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## Patent Hermeneutics: Form and Substance in Claim Construction

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## PATENT HERMENEUTICS: FORM AND SUBSTANCE IN CLAIM CONSTRUCTION

*Kelly Casey Mullally\**

### Abstract

The claims section of a patent performs an important public notice function in patent law. The claims inform us of the boundaries delineating the subject matter over which the inventor holds an exclusive right. Methodology for interpreting patent claims has a direct impact on the claims' ability to fulfill that mandate. Theories of interpretation are far better developed in statutory and contract law. Many principles animating the debate between form and substance in those fields are relevant to patent law as well, but patents' divergent genesis and purpose create some important differences. This Article identifies the methodology set forth in the recent *Phillips v. AWH Corp.* case as a "tiered" substantive approach. Counter to conventional wisdom that formalism's chief virtue is its production of certain results, this tiered substantive approach in claim construction best achieves certainty and, by extension, furthers the public notice function of claims. It also best comports with the courts' obligation to construe patents in the same manner as a "person of ordinary skill in the art."

Another pivotal consideration is this methodology's influence on private drafting behavior. The tiered substantive approach will likely induce many inventors to draft their patents more formalistically. In effect, this permits a drafter to opt out of substantivism. Inventors have a variety of formalist tools for reigning in the potentially expansive effect of the tiered substantive methodology. Such a combination—formalism in patent drafting and substantivism in claim interpretation—will most effectively serve the public notice function of claims.

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I. INTRODUCTION

As a legal structure, the claims<sup>1</sup> of a patent are largely considered to be a successful solution to what had been a significant public notice problem.<sup>2</sup> Before Congress instituted the claiming requirement in 1870,<sup>3</sup> courts and the public engaged in an attempt to distill the “essence” of an invention from the entire patent document.<sup>4</sup> Claims provide a stream-lined mechanism for determining what, precisely, a patentee invented. Yet the practice of interpreting claims has been unstable and marred with criticism that has been increasing in recent years.<sup>5</sup> Some commentators view claims as a good idea that a broken system has debilitated.<sup>6</sup>

1. At least one claim is required in all U.S. patents. 35 U.S.C. § 112 (2000). The claims of a patent “particularly point[ ] out and distinctly claim[ ] the subject matter which the applicant regards as his invention.” *Id.*; see also *infra* notes 9-10, 102-03 and accompanying text.

2. John F. Duffy, *On Improving the Legal Process of Claim Interpretation: Administrative Alternatives*, 2 WASH. U. J.L. & POL’Y 109, 110 (2000) (“The success of the modern patent claim is demonstrated by its universal adoption in the patent law of all major industrialized countries. In the technology of law, the nineteenth century’s creation of the patent claim ranks as one of the most important innovations in the field of patent law . . .”).

3. Joshua D. Sarnoff, *The Historic and Modern Doctrines of Equivalents and Claiming the Future, Part I (1790-1870)*, 87 J. PAT. & TRADEMARK OFF. SOC’Y 371, 373 (2005).

4. See 1 ANTHONY W. DELLER, PATENT CLAIMS 11 (2d ed. 1971) (“The problem of discovering in the early patents what invention was involved was a burden which was carried by the courts and the public.”); see also *infra* notes 101-02 and accompanying text (discussing public notice function of patent claims).

5. See, e.g., 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, 175 (2001) (“[T]he field of patent infringement litigation currently lacks the certainty and predictability necessary to efficiently litigate (and resolve) cases.”); Russell B. Hill & Frank P. Cote, *Ending the Federal Circuit Crapshoot: Emphasizing Plain Meaning in Patent Claim Interpretation*, 42 IDEA 1, 1 (2002) (discussing how different approaches taken by panels in interpreting patent claims “result[] in uncertainty for litigants and wasted judicial resources”).

6. See Hill & Cote, *supra* note 5, at 2.

The controversy concerning claim interpretation reflects the paradoxical nature of claims. Patents, although privately drafted, are enforceable against the public at large and accordingly have broad and significant effects. They draw the line between technology that can be freely used by all, such as the skateboard or penicillin, and technology that an inventor can legally exclude all others from using<sup>7</sup> or, as is often the case, charge near-monopoly prices for using, such as the Segway Human Transporter and the anthrax-fighting antibiotic Cipro.<sup>8</sup> The claims are the specific portion of a patent that delineate this boundary between permissible and prohibited use.<sup>9</sup> By defining the scope of the patentee's right to exclude others from the subject matter contained therein,<sup>10</sup> the claims play the dispositive role in balancing competing interests in the law of invention: providing sufficient incentive for an inventor to create,<sup>11</sup> yet, at the same time, ensuring that information and technology that belong in the public domain are not removed from general public use.<sup>12</sup> The claims are accordingly the focal point in every United States patent.

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7. *Zoltek Corp. v. United States*, 442 F.3d 1345, 1374 (Fed. Cir. 2006) (“One of the property attributes of a patent grant is the right to exclude all others, including the Government, from ‘making, using, offering for sale, or selling’ the patented invention without the patentee’s consent.” (quoting 35 U.S.C.A. § 154(a)(1) (West 2005))).

8. The Segway is a two-wheeled, self-balancing motorized platform with handle bar that the rider operates, standing upright, by simply leaning in the direction she wants to travel. SEGWAY LLC, SEGWAY HT REFERENCE MANUAL 6, 12 (2005), available at <http://www.segway.com/support/docs/Reference Manual.pdf>. The device is covered by more than forty U.S. patents, with additional patent applications pending. *Id.* at 44-45.

Cipro is a tradename for a pharmaceutical containing the chemical ciprofloxacin. *See Cipro*, <http://www.cipro.com/en/home.html> (last visited Feb. 18, 2007). It is covered by at least eight U.S. patents, with additional patent applications pending. U.S. DEP’T OF HEALTH & HUMAN SERVS., FOOD & DRUG ADMIN., APPROVED DRUG PRODUCTS WITH THERAPEUTIC EQUIVALENCE EVALUATIONS, at Patent and Exclusivity Information Addendum ADA 26-27 (27th ed. 2007), available at <http://www.fda.gov/cder/orange/obannual.pdf>.

9. The claims define the metes and bounds of an invention. *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 336 U.S. 271, 277 (1949) (“We have frequently held that it is the claim which measures the grant to the patentee.”); *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))), *cert. denied*, 126 S. Ct. 1332 (2006).

10. *Phillips*, 415 F.3d at 1312; *see also Graver Tank*, 336 U.S. at 277.

11. *E.g.*, *Diamond v. Chakrabarty*, 447 U.S. 303, 307 (1980) (“The patent laws . . . offer[ ] inventors exclusive rights for a limited period as an incentive for their inventiveness and research efforts.”).

12. *See, e.g.*, *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 481 (1974) (“The Court has also articulated another policy of the patent law: that which is in the public domain cannot be removed therefrom . . .”).

Claims, however, are not self-executing. Like all written documents, patents require interpretation to give them effect.<sup>13</sup> The claims are interpreted first by examiners<sup>14</sup> at the United States Patent and Trademark Office (PTO) who determine whether to issue a patent, and later by third parties who determine whether their anticipated or current conduct is permissible.<sup>15</sup> Patent owners also analyze the meaning of the claims when determining whether to assert their rights against alleged infringers.<sup>16</sup> The judiciary's interpretation of a claim is perhaps most significant, of course, given that the courts not only have the last word on the meaning of a particular claim but also instruct in exegesis for all claims, informing others engaged in interpretation of the legal rules of construction. In patent law, that judicial influence is exerted largely by a single court, the United States Court of Appeals for the Federal Circuit—the de facto court of last resort for patent cases.<sup>17</sup>

Courts hearing patent cases, particularly the Federal Circuit, have many opportunities to consider issues of claim interpretation. Disagreement over the meaning of the claims is arguably the most common and pervasive issue in patent litigation. Most patent cases decided on the merits turn on

13. See *McClain v. Ortmayer*, 141 U.S. 419, 424 (1891) (“The rights of the plaintiff [patentee] depend upon the claim in his patent, according to its proper construction . . . .” (quoting *Masury v. Anderson*, 16 F. Cas. 1087, 1088 (C.C.S.D.N.Y. 1873) (No. 9,270))); see also *Chimie v. PPG Indus. Inc.*, 402 F.3d 1371, 1377 (Fed. Cir. 2005) (“Courts construe claim terms in order to assign a fixed, unambiguous, legally operative meaning to the claim.”).

14. Patent examiners are “quasi-judicial officials trained in the law . . . ‘whose duty it is to issue only valid patents.’” *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 986 (Fed. Cir. 1995) (en banc) (quoting *Am. Hoist & Derrick Co. v. Sowa & Sons*, 725 F.2d 1350, 1359 (Fed. Cir. 1984)), *aff’d*, 517 U.S. 370 (1996). Patent examiners specialize in particular technologies and often have an educational background and some experience in their assigned area. *Am. Hoist*, 725 F.2d at 1359.

15. See *Vitronics Corp. v. Conceptoronic, Inc.*, 90 F.3d 1576, 1583 (Fed. Cir. 1996) (“[C]ompetitors are entitled to review the public record, apply the established rules of claim construction, ascertain the scope of the patentee’s claimed invention and, thus, design around the claimed invention.”).

16. As argued in this Article, patent owners should also interpret claims both before filing a patent application and throughout the patent procurement process, particularly if the applicant amends the claims at any point. See *infra* Part V.B.

17. The United States Court of Appeals for the Federal Circuit has near-exclusive appellate jurisdiction over patent disputes. See 28 U.S.C. § 1295(a)(4)(A)-(C) (2000); see also *Holmes Group, Inc. v. Vornado Air Circulation Sys., Inc.*, 535 U.S. 826, 833-34 (2002) (applying the well-pleaded-complaint rule to limit the Federal Circuit’s jurisdiction to cases in which the complaint alleges a claim arising under federal patent law). Because the Supreme Court grants certiorari in so few patent cases, the Federal Circuit is effectively the court of last resort in patent law. See THE U.S. JUDICIAL CONFERENCE COMM. ON THE BICENTENNIAL OF THE CONSTITUTION OF THE U.S., THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT: A HISTORY, 1982-1990, at 226-27 (1991); see also Mark D. Janis, *Patent Law in the Age of the Invisible Supreme Court*, 2001 U. ILL. L. REV. 387, 387 (“The [Federal Circuit] . . . has become the de facto supreme court of patents.”).

the validity and infringement of the patent. To reach those issues, however, a court usually must first construe the claims.<sup>18</sup> Claim interpretation, also known as claim construction, must therefore occur before courts address nearly every other issue in a patent case.<sup>19</sup> The meaning of the claims is often conclusive of an entire case<sup>20</sup> and, by extension, the value of the patent.<sup>21</sup> As a consequence, construing claims has become routine work for the Federal Circuit.

Despite the importance of claim interpretation, theoretical scholarship has largely neglected its methodology.<sup>22</sup> Exploring underlying theories, however, has the potential to improve understanding of claim construction and to influence the decision-making tools ultimately used to construe and to draft claims. In contrast to the commentary on patent law, scholarship in other areas has often addressed interpretive problems—an issue that is endemic to resolving legal disputes—from a theoretical standpoint.<sup>23</sup> This scholarship provides an abundant source of legal thinking about underlying theories from which to consider current problems in claim construction.<sup>24</sup> These theories have not been sufficiently explored in the

18. *State Contracting & Eng'g Corp. v. Condotte Am., Inc.*, 346 F.3d 1057, 1067 (Fed. Cir. 2003) (“[W]e have held that a claim ‘must be construed before determining its validity . . . .’” (quoting *Markman*, 52 F.3d at 997 n.7)); *Amgen, Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1324 (Fed. Cir. 2003) (“Because claim language defines claim scope, the first step in an infringement analysis is to construe the claims, *i.e.*, to determine the scope and meaning of that which is allegedly infringed.”).

19. Indeed, many district courts hold separate hearings early in a patent case to determine the meaning of the claims. See Frank M. Gasparo, *Markman v. Westview Instruments, Inc. and Its Procedural Shock Wave: The Markman Hearing*, 5 J.L. & POL'Y 723, 724-25 (1997) (describing “*Markman* hearings” to construe claims).

20. *Markman*, 52 F.3d at 989 (Mayer, J., concurring) (“[T]o decide what the claims mean is nearly always to decide the case.”).

21. See *supra* note 9 (noting that the scope of the right to exclude depends on claim boundaries). Consider the recent suit against BlackBerry manufacturer Research In Motion (RIM), where the value of the asserted patents proved to be very high—a jury’s infringement verdict resulted in a judgment against RIM for \$53,704,322.69. *NTP, Inc. v. Research In Motion, Ltd.*, 418 F.3d 1282, 1287 (Fed. Cir. 2005). Although the court found one error in claim construction on appeal, the court affirmed the remainder of the claim construction issues raised by RIM and accordingly upheld infringement of many of the asserted claims. *Id.* at 1325-26. RIM ultimately settled the case for \$612.5 million to continue using its wireless technology. *BlackBerry Case Settles as RIM Agrees to Pay NTP Inc. \$612.5 Million for License*, 71 PAT. TRADEMARK & COPYRIGHT J. (BNA) 489 (Mar. 10, 2006).

