insight for the debate over claim construction.

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INTRODUCTION

One of the oddest features of the patent system is that patentees get to draft the patent “claim.”¹ Because the patent claim defines the scope of the monopoly,² patentees have a strong incentive to subtly slant the claim’s language in a way that aggrandizes their rights to the detriment of the public. Moreover, it is impossible for the Patent and Trademark Office (“PTO”) to police patentees so fully as to detect every subtle drafting trick.³ In short, it would seem a good idea to prohibit patentees from drafting claims and instead give claim-drafting power to a neutral entity such as the PTO or a court.

Much of the literature on patent-claim construction can be understood as implicitly criticizing the allocation of drafting power to patentees, although no one has done so explicitly.⁴ The existing literature on claim construction focuses on what I call the *linguistic indeterminacy thesis*—the

1. See 35 U.S.C. § 112(b) (2012) (requiring patentees to write claims).

2. See, e.g., *Universal Oil Prods. Co. v. Globe Oil & Ref. Co.*, 322 U.S. 471, 484 (1944) (“The claim is the measure of the grant.”).

3. See Dan L. Burk & Mark A. Lemley, *Fence Posts or Sign Posts? Rethinking Patent Claim Construction*, 157 U. PA. L. REV. 1743, 1752–53 (2009) (arguing that patent applicants intentionally include ambiguities in claim language); Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495, 1528 (2001) (“Examiners do not in fact spend long hours poring over a patent application . . .”).

4. See *infra* Section I.C (providing a survey of prominent critics and their arguments).

argument that the problem with patent claims is their linguistic ambiguity and that such ambiguity results in overbroad patent rights.⁵ But as I have explained in a prior article with Lawrence Solum,⁶ patent claims are not especially ambiguous, and, in any case, ambiguous claims would not obviously lead to systematically overbroad patent rights since ambiguity can be construed either broadly *or* narrowly. Properly understood, the critics' real concern is not that claims are ambiguous but that self-serving patentees draft the claims in an *overbroad* manner.⁷ In other words, the critics implicitly argue that patentee-drafted claims are nothing more than self-serving statements entitled to no weight. Viewed in this light, the question becomes the following: Why does the patent system require patentees to draft claims? And what is the social value of patentee-drafted claims?

This Article provides an answer: patentee-drafted claims are socially valuable because they force patentees to disclose an imperfect approximation of the correct scope of a patent.⁸ Although patentees will overclaim, they cannot overclaim too much,⁹ and some degree of overbreadth is tolerable compared to the alternative. Namely, the only obvious alternative to relying on

5. See, e.g., JAMES BESSEN & MICHAEL J. MEURER, *PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK* 57 (2008) (arguing that patentees overclaim because "the Patent Office does a poor job of monitoring the clarity of patent claims"); Burk & Lemley, *supra* note 3, at 1762–63 (arguing that the inherent ambiguity of claim language "permits—and indeed even encourages—overclaiming by patentees"); Sean B. Seymore, *The Teaching Function of Patents*, 85 NOTRE DAME L. REV. 621, 637–38 (2010) (attributing the problem to "the inherent indeterminacy of language"); see also FED. TRADE COMM'N, *TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION & PATENT LAW AND POLICY* 5 (2003), available at <http://www.ftc.gov/os/2003/10/innovationrpt.pdf> (stating that "[q]uestionable [p]atents" containing overbroad claims "[a]re a [s]ignificant [c]ompetitive [c]oncern"); Gretchen Ann Bender, *Uncertainty and Unpredictability in Patent Litigation: The Time Is Ripe for a Consistent Claim Construction Methodology*, 8 J. INTELL. PROP. L. 175, 209 (2001) (arguing that uncertainty arises because claim language is "inherently ambiguous").

6. Tun-Jen Chiang & Lawrence B. Solum, *The Interpretation-Construction Distinction in Patent Law*, 123 YALE L.J. 530 (2013).

7. See BESSEN & MEURER, *supra* note 5, at 57 (arguing that patentees have incentives to draft "vague" claims that lead to overbroad patents); Dan L. Burk, *Dynamic Claim Interpretation*, in *INTELLECTUAL PROPERTY AND THE COMMON LAW* 107, 112 (Shyamkrishna Balganesh ed., 2013) (arguing that the "patent owner has every incentive to take advantage of every indeterminacy to expand the ambit of exclusivity a little farther" and that this "inevitably leads to a reading that is even broader than the patent drafter might originally have expected"); Burk & Lemley, *supra* note 3, at 1762–63 (expressing concern about the incentive for "overclaiming by patentees"); Seymore, *supra* note 5, at 638 (arguing that "patentees intentionally draft ambiguous claims in an effort to expand their patent rights as far as possible").

8. A key assumption here is that patentees have superior information about the correct scope of the patent, even if they lack incentives for honest disclosure. See *Kintner v. Atl. Comm'n Co.*, 240 F. 716, 717 (2d Cir. 1917) ("[T]he patentee is conclusively presumed to have known what he invented or discovered, better than did any one else, at the time he applied for a patent."); Clarisa Long, *Information Costs in Patent and Copyright*, 90 VA. L. REV. 465, 496–97 (2004) ("In almost all cases, owners will know more about their intellectual goods than observers will.").

9. For an explanation of why patentees are limited in the amount of overclaiming they can get away with, see Section II.D.

patentee-written claims is for some governmental entity, such as the PTO or a court, to determine the correct scope of a patent in the first instance. And a central premise of having a patent system at all (rather than some alternative incentive mechanism such as a government-sponsored prize system) is that the government lacks sufficient information to determine the correct level of reward for particular innovations.¹⁰ In other words, the only alternative to relying on somewhat overbroad patentee-drafted claims is for judges to hazard almost completely arbitrary guesses about optimal patent scope.¹¹

This insight has important implications for the long-running debate over claim construction. Many commentators argue that, because claim text often does not describe the real invention, courts should use their interpretative powers to overcome this defect.¹² In its extreme form, the argument holds that courts should abolish claims altogether and look only at external evidence (i.e., evidence outside the claim, such as the patent specification or expert testimony) to determine the real invention.¹³ In a less extreme form, the argument is that, although courts need not abolish claims, they nonetheless should give external evidence greater weight in the interpretative calculus in order to compensate for the patentee's drafting bias and to obtain the most accurate determination of the real invention.¹⁴ As this Article will explain, both of these arguments turn the problem on its head: the critics implicitly assume that courts can reliably discern the real invention (i.e., the optimal patent scope)¹⁵ without claims, but the whole reason that claims are required is that courts lack the capacity to perform this function.

10. Louis Kaplow, *The Patent-Antitrust Intersection: A Reappraisal*, 97 HARV. L. REV. 1813, 1844 (1984) ("A central reason for reliance on a patent system [over alternative methods of encouraging innovation, such as government-funded prizes] is that it is thought to be too difficult to determine the appropriate level of reward fairly and accurately on a case-by-case basis."); see also Harold Demsetz, *Information and Efficiency: Another Viewpoint*, 12 J.L. & ECON. 1, 11–12 (1969); Brian D. Wright, *The Economics of Invention Incentives: Patents, Prizes, and Research Contracts*, 73 AM. ECON. REV. 691, 695 (1983).

11. One counterargument is that the patent specification can provide courts with all the information they need to discern the real invention. For an explanation of why this is incorrect, see *infra* Section II.B.1.

12. See, e.g., Burk, *supra* note 7, at 121; Dan L. Burk & Mark A. Lemley, *Quantum Patent Mechanics*, 9 LEWIS & CLARK L. REV. 29, 32 (2005) (arguing that courts should construe claims "narrowly and in light of the actual invention"); Christopher A. Cotropia, *Patent Claim Interpretation Methodologies and Their Claim Scope Paradigms*, 47 WM. & MARY L. REV. 49, 127 (2005); Peter Lee, *Substantive Claim Construction as a Patent Scope Lever*, 1 IP THEORY 100, 105 (2010), <http://www.repository.law.indiana.edu/cgi/viewcontent.cgi?article=1006&context=ipt>; Oskar Liivak, *Rescuing the Invention from the Cult of the Claim*, 42 SETON HALL L. REV. 1, 40–42 (2012); see also *infra* Section I.C (discussing a number of scholarly arguments in favor of abolishing patent claims on the basis that such claims do not reflect the real inventions).

13. See, e.g., Burk & Lemley, *supra* note 3, at 1784–85 (arguing for claims to be abolished).

14. See, e.g., Lee, *supra* note 12, at 106 ("[E]xtrinsic evidence . . . provides a more accurate description of the technological scope of the patented invention.").

15. See *infra* Section II.B.1 (defending the proposition that the real invention is conceptually equivalent to the optimal scope of the patent).

The information-forcing insight's initial implication is that courts should refrain from abolishing claims altogether and from attempting directly to discern optimal patent scope; such a methodology faces the problem of insurmountable information costs. But the information-forcing insight has another implication: if courts did not give patentee-written claim text any more weight in claim construction than other types of evidence, then patentees would have no incentive to spend money to draft claims.¹⁶ The long-term result would be de facto abolition, which would once again increase judicial information costs.

The result of this analysis is that courts must delicately balance two competing considerations. In the short run, giving weight to both claim text *and* external evidence will generate the best outcomes, as courts can reap the information benefits of claim text while also using external evidence to detect and rectify a particular patentee's drafting bias. In the long run, however, courts cannot rely too heavily on external evidence, because a patentee's incentive to write claims, and to write them in an informative manner, would disappear if courts gave claim text too little weight. As a result, courts must balance the short-term desire to achieve better outcomes (the equal-weight approach) against the long-term need to preserve incentives for patentee claim drafting (the more-weight-to-claim-text approach). And such a balancing act reflects real life, where courts give primary weight to claim text—by treating the written claim as a presumptive baseline for patent scope—but also do not exclude external evidence from the analysis completely.¹⁷ This Article therefore provides a normative and descriptive theory for how courts should and do construe patent claims.

The Article proceeds in four Parts. Part I provides a background and describes the puzzle of allowing patentees to write patent claims, as well as explains the adverse consequences (and implicit criticisms) that allocating drafting responsibility in this way has produced. Part II then explains why allocating drafting responsibility to patentees is an efficient mechanism to solve an underlying information problem. Part III elaborates on a key implication of the theory—i.e., that in order to provide an incentive for patentees to draft claims and to convey accurate information, courts must give claim text some weight over external evidence, a position that contradicts many academic proposals. Part IV then addresses some objections, and a brief conclusion follows.

16. See Burk & Lemley, *supra* note 3, at 1784 (predicting that, if claims do not “define the scope of the invention, there would be less incentive to use them at all”); Eric A. Posner, *The Parol Evidence Rule, the Plain Meaning Rule, and the Principles of Contract Interpretation*, 146 U. PA. L. REV. 533, 544 (1998) (demonstrating this point in the field of contract law).

17. Compare *Merrill v. Yeomans*, 94 U.S. 568, 570 (1876) (claim text is “of primary importance”), with *Autogiro Co. of Am. v. United States*, 384 F.2d 391, 397 (Ct. Cl. 1967) (“In deriving the meaning of a claim, we inspect all useful documents . . .”).

I. THE PUZZLE OF PATENTEE-DRAFTED CLAIMS

A. *Background on the Patent Document*

A U.S. patent is a complex document, but its two most important parts are the *specification* and the *claims*.¹⁸ The patentee drafts both the specification and the claims, and both are supposed to describe the patentee's invention.¹⁹ Although the Patent Act uses the word "invention" in both of these contexts, the term refers to two distinct concepts. As this Section will explain, the specification describes an invention in the sense of an *embodiment*, while the claim describes an invention in the sense of *monopoly scope*.

1. The Specification Describes an Embodiment

In simplified terms, the specification is the portion of the patent that provides technical knowledge about the invention. It is obviously important that the disclosure is sufficiently detailed to enable the public to gain the full benefit of the invention once the patent expires.²⁰ Accordingly, § 112 of the patent statute mandates that the specification "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 make and use the same."²¹

In practical terms, this means that the specification describes an *embodiment*.²² Only tangible embodiments can be "made," and so the statute implicitly conceptualizes the "invention" of the specification in these terms. Similarly, the requirement that the specification description be detailed and "exact" reflects a conception of the invention as a tangible embodiment whose precise features can be specified. This is not to say that the embodiment actually needs to be built or that the specification is confined to a single embodiment—specifications often describe several embodiments that are not actually reduced to practice. The point is that the specification describes a fixed set of concrete things that all *could* be reduced to physical form at the time of patent filing—rather than an abstract principle or idea that intrinsically lacks such concreteness.

18. In conventional patent parlance, the two major components of a patent are known as the "specification" and the "claims." CRAIG ALLEN NARD, *THE LAW OF PATENTS* 43 (3d ed. 2014). In the patent statute, however, what is commonly called the specification is instead called the "written description," while the word "specification" is used to denote the combination of the written description and the claims. *Id.*; see 35 U.S.C. § 112 (2012). I will follow the conventional usage in this Article.

19. 35 U.S.C. § 112.

20. *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 480–81 (1974).

21. 35 U.S.C. § 112(a).

22. See *Smith v. Snow*, 294 U.S. 1, 11 (1935) (statute requires describing one embodiment, but claims are not limited to the embodiment shown); *Autogiro Co. of Am.*, 384 F.2d at 398 ("The specification 'set[s] forth the best mode contemplated by the inventor of carrying out his invention.' This one embodiment of the invention does not restrict the claims." (alteration in original) (citation omitted) (quoting 35 U.S.C. § 112 (1964))).

For example, the Wright brothers could not have simply written in their patent specification that they had invented “a flying machine with wings.” Such an abstract description would have been too sparse to satisfy the requirements of § 112.²³ Rather, the Wright brothers had to specify that their particular airplane embodiment had a wooden frame and cloth wings, that it was controlled using rope pulleys, and numerous other details about their particular wooden glider.²⁴ Such a concrete and detailed description serves the goals of the patent system by ensuring that the public has all the technical details it needs to reproduce the patentee’s embodiment in the future.

2. The Claim Delineates Monopoly Scope

Although it is important that patentees provide extensive technical detail about their inventions, the law has long recognized that patent scope cannot be limited to literal replication of the specification embodiment or embodiments.²⁵ If the scope were so limited, copyists would quickly take the patentee’s core idea but make minor changes to the details, thereby escaping infringement.²⁶ For example, the Stone Age inventor of the table might disclose a table embodiment made of wood in the patent specification, but he could not disclose a plastic table because plastic would not have been invented. After plastic (or some other material besides wood) was invented, however, anyone who saw a wooden table would immediately understand that a plastic table would work just as well. Therefore, if the patent were confined to literal replication of a wooden table, it would become worthless as soon as plastic—or any other alternative to wood—was invented. This would undermine the patent system’s social goal of incentivizing innovation.²⁷

Thus, rather than confining patent scope to literal replication of the specification embodiment, patent law has always allowed the monopoly to

23. John F. Duffy, *Rules and Standards on the Forefront of Patentability*, 51 WM. & MARY L. REV. 609, 645 (2009) (“[A]bstraction is the very antithesis of the precision required by the disclosure provisions of the Patent Act.”).

24. See U.S. Patent No. 821,393 (filed Mar. 23, 1903) (Wright brothers’ patent on the airplane).

25. See *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605, 607 (1950) (“[C]ourts have also recognized that to permit imitation of a patented invention which does not copy every literal detail would be to convert the protection of the patent grant into a hollow and useless thing.”).

26. MARTIN J. ADELMAN ET AL., *CASES AND MATERIALS ON PATENT LAW* 414 (3d ed. 2009) (“If courts strictly limit the scope of patent protection to the specific examples disclosed in the specification, competitors could readily circumvent the patent through minor changes in design.”).