22. See, e.g., Dan L. Burk & Mark A. Lemley, *Quantum Patent Mechanics*, 9 LEWIS & CLARK L. REV. 29, 34 (2005) (“Although claim interpretation is fundamental to patent law, both the theory and doctrine of the practice remain astonishingly underdeveloped, limited mostly to squabbles over the proper or improper application of ‘ordinary meaning.’”).

23. The wide-ranging scholarship on how to interpret written documents spans the disciplines of literature, religion, and law, to name just a few. See *id.* at 49.

24. See *id.*

patent literature.<sup>25</sup>

In particular, the debate about the relative virtues of form and substance has been a mainstay in furthering an understanding of how to interpret legal instruments, contributing to the practice and development of the law in a number of fields.<sup>26</sup> To date, however, these theories have rarely been applied in patent law.<sup>27</sup> Patent scholars have noted an institutional trend in the Federal Circuit's general patent jurisprudence toward formalism<sup>28</sup> and a "process-based formalism" in the Supreme Court's approach to claim construction.<sup>29</sup> Yet this relatively limited body of literature has barely scratched the surface of the form and substance debate in patent law. Theories of form and substance should be further explored in patent law in order to broaden our understanding of claim construction. At the same time, patent law, with its varied technical settings and unique mix of contract- and statute-like elements,<sup>30</sup> provides an interesting context for exploring the concepts of form and substance more generally.

This Article analyzes claim construction methodology through the lens of form and substance. Part II sets forth the theoretical distinctions between form and substance used herein. Part III provides a general guide to the patent procurement process, the patent document, and claim

25. See, e.g., *id.* ("Curiously, relatively little of this literature [regarding interpretation of literary and legal texts, particularly contracts and constitutional provisions] has been applied to understand the practice of patent claim interpretation.").

26. See Avery Wiener Katz, *The Economics of Form and Substance in Contract Interpretation*, 104 COLUM. L. REV. 496, 496 (2004) ("[A]lmost all questions of interpretation implicate the tension between form and substance."); Duncan Kennedy, *Form and Substance in Private Law Adjudication*, 89 HARV. L. REV. 1685, 1701 (1976) ("There seems no basis for disputing that the notions of rule and standard, and the idea that the choice between them will have wide-ranging practical consequences, are useful in understanding and designing legal institutions.").

27. See John R. Thomas, *Formalism at the Federal Circuit*, 52 AM. U. L. REV. 771, 797 (2003) ("[T]he patent law traditionally has borrowed little from contracts.").

28. *Id.* at 774 ("[T]he Federal Circuit has embraced an increasingly formal jurisprudence.").

29. Timothy R. Holbrook, *Substantive Versus Process-Based Formalism in Claim Construction*, 9 LEWIS & CLARK L. REV. 123, 126-29 (2005) (arguing that the Supreme Court has adopted a "process-based formalism," in contrast with the Federal Circuit's "bright-line substantive formalism," in claim construction); see also Craig Allen Nard, *A Theory of Claim Interpretation*, 14 HARV. J.L. & TECH. 1, 5 (2000) (describing some judges' hypertextualist approach to claim construction as "highly formalistic"). Professor Holbrook uses the term "process-based formalism" to refer to the practice of "fashion[ing] a variety of rules detailing the manner of approaching an issue, instead of one rule directed at reaching a particular outcome," Holbrook, *supra* at 129, and the term "formalistic substantive rules" to refer to "rules that are outcome determinative," *id.* at 126. Professor Holbrook thus focuses on concepts that differ from those considered in this Article. See *infra* Part II.

30. See *infra* note 33 and Part III.A (discussing contract and statutory interpretation as analogies for claim construction).

construction. Part IV discusses the interpretative methodologies the courts have applied to construe claims, including the Federal Circuit's recent en banc decision in *Phillips v. AWH Corp.*<sup>31</sup> It then classifies those methodologies based on the form and substance distinction, concluding that the *Phillips* methodology is a "tiered" substantive approach to claim construction. Next, Part V considers the importance of certainty in claim construction, concluding that substantivism best comports with the important public notice function of claims and achieves greater certainty in patent law than formalism. That Part concludes with a discussion of how a patentee may reign in the potentially expansive substantive approach with formalistic claim drafting.

## II. A MODEL OF FORM AND SUBSTANCE FOR CLAIM CONSTRUCTION

Scholars have long explored the distinction between form and substance in a variety of fields. In law, the debate has especially influenced theories of interpretation for contracts and statutes,<sup>32</sup> two legal instruments that are particularly useful analogues to patents.<sup>33</sup> Although Part III will discuss more similarities, patents are documents that are largely<sup>34</sup> privately

31. 415 F.3d 1303 (Fed. Cir. 2005) (en banc), *cert. denied*, 126 S. Ct. 1332 (2006).

32. *See, e.g.,* Katz, *supra* note 26, at 496 ("For over a century, legal commentators have debated the relative merits of formal and substantive approaches to the interpretation of contracts . . ."); Kennedy, *supra* note 26, at 1705-06 (discussing theories of form and substance in statutory interpretation).

33. Although differences exist between claim construction and contract and statutory interpretation courts have found it useful to rely on principles of contract and statutory interpretation for various aspects of claim construction. Which discipline presents the most useful analogy depends on the precise issue at hand. *See* Markman v. Westview Instruments, Inc., 52 F.3d 967, 984-87 (Fed. Cir. 1995) (en banc) (discussing relationships between statutory interpretation and contract interpretation, respectively, and claim construction, and "conclud[ing] that the statutory interpretation model is a more accurate model than the contractual one for purposes of determining whether constitutional protections are transgressed by assigning claim construction exclusively to judges"), *aff'd*, 517 U.S. 370 (1996); *see also* MacNeill Eng'g Co. v. Trisport, Ltd., 126 F. Supp. 2d 51, 54 n.1 (D. Mass. 2001) ("The analogy to statutory construction is compelling and properly confines the judiciary to its traditional law 'defining' role: in essence, the judge's role in claim construction (defining the relevant language as matter of law) is equally a teaching role because such construction is meaningless unless it can be conveyed to a jury so as to aid the jury in its fact finding role." (citation omitted)). *But see* Markman, 52 F.3d at 998 n.8 (Mayer, J., concurring) (concluding that rules of contract interpretation should inform claim construction practice). The Supreme Court has also implicitly recognized that claim construction is similar to the interpretative tasks commonly undertaken by judges, such as statutory and contract interpretation, noting that the general interpretative skills of judges in construing written documents can be applied to construe claims. Markman v. Westview Instruments, Inc., 517 U.S. 370, 388 (1996) (reasoning that "[t]he construction of written instruments is one of those things that judges often do and are likely to do better than jurors unburdened by training in exegesis" in concluding that claim construction is in the exclusive purview of judges).

34. Patent examiners, ostensibly representing the public in the patent procurement process,



drafted, like contracts, but have broad effects on the general public, like statutes.

The scholarship in contract and statutory interpretation relating to formal and substantive methodologies guides both public and private decision makers by highlighting the effect of the two opposing approaches on such considerations as efficiency, economics, and judicial activism.<sup>35</sup> The choice between form and substance can be tied to normative principles and used to encourage desirable behavior.

Scholars have discussed the relative merits of formal and substantive approaches in several guises. At times, this dialectic appears as a debate between rules and standards, but at other times, it appears as one over text versus context.<sup>36</sup> None of these terms, however, have a precise or even consistent meaning. Indeed, discussions about form and substance can be hindered by a lack of agreement on the concepts to which the terms refer.

Although sometimes addressing different issues, one functional difference central to the larger form versus substance debate relates to the scope of authoritative or evidentiary materials consulted. A formalist approach strictly limits the universe of permissible interpretative sources. By contrast, a substantive approach allows a decision maker to consider a broader information set to determine meaning.<sup>37</sup> For a formalist interpreter, the body of relevant materials is restricted and structured, usually ordered by a set of bright-line interpretative rules. The dictionary is a frequently invoked and favored tool of formalist interpreters,<sup>38</sup> while substantive

may have some input on the language in the claims either directly, by requiring amendments to the claims, or indirectly, by simply rejecting the claims written by an applicant.

35. See *supra* note 26.

36. *E.g.*, Katz, *supra* note 26, at 515 (“One sees the dichotomy [of form and substance] expressed in terms of rules versus standards, rules versus discretion, textual versus contextual modes of interpretation, static versus dynamic interpretation, simplicity versus complexity, determinacy versus flexibility, objective versus subjective standards, and so on. Each of these opposed pairs highlights different functional aspects of the formalism problem . . .”).

37. *Id.* at 516 (“Formalism entails restriction to a smaller set of decisional materials . . . while substantive interpretation permits and sometimes directs attention to a larger set of decisional materials . . .”); see also James W. Bowers, *Incomplete Law*, 62 LA. L. REV. 1229, 1237 (2002) (contrasting formalist interpretative strategy with “a command to honor the . . . context in which the interpretive task arises”); Frederick Schauer, *Formalism*, 97 YALE L.J. 509, 509 (1988) (noting that various conceptions of formalism involve some constriction of the decisionmaker’s choices).

38. See Ellen P. Aprill, *The Law of the Word: Dictionary Shopping in the Supreme Court*, 30 ARIZ. ST. L.J. 275, 278 (1998) (noting textualists’ use of dictionaries in statutory interpretation); James W. Bowers, *Murphy’s Law and the Elementary Theory of Contract Interpretation: A Response to Schwartz and Scott*, 57 RUTGERS L. REV. 587, 589 (2005) (noting that formalist methods of interpretation hold that documents “should be interpreted with reference only to the dictionary”); Jonathan T. Molot, *The Rise and Fall of Textualism*, 106 COLUM. L. REV. 1, 44 (2006) (noting that textualists “place heavy emphasis on dictionary definitions”).

interpreters rely on more varied resources.<sup>39</sup> A substantive interpreter approaches her task with the view that it is necessary to look at context to attain the meaning of a word. Context is less important, if not unimportant altogether, to a formalist.<sup>40</sup>

Methodologies of statutory interpretation illustrate the divide between formalism and substantivism. Supreme Court Justices have used differing approaches in determining the meaning of legislative enactments. For example, in *MCI Telecommunications Corp. v. American Telephone & Telegraph Co.*,<sup>41</sup> the majority and dissenting Justices approached their interpretative task in fundamentally different ways. The case involved a provision of the Communications Act of 1934 that required common carriers to file tariffs with the Federal Communications Commission but also authorized the Commission to modify the tariff filing requirement.<sup>42</sup> Justice Scalia, a noted textualist,<sup>43</sup> wrote for the majority.<sup>44</sup> In construing the phrase “to modify,” Justice Scalia relied heavily on dictionary definitions.<sup>45</sup> He canvassed numerous dictionaries of different types and from different time periods to conclude that the Commission had exceeded its authority to modify the filing requirement.<sup>46</sup> Justice Stevens dissented, reaching the opposite conclusion based on a fundamentally different approach to interpretation.<sup>47</sup> Although acknowledging the dictionary

39. See Katz, *supra* note 26, at 516.

40. See Richard J. Pierce, Jr., *The Supreme Court's New Hypertextualism: An Invitation to Cacophony and Incoherence in the Administrative State*, 95 COLUM. L. REV. 749, 750 (1995) (“Textualism refers to . . . [a] set of tools, including dictionary definitions, rules of grammar, and canons of construction, in an effort to derive the putatively objective meaning of the statutory word or phrase.”).

41. 512 U.S. 218 (1994).

42. *Id.* at 220, 224.

43. See, e.g., William N. Eskridge Jr., *The New Textualism*, 37 UCLA L. REV. 621, 623, 650-56 (1990) (identifying Justice Scalia as a key new textualist and discussing Justice Scalia's textualist methodology).

44. *MCI Telecomm. Corp.*, 512 U.S. at 220.

45. *Id.* at 225-28. Justice Scalia did not rely exclusively on dictionary definitions, but he did place great emphasis on them. *Id.* The discussion of dictionaries featured prominently in the Court's opinion, and dictionaries were the first resources consulted. See *id.*

46. *Id.* at 225 (citing definitions from the 1987 second edition of Random House Dictionary of the English Language, the 1981 edition of Webster's Third New International Dictionary, the 1989 second edition of the Oxford English Dictionary, and the 1990 sixth edition of Black's Law Dictionary). Based on his review of dictionaries, Justice Scalia concluded that consensus existed, writing that “[v]irtually every dictionary we are aware of says that ‘to modify’ means to change moderately or in minor fashion.” *Id.* Justice Scalia also looked to the Latin root of the word “modify.” *Id.*

47. See *id.* at 235-45 (Stevens, J., dissenting).

definitions relied upon by the majority,<sup>48</sup> Justice Stevens stressed instead the purpose and policy of the Act and argued that the Commission's action had to be viewed in the context of the Commission's conduct over time.<sup>49</sup>

The familiar divide between Samuel Williston and Arthur Corbin in contract law also provides a useful example. Williston advocated a formalist approach to contract interpretation, with reference only to the contractual text and the dictionary as interpretative sources to determine the "plain meaning" of words.<sup>50</sup> Legal realists such as Corbin and Karl Llewellyn later sought to discredit the Willistonian approach, arguing that words in contracts derive meaning only from their context.<sup>51</sup> Llewellyn's concept of a merchant tribunal, in which disputes would be submitted to a jury of peers in the relevant commercial field, is the unrealized ideal of that context-based approach to interpretation.<sup>52</sup> Llewellyn found success, however, in the Uniform Commercial Code's incorporation of flexible, context-centered concepts—such as trade usage in the pertinent commercial area—as part of the mandatory interpretative landscape.<sup>53</sup>

That distinction—between a flexible approach to interpretation that considers a wide array of contextual materials, and a more rigid approach that limits the sources taken into account—is the framework for this Article. In keeping with that general dichotomy, this Article will analyze approaches to claim construction based on the universe of materials considered relevant and necessary to interpretation and the hierarchy of those materials. Because neither approach exists in patent law in their pure forms, this Article considers formalistic and substantive regimes in

48. *See id.* at 241–42. Justice Stevens did not rule out use of the dictionary altogether. *See id.* Indeed, he consulted the dictionary and noted definitional entries broader than those cited in the majority opinion. *See id.* Nevertheless, for Justice Stevens, dictionary definitions served as merely a part of understanding the statute and its purpose. *See id.* at 240 (“Dictionaries can be useful aids in statutory interpretation, but they are no substitute for close analysis of what words mean as used in a particular statutory context.”).

49. *Id.* at 235.

50. *See* Mark L. Movsesian, *Rediscovering Williston*, 62 WASH. & LEE L. REV. 207, 213 (2005); Dennis M. Patterson, *Good Faith, Lender Liability, and Discretionary Acceleration: Of Llewellyn, Wittgenstein, and the Uniform Commercial Code*, 68 TEX. L. REV. 169, 187–90 (1989).

51. *See* Patterson, *supra* note 50, at 170, 187–90.

52. *See* K.N. Llewellyn, *The First Struggle to Unhobble Sales*, 52 HARV. L. REV. 873, 903–04 (1939); *see also* Zipporah Batshaw Wiseman, *The Limits of Vision: Karl Llewellyn and the Merchant Rules*, 100 HARV. L. REV. 465, 466, 512–15 (1987) (describing Llewellyn's efforts to incorporate the concept of a merchant jury into the Uniform Commercial Code).

53. *See* U.C.C. § 1-205(2) (2005); *see also* Amy H. Kastely, *Stock Equipment for the Bargain in Fact: Trade Usage, “Express Terms,” and Consistency Under Section 1-205 of the Uniform Commercial Code*, 64 N.C. L. REV. 777, 779 (1986) (noting that the Uniform Commercial Code made trade usage an essential part of parties' agreements).

relative, probabilistic terms.<sup>54</sup> These concepts will be matters of degree, rather than absolutes.

Theories of formalism and substantivism also have an *ex ante* impact, manifesting themselves in drafting behavior.<sup>55</sup> As a corollary to the above dichotomy, a formalist writer will seek to include all information necessary for interpretation of her text within its four corners. She will also prefer bright-line expressions. At the other end of the spectrum, a substantive writer will expect and rely on the interpreter's use of external sources, such as materials reflecting policy, purpose, and context, to arrive at meaning in her work.<sup>56</sup> Her writing will accordingly use more open-textured terminology.

One additional aspect of the form versus substance debate that is particularly relevant to this Article deals with certainty. A perceived lack of certainty, in the sense of predictability of results (e.g., claim, scope, or meaning), has been the basis for much criticism of patent law in general,<sup>57</sup> and of claim construction specifically,<sup>58</sup> by both academics and practitioners.

54. Professor Katz offers the following helpful description of the relative nature of the form and substance labels:

Some regimes—indeed, probably most—may admit certain types of material into their permissible information sets, but only some of the time, or only for limited purposes, or with less weight, or only if the material is weighty enough to overcome a presumption against admissibility. Accordingly, a regime that allows the consideration of more interpretive material more of the time or with greater probability is more [substantive], other things being equal, than a regime that uses such material less of the time or with lower probability. Similarly, a regime that establishes a hierarchy of influence and that treats certain types of material as more weighty or more privileged than others is more formalistic than one that accords all types of material equal consideration.

Katz, *supra* note 26, at 517.

55. *See infra* Part V.B.

56. Textualist interpreters such as Justice Scalia strive to vitiate this very expectation. *See, e.g.*, Aprill, *supra* note 38, at 278-80.

57. *See, e.g.*, Charles W. Adams, *The Doctrine of Equivalents: Becoming a Derelict on the Waters of Patent Law*, 84 NEB. L. REV. 1113, 1116 (2006) (noting that “[t]he consequent lack of certainty [in the doctrine of equivalents] has adverse consequences for both patentees and their competitors”); Bender, *supra* note 5, at 175. The broad issue of legal certainty in patent law is beyond the scope of this Article but certainly warrants further exploration.

58. *See, e.g.*, Bender, *supra* note 5, at 176 (“[T]he [Federal Circuit’s] current [claim construction] practice does not provide certainty or predictability to patent litigants.”); Hill & Cote, *supra* note 5, at 2 (arguing that problems with the Federal Circuit’s claim construction decisions “give[ ] litigants no more certainty than a roll of the dice”); Kimberly A. Moore, Markman *Eight Years Later: Is Claim Construction More Predictable?*, 9 LEWIS & CLARK L. REV. 231, 231 (2005) (noting “growing criticism surrounding the lack of guidance and predictability in claim construction cases”).

The courts have also expressed a concern for certainty.<sup>59</sup> Indeed, both patentees<sup>60</sup> and the public's<sup>61</sup> desire for certainty warrants some consideration<sup>62</sup> in light of the impact that uncertainty can have on property rights.<sup>63</sup> Certainty is especially important when the law informs future actions, such as a competitor's decision to seek a license or to design around a patented invention without fear of being sued for infringement.<sup>64</sup>

Scholars have typically associated certainty primarily with formalism.<sup>65</sup>

59. *See, e.g.*, *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 39 n.8 (1997) (noting need “to promote certainty, consistency, and reviewability” in patent law); *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 391 (1996) (expressing a need for certainty in claim construction); *Phillips v. AWH Corp.*, 415 F.3d 1303, 1323 (Fed. Cir. 2005) (en banc) (noting a need for “reasonable certainty and predictability” in claim construction), *cert. denied*, 126 S. Ct. 1332 (2006).

60. *See* Craig Allen Nard, *Certainty, Fence Building, and the Useful Arts*, 74 IND. L.J. 759, 759 (1999) (“The prospect of certainty in the patentee’s property interest has several benefits, one of which is to create a sense of security which permits the patentee to secure risk capital from investors, which in turn facilitates the commercialization of the claimed invention. A related benefit is the patentee’s ability to send a clearly defined message of deterrence to competitors, in effect blocking them from developing the same or very similar technology.” (footnote omitted)).

61. As Judge Bryson has explained, the costs of uncertainty to the public are significant:

Patent counselors should be able to advise their clients, with some confidence, whether to proceed with a product or process of a particular kind. The consequences of advice that turns out to be incorrect can be devastating, and the costs of uncertainty—unjustified caution or the devotion of vast resources to the sterile enterprise of litigation—can be similarly destructive.

*Litton Sys., Inc. v. Honeywell, Inc.*, 87 F.3d 1559, 1580 (Fed. Cir. 1996) (Bryson, J., concurring in part and dissenting in part).

62. However, at least one scholar has questioned whether certainty should be the primary criterion for claim construction methodology. *See* Christopher A. Cotropia, *Patent Claim Interpretation Methodologies and Their Claim Scope Paradigms*, 47 WM. & MARY L. REV. 49, 95-102 (2005) (arguing that courts, in evaluating claim construction methodologies, should place more attention on the desired claim scope they hope to achieve as a policy matter than on certainty).

63. *See* Michael J. Meurer & Craig Allen Nard, *Patent Policy Adrift in a Sea of Anecdote: A Reply to Lichtman*, 93 GEO. L.J. 2033, 2035 (2005) (noting “the standard view in law and economics that fuzzy property rights frustrate investment decisions and impede transactions”); Joseph Scott Miller, *Enhancing Patent Disclosure for Faithful Claim Construction*, 9 LEWIS & CLARK L. REV. 177, 195 (2005) (“Both due process norms and the economic analysis of property law support the view that claim scope should be predictable.”).

64. *See* Kennedy, *supra* note 26, at 1688 (“Certainty . . . is valued for its effect on the citizenry: if private actors can know in advance the incidence of official intervention, they will adjust their activities in advance to take account of them.”).

65. *See, e.g.*, Robert E. Scott, *The Uniformity Norm in Commercial Law: A Comparative Analysis of Common Law and Code Methodologies*, in *THE JURISPRUDENTIAL FOUNDATIONS OF CORPORATE AND COMMERCIAL LAW* 149, 171-72 (Jody S. Kraus & Steven D. Walt eds., 2000) (arguing that formalist interpretive strategies result in more predictable decisions than context-based approaches); Katz, *supra* note 26, at 532 (noting that “restricting the scope of admissible

Advocates of formalism assert that formalistic rules provide clear guidelines that reign in judicial discretion and thereby increase certainty and predictability of results.<sup>66</sup> Proponents of substantivism often seem complicit in this characterization, instead highlighting other virtues such as flexibility, ex post fairness, and morality.<sup>67</sup> Claim construction, however, presents a legal environment in which, interestingly, the certainty characterization is reversed.<sup>68</sup> In claim construction, a substantive method leads to increased certainty while the certainty promised by formalists is illusory. A substantive interpretative methodology accomplishes this much desired certainty while maintaining its flexibility. Claim construction thus presents an environment in which substantivism provides primary benefits of both substantivism and formalism.

### III. A GENERAL GUIDE TO CLAIMS AND CLAIM CONSTRUCTION

Although patents share some characteristics with contracts and statutes, they are unique legal instruments.<sup>69</sup> Section A provides a brief introduction to the patent procurement process and the resultant patent document and notes some of the similarities that patents share with statutes and contracts, respectively.<sup>70</sup> As this section discusses more fully, although patents may be of great interest to legal and business actors (among others), they are written for a singular, specific audience: the hypothetical “person of ordinary skill in the art” to which the technology of the particular patent at issue pertains.<sup>71</sup> Section B provides a general guide to claim construction and introduces the overarching principles of the process.

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interpretive materials” may prevent courts from indulging in the temptation to tailor their interpretations “in furtherance of other goals such as distributional equity, risk sharing ex post, or corrective justice”); Kennedy, *supra* note 26, at 1710-11 (listing certainty among qualities that describe rules and uncertainty among qualities that describe standards); Pierre J. Schlag, *Rules and Standards*, 33 UCLA L. REV. 379, 400 (1985) (“Rules, for instance, are said to be appropriate when certainty, uniformity, stability, and security are highly valued, whereas standards are seen as more appropriate when flexibility, individualization, open-endedness, and dynamism are important.”).

66. See, e.g., Thomas, *supra* note 27, at 774 (noting that “[a]dvocates of formally realized rules argue that they reduce judicial discretion, lead to more certain outcomes and provide private actors with the certainty necessary to order their affairs in an efficient fashion” (citing Frank I. Michelman, *A Brief Anatomy of Adjudicative Rule-Formalism*, 66 U. CHI. L. REV. 934, 934 (1999))).

67. See, e.g., Kennedy, *supra* note 26, at 1710-11, 1776 (listing flexibility, individualization, equity, fairness, and morality among qualities that describe standards and stressing the importance of a link “between altruism and a preference for standards”).

68. See *infra* Part V.A.

69. See *Elec. Mfg. Co. v. Edison Elec. Light Co.*, 61 F. 834, 837 (7th Cir. 1894).

70. Without canvassing all possible similarities and differences, this Article merely notes some of the common traits that have relevance to claim interpretation.

71. *In re Nelson*, 280 F.2d 172, 181 (C.C.P.A. 1960) (“The descriptions in patents are not addressed to the public generally, to lawyers or to judges, but . . . to those skilled in the art to which the invention pertains or with which it is most nearly connected.”), *overruled by In re Kirk*, 376 F.2d 936 (C.C.P.A. 1967).