27. See *Graver Tank*, 339 U.S. at 607.

extend more broadly to cover the inventive *principle*.²⁸ When stated explicitly, the proposition that patent scope covers an idea (and not an embodiment) is not controversial,²⁹ although even experienced patent lawyers are often confused on this point.³⁰ The key insight is that patent law has two separate concepts of “the invention,” and the two parts of the patent describe entirely different things at a conceptual level. The specification describes the invention in the sense of a concrete embodiment or embodiments.³¹ The claim identifies the patentee’s inventive principle and delineates patent scope.³²

The claim is a single sentence, appearing at the end of the patent, that identifies the core inventive features that the patentee considers important.³³ This means that claims omit extraneous details. For example, the Wright brothers’ claim to the airplane identified three key features: (1) adjustable wings; (2) a rudder; and (3) a means for adjusting the rudder in tandem with the wings.³⁴

For present background purposes, the key point is that *every* product utilizing these claimed features is then deemed to infringe the patent, even if

28. See, e.g., *Pfaff v. Wells Elecs., Inc.*, 525 U.S. 55, 60 (1998) (“The primary meaning of the word ‘invention’ in the Patent Act unquestionably refers to the inventor’s conception rather than to a physical embodiment of that idea.”); *Winans v. Denmead*, 56 U.S. (15 How.) 330, 343 (1853) (“[I]t is the duty of courts and juries to look through the form for the substance of the invention . . .”).

29. This does not imply that merely thinking about the patented idea infringes a patent. See Kevin Emerson Collins, *The Knowledge/Embodiment Dichotomy*, 47 U.C. DAVIS L. REV. 1279, 1309–10 (2014). Patent infringement requires a real-world act such as making, using, or selling a thing that implements the patented idea. 35 U.S.C. § 271(a) (2012). My point here is that the set of infringing real-world things is open ended and is not confined to an ex ante specified set of embodiments.

30. See *infra* Section II.B.1; see also EMERSON STRINGHAM, *DOUBLE PATENTING* § 2831, at 209 (1933) (“This primitive confusion of ‘invention’ in the sense of physical embodiment with ‘invention’ in the sense of definition of the patentable . . . survives to the present day, not only in the courts, but among some examiners in the Patent Office.”).

31. See 35 U.S.C. § 112(a) (2012).

32. See *id.* § 112(b); *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (“It is a ‘bedrock principle’ of patent law that ‘the claims of a patent define the invention to which the patentee is entitled the right to exclude.’” (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004))).

33. A patent can have more than one claim, if the patentee wants to identify multiple combinations of features as critical. See 35 U.S.C. § 112(b) (requiring “one or more” claims).

34. This is a simplified version of their seventh claim. The original version read as follows:

In a flying machine, the combination, with an aeroplane, and means for simultaneously moving the lateral portions thereof into different angular relations to the normal plane of the body of the airplane and to each other, so as to present to the atmosphere different angles of incidence, of a vertical rudder, and means whereby said rudder is caused to present to the wind that side thereof nearest the side of the aeroplane having the smaller angle of incidence and offering the least resistance to the atmosphere, substantially as described.

U.S. Patent No. 821,393, col. 6 ll. 62–74 (filed Mar. 23, 1903).

the infringing product looks very different from the specification embodiment and incorporates later-developed technology that was not disclosed in the patent specification.³⁵ For example, a modern Boeing 747 has aluminum wings with adjustable flaps rather than the Wright brothers' flexible cloth wings, and it adjusts its rudder in tandem with the wings using advanced hydraulics rather than rope pulleys. But the Boeing 747 still contains all three of the claimed features, and it therefore would infringe the Wright brothers' patent if the patent had not already expired. In this way, the "invention" identified by a claim is not a particular wooden glider airplane but the general *idea* of all airplanes that have wings and a coordinated rudder. The scope of the patent is then defined in these terms.³⁶

B. Patentee Drafting and the Self-Interest Problem

It can be seen from this brief introduction that claims play an outsize role in the modern patent system. Indeed, claims are usually described as the most important part of the patent document.³⁷ And, as discussed above, the patent system needs something like a claim to delineate the patent's scope—that is, it needs a legal instrument, separate from the specification, to identify the legally protected inventive principle. The question is why the patent system has chosen a *patentee-written* claim for this purpose.

The standard response—the one that patent lawyers and judges would reflexively give and the one contained in virtually every casebook and treatise—is that the notice theory explains claims' role in the patent system.³⁸ This theory states that patentees should describe their invention clearly and precisely to enable the public and competitors to determine whether their

35. *Cont'l Paper Bag Co. v. E. Paper Bag Co.*, 210 U.S. 405, 418–19 (1908) ("The principle of the invention is a unit, and invariably the modes of its embodiment . . . may be numerous and in appearance very different from each other." (quoting 2 WILLIAM C. ROBINSON, *THE LAW OF PATENTS FOR USEFUL INVENTIONS* § 485, at 75 (1890)) (internal quotation marks omitted) (alterations unmarked in original)).

36. *See Universal Oil Prods. Co. v. Globe Oil & Ref. Co.*, 322 U.S. 471, 484 (1944) ("The claim is the measure of the grant.").

37. *E.g.*, John F. Duffy, *On Improving the Legal Process of Claim Interpretation: Administrative Alternatives*, 2 WASH. U. J.L. & POL'Y 109, 109 (2000) ("Claims are the most important part of the modern patent document."); *see also In re Hiniker Co.*, 150 F.3d 1362, 1369 (Fed. Cir. 1998) ("[T]he name of the game is the claim."); Mark A. Lemley, *The Changing Meaning of Patent Claim Terms*, 104 MICH. L. REV. 101, 101 (2005) ("The claims of a patent are central to virtually every aspect of patent law.").

38. *See, e.g., Permutit Co. v. Graver Corp.*, 284 U.S. 52, 60 (1931) ("[Claims] inform the public during the life of the patent of the limits of the monopoly asserted, so that it may be known which features may be safely used or manufactured without a license and which may not.").

activities infringe the patent.³⁹ The benefits of such *ex ante* notice for competitors and the public then justify the outsize role that claims occupy in the patent system.⁴⁰

The problem is that the notice theory relies on a non sequitur when it comes to allocating drafting responsibility to patentees. In one incarnation, the notice theory states that patentees have *the obligation* to describe the invention accurately and precisely in writing the claim.⁴¹ In another incarnation, the notice theory states that claims deserve their outsize role in the patent system because they *actually do* describe the real invention.⁴² The notice theory never explains, however, why patentees would comply with their obligation to write claims that actually describe the real invention when doing so manifestly conflicts with their self-interest.

Once we consider a rational, self-interested patentee's actual incentives, it becomes obvious that patent claims are unlikely to describe the real invention. Rather, patentees will draft claims to cover as much as they can possibly get away with.⁴³ To be sure, patentees cannot get away with claiming everything in the universe because the PTO will scrutinize the claims.⁴⁴ And yet it is fanciful to suppose that the PTO can police patentees perfectly and catch every subtle drafting trick.⁴⁵

Allowing patentees to draft claims therefore produces a systematic tendency toward overbroad claims. If patent claims are only designed to provide prior notice of the patent's scope to the public and to competitors, then an instrument delineating patent scope that was unilaterally drafted by the PTO examiner—we could call it a “grant” instead of a “claim”—would serve the notice function equally well while greatly diminishing the patentee self-interest problem. A notice-based rationale therefore cannot justify allocating claim-drafting responsibility to patentees. With the notice theory thus neutralized, and in the absence of any other persuasive theory to explain why patentee-written claims further the social purposes of the patent system, the apparent solution is to abolish such claims—or at least to ignore them when determining patent scope.

39. *Merrill v. Yeomans*, 94 U.S. 568, 573–74 (1876) (“[N]othing can be more just and fair, both to the patentee and to the public, than that the former should understand, and correctly describe, just what he has invented . . .”).

40. *Haemonetics Corp. v. Baxter Healthcare Corp.*, 607 F.3d 776, 781 (Fed. Cir. 2010) (“Patent claims function to delineate the precise scope of a claimed invention and to give notice to the public, including potential competitors, of the patentee’s right to exclude.”).

41. *Merrill*, 94 U.S. at 573–74.

42. *Haemonetics*, 607 F.3d at 781.

43. ROBERT PATRICK MERGES & JOHN FITZGERALD DUFFY, *PATENT LAW AND POLICY* 26 (6th ed. 2013) (“The overall goal when drafting claims is to make them as broad as the Patent Office will allow.”); ASH TANKHA ET AL., *PATENT YOUR IDEA* § 3.5, at 34 (2011) (“The claims should be drafted as broadly as possible but just narrower than the prior art.”).

44. 35 U.S.C. § 131 (2012) (requiring PTO examination).

45. See BESSEN & MEURER, *supra* note 5, at 57 (arguing that the PTO lacks resources to police patentees); LEMLEY, *supra* note 3, at 1528 (same).

C. *The Claim-Ambiguity Literature as an Implicit Critique*

One can understand much of the existing literature on claim construction as implicitly adopting the view stated in the prior Section. That is, the literature implicitly argues that patentee-drafted claims are just self-serving statements: predictably overbroad, nondescriptive of real invention, and with no other redeeming virtue. The logical conclusion is that they should be abolished or ignored.

But this argument is not made explicitly. As this Section will describe, it is true that many scholars argue that patent claims should be abolished or ignored.⁴⁶ These scholars sometimes contend that patent claims do not reflect the real invention.⁴⁷ Some scholars even go so far as to argue that one cause of the problem is that patentees have bad incentives with respect to claim drafting.⁴⁸ But my analysis differs from the express arguments in the literature in three respects. First, the literature generally characterizes the problem with patent claims as their being too linguistically indeterminate,⁴⁹ whereas my analysis suggests that the real concern is that patent claims are determinately overbroad. Second, the literature generally characterizes the underlying problem as the inherent imprecision of language (with patentee incentives being, at most, a compounding factor).⁵⁰ My analysis instead suggests that the central difficulty lies in self-interested patentee incentives, combined with the institutional allocation of claim-drafting power that gives patentees the opportunity to implement those incentives. Third, with the exceptions of Professor Burk and Professor Lemley, all critics avoid overtly arguing that claims should be abolished (even if their proposals will have that effect in practice). In contrast, I view abolishing patent claims as the

46. See *infra* Sections I.C.1–4. Of course, nobody proposes abolishing patent claims in the sense of making it a crime to write one. Rather, “abolition” is used in the sense of denying legal effect to a claim. See Burk & Lemley, *supra* note 3, at 1784.

47. See, e.g., Burk & Lemley, *supra* note 3, at 1762; Christopher A. Cotropia, *What Is the “Invention”?*, 53 WM. & MARY L. REV. 1855, 1897 (2012); Lee, *supra* note 12, at 104; Liivak, *supra* note 12, at 40.

48. See, e.g., BESSEN & MEURER, *supra* note 5, at 57; Burk, *supra* note 7, at 112; Burk & Lemley, *supra* note 3, at 1762; Seymore, *supra* note 5, at 638.

49. See, e.g., BESSEN & MEURER, *supra* note 5, at 57 (arguing that the problem lies with “vague” claims); Burk & Lemley, *supra* note 3, at 1745–46 (“[C]laim construction may be inherently indeterminate . . . [S]etting out clear boundaries to warn the public of what is and is not claimed . . . increasingly seems to be an illusion.”); Liivak, *supra* note 12, at 40 (“Claim interpretation is now a meaningless exercise. Interpretation in modern patent law takes the actual words from claim language and replaces them with more words.”).

50. See, e.g., Burk, *supra* note 7, at 112 (“Due to the inherent indeterminacy of language, the boundary remains necessarily indeterminate.”); Burk & Lemley, *supra* note 3, at 1762 (arguing that the inherent ambiguity of claim language “permits—and indeed even encourages—overclaiming by patentees”); Peter S. Menell et al., *Patent Claim Construction: A Modern Synthesis and Structured Framework*, 25 BERKELEY TECH. L.J. 711, 716 (2010) (“If nothing else, the past two decades revealed the inherent difficulties of using language to define the boundaries of abstract and intangible rights.”); Seymore, *supra* note 5, at 637–38 (attributing the problem to “the inherent indeterminacy of language”).

obvious policy implication if patent claims indeed lack redeeming social value.

Viewing the existing literature as a criticism of intentional patentee overclaiming—rather than as a criticism of the inherent ambiguity of language—provides a more accurate and coherent framework for thinking about this problem. It is more accurate and more coherent because proponents of the linguistic ambiguity thesis seem to worry mainly about the potential for “ambiguity” to result in overly broad patents; they generally do not express much concern about the potential creation of overly narrow patents,⁵¹ even though a true ambiguity problem should cause high variance in *both* directions. The overclaiming critique is also stronger than the ambiguity critique because, as I explain in more detail elsewhere,⁵² and as I discuss in Section IV.A, there is little evidence that patent claims are systematically ambiguous: the primary piece of evidence cited for this proposition—high reversal rates in claim-construction proceedings—fails upon close inspection.⁵³ And even if patent claims were linguistically ambiguous, there is no indication that such ambiguity is systematically resolved in favor of greater breadth (as the critics assume⁵⁴). Given these defects in the linguistic indeterminacy thesis, the more charitable interpretation of the critics’ argument would view the claim-ambiguity literature as an implicit critique of the institutional allocation of claim-drafting power and as expressing a concern with predictably overbroad language rather than with unpredictable ambiguous language.

That said, one need not view the existing literature in this manner. This Article’s contribution would be even greater if no one had yet asked, even implicitly, why the patent system allows self-serving patentees to draft claims. I believe that the best view is that the question has been asked implicitly and that it is in fact driving much of the critics’ analysis. It is in this light that I outline below a sample of the literature, which I submit is best understood as implicitly criticizing (and arguing for the abolition of) patentee-written claims based on their intentional overbreadth as compared to the real invention. To the extent that the literature can be understood differently, however, that fact does not detract from the thesis of this Article.

51. See, e.g., *Retractable Techs., Inc. v. Becton, Dickinson & Co.*, 653 F.3d 1296, 1311 (Fed. Cir. 2011) (Plager, J., concurring) (complaining about “ambiguous” claims that “go beyond the invention”); Burk, *supra* note 7, at 112 (“[T]he intrinsic imprecision of the text . . . inevitably leads to a reading that is even broader than the patent drafter might originally have expected.”); Liivak, *supra* note 12, at 15 (“[T]his broad allowable claim scope forms the central criticism of the [claim-centered] view.”).

52. See Chiang & Solum, *supra* note 6.

53. See *infra* Section IV.A.

54. See *supra* notes 50–51; see also Burk & Lemley, *supra* note 12, at 32 (equating construing claims “in light of the actual invention” with construing them “narrowly”); Cotropia, *supra* note 47, at 1910 (“One of the results from [adopting his proposal] is that the literal claim scope is likely to be narrow.”).

1. Dan Burk and Mark Lemley

Perhaps the most prominent critics of patent claims are Burk and Lemley. In an article titled *Fence Posts or Sign Posts? Rethinking Patent Claim Construction*, Burk and Lemley argue that the modern claiming system “isn’t working.”⁵⁵ Although they devote considerable space to demonstrating how supposedly indeterminate claim language causes unpredictability in patent rights and associated litigation costs, Burk and Lemley ultimately argue that indeterminacy is not the biggest problem. Rather, the biggest problem is that focusing on claim text—drafted by the patentee’s lawyers—detracts from an inquiry into the real invention:

Far more significant is that legal interpretation of words has taken the place of a definition of the proper scope of the invention itself. . . . It should be no surprise that the result of this collateral process bears only a coincidental relationship to the ideal scope of the patent claim. After *Markman*, we’re not often litigating what the inventor did or what her patent should cover, because we are too concerned with what the lawyers did to define what the invention should cover. We have, in other words, taken our eyes off of the ball.⁵⁶

From the premise that patent claims cause problems and lack any redeeming virtues,⁵⁷ Burk and Lemley then conclude that such claims should be abolished.⁵⁸

2. Oskar Liivak

Even more scathing than Burk and Lemley is Professor Liivak, who has written an article titled *Rescuing the Invention from the Cult of the Claim*.⁵⁹ As the title suggests, Liivak argues that the patent system’s reliance on the claim amounts to a cultlike delusion. In Liivak’s view, the “cult of the claim” has improperly ignored the real invention in favor of a “meaningless” devotion to claim text.⁶⁰ Like Burk and Lemley, therefore, Liivak argues that focusing on claims takes our eyes off the ball—that is, off the real, substantive invention.