### A. *The Birth and Anatomy of a Patent*

The United States's patent procurement process, known as patent prosecution, is an ex parte administrative procedure between an applicant<sup>72</sup> and the PTO, represented by one or more patent examiners.<sup>73</sup> The average prosecution takes roughly two to three years.<sup>74</sup> It commences when an applicant files a patent application, which a patent examiner reviews for compliance with the statutory patentability requirements.<sup>75</sup> In conducting her review, the examiner searches the "prior art,"<sup>76</sup> that is, pre-existing, known technical information in relevant scientific fields.<sup>77</sup> This search assists the examiner in determining, among other things, whether the invention that the applicant's claims describe is new. The examiner and the applicant then engage in a series of written communications and oral communications usually memorialized in writing. The examiner typically rejects or objects to one or more claims in the application.<sup>78</sup> In response, the applicant may amend her claims to address the examiner's concerns.<sup>79</sup> The applicant may also submit arguments or additional information about the invention to overcome claim rejections, with or without making amendments to the claims.<sup>80</sup> These transactions continue until either the examiner allows the claims or the applicant decides not to pursue them.<sup>81</sup>

This back-and-forth process is similar to a contract negotiation. The patent examiner ostensibly represents the public in ensuring that the patent applicant does not obtain rights to information that properly belongs in the public domain under the patentability standards. On the other side, the patent applicant seeks to obtain the greatest possible scope of coverage for her invention.

72. The applicant may be the inventor or the inventor's assignee, often the inventor's employer or licensee. *See* 35 U.S.C. § 261 (2000); 8 DONALD S. CHISUM, CHISUM ON PATENTS § 22.01 (2006). The applicant may be represented by counsel or may proceed pro se. *See* 37 C.F.R. § 1.31 (2006).

73. 4 CHISUM, *supra* note 72, § 11.03[1].

74. *See id.* § 11.03[1][a].

75. The Patent Act specifies three primary conditions for patentability. *See* 35 U.S.C.A. §§ 101-103 (West 2007). First, the invention must be appropriate subject matter for a patent. *Id.* § 101. Second, the invention must be new, and the applicant must be the first inventor. *Id.* §§ 101-102. Finally, the invention must be "nonobvious." *Id.* § 103.

76. 4 CHISUM, *supra* note 72, § 11.03[1][b].

77. Prior art comes in many forms, including, for example, published patent applications, issued patents, journal articles, textbooks, technical treatises, physical and graphical models, reports of presentations, and doctoral theses. *See generally* 35 U.S.C.A. § 102 (West 2007) (noting that "printed publication[s]" and "application[s] for patent[s]" are among the sources that may contain information about prior inventions).

78. 4 CHISUM, *supra* note 72, § 11.03[1][c][ii].

79. *Id.* § 11.03 [2].

80. *Id.* § 11.03[2][a][i]-[iii].

81. *Id.* § 11.03[2][b].

The written record of this process is called the prosecution history or file wrapper.<sup>82</sup> It memorializes the representations that the patentee made about her invention to secure the patent's issuance, as well as the examiner's understanding of the invention—the basis on which the examiner issued the patent.<sup>83</sup> As a publicly available, written record of the process by which the patent was obtained, the prosecution history is similar to the legislative history of a statute.<sup>84</sup>

The structure of a patent application and the resultant patent is straightforward. A patent generally consists of any drawings that depict the invention,<sup>85</sup> a written description of the invention,<sup>86</sup> and one or more claims.<sup>87</sup> To ensure a threshold level of disclosure, the law requires that a patent:

[C]ontain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.<sup>88</sup>

This statutorily mandated written description, also referred to as the “specification”<sup>89</sup> of a patent, describes the invention, often using data, drawings, computer code, graphs, genetic sequences, and the like, as appropriate.<sup>90</sup> It will often describe the problem that the invention was

82. *Standard Oil Co. v. Am. Cyanamid Co.*, 774 F.2d 448, 452 (Fed. Cir. 1985).

83. *See id.*

84. *See Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 987 (Fed. Cir. 1995) (en banc) (noting that legislative history and prosecution history are similar in providing a public record), *aff'd*, 517 U.S. 370 (1996).

85. 35 U.S.C.A. § 113 (West 2007).

86. 35 U.S.C. § 112 (2000).

87. *Id.*

88. *Id.*

89. Pursuant to the statutory terminology, the word “specification” refers to the written description of the patent and the claims. *See id.* (“The specification shall contain a written description of the invention . . . [and] shall conclude with one or more claims . . .”). Nevertheless, the term “specification” has been often used to refer only to the written description. *See DONALD S. CHISUM ET AL., PRINCIPLES OF PATENT LAW* 73 n.6 (3d ed. 2004) (noting common misuse of the term). This Article will use the term “specification” to refer only to the written description because that convention is consistent with the Federal Circuit’s recent claim construction cases discussed herein. *See, e.g., Phillips v. AWH Corp.*, 415 F.3d 1303, 1323 (Fed. Cir. 2005) (en banc) (referring to “specification and claims”) (emphasis added).

90. *See generally Cimotti Unhairing Co. v. Am. Fur Ref. Co.*, 198 U.S. 399, 410 (1905) (noting that “the inventor is at liberty to choose his own form of expression” in creating the claim specification).



designed to solve and discuss prior art attempts to provide a solution, distinguishing the claimed invention from those preceding efforts.<sup>91</sup> It may contain various embodiments or examples of the invention, both real and prophetic.<sup>92</sup> The specification thus contains a wealth of information about the invention and its technological setting.

This description must be sufficient to teach a “person skilled in the art” to practice the invention and to do so in the best manner known to the inventor. As section B explains in more detail, the “person skilled in the art” standard, to which the disclosure requirements are tied, identifies a specific audience for each patent and is the touchstone against which compliance with the disclosure requirements is measured. The abundance of information contained in the specification is an essential part of the quid pro quo of the patent bargain whereby a patentee discloses her invention to the public in consideration for the right to exclude others from making, using, or selling it for a limited term. As a consequence, failure to meet these requirements will result in the rejection of a patent application,<sup>93</sup> or, if a patent has already been issued, invalidation of the patent by a court.<sup>94</sup> Because the specification cannot be amended substantively during prosecution of a patent application,<sup>95</sup> a patent drafter must ensure that when she files her application it already contains the information needed to meet these requirements.

Aside from these disclosure requirements and a handful of organizational components suggested by the PTO,<sup>96</sup> a patent drafter has great latitude in what information to include in her specification and how to present it. In preparing the patent application, the specification is written with a forward view of what will ultimately be claimed in the patent because “the words of the claims must be based upon the [specification].”<sup>97</sup> The specification, functioning as “a concordance for the claim[s],”<sup>98</sup> provides their antecedent basis.

91. See 3 CHISUM, *supra* note 72, § 8.03.

92. See *id.* § 8.03[4].

93. See 4 CHISUM, *supra* note 72, § 11.03[1][c].

94. See PRINCIPLES OF PATENT LAW 184-91 (Roger Schechter & John Thomas eds., 2d ed. 2004).

95. 35 U.S.C.A. § 132(a) (West 2007).

96. The Manual of Patent Examining Procedure, which provides guidance and instruction to patent examiners and practitioners, *In re Portola Packaging, Inc.*, 110 F.3d 786, 788 (Fed. Cir. 1997), sets forth the format for patent applications preferred by the PTO. See U.S. PATENT & TRADEMARK OFFICE, MANUAL OF PATENT EXAMINING PROCEDURE § 608.01(a) (8th ed., rev. 2006). The format includes the following: background of the invention, summary of the invention, brief description of the drawing(s), detailed description of the invention, and the claims. *Id.*; see also 37 C.F.R. § 1.77 (2006) (providing the arrangement of application components).

97. *Standard Oil Co. v. Am. Cyanamid Co.*, 774 F.2d 448, 452 (Fed. Cir. 1985).

98. *Autogiro Co. of Am. v. United States*, 384 F.2d 391, 397-98 (Ct. Cl. 1967).

The specification thus builds to the claims, which are the final portion of the patent. A patent must “conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.”<sup>99</sup> In this way, the claims of the patent define a patentee’s property right, delineating what the patentee believes she has invented and is entitled to exclude all others from doing. Intended to be a succinct statement of the invention, claims must be written as a single sentence, often requiring extreme contortions of language.<sup>100</sup>

The claims perform an important public notice function in patent law.<sup>101</sup> The public notice function refers to the role that the claims play in advising interested parties of the subject matter over which a patentee asserts the right to exclude all others. It is “the mechanism whereby the public learns which innovations are the subjects of the claimed invention, and which are in the public domain.”<sup>102</sup> Concern for the public notice function of claims has had a significant impact on contemporary patent doctrine.<sup>103</sup> By fixing the right to exclude in a publicly available record,

99. 35 U.S.C. § 112 (2000).

100. See John R. Thomas, *The Question Concerning Patent Law and Pioneer Inventions*, 10 HIGH TECH. L.J. 35, 53-55 (1995) (noting difficulties of expressing complex technical concepts in one sentence). For example, the following is a claim for a relatively simple invention, a sliding fastener used on zipper-type plastic sandwich bags:

A plastic reclosable fastener of the rolling action type for use with a slider having a separator finger particularly suited for opening and closing the mouth of the thermoplastic bags comprising separable fastener means extending along the mouth of the bag comprising reclosable interlocking rib and groove profile elements on the respective sides of the bag mouth, and profiled tracks extending along the respective sides of the bag mouth and parallel to the rib and groove elements, said profiled tracks extending above both of said rib and groove elements for engagement of said profiled tracks by the separator finger on the slider during the opening of said rib and [groove] elements, said rib and groove elements having complimentary cross-sectional shapes such that they are closed by first pressing the bottom of the elements together and then rolling the elements to a closed position toward the top thereof.

U.S. Patent No. 5,007,143 col.8 l.3 (filed Mar. 7, 1990).

101. Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 29 (1997) (noting the “public-notice function[ ] of the statutory claiming requirement”).

102. PSC Computer Prods., Inc. v. Foxconn Int’l, Inc., 355 F.3d 1353, 1361 (Fed. Cir. 2004).

103. See *Warner-Jenkinson*, 520 U.S. at 29 (expressing concern that broad application of patent law’s doctrine of equivalents conflicts with the public notice function of claims); Craig Allen Nard, *Process Considerations in the Age of Markman and Mantras*, 2001 U. ILL. L. REV. 355, 360 (noting that judicial concern for the notice function of patent claims is at “the forefront of patent law jurisprudence”); John M. Romary & Arie M. Michelsohn, *Patent Claim Interpretation After Markman: How the Federal Circuit Interprets Claims*, 46 AM. U. L. REV. 1887, 1890-91 (1997) (noting the Federal Circuit’s focus on public notice in claim construction); John R. Thomas, *Claim*

the claims set the boundaries of the right that the patentee is entitled to enforce and, as an important corollary, the boundaries from which the patentee will not be permitted to deviate and on which the public can rely.<sup>104</sup> The public notice function thus seeks to ensure that interested parties know the scope of the right to exclude. This allows patentees to know who is infringing their claims, and it allows third parties to know whether their conduct will render them liable for patent infringement.<sup>105</sup> The importance of certainty in patent law is closely associated with the public notice function of the claims.<sup>106</sup> The claims cannot fulfill this vital role in the patent system if the public cannot be certain of their meaning.

### B. *General Claim Construction Principles and the Person of Ordinary Skill in the Art*

Like most interpretive exercises, claim construction begins with the good intention of focusing on the relevant text, i.e., the claims.<sup>107</sup> Concentrating on the claims is not only analytically sensible, but also it ensures that the claims, rather than some other source, dictate the metes and bounds of the invention.<sup>108</sup> That touchstone, however, is simply a prologue to the real difficulty in nearly every patent case: determining the meaning of the claims.

In arriving at that meaning, claims must be viewed from a specific, specialized perspective. A claim term is to be given its “ordinary and accustomed” meaning as understood by a person of ordinary skill in the

*Re-Construction: The Doctrine of Equivalents in the Post-Markman Era*, 9 LEWIS & CLARK L. REV. 153, 154-55 (2005) (“Although long acknowledged, the public notice function of claims has only recently had dramatic doctrinal consequences.” (footnote omitted)).

104. See *Southwall Techs., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1578 (Fed. Cir. 1995) (“A patentee may not proffer an interpretation for the purposes of litigation that would alter the indisputable public record consisting of the claims, the specification and the prosecution history, and treat the claims as a ‘nose of wax.’” (quoting *Senmed, Inc. v. Richard-Allan Med. Indus., Inc.*, 888 F.2d 815, 819 n.8 (Fed. Cir. 1989))).

105. See *SmithKline Beecham Corp. v. Apotex Corp.*, 403 F.3d 1331, 1358 (Fed. Cir. 2005) (“The ability to discern both what has been disclosed and what has been claimed is the essence of public notice. It tells the public which products or processes would infringe the patent and which would not.”).

106. See, e.g., *Freedman Seating Co. v. Am. Seating Co.*, 420 F.3d 1350, 1358 (Fed. Cir. 2005) (noting that “add[ing] uncertainty to the scope of patent claims . . . detracts from the public-notice function of patent claims and risks deterring non-infringing and potentially innovative endeavors”).

107. See, e.g., *Interactive Gift Express, Inc. v. CompuServe, Inc.*, 256 F.3d 1323, 1331 (Fed. Cir. 2001) (“In construing claims, the analytical focus must begin and remain centered on the language of the claims themselves, for it is that language that the patentee chose to use to ‘particularly point[ ] out and distinctly claim[ ] the subject matter which the patentee [sic] regards as his invention.’” (quoting 35 U.S.C. § 112 (2000))).

108. See *supra* note 9.

relevant art at the time of the invention.<sup>109</sup> Thus, although numerous different actors in the patent and legal system interpret claims, claims are written from the standpoint of a singular, specialized audience: “It is the person of ordinary skill in the field of the invention through whose eyes the claims are construed.”<sup>110</sup>

The hypothetical person of ordinary skill in the art brings an objective standard to patents<sup>111</sup> and allows the law to consider the varied technological settings in which patents are written.<sup>112</sup> The level of skill in the art varies depending on, among other things, the technology at issue.<sup>113</sup> For example, the person of ordinary skill in the art in one case involving a biotechnology invention was a “person having the combination of skill

109. The cases setting forth this principle are legion. *See, e.g.*, *CollegeNet, Inc. v. ApplyYourself, Inc.*, 418 F.3d 1225, 1231 (Fed. Cir. 2005); *Johnson Worldwide Assocs. v. Zebco Corp.*, 175 F.3d 985, 989 (Fed. Cir. 1999). The “person of ordinary skill in the art” standard is found in sections 103 and 112 of the Patent Act. 35 U.S.C.A. § 103 (West 2007) (using “person having ordinary skill in the art to which said subject matter pertains” as the standard for patentability); 35 U.S.C. § 112 (2000) (requiring that the patent enable “any person skilled in the art” to make and use the invention). Most of the case law elucidating this person of ordinary skill in the art accordingly arises in the context of patentability and validity issues, rather than claim construction. *See, e.g.*, *In re Kahn*, 441 F.3d 977, 985 (Fed. Cir. 2006). Nevertheless, the courts have adopted this touchstone for claim construction, and logic and consistency compel that the standard be the same for purposes of claim construction and validity. *But see* Dan L. Burk & Mark A. Lemley, *Is Patent Law Technology-Specific?*, 17 BERKELEY TECH. L.J. 1155, 1189-90 (2002) (suggesting that the person of ordinary skill in the art standard may vary in different validity contexts).

110. *Multiform Desiccants, Inc. v. Medzam, Ltd.*, 133 F.3d 1473, 1477 (Fed. Cir. 1998).

111. *See* *Kimberly-Clark Corp. v. Johnson & Johnson*, 745 F.2d 1437, 1453-54 (Fed. Cir. 1984) (noting that statutory focus on the person of ordinary skill in the art replaced any need to inquire into the inventor’s subjective state of mind). Inventors are not persons of ordinary skill. *See* *Standard Oil Co. v. Am. Cynamid Co.*, 774 F.2d 448, 454 (Fed. Cir. 1985) (“Inventors, as a class, according to the concepts underlying the Constitution and the statutes that have created the patent system, possess something—call it what you will—which sets them apart from the workers of ordinary skill . . .”).

112. Patents have been issued in fields ranging from fishing lures, *see* *Salt Impregnated Fishing Lure*, U.S. Patent No. 4,530,179 (filed Aug. 26, 1981), to genetically engineered mice, *see* *Transgenic Non-Human Mammals*, U.S. Patent No. 4,736,866 (filed June 22, 1984).

113. As the court explained in *Environmental Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693 (Fed. Cir. 1983):

Factors that may be considered in determining level of ordinary skill in the art include: (1) the educational level of the inventor; (2) type of problems encountered in the art; (3) prior art solutions to those problems; (4) rapidity with which innovations are made; (5) sophistication of the technology; and (6) educational level of active workers in the field.

*Id.* at 696. A court interpreting a patent, then, has another threshold task: defining the relevant person of ordinary skill in the art. That step, although significant, is beyond the scope of this Article.

and knowledge of a cardiac surgeon together with the expertise of [a] biomedical engineer having a mechanical or electrical aptitude or engineering degree.”<sup>114</sup> At the other end of the spectrum, in a case involving a patent entitled, in part, “Method of Producing a Random Faded Effect on Cloth or Made-Up Garments” (faded blue jeans), the person of ordinary skill in the art was a high school graduate with one to two years of experience in “wet processing” of denim.<sup>115</sup> The level of skill thus varies greatly and can change within a given discipline over time as the field advances and new information becomes available.

Regardless of the precise level of skill in a given case, the person of ordinary skill in the art is presumed to have complete knowledge of all the prior art in the technological field at issue<sup>116</sup> as well as in all fields that are reasonably pertinent.<sup>117</sup> This fiction,<sup>118</sup> although commonly discussed in the context of validity determinations,<sup>119</sup> applies equally when adopting the vantage point of a person of ordinary skill in the art for purposes of claim construction. This standard gives legal interpreters a consistent lens through which to view the claims, albeit one that typically requires them to step into unfamiliar territory.

Courts have employed a number of interpretive canons for construing claims, many of them having familiar counterparts in statutory and contract interpretation. For example, courts have declared that a claim’s construction should not conflict with its plain meaning,<sup>120</sup> that words in a claim should be construed to have the same meaning throughout a patent,<sup>121</sup> that limitations may not be read into a claim from the

114. *Medtronic, Inc. v. Intermedics, Inc.*, 799 F.2d 734, 736, 739 n.14 (Fed. Cir. 1986).

115. *Levi Strauss & Co. v. Golden Trade, S.r.L.*, Nos. 92 Civ. 1667 (RPP), 90 Civ. 6291 (RPP), 90 Civ. 6292 (RPP), 1995 WL 710822, at \*1, \*12 n.18 (S.D.N.Y. Dec. 1, 1995).

116. *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986) (“The person of ordinary skill is a hypothetical person who is presumed to be aware of all the pertinent prior art.”).

117. *Int’l Cellucotton Prods. Co. v. Sterilek Co.*, 94 F.2d 10, 13 (2d Cir. 1938) (“[W]e are to impute to [the person of ordinary skill in the art] knowledge of all that is not only in his immediate field, but in all fields nearly akin to that field.”).

118. This has been called the “*Winslow* tableau,” Thomas, *supra* note 27, at 790-91, based on Judge Rich’s depiction in *In re Winslow* of the person having ordinary skill in the art “as working in his shop with the prior art references—which he is presumed to know—hanging on the walls around him.” *In re Winslow*, 365 F.2d 1017, 1020 (C.C.P.A. 1966).

119. *See Winslow*, 365 F.2d at 1020.

120. *See, e.g., Lava Trading, Inc. v. Sonic Trading Mgmt., LLC*, 445 F.3d 1348, 1353-55 (Fed. Cir. 2006).

121. *See, e.g., Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005) (en banc) (“Because claim terms are normally used consistently throughout the patent, the usage of a term in one claim can often illuminate the meaning of the same term in other claims.”), *cert. denied*, 126 S. Ct. 1332 (2006).

specification,<sup>122</sup> that claims should not be interpreted so as to make another claim identical in scope (i.e., redundant),<sup>123</sup> that a construction should not exclude disclosed embodiments,<sup>124</sup> and that claims should be construed if possible to preserve their validity.<sup>125</sup> These judge-made norms can facilitate patent drafting and provide some guidance for reading claims. Yet they do not directly discern claim meaning and consequently do not go far enough in resolving the ultimate issue of interpretation. Further, they often conflict with one another<sup>126</sup> and do not apply in every case. As a result, they have not had any systematic effect on claim construction. The canons are ultimately only as effective as the claim construction methodology in which they are used.

#### IV. CONTOURS OF FORM AND SUBSTANCE IN CLAIM CONSTRUCTION

In 1996, the Supreme Court issued a watershed claim construction decision in *Markman v. Westview Instruments, Inc.*<sup>127</sup> *Markman* held that the Seventh Amendment does not provide a right to a jury trial for the interpretation of patent claims.<sup>128</sup> Instead, the Court held that claim construction is a matter reserved for judges.<sup>129</sup> In effect it is a matter reserved particularly for judges of the Federal Circuit, given that court's influence in patent law<sup>130</sup> and the Supreme Court's disinclination to

122. See, e.g., *Renishaw PLC v. Marposs Societa' Per Azioni*, 158 F.3d 1243, 1249 (Fed. Cir. 1998).

123. See, e.g., *Inpro II Licensing, S.A.R.L. v. T-Mobile USA, Inc.*, 450 F.3d 1350, 1354 (Fed. Cir. 2006) (“[T]he doctrine of claim differentiation means that different claims are presumed to be of different scope . . .”).

124. See, e.g., *Lava Trading*, 445 F.3d at 1353-55.

125. E.g., *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1384 (Fed. Cir. 2001) (“Claims amenable to more than one construction should, when it is reasonably possible to do so, be construed to preserve their validity.”).

126. As Karl Llewellyn famously demonstrated, the traditional canons of statutory construction are similarly of limited utility because the canons cancel out one another. See Karl N. Llewellyn, *Remarks on the Theory of Appellate Decision and the Rules or Canons About How Statutes Are to Be Construed*, 3 VAND. L. REV. 395, 401-06 (1950) (listing canons and their counter-canons).

127. 517 U.S. 370 (1996).

128. *Id.* at 372.

129. *Id.* at 391. In the absence of compelling historical evidence or precedent on the issue, the Court was guided largely by policy considerations. See *id.* at 388-90. In particular, the Court concluded that judges are better equipped than jurors to construe the meaning of legal documents. *Id.* The Court also noted that the interests of uniformity and certainty would be better served if judges interpreted patent claims. *Id.* at 390-91.

130. See *supra* note 17. The Federal Circuit increased its own influence in the area of claim construction in particular when it held after the *Markman* decision that claim construction is subject to de novo review on appeal. *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1456 (Fed. Cir. 1998) (en banc).

specify any particular methodology that judges should use in interpreting patents. The Court noted only that, in general, the interpretation of written documents was a task familiar to judges, indicating that other areas of the law presenting interpretative issues might inform claim construction.<sup>131</sup> After *Markman*, the Federal Circuit was thus faced with the enterprise of developing a methodology or methodologies for conducting claim construction, keeping in mind the public notice function of claims.<sup>132</sup>

Carrying out this task, the Federal Circuit developed two distinct methodologies for construing claims. Viewed alone, each method has some form-like structure, and each pays some degree of homage to context-based sources. When juxtaposed to one another, however, a clear distinction along form and substance lines appears. As discussed below, the Federal Circuit ultimately settled, for the time being, on a substantive method of interpretation.

*Texas Digital Systems, Inc. v. Telegenix, Inc.*<sup>133</sup> is representative of the relatively short-lived formalist methodology. Starting with *Texas Digital*, a number of judges began to express a preference for the use of dictionaries as the primary source in claim construction,<sup>134</sup> espousing virtues such as availability, objectivity, and certainty.<sup>135</sup> The *Texas Digital* court established an ordered procedure for bringing materials to bear on claim construction.<sup>136</sup> The first step in claim construction under *Texas Digital* was to consult the dictionary, or a dictionary-like source such as a treatise, to determine the meaning of the claims.<sup>137</sup> The patent's specification and prosecution history would then be consulted as a second step,<sup>138</sup> only to determine whether the specification excluded one of the dictionary definitions or whether the patentee had used the words of the claim in a manner clearly inconsistent with the dictionary definition.<sup>139</sup> The court identified two limited circumstances in which such an inconsistency might exist.<sup>140</sup> This formula severely restricted the role of

131. See *Markman*, 517 U.S. at 388.

132. Romary & Michelsohn, *supra* note 103, at 1892 (noting that, after *Markman*, “the Federal Circuit . . . renewed its focus on adequate public notice as perhaps the fundamental constraint on the claim interpretation process.”).

133. 308 F.3d 1193 (Fed. Cir. 2002).

134. See *infra* note 141.

135. *Tex. Digital*, 308 F.3d at 1202-03.

136. See *id.* at 1202-05.

137. *Id.* at 1201-02.