Liivak concludes from these premises that courts should focus on the substantive invention.⁶¹ Unlike Burk and Lemley, he does not advocate abolishing claims as a formal matter but rather advocates a rule that courts

55. Burk & Lemley, *supra* note 3, at 1744.

56. *Id.* at 1762.

57. *See id.* at 1746 (“If patent-claim terms lack the virtue of certainty and are in fact doing mischief in the patent system, perhaps we should begin to rethink the whole enterprise . . .”).

58. *See id.* at 1784–85.

59. Liivak, *supra* note 12.

60. *Id.* at 40.

61. *Id.* at 5 (arguing that we should employ a “substantive interpretation of the invention . . . to structure our patent system”).

should always “interpret” claim language to cover the “set of embodiments disclosed in the specification.”⁶² As a practical matter, however, Liivak’s approach would make claims a dead letter. The real inquiry for patent scope becomes not what the claim says but what “set of embodiments disclosed in the specification” a court will find.

For his part, Liivak resists concluding that his proposal renders claims a dead letter. He argues that claims still perform a role under his theory because courts would continue to follow the text “[w]hen the claims precisely and accurately reflect the invention.”⁶³ But this standard is hollow: if courts follow claim text only *after* determining that it matches the real invention, then logically they must first determine what the real invention is, and that inquiry would perform all the analytical work.

3. Chris Cotropia

Professor Cotropia similarly argues that existing patent law operates largely on the view that “the claim *is* the invention.”⁶⁴ This means that courts adopt a “heavy presumption” that the text of the claim determines the patent scope.⁶⁵ Cotropia argues that this approach is contrary to “basic patent theory” because it “invites disjointedness between protection and the real-world contributions of the inventor.”⁶⁶

Instead of focusing on patent claims, Cotropia argues that patent scope should be defined primarily by what he calls the *external invention*.⁶⁷ In practical terms, Cotropia contends that one can find the external invention primarily by looking at the patent specification.⁶⁸ Like Liivak, Cotropia would retain claims as a formal matter, but he argues that they should be creatively “interpreted” to match the specification disclosure.⁶⁹ Once again, the claim text itself becomes secondary in such a regime.

62. *Id.* at 44.

63. *Id.* at 43.

64. Cotropia, *supra* note 47, at 1886.

65. *See id.* at 1897 & n.223 (quoting Cotropia, *supra* note 12, at 123–24) (internal quotation marks omitted).

66. *Id.* at 1862, 1897.

67. *Id.* at 1895 (“The external invention falls more in line with the incentive-to-invent narrative.”).

68. *Id.* at 1906 (“[C]hoosing an external definition of the invention means the specification plays a heavy role . . .”).

69. *Id.* at 1909 (“Because claims must be read in light of the specification, the disclosure dictates claim meaning.”).

4. Peter Lee

Professor Lee also argues that claims are defective because they fail to describe the real invention. According to Lee, “Claim construction has become an exercise in parsing words rather than ascertaining the substance and significance of a patented invention”⁷⁰:

These days, entire claim construction disputes revolve around the meaning of words such as “a.” Such a textualist, inward-looking approach to claim construction deprioritizes contextual factors such as expert testimony and industry dynamics that speak to an invention’s *substantive technological contribution*. This literalist claim construction methodology, moreover, cannot even assert the virtues of certainty and predictability. Claim construction after *Phillips* is still marred by high reversal rates and significant internal dissent among judges of the Federal Circuit.⁷¹

Somewhat unlike the other critics’ proposals, Lee’s solution avoids focusing too much on using the patent specification to determine patent scope. Instead, he argues that courts should look to “expert testimony and industry dynamics.”⁷² This proposal essentially amounts to two layers of expert testimony because “industry dynamics” would presumably be conveyed through expert witnesses. More importantly, like the other critics’ ideas, Lee’s proposal renders claims a dead letter: in his formulation, what matters is not what the claim says but what the expert witnesses say about the patentee’s “substantive technological contribution.”

Like many others, Lee resists this conclusion. In his article, he argues that his proposal would not render claims obsolete because the proposal includes an exception: courts would be obliged to give effect to the claim text if claim-construction *doctrine* (not text) provided a clear answer to the infringement dispute.⁷³ But this is a hollow exception for two reasons. First, as Lee himself explains, current claim-construction case law is already so rife with self-contradiction that it rarely gives a clear answer.⁷⁴ Second, even if claim-construction case law provided clear answers in some cases, Lee’s methodology would itself *generate* a body of claim-construction case law that would feature courts’ bending claim text in increasingly creative ways to achieve the substantive invention. Over time, therefore, claim-construction case law would become less clear, and the vicious cycle would continue until no clear answers remained.

70. Lee, *supra* note 12, at 104.

71. *Id.* (emphasis added).

72. *Id.*

73. *Id.* at 113 (“[I]t bears emphasizing that under my proposal, substantive and policy considerations only come into play when traditional claim construction does not yield a clear answer . . .”).

74. *Id.* at 102–04, 114 (arguing that claim construction is “inherently difficult to perform,” “fraught with indeterminacy,” “highly indeterminate,” and has “well known difficulties”).

5. Robert Merges and John Duffy

In their leading casebook on patent law, Professor Merges and Professor Duffy repeat the basic critique that patent law has lost sight of the invention.⁷⁵ They argue that contemporary patent law focuses excessively on claim text and that this reliance means that courts often adjudicate patent scope “without any of the judges knowing what the inventor’s alleged contribution to the art is.”⁷⁶

Merges and Duffy argue that, instead of adopting a textualist approach, courts should “first look[] into the art to find what the real merit of the alleged discovery or invention is and whether it has advanced the art substantially.”⁷⁷ If the patentee has made a large social contribution, the court would then be “liberal in its construction of the patent to secure to the inventor the reward he deserves” while “being more stingy if what [the inventor] has done works only a slight step forward.”⁷⁸ Thus, rather than claim text, the real driver of patent scope would again be the court’s predicate assessment of the patentee’s contribution.

6. Judge S. Jay Plager

Given the strong academic tide, it should come as no surprise that the argument that courts should seek to measure patent scope by looking for the real invention rather than claim text (because claims are just self-serving statements by patentees) has gained significant traction among judges on the U.S. Court of Appeals for the Federal Circuit.⁷⁹ Although Federal Circuit majority opinions sometimes contain hints of the argument,⁸⁰ its clearest expression can be found in Judge Plager’s concurring opinion in *Retractable*

75. MERGES & DUFFY, *supra* note 43, at 769.

76. *Id.*

77. *Id.* at 770 (alteration in original) (quoting *Eibel Process Co. v. Minn. & Ont. Paper Co.*, 261 U.S. 45, 63 (1923)) (internal quotation marks omitted).

78. *Id.* (alteration in original) (quoting *Eibel*, 261 U.S. at 63) (internal quotation marks omitted).

79. See Chiang & Solum, *supra* note 6, at 573 (explaining that one of the two main lines of claim-construction case law—the other being textualism—can best be understood as being about “a theory of construction that pursues the true invention”).

80. See, e.g., *MySpace, Inc. v. GraphOn Corp.*, 672 F.3d 1250, 1256 (Fed. Cir. 2012) (Plager, J.) (“An inventor is entitled to claim in a patent what he has invented, but no more. . . . [P]roper claim construction requires that we understand what the invention encompasses as well as how the claims are stated.”); *Retractable Techs., Inc. v. Becton, Dickinson & Co.*, 653 F.3d 1296, 1305 (Fed. Cir. 2011) (Lourie, J.) (“In reviewing the intrinsic record to construe the claims, we strive to capture the scope of the actual invention”); *Kinetic Concepts, Inc. v. Blue Sky Med. Grp., Inc.*, 554 F.3d 1010, 1019 (Fed. Cir. 2009) (limiting a claim to treating a “wound” to treatments of skin wounds because doing otherwise would “expand the scope of the claims far beyond anything described in the specification” (internal quotation marks omitted)); *Autogiro Co. of Am. v. United States*, 384 F.2d 391, 397 (Ct. Cl. 1967) (“An invention exists most importantly as a tangible structure or a series of drawings. A verbal portrayal is usually an afterthought”).

Technologies, Inc. v. Becton, Dickinson & Co., in which he stated the following:

However much desired by the claim drafters, who want claims that serve as business weapons and litigation threats, the claims cannot go beyond the actual invention that entitles the inventor to a patent. For that we look to the written description. I have written elsewhere about the curse of indefinite and ambiguous claims, divorced from the written description, that we regularly are asked to construe, and the need for more stringent rules to control the curse.⁸¹

In this short paragraph, Judge Plager makes three arguments. First, he argues that patentee-drafted claim text—which expresses the patentees’ “desire[s]”—often fails to describe the actual inventions because these drafters have self-interested motivations to obtain undeserved business weapons and litigation threats. Second, Judge Plager contends that relying on claim text causes frequent litigation that the courts are “regularly” required to resolve. Finally, he argues that the solution to both of these problems lies in looking primarily to the patent specification⁸² to find the actual invention and to determine patent scope. These arguments mirror in substance the general academic argument. And, like the proponents of this academic argument, Judge Plager characterizes his argument as focusing on a “curse of indefinite and *ambiguous* claims,” when his concern is really about the incentives of claim drafters and the resulting *overbroad* claims that “go beyond the actual invention.”

Of course, the Federal Circuit remains far from abolishing or ignoring claims as a matter of actual doctrine. Even Judge Plager would surely not go to this extreme if directly presented with the question. And yet abolishing claims represents the *logical* conclusion of the theoretical argument to which he is appealing. All of the patent-claim critics, with the notable exceptions of Burk and Lemley, shy away from advocating for formal abolition. But they do so not because they can identify a principle to justify patent claims—the animating thesis of their argument is that claims are overbroad relative to the real invention and therefore possess no social value—but only because lawyers hate overt change⁸³ and because it is an enormous practical hassle to persuade Congress to amend the patent statute to abolish the requirement for formal claiming.⁸⁴ Those are not compelling justifications for patentee-drafted claims.

81. 653 F.3d at 1311 (Plager, J., concurring) (footnote omitted) (citations omitted).

82. Judge Plager uses the more technically accurate term, “written description,” to refer to the specification. See *supra* note 18.

83. See generally 1 BRUCE ACKERMAN, *WE THE PEOPLE: FOUNDATIONS* 17–18 (1991) (describing the “Burkean sensibility” that is “pronounced amongst practicing lawyers and judges”); Larry D. Kramer, *The Pace and Cause of Change*, 37 J. MARSHALL L. REV. 357, 357 (2004) (“Lawyers hate change.”).

84. See Burk & Lemley, *supra* note 3, at 1747 (“Central claiming would be a radical change, and perhaps the country is not ready to take such a step.”); Lee, *supra* note 12, at 105 (stating that legislative action to implement his proposal is unlikely); Liivak, *supra* note 12, at 41 (emphasizing that his proposal does not require statutory reform).

In sum, patentee-drafted claims provide a significant puzzle, one that likely animates the existing literature's critique of the strong role given to claim text in patent-scope determinations. What can possibly justify giving a strong role to a legal instrument that does not accurately describe the real invention? In the absence of a convincing answer, it would logically follow that patentee-written claims ought to be abolished or ignored, a conclusion that makes the question one of practical significance. In the next Part, I will endeavor to provide an answer to this question.

II. THE INFORMATION-FORCING FUNCTION OF CLAIMS

A. *An Analogy: The Value of Contracts of Adhesion*

To begin, it is helpful to consider an analogous situation involving a self-servingly drafted legal instrument. Consider a contract of adhesion between a large corporation and a consumer. Because the written contract is drafted solely by the corporation, the contract likely contains some "fine print" that the consumer does not read and to which he does not really consent.⁸⁵ In sum, there will be subtle differences between the real agreement or bargain—that is, the actual meeting of the minds of the parties—and the literal text of the written contract. For clarity, I will use the label *real bargain* to denote the former and the label *written contract* to denote the latter.

Every first-year law student confronts the question of why courts routinely enforce such contracts of adhesion as written, even though consumers do not read them.⁸⁶ Intuitively, it would seem that courts should disregard such self-servingly drafted contracts and instead look for the real bargain.⁸⁷

Upon close examination, however, it quickly emerges that this alternative is not feasible. If courts simply declared all form contracts unenforceable and ignored such self-serving writings, the result would not be some utopia where formerly powerless consumers could receive their real bargain.⁸⁸ Rather, the result would likely be a complete breakdown of the contract system. In every case, the parties could dispute the terms of their bargain, and they could dispute *all* the terms (e.g., the subject matter, the price, the timing, the quantity) because there would be no written record to which to refer. A court attempting to resolve the dispute would essentially have to reassemble the entire bargain from scratch, and it would need to do so by

85. RICHARD A. POSNER, ECONOMIC ANALYSIS OF LAW § 4.9, at 125 (9th ed. 2014) ("[F]orm contracts . . . tend to be one-sided against the consumer . . ."); see also Jonathan Klick, *The Microfoundations of Standard Form Contracts: Price Discrimination vs. Behavioral Bias*, 32 FLA. ST. U. L. REV. 555, 556 (2005) ("[A] great many of the standardized terms appear to benefit the seller to the potential detriment of the buyer.").

86. MARGARET JANE RADIN, *BOILERPLATE: THE FINE PRINT, VANISHING RIGHTS, AND THE RULE OF LAW* 14 (2013) (stating that "incoming law students . . . are astonished" to discover that adhesion contracts are binding).

87. See, e.g., *id.*; Todd D. Rakoff, *Contracts of Adhesion: An Essay in Reconstruction*, 96 HARV. L. REV. 1173, 1173 (1983).

88. RADIN, *supra* note 86, at 15 ("[I]f all attempts to use boilerplate were to be declared unenforceable, that would cause a considerable disruption of current commercial practice.").

sorting through a morass of self-serving oral testimony and post-hoc litigation-driven evidence.⁸⁹ The prospect of a court's achieving anything resembling an accurate result—that is, one that actually matched the real bargain—would be miniscule. Realistically, the court would find itself utterly lost at sea.

Instead of generating such chaos, written contracts of adhesion provide a reasonable approximation of the real bargain. The drafting party knows the real bargain—or at least it knows more than the court does—and the written contract discloses some of that information to the court. To be sure, the written contract of adhesion will also be slanted in the drafter's favor. But it cannot be too greatly slanted—reputation, consumer experience, and competitive pressures impose a limit on how far a company can go with the fine print even when consumers fail to read it.⁹⁰ Furthermore, the written contract is memorialized before the dispute arises, so the drafting party is less likely to be able disingenuously to tailor the contract to fit the precise facts of a later dispute. In contrast, post-hoc oral testimony and litigation-driven evidence could easily be slanted to fit the case at hand. From a systemic viewpoint, it is easier for courts to enforce written contracts of adhesion than to recreate every bargain from scratch. Rather than detracting from the real bargain, a written contract of adhesion actually serves as the most reliable evidence of it.⁹¹

This does not imply that the most efficient rule would be to enforce dogmatically each and every written contract of adhesion to the letter. The rule in contract law is in fact not so absolute.⁹² But this theory does prove that contracts of adhesion have important social value, even though they are systematically biased in favor of the drafting party. This reality explains why courts do not—and should not—abolish or ignore such contracts and instead accord them considerable weight.

Applying this analogy to patent claims is straightforward,⁹³ and the remainder of this Part will elaborate on that analogy in two steps. In Section

89. *Trident Ctr. v. Conn. Gen. Life Ins. Co.*, 847 F.2d 564, 569 (9th Cir. 1988) (arguing that relaxing the plain-meaning rule “creates much business for lawyers and an occasional windfall to some clients [but] leads only to frustration and delay for most litigants and clogs already overburdened courts”).