138. *Id.* at 1204. The court wrote that it was error to “[c]onsult[ ] the written description and prosecution history as a threshold step in the claim construction process, before any effort is made to discern the ordinary and customary meanings attributed to the words themselves.” *Id.*

139. *Id.*

140. “[T]he presumption in favor of a dictionary definition will be overcome where the patentee, acting as his or her own lexicographer, has clearly set forth an explicit definition of the term different from its ordinary meaning.” *Id.* In addition, the presumption “will be rebutted if the

the specification and other context-based sources, using them solely for verification.

Many commentators applauded this highly structured decisional process and a number of courts followed it.<sup>141</sup> *Novartis Pharmaceuticals Corp. v. Eon Labs Manufacturing, Inc.*<sup>142</sup> exemplifies the *Texas Digital* approach. *Novartis* involved a patent directed to solving problems with the administration of a particular immunosuppressant drug, cyclosporin.<sup>143</sup> Cyclosporin is not highly soluble in water, making it difficult to prepare a formula that can be absorbed by the human body's aqueous environment.<sup>144</sup> To solve this problem, the patentee developed a method entailing the steps of dissolving cyclosporin in a water-miscible solvent followed by adding water to the cyclosporin-solvent solution, resulting in a "hydrosol" as claimed in the patent.<sup>145</sup>

The parties disagreed about the meaning of hydrosol.<sup>146</sup> In resolving the dispute, the court started its analysis by consulting the dictionary definitions for a series of words.<sup>147</sup> First, the court looked up the word "hydrosol" itself.<sup>148</sup> That definition required it to look up the word "sol," which in turn necessitated consulting the definition of the word "solution," followed by a determination of the definitions for "medicinal" and

inventor has disavowed or disclaimed scope of coverage, by using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope." *Id.* (citation omitted). The *Texas Digital* method of claim construction is thus not a purely formalist one because it requires going beyond the text at issue (the claims), but only for a limited purposes. *See id.*

141. *See, e.g.,* R. Polk Wagner & Lee Petherbridge, *Is the Federal Circuit Succeeding? An Empirical Assessment of Judicial Performance*, 152 U. PA. L. REV. 1105, 1176 (2004) (arguing in favor of a dictionary-centric "procedural" approach); Ruoyu Roy Wang, Note, *Texas Digital Systems v. Telegenix, Inc.: Toward a More Formalistic Patent Claim Construction Model*, 19 BERKELEY TECH. L.J. 153, 153-54 (2004) (arguing in favor of the *Texas Digital* methodology); *see also* *Prima Tek II, L.L.C. v. Polypap, S.A.R.L.*, 412 F.3d 1284, 1288 (Fed. Cir. 2005) (using only a dictionary to construe claim term "pot"); *Nystrom v. TREX Co.*, 374 F.3d 1105, 1111-12 (Fed. Cir. 2004) (construing claim term "board" using dictionary definitions); *Inverness Med. Switz. GmbH v. Warner Lambert Co.*, 309 F.3d 1373, 1378-79 (Fed. Cir. 2002) (holding that claim term "on" should be construed to encompass multiple dictionary definitions unless "the specification or prosecution history clearly demonstrates that only one of the multiple meanings was intended").

142. 363 F.3d 1306 (Fed. Cir. 2004).

143. *Id.* at 1307. The drug at issue could be administered, for example, to organ transplant patients to reduce the risk of infection. *Id.*

144. *Id.*

145. *Id.*

146. *Id.*

147. *Id.* at 1308 ("Neither party has suggested that hydrosol has a specialized meaning inconsistent with the ordinary dictionary definition, thus under our precedent, we begin our claim construction analysis with an examination of general purpose dictionary definitions." (citation omitted)).

148. *Id.* at 1308-09.



“preparation.”<sup>149</sup> The court used several different dictionaries and selected among different definitional entries for each word in this process.<sup>150</sup> Of particular significance, in defining the term “solution,” despite the patent at issue being directed to solving problems associated with use of an *insoluble* compound, the court chose a definition that required that the “solid ingredients [be] soluble.”<sup>151</sup> Through its use of the dictionaries, the court arrived at two tentative claim constructions, both using this definition of “solution.”<sup>152</sup> Only then did the court turn to the specification and prosecution history to determine which of the two constructions to select,<sup>153</sup> ultimately choosing the narrower of the two possible meanings.<sup>154</sup>

The *Texas Digital* approach is easily characterized as formalistic. That case established, or purported to establish, a bright-line rubric for arriving at the meaning of claims using a series of presumptions and burdens. The court’s rubric limited the information that could be considered in claim construction as well as how and when it could be considered. By relegating the use of the specification and prosecution history to a secondary, “also-ran”<sup>155</sup> position, it devalued important information within the context of the specific invention at issue. In similarly failing to embrace general information about the technical art at issue,<sup>156</sup> the approach further eschewed context-based information. Instead, the courts using this methodology relied heavily on a dictionary, a resource that seeks to define words in the abstract rather than in particular contexts. The prominence of the dictionary, together with the limitations applied to the use of the specification and other technology-specific interpretative sources, created a highly acontextual environment for claim construction that is demonstrative of interpretative formalism.

In contrast to the formalist approach, many other judges emphasized context in claim interpretation<sup>157</sup> and encouraged early and heavy reliance

149. *Id.* It was necessary to look at the definitions for these various words because each was used in the definition of another word the court needed to define. *See id.*

150. *Id.* at 1308-10. The court did not provide any explanation for its selection of the particular dictionaries that it used or for the use of different dictionaries for different words. *See id.*

151. *Id.* at 1314 (Clevenger, J., dissenting). As pointed out by Justice Clevenger, other dictionary definitions not containing the “soluble” requirement did exist. *Id.*

152. *Id.* at 1309-10 (majority opinion).

153. *Id.* at 1310-11. “[W]e look to statements made in the specification and prosecution history to choose between competing dictionary definitions.” *Id.* at 1311.

154. *Id.*

155. *Housey Pharms., Inc. v. Astrazeneca UK Ltd.*, 366 F.3d 1348, 1358 (Fed. Cir. 2004) (Newman, J., dissenting).

156. This can be inferred from the *Texas Digital* court’s failure to include the use of other context-based information in its claim construction rubric and its limiting of even the most readily available sources of context, the specification and prosecution history. *See Tex. Digital Sys., Inc. v. Telegenix, Inc.*, 308 F.3d 1193, 1201-05 (Fed. Cir. 2002).

157. *See, e.g., Medrad, Inc. v. MRI Devices Corp.*, 401 F.3d 1313, 1319 (Fed. Cir. 2005)

on the specification.<sup>158</sup> These differing approaches set the stage for the Federal Circuit to explore, en banc, the apparent conflict between formalist and substantive methodologies in the recent *Phillips v. AWH Corp.* decision.<sup>159</sup> As discussed below, *Phillips* adopted a tiered substantive methodology.

*Phillips* involved a patent directed to vandalism-resistant modular wall panels that contain internal steel baffles.<sup>160</sup> The panel below split on methodology, bringing the issue into focus for the court.<sup>161</sup> The majority emphasized the specification in arriving at its claim construction, while the dissenting judge utilized the dictionary-centric approach and reached a different result.<sup>162</sup> The discrete issue was the meaning of the word “baffles,”<sup>163</sup> but the court’s order granting a rehearing en banc set out a broad-ranging and ambitious agenda pertaining to the paramount conflict between the formalist methodology of *Texas Digital* and the more substantive methodology that other judges favored.<sup>164</sup> The comprehensive list of questions addressed such topics as the use of dictionaries, the role of the specification, how best to fulfill the public notice function of claims,

(“We cannot look at the ordinary meaning of the term . . . in a vacuum . . . [W]e must look at the ordinary meaning in the context of the written description and the prosecution history.” (quoting *DeMarini Sports, Inc. v. Worth, Inc.*, 239 F.3d 1314, 1324 (Fed. Cir. 2001))); *V-Formation, Inc. v. Benetton Group SPA*, 401 F.3d 1307, 1310 (Fed. Cir. 2005) (discussing tools to “provide[ ] the technological and temporal context to enable the court to ascertain the meaning of the claim”); *Ferguson Beauregard/Logic Controls, Div. of Dover Res., Inc. v. Mega Sys., LLC*, 350 F.3d 1327, 1338 (Fed. Cir. 2003) (“The words used in the claims must be considered in context . . .”); *Moba, B.V. v. Diamond Automation, Inc.*, 325 F.3d 1306, 1315 (Fed. Cir. 2003) (“[A]s this court has repeatedly counseled, the best indicator of claim meaning is its usage in context as understood by one of skill in the art at the time of invention.”).

158. See, e.g., *United States v. Adams*, 383 U.S. 39, 49 (1966) (“[I]t is fundamental that claims are to be construed in the light of the specifications and both are to be read with a view to ascertaining the invention.”); *Astrazeneca AB v. Mut. Pharm. Co.*, 384 F.3d 1333, 1336 (Fed. Cir. 2004) (“[E]vidence intrinsic to the patent—particularly the patent’s specification, including the inventors’ statutorily-required written description of the invention—is the primary source for determining claim meaning.”); *Vitronics Corp. v. Conceptor, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996) (“[T]he patent itself, including the claims, the specification and, if in evidence, the prosecution history . . . is the most significant source of the legally operative meaning of disputed claim language.” (citation omitted)).

159. 415 F.3d 1303 (Fed. Cir. 2005) (en banc), *cert. denied*, 126 S. Ct. 1332 (2006).

160. *Id.* at 1309.

161. Compare *Phillips v. AWH Corp.*, 363 F.3d 1207, 1212-14 (Fed. Cir. 2004), *vacated reh’g en banc granted*, 376 F.3d 1382, 1382-84 (Fed. Cir. 2004) (en banc) (per curiam), *aff’d in part, rev’d in part, appeal dismissed in part*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc), *cert. denied*, 126 S. Ct. 1332 (2006), *with id.* at 1216-17 (Dyk, J., dissenting).

162. See *id.* at 1212-14 (majority opinion); *id.* at 1216-19 (Dyk, J., dissenting).

163. *Phillips*, 415 F.3d at 1310.

164. *Phillips*, 376 F.3d at 1383.

and reliance on extrinsic evidence<sup>165</sup> in claim construction.<sup>166</sup> In answering these questions, the court renounced *Texas Digital's* formalist approach to claim construction.

Instead, *Phillips* stressed the importance of context in defining the scope of the claims.<sup>167</sup> Specifically, the court concluded that the context-rich specification is the “best source” for understanding claim terms<sup>168</sup> and must be consulted, along with the prosecution history (another context-based source),<sup>169</sup> to interpret claims. Among other problems, claim construction based primarily on dictionaries removes claims from their context and improperly restricts the role of the specification and the

165. “Extrinsic evidence is that evidence which is external to the patent and file [prosecution] history, such as expert testimony, inventor testimony, dictionaries, and technical treatises and articles.” *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1584 (Fed. Cir. 1996).

166. *Phillips*, 376 F.3d at 1383. The court’s questions included the following:

1. Is the public notice function of patent claims better served by referencing primarily to technical and general purpose dictionaries and similar sources to interpret a claim term or by looking primarily to the patentee’s use of the term in the specification? If both sources are to be consulted, in what order?
2. If dictionaries should serve as the primary source for claim interpretation, should the specification limit the full scope of claim language (as defined by the dictionaries) only when the patentee has acted as his own lexicographer or when the specification reflects a clear disclaimer of claim scope? If so, what language in the specification will satisfy those conditions? What use should be made of general as opposed to technical dictionaries? How does the concept of ordinary meaning apply if there are multiple dictionary definitions of the same term? If the dictionary provides multiple potentially applicable definitions for a term, is it appropriate to look to the specification to determine what definition or definitions should apply?
3. If the primary source for claim construction should be the specification, what use should be made of dictionaries? Should the range of the ordinary meaning of claim language be limited to the scope of the invention disclosed in the specification, for example, when only a single embodiment is disclosed and no other indications of breadth are disclosed?
- ....
6. What role should prosecution history and expert testimony by one of ordinary skill in the art play in determining the meaning of the disputed claim terms?

*Id.*

167. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005) (en banc) (“The best indicator of claim meaning is its usage in context . . . .” (quoting *Moba, B.V. v. Diamond Automation, Inc.*, 325 F.3d 1306, 1315 (Fed. Cir. 2003))), *cert. denied*, 126 S. Ct. 1332 (2006).

168. *Id.* (quoting *Multiform Desiccants, Inc. v. Medzam, Ltd.*, 133 F.3d 1473, 1478 (Fed. Cir. 1998)); *see also id.* at 1316 (“[T]he specification necessarily informs the proper construction of the claims.”).