90. POSNER, *supra* note 85, § 4.9, at 125–26 (arguing that reputation and competition cannot produce the optimal form contract but do limit abuse).

91. *Slamow v. Del Col*, 594 N.E.2d 918, 919 (N.Y. 1992).

92. *Jake C. Byers, Inc. v. J.B.C. Invs.*, 834 S.W.2d 806, 811 (Mo. Ct. App. 1992) (“The parol evidence rule is simple to state. . . . But, the rule is difficult to apply. . . . [W]e, in Missouri, no different than the courts in most other jurisdictions, have used a variety of principles”); Posner, *supra* note 16, at 538–40 (“[M]any jurisdictions take different and often conflicting approaches to the treatment of extrinsic evidence.”).

93. Burk and Lemley make the same contract–patent analogy, although they come to very different conclusions. See Burk & Lemley, *supra* note 12, at 49–50 (arguing that a textualist approach to claims is analogous to the “discredited” plain-meaning approach to contract interpretation). Given that the overwhelming majority of jurisdictions follow to some extent the plain-meaning approach, 2 E. ALLAN FARNSWORTH, FARNSWORTH ON CONTRACTS § 7.12, at 308 (3d ed. 2004), Burk and Lemley’s argument seems overstated.

II.B, I will argue that, as with the real bargain, courts cannot directly determine the real invention because they face a severe information deficit. In Section II.C, I will explain how patentee-written claims serve as a mechanism to partially overcome this information deficit.

B. Courts Lack Information About the Real Invention

1. The Misconception of the Invention as an Embodiment

In order to see why courts cannot easily determine what the real invention is in a particular case, it is first necessary to rebut a very common misconception. The misconception is that “the real invention” for this purpose is the embodiment(s) described in the specification.⁹⁴ This misconception is intuitively appealing because the patent statute explicitly says that the specification describes “the invention.”⁹⁵ And even without the patent statute, many people intuitively think of an invention as a widget with physical form.⁹⁶

If we accept an embodiment-centric conceptualization of the invention, then my entire argument falls apart. The physical object that the patentee created or described is easy for a court to discern—the object can simply be wheeled into the courtroom for all to see. Furthermore, the patent specification will provide a detailed description of the physical embodiment, including all the details about how to make and use it.⁹⁷ There is no information difficulty to be solved in such a regime and no policy function for claims to serve.

94. See, e.g., *Network, LLC v. Centraal Corp.*, 242 F.3d 1347, 1352 (Fed. Cir. 2001) (“The claims are directed to the invention that is described in the specification; they do not have meaning removed from the context from which they arose.”); *Autogiro Co. of Am. v. United States*, 384 F.2d 391, 397 (Ct. Cl. 1967) (“An invention exists most importantly as a tangible structure”); *Cotropia*, *supra* note 47, at 1866 (conceptualizing the invention as something that an inventor “build[s]”); *Liivak*, *supra* note 12, at 5 (conceptualizing the invention as “the set of embodiments conceived and disclosed by the inventor in enough detail that they can be reduced to practice”).

95. 35 U.S.C. § 112 (2012); see Howard T. Markey, *Why Not the Statute?*, 65 J. PAT. OFF. SOC’Y 331, 333 (1983) (“Ideas are never patentable. Only embodiments of an idea, i.e., an invention, may be patented.”).

96. See STRINGHAM, *supra* note 30, § 2831, at 209 (observing that the “primitive confusion” of the embodiment and the invention “survives to the present day, not only in the courts, but among some of the examiners in the Patent Office”); Giles S. Rich, *The Relation Between Patent Practices and the Anti-Monopoly Laws, Part II*, 24 J. PAT. OFF. SOC’Y 159, 172 (1942) (observing that an embodiment is “[p]opularly but inaccurately called ‘invention’”); cf. Kevin Emerson Collins, *Patent Law’s Functionality Malfunction and the Problem of Overbroad Functional Software Patents*, 90 WASH. U. L. REV. 1399, 1424–25 (2013) (arguing that a core assumption of patent law is that “the identity or defining quality of an invention . . . resides in some subset of the physical, structural properties of the technology produced by an inventor”).

97. 35 U.S.C. § 112(a). Patentees have the practical incentive to comply with this statutory obligation because the PTO can easily detect a situation where the specification on its face fails to describe an embodiment. Cf. *supra* text accompanying notes 41–45.

But as explained in Section I.A, patent law has never subscribed to this conception⁹⁸ because it threatens to eviscerate the underlying incentives of the patent system.⁹⁹ Consider again the Wright brothers' patent on the airplane. If we take seriously the conceptualization of the invention as an embodiment, the logical implication is that the monopoly they should receive—which of course is defined by the invention—would cover only literal replication of a wooden glider with cloth wings. This is the only type of airplane that the Wright brothers actually described in the specification with sufficient exactness and detail that another person in the aviation field could build the same airplane.¹⁰⁰ The Wright brothers themselves could not build (and thus could not have described how to build) a World War I fighter,¹⁰¹ let alone a modern jet. Limiting the Wright brothers' monopoly to literal replication of a wooden glider with cloth wings would render their patent worthless, thereby destroying the *ex ante* incentive to invest in research and development. For this reason, the specification embodiment is *not* the invention, at least not for purposes of defining patent scope.

Instead, the invention for patent-scope purposes has always been defined as the inventor's *idea*.¹⁰² The Wright brothers did not merely invent a single wooden glider with cloth wings that flew for fifty-nine seconds at Kitty Hawk on December 17, 1903.¹⁰³ They invented "the airplane,"¹⁰⁴ which is an idea that covers a large range of machines from a barely flying wooden

98. *Pfaff v. Wells Elecs., Inc.*, 525 U.S. 55, 60 (1998) ("The primary meaning of the word 'invention' in the Patent Act unquestionably refers to the inventor's conception rather than to a physical embodiment of that idea."); *Smith v. Snow*, 294 U.S. 1, 11 (1935) ("[I]t is not necessary to . . . describe in the specifications all possible forms in which the claimed principle may be reduced to practice.").

99. See *supra* notes 25–32 and accompanying text.

100. See *SRI Int'l v. Matsushita Elec. Corp. of Am.*, 775 F.2d 1107, 1121 (Fed. Cir. 1985) (en banc) ("The law does not require the impossible. Hence, it does not require that an applicant describe in his specification every conceivable and possible future embodiment of his invention.").

101. See G.D. Padfield & B. Lawrence, *The Birth of Flight Control: An Engineering Analysis of the Wright Brothers' 1902 Glider*, 107 AERONAUTICAL J. 697, 717 (2003) (stating that "after 1908 the rate of progress in aviation was quite startling; progress which, in many ways, would leave the Wright brothers behind").

102. See, e.g., *Pfaff*, 525 U.S. at 60; *Cont'l Paper Bag Co. v. E. Paper Bag Co.*, 210 U.S. 405, 418–19 (1908) ("The principle of the invention is a unit, and invariably the modes of its embodiment in a concrete invention may be numerous and in appearance very different from each other." (quoting 2 WILLIAM C. ROBINSON, *THE LAW OF PATENTS FOR USEFUL INVENTIONS* § 485, at 75 (1890)) (internal quotation marks omitted) (alterations unmarked in original)); *Winans v. Denmead*, 56 U.S. (15 How.) 330, 343 (1853) ("[I]t is the duty of courts and juries to look through the form for the substance of the invention—for that which . . . the patent was designed to secure . . .").

103. WENDIE C. OLD, *THE WRIGHT BROTHERS: INVENTORS OF THE AIRPLANE* 52–55 (2000).

104. *Id.*

glider to a modern Boeing 747 jet. It is a fundamental mistake—albeit a common one—to conflate the embodiment with the inventive idea.¹⁰⁵

2. The Problem of Identifying the Inventive Idea

Once we understand that the “invention” is not an embodiment but an idea, a problem quickly arises: an idea can be characterized at multiple levels of abstraction, all of which are equally accurate as a matter of logic.¹⁰⁶ For example, consider again the Wright brothers’ invention of the airplane. Is the inventive idea (1) artificially powered flight; (2) artificially powered flight *using wings and a rudder*; or (3) artificially powered flight using *cloth* wings and a *wooden* rudder?

Each of these levels of abstraction constitutes a plausible description of the Wright brothers’ inventive idea. But they have very different implications. A monopoly that covers all powered flight would cover, for example, later-developed helicopters and a future antigravity spaceship. This would provide strong incentives for the Wright brothers and other similarly situated inventors to make investments in research, but it would also impose high monopoly costs.¹⁰⁷ A monopoly that covered only powered flight using wings and rudders would not cover helicopters, but it would still cover all future jet airplanes, including those made with aluminum and modern composite materials. Such a scenario represents an intermediate level of both incentives and monopoly costs.¹⁰⁸ Finally, a monopoly that covered only airplanes using cloth wings and wooden rudders would cover essentially nothing, a situation that produces little to no monopoly costs but also fails to provide much in the way of incentives for inventors.¹⁰⁹

How should the patent system choose among these competing alternatives? Almost everyone at some level agrees that the choice should be based on the economic consequences.¹¹⁰ That is, the patent system should aim to protect the idea at the level of abstraction that optimally balances the incentive benefits and the monopoly costs. For example, Burk and Lemley contend that courts should look for the “ideal scope of the patent claim.”¹¹¹ Cotropia echoes this point by arguing that the invention should be defined

105. MERGES & DUFFY, *supra* note 43, at 27 (“It is very important in patent law not to confuse the invention claimed in the patent with the physical manifestations or ‘embodiments’ of the invention.”); STRINGHAM, *supra* note 30, § 2831, at 209.

106. For a more detailed explanation of this point, see Tun-Jen Chiang, *The Levels of Abstraction Problem in Patent Law*, 105 Nw. U. L. REV. 1097 (2011).

107. *See id.* at 1099–1100.

108. *See id.*

109. *See id.*

110. *Id.* at 1139; *see generally* Robert P. Merges & Richard R. Nelson, *On the Complex Economics of Patent Scope*, 90 COLUM. L. REV. 839 (1990).

111. Burk & Lemley, *supra* note 3, at 1762; *see also id.* at 1765 (arguing that patent scope is “the key policy lever courts can use to ensure that patents encourage innovation” and characterizing the policy goal as “socially optimizing patent scope”).

by “basic patent theory,”¹¹² which, in standard parlance, means the economic balance between incentives and monopoly costs.¹¹³ And Lee explicitly recognizes that his proposal ultimately calls for courts to “calibrat[e] patent scope to maintain incentives to invent without unduly burdening sequential developments.”¹¹⁴

Discerning the real invention therefore conceptually requires finding the economically optimal patent scope. But this is not to say that courts must necessarily phrase the doctrinal test in such an explicit manner. For example, courts can instead say that the invention is the patentee’s embodiment plus all substantially similar embodiments, which is the test that many critics seem to propose.¹¹⁵ Such a formulation is hardly different from saying that courts should conduct economic balancing, since empty standards such as “substantial similarity” possess scant analytical content and thus courts must ultimately utilize some underlying theory to define them.¹¹⁶ In patent law, the commonly accepted theory is economic efficiency.¹¹⁷ The net result is that a substantial-similarity test ends up being a judicial estimation of the optimal economic scope.

3. The Impossibility of Direct Determination

Once we recognize that the real invention is not an embodiment but an idea at a level of abstraction *that represents optimal patent scope*, the patent system’s fundamental information difficulty becomes apparent: courts lack the information necessary to calculate optimal patent scope or even to approximate it in any meaningful way. This is self-evidently true both as a theoretical and as an empirical matter.

As a theoretical matter, the entire reason for having a patent system at all is that the government (including a court) lacks sufficient information to

112. Cotropia, *supra* note 47, at 1913.

113. Merges & Nelson, *supra* note 110, at 868 (“The analysis has concentrated on how changing patent coverage affects the balance between incentives to the inventor and underuse of the invention due to patent monopolies.”).

114. Lee, *supra* note 12, at 111.

115. See Burk & Lemley, *supra* note 3, at 1768, 1785 (arguing for a return to nineteenth-century doctrine, which used a substantial-similarity test); Cotropia, *supra* note 47, at 1910–13 (arguing for greater reliance on the doctrine of equivalents, which uses a substantial-similarity test).

116. The best analogy is reasonableness in tort law. The Hand formula of $B < PL$ is useful precisely because it provides an underlying theory for the meaning of reasonableness. See RICHARD A. POSNER, TORT LAW: CASES AND ECONOMIC ANALYSIS 2 (“This casebook is premised on the belief that the Hand formula . . . provides a unifying perspective in which to view all of tort law.”). Without an underlying theory, a doctrinal test becomes a matter of “I know it when I see it”—an incoherent mess. Cf. *Jacobellis v. Ohio*, 378 U.S. 184, 197 (1964) (Stewart, J., concurring) (describing the obscenity doctrine in this way).

117. See 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, 1967–68 (2005) (arguing that the doctrine of equivalents is based on an economic-efficiency theory).

determine directly the social costs and benefits of a particular patent.¹¹⁸ As the economic literature has long established, if governmental agents, such as judges or PTO examiners, could directly calculate the optimal reward, it would be more efficient to finance innovation through taxpayer-funded prizes than through awards of patent monopolies.¹¹⁹ And this would be true even if judges could only make approximate guesses about the benefits and costs—roughly optimal prizes are still more efficient than roughly optimal monopolies. The patent system's central theoretical premise is that judges cannot meaningfully conduct case-by-case economic balancing.¹²⁰ If this premise does not hold, the policy implication is not to abolish claims—it is to abolish the entire patent system.

As an empirical matter, economists have made repeated attempts to study the social costs and benefits of the patent system, all with inconclusive results.¹²¹ The same information problem—the intrinsic difficulty of measuring social costs and benefits—will plague any attempt to conduct similar studies as to individual patents. It is fanciful to believe that judges or juries—even when aided by expert witnesses—can determine anything remotely resembling the optimal scope of a patent in an individual patent case.¹²²

No critic of patent claims has proposed an alternative methodology for determining patent scope that addresses this information difficulty. By far the most commonly proposed methodology is for courts to look to the patent specification instead of the claim.¹²³ But this comes back to the point

118. Demsetz, *supra* note 10, at 11–12 (“If, somehow, we knew how much and what types of information it would be desirable to produce, then we could administer production independently of the distribution of any given stock of information. But we do not know these things.”); Kaplow, *supra* note 10, at 1844; Wright, *supra* note 10, at 695.

119. See, e.g., Kenneth J. Arrow, *Economic Welfare and the Allocation of Resources for Invention*, in *THE RATE AND DIRECTION OF INVENTIVE ACTIVITY: ECONOMIC AND SOCIAL FACTORS* 609 (Nat'l Bureau of Econ. Research ed., 1962); Steven Shavell & Tanguy van Ypersele, *Rewards Versus Intellectual Property Rights*, 44 J.L. & ECON. 525, 536 (2001) (“[I]f the information that the government has about demand is sufficiently good, then the reward system will dominate patent.”). See generally Daniel J. Hemel & Lisa Larrimore Ouellette, *Beyond the Patents-Prizes Debate*, 92 TEX. L. REV. 303 (2014) (discussing nonpatent mechanisms for funding research).

120. See, e.g., Wright, *supra* note 10, at 695 (“[A]n imbalance of information between the public research authority or administrator and the innovating agents is essential if a patent system is to be a candidate for the best incentive choice in a competitive model.”).

121. SUBCOMMITTEE ON PATENTS, TRADEMARKS, AND COPYRIGHTS OF THE S. COMM. ON THE JUDICIARY, 85TH CONG., *AN ECONOMIC REVIEW OF THE PATENT SYSTEM* 79 (Comm. Print 1958) (prepared by Fritz Machlup) (“No economist, on the basis of present knowledge, could possibly state with certainty that the patent system, as it now operates, confers a net benefit or a net loss upon society.”); George L. Priest, *What Economists Can Tell Lawyers About Intellectual Property*, in 8 *RESEARCH IN LAW AND ECONOMICS* 19, 21 (John Palmer & Richard O. Zerbo, Jr. eds., 1986) (“[E]conomists know almost nothing about the effect on social welfare of the patent system . . .”).

122. See Frank H. Easterbrook, *The Limits of Antitrust*, 63 TEX. L. REV. 1, 11 (1984) (discussing the difficulty of judicially discerning economic efficiency).

123. *Cotropia*, *supra* note 47, at 1909–10; Liivak, *supra* note 12, at 44; see also *Retractable Techs., Inc. v. Becton, Dickinson & Co.*, 653 F.3d 1296, 1311 (Fed. Cir. 2011) (Plager, J.,

made in Section II.B.1. If the invention being discussed were an embodiment, then looking primarily to the specification would make a lot of sense.¹²⁴ But once we acknowledge that the invention does not refer to a concrete embodiment but instead refers to an economic balancing act, the specification provides almost no information for the inquiry.

In contrast to their fellow travelers, whose proposals look to the patent specification, Lee and Professor Nard argue that courts should look primarily to the testimony of expert witnesses and other industry participants to determine patent scope.¹²⁵ This suggestion is more plausible—experts and other industry participants might know something about the economic benefits and costs of the patent. But unless either Lee or Nard is suggesting that courts should hold patent trials running for months and years and summon a veritable army of both economics experts and industry participants, the amount of information that can be collected on the question will still be tiny relative to the amount required to actually reach meaningful conclusions.¹²⁶ The problem is not only that paid experts in litigation have little incentive to testify honestly¹²⁷—although that, too, is a problem—but that the experts simply would not be able to calculate the optimal patent scope *even if* they could be made to testify honestly.¹²⁸

In the end, only one method allows judges and juries to directly assess the optimal patent scope despite the information difficulty and at tolerable adjudication cost: they could simply make uninformed stabs in the dark on the question.¹²⁹ Whether a judge or a jury attempts such a guess (and whether under some open-ended test such as “substantial similarity”¹³⁰ or under a more overtly economics-focused test such as “the optimal patent scope”), the decision would ultimately prove empty. A court could mask the emptiness of its decision by conducting a long trial, reading the specification ten times, collecting a library’s worth of prior art, and calling a great number of impressively credentialed expert witnesses. But the ultimate decision

concurring) (“[T]he claims cannot go beyond the actual invention that entitles the inventor to a patent. For that we look to the written description.”).

124. See Christopher A. Cotropia, *Patent Claim Interpretation and Information Costs*, 9 LEWIS & CLARK L. REV. 57, 68–72 (2005) (arguing that the specification produces information about the invention).

125. Lee, *supra* note 12, at 106–07; Craig Allen Nard, *A Theory of Claim Interpretation*, 14 HARV. J.L. & TECH. 1, 57–63 (2000).

126. See Easterbrook, *supra* note 122, at 11 (“If we assembled twelve economists and gave them all the available data about a business practice, plus an unlimited computer budget, we would not get agreement about whether the practice promoted consumers’ welfare or economic efficiency more broadly defined.”).

127. Cf. Nard, *supra* note 125, at 62–63 (focusing on the honesty problem).

128. Easterbrook, *supra* note 122, at 11; Priest, *supra* note 121, at 21.

129. Cf. Frank H. Easterbrook, *On Identifying Exclusionary Conduct*, 61 NOTRE DAME L. REV. 972, 980 (1986) (“What we need is a set of intelligent presumptions, not a stab at the ultimate question of efficiency.”).

130. See Burk & Lemley, *supra* note 3, at 1768, 1785 (arguing for substantial-similarity test); Cotropia, *supra* note 47, at 1910–12 (same).

would still be empty and uninformed. As the Supreme Court once observed about patent adjudication in the era before claims were invented, courts expended “laborious” effort in such adjudications while producing results that were no better than “inference and conjecture.”¹³¹ This was due to the intrinsic lack of information.

C. *Claims Force Information from Patentees*

If attempting a *direct* calculation of optimal patent scope cannot yield good results, how should the patent system make informed decisions about patent scope? When attempting to answer that question, consider the fact that the patentee has better information than anyone else about the optimal scope of the patent.¹³² The patentee has this superior information because a patent’s optimal scope depends in large part on what amount of reward suffices to induce that particular patentee to invest in the research and development in question.¹³³ The difficulty here is that patentees lack an incentive honestly to disclose their superior information. As a result, patent law needs, in economic parlance, an *information-forcing* mechanism.¹³⁴

Patent claims serve as this information-forcing mechanism. When a patentee writes down a claim, he takes the public position that he believes that this particular claim represents the optimal degree of patent scope for his particular contribution. Because the patentee must take a definitive position on the issue, he must reveal some of his private information. A patentee will not fully disclose his true belief of optimal patent scope, but at the same time he will at least disclose a reasonable approximation of it.

That last sentence requires some explanation, as it raises the intuitive counterargument that a patentee would have no incentive to be reasonable and disclose an approximation of his true beliefs. If patentees have an information advantage, it would seem rational for them to exploit ruthlessly that advantage and claim as much as possible. If patentees really possess more information than courts, why don’t they just claim everything under the sun and then rely on the fact that courts do not have enough information to

131. *Keystone Bridge Co. v. Phoenix Iron Co.*, 95 U.S. 274, 278 (1877).

132. Long, *supra* note 8, at 496–97 (“In almost all cases, owners will know more about their intellectual goods than observers will.”); see also *Kintner v. Atl. Comm’n Co.*, 240 F. 716, 717 (2d Cir. 1917) (“[T]he patentee is conclusively presumed to have known what he invented or discovered, better than did any one else, at the time he applied for a patent.”).

133. See generally Michael Abramowicz & John F. Duffy, *The Inducement Standard of Patentability*, 120 YALE L.J. 1590, 1590 (2011) (arguing that the inducement standard should serve as “the doctrinal polestar” of patent law).

134. This argument fits within the more general economics literature on how decisionmakers can elicit useful information from better-informed but self-interested parties. See Ian Ayres & Robert Gertner, *Filling Gaps in Incomplete Contracts: An Economic Theory of Default Rules*, 99 YALE L.J. 87, 97–100 (1989); Paul Milgrom & John Roberts, *Relying on the Information of Interested Parties*, 17 RAND J. ECON. 18, 19–20 (1986); Chris William Sanchirico, *Relying on the Information of Interested—and Potentially Dishonest—Parties*, 3 AM. L. & ECON. REV. 320 (2001).

determine if that degree of patent scope is correct or not? What forces patentees to disclose—or at least to partially disclose and thus approximate—their true beliefs about optimal scope?

The answer is that patentees are constrained by an intrinsic asymmetry between the information required to form an affirmative position and the effort required to critique a position that someone else has taken.¹³⁵ Stated another way, it is easier—less information intensive—for a decisionmaker to determine that a position is *incorrect* than it is for the same decisionmaker to state affirmatively the *correct* answer.

This is a point that every academic already knows: it is easier to poke holes in someone else's theory than to come up with one's own. This basic asymmetry underlies the workshop adage that "it takes a theory to beat a theory."¹³⁶ The same point explains why legal academia can mostly rely on student law review editors to identify bad articles even when the editors themselves cannot write a better article on the same topic.¹³⁷ Essentially, identifying an incorrect position requires less knowledge and information than affirmatively formulating the correct position. This basic point about information costs holds whether the decisionmaker is a law review editor or a patent judge.

When this observation is applied to the context of patent claims, the point emerges that a patentee who writes a claim takes a position that a court can then evaluate and scrutinize. It is true that, in the absence of any enforceable constraint, a rational patentee would blatantly lie and assert a monopoly that covers absolutely everything. But the patentee *is* constrained—if he claims too much, a court or the PTO will strike down the claim as invalid.¹³⁸ The key here is that it is easier for a court or the PTO to determine whether a claim is *wrong*—that is, whether the claim is overbroad and would result in excessive monopoly scope if upheld—than for a court or the PTO to state affirmatively in the first instance the *right* degree of monopoly scope. Thus, courts and the PTO only evaluate patentee-drafted claims, and they do not affirmatively state the approvable degree of patent

135. Cf. John C.P. Goldberg & Benjamin C. Zipursky, *The Easy Case for Products Liability Law: A Response to Professors Polinsky and Shavell*, 123 HARV. L. REV. 1919, 1942 (2010) ("[I]t is easier to criticize than to make a positive case . . .").

136. Richard A. Epstein, *Common Law, Labor Law, and Reality: A Rejoinder to Professors Getman and Kohler*, 92 YALE L.J. 1435, 1435 (1983).

137. The law review editor analogy carries to a further point. Nobody would contend that law review editors do a perfect job in analyzing articles, and the PTO and courts are similarly imperfect in analyzing patentee-written claims. The point is that they do a better job than one would expect if there were no asymmetry between criticizing a position and formulating one.

138. Courts can invoke a variety of doctrines to invalidate claims that create excessive monopoly cost. See Tun-Jen Chiang, *Defining Patent Scope by the Novelty of the Idea*, 89 WASH. U. L. REV. 1211, 1227–32 (2012) (explaining the doctrinal mechanisms that courts can use to control patent scope); see also Merges & Nelson, *supra* note 110, at 841–42 (noting that there are a number of existing doctrines used to define patent scope and that these doctrines leave room for judicial discretion).

scope in the first instance.¹³⁹ Even after the PTO rejects a patentee-drafted claim, the usual procedure is to send it back to the patentee for redrafting; the PTO merely says the patentee is wrong; it does not say what would be right.¹⁴⁰

Once we understand the information-forcing function of claims, the practice of relying on patentee-drafted claims is revealed to be an efficient solution to the problem of judicial information costs.¹⁴¹ I do not mean to praise this solution as an unbridled good: there are serious drawbacks to governmental regulators' relying on better-informed regulated parties to supply information, and such drawbacks are not unique to patent law.¹⁴² A perfect solution has yet to be identified for the information-cost problem, however, and patentee-written claims serve as an imperfect solution.

The information-forcing function of claims explains not only why the patent system requires patentees to write claims. It also explains why the patent system requires claims to be written *early* in the life of a patent, at the time of the initial patent filing. Intuitively, one might not think that this is a good idea—Burk and Lemley are specifically critical of the fact that claims are memorialized early in a patent's life.¹⁴³ According to these authors, more information about a patent's social benefits and costs becomes available once people actually start making and selling widgets in the market.¹⁴⁴ Burk and Lemley therefore suggest that the patent system should wait before memorializing the scope of the patent in a claim.¹⁴⁵

But a *patentee's* private information does not increase over time. At the time of patent filing, the patentee already has all the information he needs

139. It is for this reason that the patent system also disallows so-called omnibus claims. *Ex parte Fressola*, 27 U.S.P.Q.2d 1608, 1611 (Bd. Pat. App. & Inter. 1993). An omnibus claim is a claim that says something like "I claim whatever the law allows." Such an empty claim discloses no information.

140. 37 C.F.R. § 1.104(c) (2013). The PTO examiner is permitted, and sometimes encouraged, to make suggestions on how a claim should be redrafted, but this is not required. U.S. PATENT & TRADEMARK OFFICE, MANUAL OF PATENT EXAMINING PROCEDURE § 706 (9th ed. 2014).

141. At least one critic has previously recognized this function of claims. See Cotropia, *supra* note 124, at 72–74 (describing claims as an "information-producing" mechanism). Yet Cotropia now seems to attach little value to claims, dismissing them as a "legal fiction" and preferring instead to rely primarily on the specification to dictate patent scope. Cotropia, *supra* note 47, at 1862, 1909.

142. See, e.g., Paul G. Mahoney, *The Political Economy of the Securities Act of 1933*, 30 J. LEGAL STUD. 1, 20–26 (2001) (discussing how wholesale investment banks were able to influence the Securities Act of 1933 in their favor); Eric A. Posner, *The Political Economy of the Bankruptcy Reform Act of 1978*, 96 MICH. L. REV. 47, 59 (1997) ("Interest groups have a disproportionate influence on the outcome of legislation, because . . . politicians depend on the information supplied by interest groups with respect to legislative proposals.").

143. Burk & Lemley, *supra* note 3, at 1782.

144. *Id.*

145. *Id.*

about the optimal scope of the patent—that is, he knows how much incentive *he* needed to create and disclose the technology that is being patented.¹⁴⁶ And compelling the patentee to disclose this information early has value because it ensures that the patentee is more likely to make an honest disclosure.¹⁴⁷ By contrast, *after* a competitor enters the market with a new product, a patentee will have an obvious incentive to pretend retroactively that the competitor's product was part of his invention at the time he filed the patent, even if this is not true.¹⁴⁸ He will be able to tailor his litigation position to match the exact features of the competitor product. By requiring the patentee to file claims at the time of patent filing, the patent system creates a record of the patentee's position before such tailoring can occur.¹⁴⁹

The result is that the patent system in fact adopts the correct decision timing to account for information costs. The patent system requires the patentee to write the claim at an early time (when the patentee already has all the relevant private information and is more likely to be honest), but it requires courts to make the final decision at the later time of infringement litigation, when more information about the market exists because there is a defendant who makes, sells, or uses the patented invention (or at least allegedly does so).¹⁵⁰ This timing two-step provides courts with the most information possible about the correct scope of the patent when making their decision.

Another way of saying the above is that my core argument (that patentee-written claims serve an information-forcing function to overcome an information deficit) might initially seem to rest on a rather contestable empirical assumption. A skeptic might at first concede that, *if* patentees had better information than courts, then there would be some value to having patentee-written claims in the patent system. *But*, the skeptic would contend, judges in fact have more information than patentees, because judges can look at later market developments that patentees cannot fully foresee at the time of writing a claim.¹⁵¹ It follows, the skeptic would conclude, that the

146. See *supra* text accompanying note 133.

147. Tun-Jen Chiang, *Fixing Patent Boundaries*, 108 MICH. L. REV. 523, 543 (2010).

148. *Id.*; Mark A. Lemley & Kimberly A. Moore, *Ending Abuse of Patent Continuations*, 84 B.U. L. REV. 63, 111 (2004); Robert P. Merges, *Software and Patent Scope: A Report from the Middle Innings*, 85 TEX. L. REV. 1627, 1653 (2007) (calling this "misappropriation by amendment" (internal quotation marks omitted)).

149. A wrinkle arises here because the patent system also allows patentees to amend their claims and tailor the amended claim to cover new products. This process dilutes the information benefit of early-filed claims and is a practice that I and many others have criticized. Chiang, *supra* note 147, at 543–44; Lemley & Moore, *supra* note 148, at 78; Merges, *supra* note 148, at 1653; see also *infra* Section IV.B. The point here is that, given that claim amendments are permitted for reasons unrelated to the question at hand, requiring an early patentee-written claim at least preserves the original record and allows observers to detect a patentee's later change in position. If claims were abolished, there would be no record of the patentee's original position.

150. See 35 U.S.C. § 271(a) (2012) (defining infringement as making, using, selling, or importing an embodiment of the invention).

151. See, e.g., Burk & Lemley, *supra* note 3, at 1782.

patent system should rely on judicial assessments, not on patentee-written claims, to determine patent scope.¹⁵²

My response to this counterargument is twofold. Initially, as a matter of candor, I admit that I do in fact believe that patentees have better information about the optimal scope of a patent than judges, even accounting for the difference in timing. Yet my argument would survive even without this assumption. Even if we assume, for the sake of argument, that judges possess better information than patentees—because judges can look at later market developments—this is not the relevant comparison. Rather, the relevant comparison is between a judge who looks to market developments *plus* a patentee-written claim and another judge who looks only to market developments. I submit that the first judge necessarily has more information and is likely to reach better decisions than the second judge. As long as this is true, it follows that courts should give some weight to patentee-written claims rather than allow them to be eliminated *de jure* or *de facto*.

D. *The Imperfection of Claims and Ex Post Adjustment*

One important corollary to the information-forcing function of claims, implicitly stated in the previous Section, is that courts need to engage in what I will call *ex post adjustment*. More specifically, when a patentee has blatantly overclaimed, courts must be able to rectify this conduct, lest there be no constraints on even the most egregious overclaiming. The claim is therefore not the final word regarding patent scope—rather, a court's decision serves as the final word. The claim merely supplies information for that decision. That courts make the final decision on patent scope, with claims serving as a tool to facilitate this decision, leads to several implications.