169. *Id.* at 1317 (“In addition to consulting the specification, we have held that a court ‘should also consider the patent’s prosecution history, if it is in evidence.’” (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 980 (Fed. Cir. 1995) (en banc), *aff’d*, 517 U.S. 370 (1996))).

prosecution history.<sup>170</sup> Close fealty to context is needed in order to ensure that words are not defined in the abstract, divorced from the relevant technical field to which the patent pertains.<sup>171</sup> As the court explained, “The main problem with elevating the dictionary to such prominence is that it focuses the inquiry on the abstract meaning of words rather than on the meaning of claim terms within the context of the patent.”<sup>172</sup>

Continuing to emphasize context, the court concluded that the appropriate effect of examples disclosed in the specification depended on the context of the patent<sup>173</sup> and rejected the notion “that any definition of claim language in the specification [must] be express.”<sup>174</sup> Instead, *Phillips* recognized that words may be defined indirectly based on context.<sup>175</sup> Even within a given claim, “the context in which a term is used in the asserted claim can be highly instructive.”<sup>176</sup>

The *Phillips* court allowed for great latitude in the sources used to establish the relevant context. The court explained that the intrinsic record—consisting of the claims, the specification, and the prosecution history—is more reliable than extrinsic evidence and must be considered in claim construction.<sup>177</sup> But extrinsic evidence—consisting of “all evidence external to the patent and prosecution history”<sup>178</sup>—can also be used. Courts are not “barred from considering any particular sources . . . as long as those sources are not used to contradict claim meaning that is unambiguous in light of the intrinsic evidence.”<sup>179</sup> Instead, courts should look to a wide range of publicly available sources that show how a person of ordinary skill in the art would understand the claim.<sup>180</sup> Acknowledging that the available extrinsic evidence is “virtually

170. *Id.* at 1320-21.

171. *Id.* at 1321 (“[H]eavy reliance on the dictionary divorced from the intrinsic evidence risks transforming the meaning of the claim term to the artisan into the meaning of the term in the abstract, out of its particular context, which is the specification.”).

172. *Id.*

173. *Id.* at 1323-24 (“[A]ttempting to resolve [the limiting effect, if any, of examples or embodiments] in the context of the particular patent is likely to capture the scope of the actual invention more accurately than . . . divorcing the claim language from the specification.”).

174. *Id.* at 1321.

175. *Id.*; see also *SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1344 (Fed. Cir. 2001) (“[T]he written description can provide guidance as to the meaning of the claims, thereby dictating the manner in which the claims are to be construed, even if the guidance is not provided in explicit definitional format.”).

176. *Phillips*, 415 F.3d at 1314.

177. *Id.* at 1317.

178. *Id.* (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 980 (Fed. Cir. 1995) (en banc), *aff’d*, 517 U.S. 370 (1996)).

179. *Id.* at 1324.

180. *Id.* at 1314.

unbounded,”<sup>181</sup> the *Phillips* court specifically recognized the use of expert and inventor testimony, treatises, and even dictionaries to establish that a term in the patent or in the prior art has a particular meaning in the relevant technical field.<sup>182</sup> Other context-revealing resources not specifically addressed in *Phillips* but that might nevertheless inform claim construction in an appropriate case include the accused product or process,<sup>183</sup> prior art not cited during prosecution,<sup>184</sup> and survey results.<sup>185</sup>

Rather than requiring courts to analyze these external sources in any particular order, “what matters is for the court to attach the appropriate weight to be assigned to those sources in light of the statutes and policies that inform patent law.”<sup>186</sup> The court emphasized that the process of claim construction is a flexible one and that no “rigid algorithm for claim construction” exists.<sup>187</sup>

The court also provided some guidance on the use of interpretative canons in claim construction. First, the court affirmed the use of “claim differentiation,”<sup>188</sup> patent law’s label for the concept that redundancy should be avoided in interpretation.<sup>189</sup> Looking to other claims in the patent, the court rejected the accused infringer’s narrow claim construction, reasoning that it would render other claims superfluous.<sup>190</sup> The court also directly addressed another interpretative canon: the “saving” principle that courts should construe claims to preserve their

181. *Id.* at 1318. The court did not view this in a positive light from an administrative standpoint, noting “the considerable task of filtering the useful extrinsic evidence from the fluff.” *Id.* Indeed, the court cautioned that extrinsic evidence is generally less reliable due to its potential volume. *Id.* Despite these warnings, however, the court clearly embraced the use of extrinsic evidence. *Id.* at 1319.

182. *Id.*

183. *Wilson Sporting Goods Co. v. Hillerich & Bradsby Co.*, 442 F.3d 1322, 1326-27 (Fed. Cir. 2006) (“While a trial court should certainly not prejudice the ultimate infringement analysis by construing claims with an aim to include or exclude an accused product or process, knowledge of that product or process provides meaningful context for the first step of the infringement analysis, claim construction.”).

184. *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1584 (Fed. Cir. 1996) (stating that prior art, “whether or not cited in the specification or the file history. . . . can often help to demonstrate how a disputed term is used by those skilled in the art”).

185. For example, parties could solely or jointly commission a survey of persons of ordinary skill in the art as to what a particular claim term means. Surveys have been effective in trademark litigation, where they are used to determine whether a likelihood that consumers will be confused when confronted with similar trademarks. *Moseley v. V Secret Catalogue, Inc.*, 537 U.S. 418, 434 (2003) (recognizing the consumer survey as a method of demonstrating trademark dilution). To date, they have not been used in patent law, however.

186. *Phillips*, 415 F.3d at 1324.

187. *Id.*

188. *See id.* at 1329 (Lourie, J., concurring in part and dissenting in part).

189. *See id.* at 1314-15 (majority opinion).

190. *Id.* at 1324-25.

validity.<sup>191</sup> The court severely undermined that canon, explaining that it had never “endorsed a regime in which validity analysis is a regular component of claim construction”<sup>192</sup> and holding that the doctrine was “of limited utility” that could be invoked only in narrow circumstances.<sup>193</sup> Specifically, the court held that the doctrine applies only when a claim term is ambiguous and that, even if an ambiguity exists, applicability of the canon “depends on the strength of the inference that the PTO would have recognized that one claim interpretation would render the claim invalid, and that the PTO would not have issued the patent assuming that to be the proper construction of the term.”<sup>194</sup>

The court’s treatment of the two canons of claim construction discussed in the case—claim differentiation and the construction of claims to preserve their validity<sup>195</sup>—manifests its substantive tack. The court freely used the former canon, which focuses entirely on context, i.e., avoiding internal redundancy.<sup>196</sup> In contrast, the court rejected the proposition that the latter, acontextual canon might apply as a blanket rule, instead requiring inquiry into the specific circumstances of the case.<sup>197</sup> This preference for fact-specific standards over bright-line rules further demonstrates *Phillips*’s flexible substantive underpinnings.

The *Phillips* methodology is substantive, both in endorsing a context-sensitive, less structured approach to claim construction and in flatly rejecting the formalistic approach of *Texas Digital*. *Phillips* took an expansive view of the information that can, and should, be considered in resolving issues of claim construction without purporting to establish an elaborate set of rules by which to conduct claim construction.

Although the court opened the door to a wide array of additional interpretative materials, it did not require an unworkable canvassing of all possible substantive considerations.<sup>198</sup> Instead, the extent to which the court will consider external contextual sources depends on the necessity of such sources.<sup>199</sup> The court will look into the contextual realm only as needed to resolve the claim construction dispute at issue.<sup>200</sup> Some cases may not require extensive exploration of substantive sources: “In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim

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191. *Id.* at 1327.

192. *Id.*

193. *Id.* at 1327-28.

194. *Id.* at 1328.

195. *Id.* at 1324-25, 1327.

196. *See id.* at 1324-25.

197. *See id.* at 1327-28.

198. *See id.* at 1317-19.

199. *See id.* at 1319.

200. *See id.*

construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words.”<sup>201</sup> But *Phillips* acknowledged the existence of more difficult cases in which the court will look to extrinsic resources that demonstrate meaning from the standpoint of those skilled in the art:

Because the meaning of a claim term as understood by persons of skill in the art is often not immediately apparent, and because patentees frequently use terms idiosyncratically, the court looks to “those sources available to the public that show what a person of skill in the art would have understood disputed claim language to mean.”<sup>202</sup>

As *Vitronics Corp. v. Conceptronic, Inc.*,<sup>203</sup> a case expressly reaffirmed by the *Phillips* court,<sup>204</sup> stated more explicitly, “In those cases where the [patent and prosecution history] unambiguously describe[] the scope of the patented invention, reliance on any extrinsic evidence is improper.”<sup>205</sup> Instead, *Vitronics* emphasized, extrinsic sources would be used only if needed, where the patent and prosecution history fail to resolve the claim construction issues.<sup>206</sup>

Thus, in contrast to a more extreme form of substantivism, which might require consideration of a large body of contextual sources in any given case regardless of necessity, or an interpretative model that favors contextual evidence over the text to be interpreted,<sup>207</sup> the *Phillips* approach

201. *Id.* at 1314.

202. *Id.* (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1116 (Fed. Cir. 2004)).

203. 90 F.3d 1576 (Fed. Cir. 1996).

204. *Phillips*, 415 F.3d at 1312 (“We again summarized the applicable principles in *Vitronics* . . . . What we said in [that] case[ ] bears restating, for the basic principles of claim construction outlined there are still applicable, and we reaffirm them today.” (citations omitted)); *id.* at 1324 (“Today, we . . . reaffirm the approach to claim construction outlined in [*Vitronics*] . . .”).

205. *Vitronics*, 90 F.3d at 1583.

206. Quoting from other caselaw in a series of parenthetical notations, the *Vitronics* court emphasized, “In construing the claims we look to the language of the claims, the specification, and the prosecution history. Extrinsic evidence may also be considered, *if needed* to assist in determining the meaning or scope of technical terms in the claims.” *Id.* (quoting *Pall Corp. v. Micron Separations, Inc.*, 66 F.3d 1211, 1216 (Fed. Cir. 1995)); *see also id.* (“Claim interpretation involves a review of the specification, the prosecution history, the claims (including unasserted as well as asserted claims), and, *if necessary*, other extrinsic evidence, such as expert testimony.” (quoting *Hormone Research Found., Inc. v. Genentech, Inc.*, 904 F.2d 1558, 1562 (Fed. Cir. 1990))).

207. *See, e.g.*, Eyal Zamir, *The Inverted Hierarchy of Contract Interpretation and Supplementation*, 97 COLUM. L. REV. 1710, 1771-73 (1997) (arguing that traditional interpretative hierarchy in contract law, which gives greatest weight to the language of the contract, rather than social norms or industry practice, should be reversed).

is more tempered, considering context-based extrinsic sources only as necessary and still favoring intrinsic evidence.<sup>208</sup> This can accordingly be called a “tiered” substantivism.

These recent developments in claim construction methodology demonstrate formal and substantive approaches to claim construction. Viewed chronologically, they establish the Federal Circuit’s unified<sup>209</sup> shift to a tiered substantive mode of interpretation.<sup>210</sup> This result does not, however, strip the debate concerning claim construction methodology of practical significance. Claim construction jurisprudence is still evolving.<sup>211</sup> Not only did *Phillips* expressly refuse to set forth a “magic formula or catechism for conducting claim construction,”<sup>212</sup> but the precedential value of that portion of the *Phillips* decision dealing with methodology can be questioned. The manner in which a claim is construed can be considered to be the reasoning of a court’s decision and, under a narrow view of stare decisis, might be considered dictum. Indeed, the Supreme Court employs myriad different approaches in interpreting statutes, with no single approach controlling.<sup>213</sup> Although it is unlikely that a Federal Circuit judge

208. See *supra* text accompanying notes 199-201.

209. Eleven of the Federal Circuit’s twelve active judges joined those portions of the court’s opinion directed to methodology. See generally *Phillips*, 415 F.3d 1303. Without exception and without comment, even the erstwhile proponents of the dictionary-centric approach joined the *Phillips* majority and presumably renounced their former methodology. *Id.* The dissenting opinion focused on the standard of review to be applied to claim construction. *Id.* at 1330 (Mayer, J., dissenting).

210. This trend is consistent with that observed in other fields, such as contract law, where scholars have noted a movement towards a more substantive approach to interpretation. See Katz, *supra* note 26, at 498 (“As is well known to both students and scholars of contract law . . . for the past one hundred years or so the historical trend across the board has been to water down such formal doctrines in favor of a more all-things-considered analysis of what the parties may have meant in the individual case.”).

211. See *Phillips*, 415 F.3d at 1328 (noting unanswered questions in claim construction). For more immediate results, lobbying Congress to enact a claim construction statute might be an option.

212. *Id.* at 1324.