First, *ex post* adjustment demands the consideration of external evidence. In order for courts (and the PTO) to engage in *ex post* adjustment, they must be able to determine that the claim text is overbroad. And a court must obviously refer to something *other than* the claim text itself to make that determination—that is, it must refer to external evidence. Thus, my theory does not exclude external evidence from the claim-construction calculus. I am not calling for judges to be strict textualists who mechanically apply claim text in every case.

Second, notwithstanding my theory's insistence on *ex post* adjustment and external evidence, the key point of my theory is that *it uses claim text as a baseline*. The role of external evidence under my theory is only to supplement the claim and to adjust patent scope relative to the baseline that the patentee first sets through the claim. This feature makes my theory very different from the critics' theory. In the critics' telling, the claim is a valueless—indeed, affirmatively harmful—self-serving statement that does not deserve a role because it detracts from the discovery of the real invention.¹⁵³

152. *Id.* at 1762–63.

153. Burk & Lemley, *supra* note 3, at 1746 (“If patent-claim terms lack the virtue of certainty and are in fact doing mischief in the patent system, perhaps we should begin to rethink the whole enterprise . . .”).

The critics rely on external evidence to provide the substantive baseline to determine patent scope. And although they are mostly content to leave claims in place as undead zombies in order to avoid the hassle of a statutory amendment,¹⁵⁴ the critics are ultimately arguing for external evidence to *replace* claim text in everything but name. In this sense, claim text has an important conceptual and substantive role in my theory that it lacks under the critics' theory.

Third, courts can engage in ex post adjustment using a variety of doctrinal tools. At a high level, a court has at least two options in dealing with an overbroad claim: (1) it can creatively construe the claim narrowly, or (2) it can invalidate the claim.¹⁵⁵ The practical effect of each option is similar: the patentee ends up with a monopoly scope that is narrower than what the claim text itself would indicate.¹⁵⁶ As a result, this ex post adjustment mitigates the patentee's drafting bias and brings the actual monopoly reward closer to the ideal scope of the patent.

The corollary to this third point is the question of which option a court should use. The answer is that it depends on the circumstances of the individual case. Creatively narrowing a claim rather than striking it down has the obvious benefit of avoiding an extreme result that clearly underincentivizes the patentee. Interpretative narrowing also politically benefits the court because such narrowing avoids an overt disagreement with another branch of government by declining to invalidate a claim that the PTO had previously allowed.¹⁵⁷ On the other hand, interpretative narrowing forces the court to take an affirmative position on the correct scope of the patent, a process that is more information intensive.¹⁵⁸ Conversely, invalidating a claim reduces the information cost, but it creates an extreme zero-scope outcome and also imposes a political cost. Courts must weigh the pros and cons

154. See, e.g., Liivak, *supra* note 12, at 41 (agreeing with Burk and Lemley's theoretical position but arguing that it does not require significant legislative action to implement). Even Burk and Lemley, who do advocate statutorily abolishing claims, express the reservation that "perhaps the country is not ready to take such a step" because of inertia. Burk & Lemley, *supra* note 3, at 1747.

155. See Roger Allan Ford, *Patent Invalidity Versus Noninfringement*, 99 CORNELL L. REV. 71, 73–74 (2013) (noting that invalidity and noninfringement are functional substitutes); Roger Shang & Yar Chaikovsky, *Inter Partes Reexamination of Patents: An Empirical Evaluation*, 15 TEX. INTELL. PROP. L.J. 1, 25 (2006) ("In almost every patent litigation, the defendant must choose between two competing strategies: arguing for a narrow claim interpretation to avoid infringement, or arguing for a broad claim interpretation to invalidate the patent . . .").

156. Another option is to find infringement but then award no (or fewer) remedies. See *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 396–97 (2006) (Kennedy, J., concurring) (suggesting that courts may be more inclined to deny injunctions for overbroad business-method patents). Such a move reduces the patentee's monopoly rent and thus achieves a similar effect at an economic level. See generally Ted Sichelman, *Purging Patent Law of "Private Law" Remedies*, 92 TEX. L. REV. 517 (2014) (arguing that courts should tailor remedies to optimize innovation levels).

157. See 35 U.S.C. § 282(a) (2012) (stating that claims issued by the PTO are entitled to a presumption of validity).

158. See *supra* Section II.C.

of each route in the individual case, and, unsurprisingly, in doing so they often adopt different approaches.¹⁵⁹ The PTO, by contrast, faces no such trade-off—it creates no conflict with another branch of government when it rejects a claim, and a PTO rejection still allows the patentee to submit an amended claim in response.¹⁶⁰ The PTO therefore *only* rejects claims; it is not able to creatively narrow them.¹⁶¹

Fourth, once we accept that claims are merely a tool and that courts make the final decision on patent scope, the key practical question is *how* courts should make that decision, with particular consideration of the role of claim text in the calculus. Should courts give claims a great deal of weight or very little? The next Part deals with this question.

III. IMPLICATIONS FOR THE CLAIM-CONSTRUCTION DEBATE

As an initial matter, the analysis in Part II refutes the extreme position that claims should be abolished or ignored. Without claims, courts would have to assess directly the optimal patent scope from scratch. Both as a matter of theoretical deduction and empirically established reality, it is clear that courts cannot perform this direct inquiry, even as an approximation.¹⁶² Thus, it would be unwise to abolish or ignore claims entirely.

A reader may respond with a less extreme theory: while courts should not abolish or disregard claims, they should consider the full range of external evidence—and give such evidence more weight than claim text—in order to compensate for the patentee’s drafting bias.¹⁶³ As I shall explain, however, even this approach has an important and overlooked limit.

Consider again the analogy to contract law. In contract law, no one contends that courts should abolish or ignore written contracts altogether. Nor does anyone argue that courts should accord extrinsic evidence more weight than the contract text. But there remains a long-running debate about whether extrinsic evidence should be given less weight—and, if so, how much less—than the written contract. Two stylized extreme positions have been well articulated: Professor Corbin is famously associated with the position that courts should consider all evidence equally when interpreting a

159. *Compare* *Turrill v. Mich. S., &c., R.R. Co.*, 68 U.S. (1 Wall.) 491, 510 (1863) (holding that claims should be construed narrowly if necessary to save their validity), *with* *Rhine v. Casio, Inc.*, 183 F.3d 1342, 1345 (Fed. Cir. 1999) (“[I]f the only claim construction that is consistent with the claim’s language and the written description renders the claim invalid, then . . . the claim is simply invalid.”).

160. 37 C.F.R. § 1.111(a)(1) (2013) (permitting amendments in response to a rejection).

161. *See* *SRAM Corp. v. AD-II Eng’g, Inc.*, 465 F.3d 1351, 1359 (Fed. Cir. 2006) (holding that PTO interpretation of claims has no legal effect).

162. *Supra* Section II.B.3.

163. *See, e.g.*, *Burk & Lemley*, *supra* note 3, at 1785 (outlining an alternative to abolition that retains claims “as part of the overall description of the invention as actually conceived and executed by the inventor”); *Lee*, *supra* note 12, at 106 (“[E]xtrinsic evidence . . . provides a more accurate description of the technological scope of a patented invention.”).

contract, without disfavoring extrinsic evidence.¹⁶⁴ At the other extreme, the strongest form of the plain-meaning rule says that courts should consider only the written contract itself and completely exclude extrinsic evidence.¹⁶⁵ As Professor Posner observes, real-life courts take intermediate positions on the spectrum between these two extremes.¹⁶⁶ At the same time, they tend to be closer to the pole of plain meaning.¹⁶⁷

The critics of patent claims make essentially the same argument as Corbin, although they often go even further by arguing that courts should give external evidence *more* weight than claim text.¹⁶⁸ In Section III.A, I will explain that the Corbin methodology does contain one important virtue: in any given individual case, considering equally all the available evidence will produce the most accurate outcome.

In Section III.B, however, I will describe an important and often overlooked limit to the Corbin approach. In the long run, the patent system needs to provide some incentive for patentees to write claims. As a practical matter, courts can only provide this incentive by giving patentee-drafted claim text more interpretative weight than other sources of evidence. As Posner explains in the contract-law setting, taking the Corbin approach to its extreme in every case leads to the long-term consequence of eradicating written contracts.¹⁶⁹ The same problem obtains in patent law.

This does not mean that courts should go to the opposite extreme of robotically following the text in every case, either in contract or patent law. Instead, as Section III.C discusses, courts should balance the competing considerations of short-term accuracy and long-term incentives. In this sense, courts should not completely exclude external evidence. Rather, they should give claim text *more* interpretative weight. Such an argument in fact represents a descriptive account of what patent courts already do.¹⁷⁰ My theory thus provides both a normative and descriptive theory for claim construction.

164. Arthur L. Corbin, *The Interpretation of Words and the Parol Evidence Rule*, 50 CORNELL L.Q. 161, 188–89 (1965) (“[N]o relevant credible evidence [should be] inadmissible merely because it is extrinsic . . .”); Arthur L. Corbin, *The Parol Evidence Rule*, 53 YALE L.J. 603, 622 (1944) (“No parol evidence that is offered can be said to vary or contradict a writing until by process of interpretation the meaning of the writing is determined.”).

165. 5 MARGARET N. KNIFFIN, CORBIN ON CONTRACTS § 24.7, at 33 (Joseph M. Perillo ed., rev. ed. 1998) [hereinafter CORBIN ON CONTRACTS] (describing the plain-meaning rule).

166. Posner, *supra* note 16, at 538–40.

167. CORBIN ON CONTRACTS, *supra* note 165, § 24.7, at 34 (“[T]he ‘plain meaning rule’ is adhered to by a majority of the jurisdictions in the United States.”); FARNSWORTH, *supra* note 93, § 7.12, at 308 (“A few other courts have shown sympathy for Corbin’s view, but the overwhelming majority of courts retains some kind of plain meaning rule.”).

168. *Supra* notes 13–14 and accompanying text.

169. Posner, *supra* note 16, at 544.

170. See *infra* notes 208–221 and accompanying text.

A. *Short-Term Efficiency: Equal Weight to All Evidence*

If we take my argument in Part II as a given—that is, if we assume for present purposes that claims provide valuable but imperfect information about the invention—then what should a court do with them as a policy matter? A common intuition holds that a court’s job is to reach the most accurate outcome possible.¹⁷¹ That is, a court should try to discern the real invention and the optimal patent scope.¹⁷²

Of course, even in an individual case, a court is constrained in its pursuit of accuracy by finite adjudication resources. Courts cannot realistically hold multiyear trials, nor can they summon thousands of experts. Thus, our initial focus on accuracy must be qualified: courts should attempt to achieve the most accurate outcome given their available resources. Notwithstanding such resource constraints, however, the intuition is that no artificial limits should be imposed. Within this paradigm, a court should allocate its budget to maximize its ability to pursue the truth: the court should collect as much evidence as feasible and then consider all that evidence on an equal basis.

By *equal weight*, I do not mean that a court would say the following: “Witness A, the upstanding citizen, says the defendant stabbed the victim, while Witness B, the known habitual liar, says the defendant did not, and because all evidence is given equal weight, the result is a toss-up.” Rather, I mean that a court will consider all the evidence in light of its credibility and in the totality of the circumstances, to get to the result that is most likely to reflect the underlying factual truth on the question at issue. The contradiction is to a regime where courts are required by a preset rule to favor or disfavor certain types of evidence. For example, a court that excludes a bloody knife that the police obtained through an illegal search thereby gives this evidence zero weight. The court does so not because it thinks that the knife is unreliable evidence or that the underlying factual truth is that the defendant is innocent. It does so because the preset exclusionary rule mandates that courts accord zero weight to evidence obtained through illegal searches.¹⁷³

By definition, therefore, a court that is seeking to maximize accuracy in an individual case would consider equally all the available evidence. But this formulation is not just a rhetorical trick. The substantive point is that, if the goal is simply to maximize accuracy, the law should rarely have categorical rules that exclude or disfavor broad swaths of evidence.¹⁷⁴ It should instead

171. Kenworthy Bilz, *We Don’t Want to Hear It: Psychology, Literature and the Narrative Model of Judging*, 2010 U. ILL. L. REV. 429, 442 (observing that the notion that courts should sacrifice accuracy for some other social purpose “causes rebellion in the hearts of . . . many lawyers, policy makers, and academics”).

172. See, e.g., Burk & Lemley, *supra* note 3, at 1762, 1765 (arguing that courts should seek to socially optimize patent scope); Lee, *supra* note 12, at 101 (arguing that courts should “optimiz[e] patent scope”).

173. *Mapp v. Ohio*, 367 U.S. 643, 655 (1961).

174. See *Davis v. United States*, 131 S. Ct. 2419, 2423–24 (2011) (narrowing the exclusionary rule because it detracts from maximizing truth).

use a totality-of-the-circumstances inquiry that considers both the claim text and all reasonably collectible extrinsic evidence. And such totality-of-the-circumstances inquiries are what Corbin and his fellow travelers in patent law generally propose.¹⁷⁵

B. *Long-Term Incentives: More Weight to Claim Text*

Although the intuition that courts should pursue accuracy above all else is both common and understandable, it is a familiar proposition that the legal system will frequently sacrifice accuracy in an individual case to advance other social-policy goals.¹⁷⁶ The idea often causes discomfort among lawyers, judges, and academics,¹⁷⁷ but it remains a pervasive part of the legal system. I have already given the example of the exclusionary rule in the Fourth Amendment context, which excludes evidence for long-term policy purposes (e.g., to deter future constitutional violations) that are unrelated to maximizing accuracy in the individual case.¹⁷⁸ Similarly, evidentiary privileges such as the attorney–client privilege exclude a suspect’s confession to his lawyer not because such a confession is unreliable but because without the privilege there may be no confession in the first place, and hindering effective communication between lawyers and their clients would impose a social cost.¹⁷⁹ More generally, the entire patent system rests on this kind of trade-off between short-term benefits and long-term incentives.¹⁸⁰

The same essential dynamic plays out when considering the role of external evidence in determining patent scope. As noted above, the short-term optimal result in a given case—where the patent claim has already been drafted—would be to give everything equal interpretative weight. Such a methodology maximizes the information available to a court and comes closest to achieving optimal patent scope. But such a regime entails a long-term cost: if courts simply took the patentee’s claim for what it was worth in the totality of the circumstances and gave it no special weight, then patentees would have no incentive to spend money hiring attorneys to draft claims.¹⁸¹

175. See Cotropia, *supra* note 47, at 1913 (arguing for a “case-by-case” approach that “contextualizes” the inquiry); Lee, *supra* note 12, at 105 (arguing for a “holistic” approach); Nard, *supra* note 125, at 60–61 (citing Corbin, *The Interpretation of Words and the Parol Evidence Rule*, *supra* note 164, at 189) (arguing that all evidence should be considered in claim construction); see also Burk & Lemley, *supra* note 3, at 1778–79 (analogizing the question of claim-construction evidence to the rules-versus-standards debate).

176. E.g., GLEN WEISSENBERGER & JAMES J. DUANE, *FEDERAL RULES OF EVIDENCE* § 501.3, at 260 (7th ed. 2011) (noting that most evidentiary privileges have this character).

177. Bilz, *supra* note 171, at 442.

178. *Davis*, 131 S. Ct. at 2426–27.

179. See *Upjohn Co. v. United States*, 449 U.S. 383, 395 (1981) (“[T]he adversary [is] in no worse position than if the communications had never taken place.”).

180. See, e.g., *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 152 (1989) (“The tension between the desire to freely exploit the full potential of our inventive resources and the need to create an incentive to deploy those resources is constant.”).

181. Cf. Posner, *supra* note 16, at 544 (“Because the parties gain nothing by putting the marginal promise in the writing, they do not use writings.”).

And because the cost of claim drafting is not trivial,¹⁸² claims will not be drafted if patentees lack an incentive.¹⁸³ The long-term result would therefore be the de facto abolition of patent claims, which would then increase judicial information costs for all the reasons that I have already described.

One objection that should be addressed at this point is that my argument (i.e., giving claims no weight would result in de facto abolition) is belied by the historical record. As a historical matter, patentees first developed claims in the nineteenth century, before formal doctrine gave claims any special weight in patent-scope determinations.¹⁸⁴ The fact that at least some patentees had sufficient incentives to draft claims even in an environment where doctrine gave claims no special weight seems to contradict my thesis.

But in determining the interpretative weight given to a claim, it matters less what the doctrine *says* and more what courts actually *do*. It is true that early-nineteenth-century patentees drafted claims even when the formal doctrine accorded claims no interpretative weight. But the patentees did so because they had the expectation—an accurate one—that courts would nonetheless give considerable weight to claims as a practical matter.¹⁸⁵ Properly understood, then, the historical record cannot be said to contradict my thesis.

To see why giving claim text no weight *over* external evidence would lead to de facto abolition, consider first a situation where the patentee does not draft a claim, leaving the court with only external evidence. In this scenario, the court would thus take a blind stab at the optimal scope of the patent based on the external evidence. This approach would lead to highly random and arbitrary results—the court would often award too much scope or too little.¹⁸⁶ Yet the *average* result would be to grant the socially optimal amount of scope. Thus, as a matter of ex ante expectation, the patentee would expect this amount of monopoly reward, even though there would exist considerable uncertainty and variation around the average.

Now consider what happens if the patentee writes a claim. The external evidence available in the case does not change—the patentee would still file

182. See, e.g., Jeanne C. Fromer, *Claiming Intellectual Property*, 76 U. CHI. L. REV. 719, 757 (2009) (“[A] peripheral claiming system, like rule writing generally, leads to a significant ex ante expenditure in drafting claims . . .” (footnote omitted)); see also Doug Lichtman, *Substitutes for the Doctrine of Equivalents: A Response to Meurer and Nard*, 93 GEO. L.J. 2013, 2016 (2005) (describing the difficulty of drafting a precise claim over even a simple invention such as a pencil).

183. See Burk & Lemley, *supra* note 3, at 1784 (predicting that, if claims do not “define the scope of the invention, there would be less incentive to use them at all”).

184. See generally Karl B. Lutz, *Evolution of the Claims of U.S. Patents*, 20 J. PAT. OFF. SOC’Y 134 (1938) (discussing the historical development of patent claims).

185. John F. Duffy, *The Festo Decision and the Return of the Supreme Court to the Bar of Patents*, 2002 SUP. CT. REV. 273, 309–10 (explaining how juries gave claims interpretative weight and thereby helped expand patent rights); cf. Posner, *supra* note 16, at 545 (“[E]ven the softest [i.e., most antitextualist] courts put more weight on written promises than on oral promises.”).

186. See *supra* Section II.B.3.

the same specification, and the same experts would still be available to testify (and their knowledge of the industry and technology would still be the same). As described in Section III.A, under the extreme version of the totality-of-the-circumstances analysis, the court would therefore *still*, on average, grant the socially optimal patent scope, and it would do so by using the external evidence to counteract fully whatever drafting bias the patentee includes in his claim. Thus, the patentee's ex ante expected monopoly is the same whether or not he writes a claim. Because the patentee has no expected gain from writing a claim and because writing a claim costs money in the form of attorneys' fees, he will not write the claim.

One might respond that a patentee writing a claim would reduce the *variance* in the outcomes, which would mean that a risk-averse patentee would have an incentive to write a claim.¹⁸⁷ But the variance would decrease only if adding the claim text *changed the outcome* (compared to what the outcome would have been in a counterfactual with no claim) in at least one case. Such a change in the outcome in that one instance would also necessarily (if only slightly) shift the overall average toward the scope indicated by the claim text—*away* from the optimal scope. Because the reduction in variance—accomplished through giving some outcome-determinative weight to claim text—is also accompanied by a reduction in accuracy, the core trade-off between short-term accuracy and long-term incentives remains.¹⁸⁸

C. Balancing Long-Term and Short-Term Efficiency

The two stylized examples demonstrate that there is a fundamental trade-off between the patent system's policy goal of minimizing long-term information costs by incentivizing the drafting of claims and the patent system's policy goal of maximizing accuracy in the individual case. As a practical matter, courts can only seek to achieve each goal through the mechanism of calibrating the weight they give to claim text vis-à-vis external evidence. The dilemma is that the respective policy goals pull in different directions on this question.¹⁸⁹

One counterargument is that we have an alternative mechanism to ensure that patentees write claims: we can invalidate the entire patent if they

187. Risk aversion is the standard assumption in economics, ROBERT COOTER & THOMAS ULEN, *LAW & ECONOMICS* 45 (6th ed. 2012) ("Economists presume that most people are averse toward risk . . ."); *see also* A. MITCHELL POLINSKY, *AN INTRODUCTION TO LAW AND ECONOMICS* 57 (4th ed. 2011) (stating that risk aversion is the "generally more realistic assumption"), and it is the assumption that I follow here. *But see* Burk & Lemley, *supra* note 3, at 1752–53 (suggesting that patentees prefer ambiguity and uncertainty).

188. At the extreme, we can imagine a situation where courts give 100% interpretative weight to claim text—that is, where courts *always* follow the claim text and nothing else. The variance in such a regime would be very low, which would provide patentees with incentives to write claims. But the mean around which this variance coalesces would be the patentee-favoring scope indicated by the claim text, not the optimal scope.

189. A lurking counterargument here is that there is no dilemma because all text is inherently indeterminate and thus conveys no information (which means that giving more weight to text cannot reduce information costs). I will address this counterargument in Part IV.

fail to do so.¹⁹⁰ In other words, we can use the stick of invalidity rather than the carrot of granting broader-than-optimal scope to achieve the policy goal of providing long-run incentives for claim drafting.

In a certain sense this is correct, but in practical terms the stick approach is not very feasible. We can ensure that patentees write *a* claim by threatening to invalidate a patent if they fail to do so. But we cannot ensure that patentees write a *precise* claim.¹⁹¹

By *precision* here, I do not mean whether the patentee writes a claim that matches the optimal scope of the patent (I use the label *accuracy* for that question). Rather, I mean that we want patentees to write claims that actually tell us something. The claim text should have some informational content and actually take a meaningful position on patent scope, one that a decisionmaker can evaluate. A counterexample is a patentee who writes a claim that says the following: “I claim the real invention disclosed in my patent.” This is a completely *accurate* claim—it literally describes the real invention and is not overbroad—but the claim is very imprecise. It is imprecise because it lacks informational content; it does not actually take a meaningful position on patent scope, and therefore it is useless in providing a baseline for courts to engage in further analysis.

Threatening invalidity is a blunt instrument to ensure precision in patent claiming. Even if courts can (and do) use invalidity to deter utterly information-empty claims like the one above,¹⁹² it is impossible in practice to calibrate finely a regime of invalidity to deter patentees from using terms such as “approximately” or “near,” which are not utterly empty but are still rather vague.¹⁹³ Invalidation is an on-off switch—one cannot *partially* invalidate a claim—and so it is difficult to adjust incentives to correspond to different degrees of drafting precision. In contrast, the weight to be given to claim text relative to external evidence is more flexible and serves as a better instrument for this purpose.

The bottom line is that the patent system has a long-term policy interest in incentivizing patentees not only to write *a* claim but to write a *precise* claim that actually conveys information.¹⁹⁴ And this policy interest conflicts with the interest in granting the optimal patent scope in an individual case.

190. See 35 U.S.C. § 112(b) (2012) (requiring patentees to write at least one claim); *id.* § 282(3)(A) (providing a defense of invalidity for violation of § 112).

191. See *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2128–29 (2014) (explaining that the definiteness requirement entails a “delicate balance” and that “absolute precision is unattainable”).

192. *Intermountain Research & Eng’g Co. v. Hercules Inc.*, 163 U.S.P.Q. (BNA) 390, 393 n.2 (C.D. Cal. 1969) (holding an “omnibus” claim of the nature described to be prohibited).

193. See, e.g., *Young v. Lumenis, Inc.*, 492 F.3d 1336, 1346–47 (Fed. Cir. 2007) (holding a claim with the term “near” as not invalid).

194. This also explains the Federal Circuit’s treatment of means-plus-function claims. See 35 U.S.C. § 112(f) (defining means-plus-function claims). These claims specify only the function that an invention is supposed to perform and thus have very little informational content. See Burk & Lemley, *supra* note 3, at 1774 (explaining that means-plus-function claims are a remnant of central claiming, a system where claims do not delineate the boundaries of the invention). Not coincidentally, courts have treated such claims with extreme disfavor. See, e.g.,

The more weight that a court gives to external evidence, the less precise claims will be over the long run and the less information they will convey. Conversely, the more weight that a court gives to claim text, the more biased the outcome will be in the individual case, but claims in the long run will be written more precisely. In order to pursue the most efficient course of action, a court should balance these competing considerations.

In practical terms, courts should consider some external evidence, and they should curb the more egregious instances of patentee overclaiming by either invalidating the claim or by creatively narrowing it. But courts should also give claim text primary weight in the interpretative calculus, such that a court would *to some extent* abide by the claim text even if, as a matter of totality-of-circumstances evaluation, it would find the ideal scope of the patent to be somewhat narrower than the claim indicates. The amount of overbreadth that patentees are permitted effectively represents the “bribe” that courts give to patentees as an incentive to write precise claims.¹⁹⁵

Patent courts in fact already perform this balancing act, although the equilibrium has occurred more as a matter of accident than conscious design. As Part IV will discuss, the Federal Circuit is presently composed of a camp of textualist judges who give a relatively high amount of weight to claim text and a camp of antitextualist judges who more closely follow an equal-weight-to-all-evidence approach.¹⁹⁶ The court’s position as a whole, therefore, reasonably approximates the correct balance. But this balance results from the averaging of a methodological war between a textualist camp and an antitextualist camp rather than from a unified approach. This doctrinal conflict in turn creates a lot of legal uncertainty.

I should note that I am not arguing that current practice strikes *the* perfect balance but only that it strikes a reasonable one. Perfectly calculating the truly optimal trade-off between short-term accuracy and long-term incentives—that is, the optimal bribe to patentees—would involve the same kind of information difficulty that we have already seen in attempts to calculate directly the optimal patent scope. For this reason, I cannot affirmatively state what the optimal bribe is. I know only that the critics’ apparent position—a bribe of zero or close to it—is clearly wrong.

James Farrand et al., “Reform” Arrives in Patent Enforcement: *The Big Picture*, 51 IDEA 357, 414 (2011) (discussing how the Federal Circuit has narrowed means-plus-function claims).

195. It is worth mentioning that this analysis applies to invalidity for overbreadth as well as to claim construction. If courts invalidated a claim whenever they thought it was even the slightest bit broader than the optimal scope of the patent, patentees would again have no incentive to write claims. Thus, my theory states that courts should hesitate somewhat before invalidating claims, although they should certainly invalidate clearly overbroad claims. Consistent with my theory, this is exactly what courts do in practice. See *Microsoft Corp. v. i4i Ltd. P’ship*, 131 S. Ct. 2238 (2011) (reaffirming that courts give a presumption of validity to issued claims).

196. See *infra* text accompanying notes 208–218.

IV. ADDRESSING OBJECTIONS

A. *The Linguistic Indeterminacy Thesis*

The most common theory in the literature is the linguistic indeterminacy thesis,¹⁹⁷ which argues that the root problem with patent claims is their innate linguistic indeterminacy.¹⁹⁸ If claims are so indeterminate that they convey no information to courts, it logically follows that they should be abolished. In this manner, the linguistic indeterminacy thesis forms the theoretical backbone of policy proposals that give predominant weight to external evidence in claim construction.

As Solum and I have explained in another article,¹⁹⁹ the problem with the linguistic indeterminacy thesis is that it lacks evidentiary support. To be sure, claims are occasionally vague or ambiguous; but there is little evidence that patent claims are *systematically* linguistically indeterminate in the manner that proponents of the linguistic indeterminacy thesis argue. The primary piece of evidence that is cited for the proposition is the high rate of judicial disagreement over claim construction, in particular the frequency with which the Federal Circuit has reversed district courts.²⁰⁰ The argument appears to be that, because reasonable trial and appellate judges regularly disagree about how claims should be construed, such disagreement proves that claim text is routinely indeterminate.²⁰¹

At first glance, this argument seems to make sense: if a district judge, following the textualist methodology, reaches conclusion X when applying a patent claim, while an appellate judge following the same textualist methodology reaches conclusion Y when applying the same patent claim, then either one of the judges has made an error or the text is indeterminate in that

197. The argument that text is indeterminate is a familiar one in legal theory, often associated with the Critical Legal Studies ("CLS") movement. *See, e.g.*, ROBERT BENSON, *THE INTERPRETATION GAME: HOW JUDGES AND LAWYERS MAKE THE LAW*, at xv (2008) ("The modern understanding of language and culture shows us that meaning is *not* something that texts possess."). *But see* MARK KELMAN, *A GUIDE TO CRITICAL LEGAL STUDIES* 45 (1987) ("While most CLS writers have undoubtedly emphasized the inherent ambiguity of language . . . the more coherent CLS position has moved *away* from the tendency . . . to focus on the limitlessness of interpretations of each verbal command.").

198. *See, e.g.*, *Autogiro Co. of Am. v. United States*, 384 F.2d 391, 396 (Ct. Cl. 1967) ("The very nature of words would make a clear and unambiguous claim a rare occurrence."); Bender, *supra* note 5, at 209 ("Claim language is often inherently ambiguous."); Seymore, *supra* note 5, at 637–38 (attributing problems in patent law to "the inherent indeterminacy of language").

199. Chiang & Solum, *supra* note 6.

200. *See, e.g.*, Bender, *supra* note 5, at 207 (claiming a problem "because the Federal Circuit affirms the trial court's claim interpretation in only approximately forty percent of cases"); Burk & Lemley, *supra* note 3, at 1744–45 (pointing to disagreements about the construction of "'a,' 'or,' 'to,' 'including,' and 'through'" (footnotes omitted)).

201. *See, e.g.*, Burk, *supra* note 7, at 116–17 ("This [high reversal rate] belies the certainty of plain meaning rules. It is surely not the case that the trial judge cannot read the text or lacks access to a dictionary. . . . What is clear is that plain meaning is not so plain."); Thomas Chen, Note, *Patent Claim Construction: An Appeal for Chevron Deference*, 94 VA. L. REV. 1165, 1178–80 (2008).

particular case. Given that the textualist methodology is supposed to be easy to apply, it is unlikely that a judge would accidentally err in applying the methodology. Thus, frequent claim-construction disagreement among judges appears to prove that claim text is systematically indeterminate.

But the argument makes a critical assumption: it assumes that appellate and district judges are *actually* trying to apply the same textualist methodology and that they are failing to reach consistent results only because the methodology is defective and cannot be consistently applied. There is no good evidence to justify this assumption of uniform textualism. Indeed, it would be extraordinary for federal judges, who are deeply divided on interpretative methodology in almost every other area of law,²⁰² to share a uniform commitment to textualism in patent law. To state my response simply, the true reason for high reversal rates and frequent claim-construction disagreements is *not* that federal judges are all textualists who try to faithfully apply claim text but end up reaching different outcomes because the claim text is linguistically indeterminate; it is that judges disagree about methodology. When a textualist district judge meets an antitextualist appellate panel, or vice versa, a reversal will happen quite independent of the clarity or not of the underlying claim text.

Is there any reason to believe that patent judges are all faithful textualists who try to follow the textualist methodology? While the critics generally rely on judicial statements to this effect,²⁰³ such self-serving statements are unreliable.²⁰⁴ Textualism is in the political vogue right now,²⁰⁵ and every judicial nominee must take a figurative blood oath before the Senate to practice it,²⁰⁶

202. HENRY M. HART, JR. & ALBERT M. SACKS, *THE LEGAL PROCESS* 1169 (William N. Eskridge, Jr. & Philip P. Frickey eds., 1994) (“American courts have no intelligible, generally accepted, and consistently applied theory of statutory interpretation.”); ADRIAN VERMEULE, *JUDGING UNDER UNCERTAINTY* 125 (2006) (“The history of interpretative theory in American courts reveals persistent and deep disagreements among judges and courts about the proper methods and sources of legal interpretation.”).

203. See Burk, *supra* note 7, at 114 (“The membership of the Federal Circuit appears to be dominated by judges who lean toward strong forms of textualism.”). To the extent that Burk is describing judicial *appearances*, I would agree. My disagreement is with his implicit assertion that the court actually *is* textualist in orientation.

204. See Richard A. Posner, *Realism About Judges*, 105 Nw. U. L. REV. 577, 583 (2011) (“[T]here is no recognized duty of candor in judicial opinion writing . . .”).

205. Michael C. Dorf, *The Undead Constitution*, 125 HARV. L. REV. 2011, 2055 (2012) (reviewing JACK M. BALKIN, *LIVING ORIGINALISM* (2011) and DAVID A. STRAUSS, *THE LIVING CONSTITUTION* (2010)) (“[T]he political insiders who are paid to know about such matters believe that the American public wants formalist judges.”).

206. See *Confirmation Hearing on the Nomination of John G. Roberts, Jr. to Be Chief Justice of the United States: Hearing Before the S. Comm. on the Judiciary*, 109th Cong. 55 (2005) (statement of John G. Roberts, Jr.) (analogizing judges to umpires); *Confirmation Hearing on the Nomination of Hon. Sonia Sotomayor to Be an Associate Justice of the Supreme Court of the United States: Hearing Before the S. Comm. on the Judiciary*, 111th Cong. 59 (2009) (statement of Sonia Sotomayor) (“The task of a judge is not to make law. It is to apply the law.”).

so there is a strong incentive for judges to pretend to follow plain text even when they do not actually do so.²⁰⁷

When we look at what patent judges *do* rather than merely at what they *say*, it becomes quite obvious that such judges routinely consider external evidence during claim construction and hence depart from plain textual meaning. The Federal Circuit holds that the specification must always be considered during claim construction,²⁰⁸ even while it pretends that courts never “import” elements from the specification into the claim.²⁰⁹ Moreover, the court refuses to hear claim-construction appeals unless there is a complete record of external evidence including testimony about the defendant’s product,²¹⁰ even though the accused product has no relevance to a textualist analysis of claim language.²¹¹ If claim construction were actually a purely textual exercise, these practices would be inexplicable. The most natural way to understand the practice of requiring so much external evidence is that some judges actually use this evidence, even if they deny it.²¹²

Moreover, even with all the incentives for judicial nontransparency,²¹³ some Federal Circuit judges nonetheless openly advocate for reliance on external evidence. Judge Lourie’s dissenting opinion in *Arlington Industries, Inc. v. Bridgeport Fittings, Inc.*²¹⁴ provides an excellent example:

207. See Robert Alleman & Jason Mazzone, *The Case for Returning Politicians to the Supreme Court*, 61 HASTINGS L.J. 1353, 1376–77 (2010) (“[N]ominees now present themselves as the law’s servants, robotically applying legal rules to the case at hand . . .”); Erwin Chemerinsky, *Seeing the Emperor’s Clothes: Recognizing the Reality of Constitutional Decision Making*, 86 B.U. L. REV. 1069, 1076 (2006) (“Likely, the Justices believe their rhetoric holds political appeal. They believe the idea of formalism . . . resonates with how people want the system to be.”).

208. *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996) (“[T]he specification is always highly relevant to the claim construction analysis.”).

209. *CollegeNet, Inc. v. ApplyYourself, Inc.*, 418 F.3d 1225, 1231 (Fed. Cir. 2005) (“In examining the specification for proper context, however, this court will not at any time import limitations from the specification into the claims.”); see also MERGES & DUFFY, *supra* note 43, at 770 (suggesting that these two rules “fundamentally contradict each other”).

210. *Jang v. Bos. Scientific Corp.*, 532 F.3d 1330, 1337–38 (Fed. Cir. 2008). The Federal Circuit also requires *expert* testimony about the accused product in most cases. *Centricut, LLC v. Esab Grp., Inc.*, 390 F.3d 1361, 1369–70 (Fed. Cir. 2004).

211. *SRI Int’l v. Matsushita Elec. Corp. of Am.*, 775 F.2d 1107, 1118 (Fed. Cir. 1985) (en banc); *NeoMagic Corp. v. Trident Microsystems, Inc.*, 287 F.3d 1062, 1074 (Fed. Cir. 2002).

212. See Jeffrey A. Lefstin, *Claim Construction, Appeal, and the Predictability of Interpretative Regimes*, 61 U. MIAMI L. REV. 1033, 1054 (2007) (“[R]egardless of . . . the black-letter law . . . it is reasonable to expect that judges will test the validity of their interpretations by considering what outcomes follow . . .”).

213. For those who find my suggestion that judges are not transparent to be outrageous and defamatory, I plead truth and offer this revealing quote from Justice Scalia: “I never thought Oliver Wendell Holmes and the legal realists did us a favor by pointing out that all these legal fictions were fictions: Those judges wise enough to be trusted with the secret already knew it.” Antonin Scalia, *Assorted Canards of Contemporary Legal Analysis*, 40 CASE W. RES. L. REV. 581, 589 (1990).

214. 632 F.3d 1246 (Fed. Cir. 2011).

[I]n construing the claims we should avail ourselves of the knowledge we glean from the patent specification to see what the inventors disclosed as their invention. The bottom line of claim construction should be that the claims should not mean more than what the specification indicates, in one way or another, the inventors invented.²¹⁵

Thus, Judge Lourie first looks to “the patent specification to see what the inventors disclosed as their invention,” and then he creatively construes the claim to ensure that it does not “mean more than what the specification indicates, in one way or another, the inventors invented.”²¹⁶ The claim text itself never enters this equation; everything depends on what (Judge Lourie thinks) the actual invention is. This process perfectly reflects the critics’ proposed methodology. As previously described in Section I.C.6, Judge Plager has made arguments to the same effect.²¹⁷ For her part, Judge Newman, perhaps more cautiously, has also articulated a broad holistic methodology that considers a wide variety of evidence beyond the patent claim while according claim text relatively little interpretative weight.²¹⁸

The simple fact of the matter is that courts routinely consider external evidence—in derogation of the text—during claim construction.²¹⁹ Of course, courts also routinely do the opposite.²²⁰ The result is a methodological war that creates a high reversal rate. But reports of a Federal Circuit dominated by fierce textualists²²¹ have been greatly exaggerated.

Sometimes the proponents of the linguistic indeterminacy thesis seem to recognize this reality, but they fail to recognize its logical implications for their argument. For example, in one passage of their article, Burk and Lemley observe that “courts, as a practical matter, aren’t paying peripheral claim construction [i.e., claim text] more than lip service.”²²² Then they state that this observation helps their argument.²²³ But in fact the observation greatly

215. *Arlington Indus., Inc.*, 632 F.3d at 1258 (Lourie, J., dissenting).

216. *Id.*

217. *Retractable Techs., Inc. v. Becton, Dickinson & Co.*, 653 F.3d 1296, 1311 (Fed. Cir. 2011) (Plager, J., concurring).

218. *EMI Grp. N. Am., Inc. v. Intel Corp.*, 157 F.3d 887, 892 (Fed. Cir. 1998); see Timothy R. Holbrook, *Substantive Versus Process-Based Formalism in Claim Construction*, 9 LEWIS & CLARK L. REV. 123, 150 (2005) (characterizing this as a “holistic” methodology where “courts would consider all the relevant evidence as a whole”).

219. See Chiang & Solum, *supra* note 6, at 572–77 (explaining how the “specification-first” line of case law is really about measuring scope according to the real invention).

220. See, e.g., *Helmsderfer v. Bobrick Washroom Equip., Inc.*, 527 F.3d 1379, 1383 (Fed. Cir. 2008) (adhering to claim text even though it resulted in a construction that excluded every specification embodiment).

221. Burk, *supra* note 7, at 114.

222. Burk & Lemley, *supra* note 3, at 1783.

223. *Id.*

undermines it. A central premise of the existing claim-construction literature—including Burk and Lemley’s work—is that the status quo’s uncertainty problems are attributable to claim text’s intrinsic deficiencies.²²⁴ But if courts are not actually practicing textualism and are not actually relying on claim text to make decisions—at least not with any consistency—then one cannot blame textualism or text for the status quo. And if textualism and text cannot be blamed for the status quo’s problems, then proposals to reduce the role of claim text in defining patent scope lose much of their force.

To be sure, the absence of evidence supporting a proposition is not conclusive proof of its falsity. It is *possible* that claim text may be so intrinsically indeterminate that it conveys no information to courts and the PTO, or at least that it fails to convey enough useful information to justify the administrative costs. But there is no a priori reason to think that this is the case.²²⁵ Those who wish to change the status quo bear the burden of proof.²²⁶ Those who wish to argue for the linguistic indeterminacy thesis and to reduce the weight given to claim text therefore need to produce reliable evidence—beyond the false reliance on judicial disagreement rates—to support their assertions.

B. *Claim Amendments and Multiple Claims*

A second objection to my analysis is that it has difficulty explaining the extremely permissive rules regarding claim amendments and multiple claiming. Patent law allows applicants to file an unlimited number of claims at the outset of an application²²⁷ and—through the device of “continuation applications”—further allows patent applicants to amend those claims in perpetuity.²²⁸ As a result, patent applicants enjoy a fallback in the event that a broadly worded claim is invalidated, rejected, or construed in an excessively narrow manner. Such a fallback encourages patentees to push the envelope and makes courts and the PTO do more work, two consequences that

224. *Id.* at 1746 (“If patent-claim terms lack the virtue of certainty and are in fact doing mischief in the patent system, perhaps we should begin to rethink the whole enterprise of peripheral claiming . . .” (emphasis added)); *id.* at 1791 (arguing that claim text has “failed catastrophically”); Cotropia, *supra* note 47, at 1913; *see also* Liivak, *supra* note 12, at 37.

225. The most extreme version of the linguistic indeterminacy thesis—that all text is meaningless, *see* BENSON, *supra* note 197, at xv—is self-refuting. The scholars who make the argument do so in writing, and if text were truly meaningless, no one would understand that writing. *See* Antonin Scalia, *Originalism: The Lesser Evil*, 57 U. CIN. L. REV. 849, 856 (1989).

226. *See* Schaffer *ex rel.* Schaffer v. Weast, 546 U.S. 49, 56 (2005).

227. *In re Wakefield*, 422 F.2d 897, 900 (C.C.P.A. 1970) (“[A]n applicant should be allowed to determine the necessary number and scope of his claims . . .”).

228. *See* Tafas v. Dudas, 541 F. Supp. 2d 805, 814 (E.D. Va. 2008) (“[U]nder the existing patent system an applicant may file an unlimited number of continuation or continuation-in-part applications, RCEs, and claims.”); Lemley & Moore, *supra* note 148, at 64 (“One of the oddest things about the United States patent system is that it is impossible for the U.S. Patent and Trademark Office (‘PTO’) to ever finally reject a patent application.”).

weaken the information-forcing effect of patent claims.²²⁹ In the most extreme scenario, it is possible to conceptualize a situation where a patentee writes millions of claims (either at the outset or in a series of amendments) that cover the entire universe of possible outcomes. At that point, the claims would force no information at all: the courts and the PTO would perform all of the analytical work, and we would be left with a governmental actor determining the correct patent scope in the first instance. In such a situation, patentee-written claims would have no social benefit.

I will admit that this argument carries much force. The extremely permissive rules regarding multiple claims and claim amendments are inconsistent with my theory's prescriptions. My response is twofold. At a prescriptive level, the divergence between my theory and current law simply means that the current rules regarding claim amendment and multiple claiming should be modified—a proposal that I have previously made.²³⁰ To be sure, there are good reasons to permit some claim amendment (e.g., to allow the patentee to correct inadvertent and harmless drafting errors that would otherwise demand excessive drafting precautions) and to permit some amount of multiple claiming (e.g., if a patentee has multiple distinct inventive ideas in a single apparatus). Still, these reasons fail to justify our present regime, which permits *unlimited* amendments to an *unlimited* number of claims.²³¹ The social interest in permitting patentees to correct claim-drafting errors and in permitting separate claiming of distinct inventive ideas should be balanced against the harms that large numbers of claim amendments and backup claims can cause. And one harm that arises from large numbers of claim amendments and backup claims is that the information-forcing effect of patentee-written claims becomes diluted.

The force of the objection, however, lies at the descriptive level: if my theory is offered as a positive theory—and it is—then isn't it a problem that the set of legal rules that my theory would prescribe is not exactly the set that we actually have? My response to this concern is that the divergence between prescription and reality somewhat weakens, but does not ultimately destroy, the validity of my analysis. My descriptive claim is not that my theory predicts every facet of patent-claiming practice; it is that my theory explains why the current system allocates claim-drafting responsibility to patentees. Understood in this manner, my theory remains descriptively valid. Patentee-written claims today have *some* information value: applicants do not in fact write millions of claims that cover the entire universe of possible outcomes,²³² and they would not rationally do so given the filing and

229. Cf. Meurer & Nard, *supra* note 117, at 1989–90 (criticizing the doctrine of equivalents for having a similar effect in discouraging “preemptive refinement” of claims by patentees).

230. Chiang, *supra* note 147.

231. See *id.* at 551–60 (presenting an economic analysis of claim-amendment rules as risk allocation).

232. Although somewhat dated, the best available statistic is that the average patent has about fifteen claims. John R. Allison & Mark A. Lemley, *The Growing Complexity of the United States Patent System*, 82 B.U. L. Rev. 77, 104 (2002).

attorneys' fees associated with such a course of action.²³³ This information value explains why courts continue to rely on patentee-written claims despite the obvious incentive for self-serving drafting. That the information value of patentee-written claims would be *greater* in a better-designed system, one with more robust limits on claim amendments and multiple claiming, does not mean that patentee-written claims have *no* value or coherent rationale today. Rather, it simply illustrates how a better understanding of the rationale for patentee-written claims can suggest a path to improving them.

CONCLUSION

This Article began with a simple—if surprisingly unexplored—question: Why does the patent system allow patentees to write their own claims? The answer, it turns out, gives us some important insights into the fundamental operation of the patent system. The basic reason is that the government (acting through judges or the PTO) cannot directly determine the proper scope of a patent because it lacks information about a patent's social benefits and costs. Indeed, this fundamental information deficit provides the underlying justification for the patent system itself.

Once we recognize this fundamental deficit, the value of patentee-written claims becomes clearer. Patentees possess the information that courts lack, and patent claims serve as an information-forcing mechanism designed to overcome this asymmetry. Requiring patentees to write claims forces them partially to disclose their private information and to state an initial baseline that courts can then scrutinize more meaningfully. The patentee-written claim will surely be imperfect, but it is better than asking courts—or any other governmental actor—to take stabs in the dark at the correct scope of the patent.

Establishing that patentee-written claims have social value leads to several important implications for the long-running debate over claim construction. Most obviously, it means that courts should not abolish or ignore claims entirely, contrary to what prominent scholars have argued. Moreover, courts should not give claims equal treatment compared with the treatment they accord other types of evidence. As this Article has explained, claim text must be given primary (although not conclusive) weight in the claim-construction calculus in order to balance short- and long-term interests and to preserve patentees' long-term incentive to write claims. And this is in fact what courts have done. This Article therefore not only answers an interesting theoretical puzzle. It also provides a positive and normative theory for the debate over claim-construction doctrine.

233. See 37 C.F.R. §§ 1.16(h)–(i) (2013) (\$420 filing fee for each independent claim beyond three and \$80 filing fee for each claim beyond twenty).