213. Not only do the nine Justices frequently employ different methodologies from one another, but even individual Justices have employed different methodologies from case to case. See, e.g., Robert S. Summers, *Statutory Interpretation in the United States*, in INTERPRETING STATUTES: A COMPARATIVE STUDY 407, 407-59 (D. Neil MacCormick & Robert S. Summers eds., 1991) (discussing different interpretive methodologies for statutes used by Supreme Court Justices); Robert S. Summers, *How Law is Formal and Why It Matters*, 82 CORNELL L. REV. 1165, 1194 n.47 (1997) (“The United States does not have an accepted general interpretive methodology for statutes.”); *supra* notes 41-49 and accompanying text. At least one judge has contemplated the possibility that different methodologies might coexist in claim construction, with their applicability dependent on the facts of the particular case at hand. Although not addressed by the court, Judge Rader, writing separately in the *Phillips* order granting rehearing en banc, posed the following question:

Is claim construction amenable to resolution by resort to strictly algorithmic rules, e.g., specification first, dictionaries first, etc.? Or is claim construction better



will expressly refuse to apply the *Phillips* approach in the near future, the precise contours of claim construction methodology will continue to be refined.<sup>214</sup> The ongoing exploration of theory and practice will thus serve to enrich the still-developing law.

## V. PART FORM, PART SUBSTANCE

Formalism and substantivism may be present in two different aspects of claim construction—“input” and “output.” Looking first at the output, i.e., the court’s interpretive methodology and the results it produces, section A explains that expressly orienting the law of claim construction towards a more substantive approach, as *Phillips* did, is a positive development. The tiered substantive approach is faithful to the statutory scheme premised on the person of ordinary skill in the art. It also offers the signature benefits of both formalism and substantivism—certainty and flexibility, respectively. This section is publicly oriented towards the courts, the PTO, and the general public who may be faced with interpreting a given patent.

No analysis of claim construction would be complete, however, without also taking into account input, i.e., drafting behavior, and the claims it produces. Section B, which is privately oriented, focuses on patent drafters, examining how they might respond to the *Phillips* court’s substantive approach to claim construction. It predicts that formalistic drafting will result from the court’s substantive approach. This section examines various motivations that favor formalistic drafting and introduces some tools for effectuating such formalistic drafting. This Part concludes that a substantive approach to interpretation, combined with a formal approach to drafting, results in an appropriately flexible, logically unified system of resolving claim construction disputes. This hybrid approach provides the optimal benefits of both form and substance. It places the focus on the person of ordinary skill in the art, the intended, albeit fictional, audience for all patents, and on patent drafters, who have

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achieved by using the order or tools relevant in each case to discern the meaning of terms according to the understanding of one of ordinary skill in the art at the time of the invention, thus entrusting trial courts to interpret claims as a contract or statute?

*Phillips v. AWH Corp.*, 376 F.3d 1382, 1384 (Fed. Cir. 2004) (en banc) (Rader, J., concurring).

214. See *supra* note 209 (noting that *Phillips* decision was only one judge shy of unanimity as to the applicable methodology). Judges may disagree, however, on precisely how that methodology applies in any given case. Indeed, in *Phillips* itself, two judges agreed with the majority on the methodology to be used in claim construction but still reached a different result on the meaning of “baffles.” *Phillips*, 415 F.3d at 1328. (Lourie, J., concurring in part and dissenting in part).

the ability to determine how to describe their inventions and how much effort to invest in those descriptions.

### A. *Substantivism in Interpretation*

Judges and scholars have often written that words have no meaning apart from their context.<sup>215</sup> This belief has even more force in a legal system that operates in highly specialized environments, such as patent law. Indeed, the presumption of the entire claim construction system is that meaning is contextual: The claims must be interpreted from the perspective of a person of ordinary skill in the art.<sup>216</sup> “[C]laims . . . do not have meaning removed from the context from which they arose.”<sup>217</sup> A person of ordinary skill in the art brings to the text a wealth of background information and experience.<sup>218</sup> When a court construes claims, however, it lacks that background and must create it.

A substantive method of interpretation provides courts with the ability to best create that specialized, statutorily mandated environment. Claim construction is by definition a context-sensitive inquiry.<sup>219</sup> A substantive methodology properly emphasizes the person of ordinary skill in the art at the forefront of the claim construction inquiry and the vast amount of knowledge attributed to that person.<sup>220</sup> It seeks to closely track how that person would interpret claims.<sup>221</sup> This necessitates an expansive inquiry into context. Formalism fundamentally fails in claim construction because of its inability to adjust for these widely differing, yet outcome-determining, contexts.

215. See, e.g., *Citronelle-Mobile Gathering, Inc. v. Herrington*, 826 F.2d 16, 24 (Temp. Emer. Ct. App. 1987) (“‘[G]ood faith’ has no meaning without a context. It is an intangible and abstract quality; at one time it might indicate an honest belief, the next time it could signify only the absence of malice.”); Mitchel de S.-O.-l’E. Lasser, “*Lit. Theory*” *Put to the Test: A Comparative Literary Analysis of American Judicial Tests and French Judicial Discourse*, 111 HARV. L. REV. 689, 745 (1998) (“[I]solated words mean nothing, for ‘the word out of context has no meaning.’” (quoting Roman Jakobson, *Linguistics and Poetics*, in *LANGUAGE IN LITERATURE* 62, 102 (Krystyna Pomorska & Stephen Rudy eds., 1987))).

216. See *supra* notes 109-10 and accompanying text.

217. *Network, LLC v. Centraal Corp.*, 242 F.3d 1347, 1352 (Fed. Cir. 2001).

218. See *supra* notes 116-17 and accompanying text.

219. See *supra* notes 109-10 and accompanying text.

220. See *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc) (noting that “[t]he inquiry into how a person of ordinary skill in the art understands a claim term provides an objective baseline from which to begin claim interpretation” and emphasizing that claim terms cannot be construed in a vacuum), *aff’d in part, rev’d in part, appeal dismissed in part*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc), *cert. denied*, 126 S. Ct. 1332 (2006).

221. See *id.* (“[This] court starts the decisionmaking process by reviewing the same resources as would [the person of ordinary skill in the art], viz., the patent specification and the prosecution history.” (quoting *Multiform Desiccants, Inc. v. Medzam, Ltd.*, 133 F.3d 1473, 1477 (Fed. Cir. 1998))).

Substantivism also offers the advantage of increased certainty. Concern with certainty is ubiquitous in legal rule-making. It is perhaps the most highly sought-after quality of claim construction. Both patentees and the public have a legitimate interest in a clearly defined and bounded patent right. A lack of certainty can impede investment and have an *in terrorem* effect on innovation. The attraction of making judicial interpretation, and the property rights it defines, more predictable or certain is accordingly strong. This is particularly true in a legal field necessitated by scientific principles and dominated by individuals who have spent years operating in the realm of science. Increased attention to the public notice function of claims has brought the issue of certainty into sharp focus.<sup>222</sup> Yet, the concern with certainty to date has failed to identify a proper referent. Asking what “kind” of certainty is desired and to whom it is directed is an important step in understanding the concern with certainty. The claims’ function of identifying for the public the prohibited subject matter must be kept in mind in answering that question.

For example, one type of certainty relates to knowing what body of law a court will apply to a given situation.<sup>223</sup> Another aspect of certainty is knowing how the courts will apply a given body of law in a given situation.<sup>224</sup> Yet another measure of certainty in claim construction has been focused on the likelihood that the Federal Circuit will reverse a district court’s claim interpretation.<sup>225</sup> These assessments of certainty in

222. See *supra* notes 103-06 and accompanying text.

223. The pre-*Phillips* state of the law was problematic in this regard because the applicable methodology appeared to be panel dependent. See Wagner & Petherbridge, *supra* note 141, at 1133-34 (noting two different methodologies used by judges: “procedural” and “holistic”). *Phillips*, as an en banc pronouncement from the Federal Circuit, arguably goes a long way toward at least providing some certainty as to the applicable law for claim construction. *But see supra* Part IV (noting that precedential value of that portion of the opinion may be questioned).

224. For example, judges may agree on the applicable legal rule but still reach different results.

225. This is essentially a measure of the uncertainty attending the treatment of claim construction as a question of law and applying *de novo* review on appeal. The issue has been the subject of numerous empirical studies. See, e.g., Bender, *supra* note 5, at 203, 207 (finding that the Federal Circuit reversed approximately 40% of claim construction decisions appealed between the Supreme Court’s *Markman* decision in April 1996 and 2000); Christian A. Chu, *Empirical Analysis of the Federal Circuit’s Claim Construction Trends*, 16 BERKELEY TECH. L.J. 1075, 1104 (2001) (citing a 44% reversal rate for claim terms appealed between January 1998 and April 2000); Moore, *supra* note 58, at 239 (finding that the Federal Circuit overturned district court decisions on claim construction 34.5% of the time between the Supreme Court’s *Markman* decision in April 1996 and 2003); Kimberly A. Moore, *Are District Court Judges Equipped to Resolve Patent Cases?*, 15 HARV. J.L. & TECH. 1, 8-11 (2001) (citing a 33% claim construction reversal rate between the Supreme Court’s *Markman* decision in April 1996 and 2000); Andrew T. Zidel, *Patent Claim Construction in the Trial Courts: A Study Showing the Need for Clear Guidance from the Federal Circuit*, 33 SETON HALL L. REV. 711, 741-42, 755-60 (2003) (finding that Federal Circuit reversed thirty-nine of ninety-four claim construction decisions in 2001).

claim construction, however, focus primarily on legal actors as their referent and thereby do not fully explore the relationship between certainty and the public notice function of claims.

Certainty is linked to the public notice function of claims in that the public can be certain of the meaning of the claims only if the court's interpretation comports with the understanding of a person of ordinary skill in the art.<sup>226</sup> All members in a particular field could agree on the meaning of a word in a patent,<sup>227</sup> but if a court construes that word differently, the beneficial public notice function of the claims is lost. Thus, certainty in the context of claim construction must refer at least in part to the degree to which the court's interpretation is in harmony with the understanding of a person of ordinary skill in the art. Stated differently, the relevant "public" in public notice is the hypothetical objective person who is central to the claim construction task. Certainty should be evaluated from the perspective of a person of ordinary skill in the art, rather than, for example, from a lay attorney's standpoint. Even a crystal clear rule as to how claim construction will be performed will thwart the public notice function of the claims if the analysis is not conducted in the appropriate context.

Looking at certainty this way, the substantive approach to claim construction best achieves certainty in the sense intended by the public notice function.<sup>228</sup> It allows courts to replicate most closely the environment in which the relevant audience actually interprets documents, one supplied with a wealth of context-specific information about the invention. By considering more of the sources reflecting the meaning that would be considered by, or already known to, a person of ordinary skill in the art, the court comes closer to reaching the correct result. Substantive interpretation allows for clarity in a specific setting among people who share a common understanding of the meaning of words; context provides certainty.<sup>229</sup> A substantive approach to claim construction provides certainty with respect to the appropriate referent

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226. See *Phillips*, 415 F.3d at 1324 (noting the importance of "increas[ing] the likelihood that a court will comprehend how a person of ordinary skill in the art would understand the claim terms"). This is in some sense a measure of accuracy.

227. See *SmithKline Beecham Corp. v. Apotex Corp.*, 403 F.3d 1331, 1358 (Fed. Cir. 2005) (en banc) (noting that, pursuant to the public notice function, "'one of ordinary skill in the art should be able to read a patent, to discern which matter is disclosed and discussed in the written description, and to recognize which matter has been claimed'" (quoting *PSC Computer Prods., Inc. v. Foxconn Int'l, Inc.*, 355 F.3d 1353, 1359 (Fed. Cir. 2004))).

228. No methodology will achieve absolute certainty. As one court recently wrote, "[I]nterpreting claims is not an exact science . . ." *Clontech Labs., Inc. v. Invitrogen Corp.*, 406 F.3d 1347, 1352 (Fed. Cir. 2005).

229. See *Nard*, *supra* note 29, at 44-45 (characterizing some judges' context-sensitive claim construction methodology as pragmatic textualism and noting the benefits of taking into account technological context).

and thus best furthers the public notice function of claims.<sup>230</sup> This is the “kind” of certainty in claim construction with which we should be concerned.

In contrast, the vaguely defined certainty promised by interpretative formalism proved to be illusory and undermined the public notice function of claims. Advocates of formalism in general and claim construction in particular have asserted that formalistic rules reign in judicial discretion and increase certainty in results.<sup>231</sup> At best, however, the formalist approach to claim construction offered a superficially certain multi-step framework for performing a claim construction analysis. The unfettered discretion that judges had in choosing among a considerable number of dictionaries<sup>232</sup> without explanation<sup>233</sup> and then selecting a particular definition within a given entry<sup>234</sup> gave rise to a highly uncertain environment for claim construction.<sup>235</sup> When courts place great emphasis on such a malleable tool of interpretation, it is easy for both parties to craft plausible arguments within the delineated framework without really advancing the claim construction inquiry, the most obvious proof of that situation being the many cases in which each party was able to find a dictionary definition to support its position.<sup>236</sup> Formalism’s ability to

230. This is precisely the rationale that drove the architects of the Uniform Commercial Code to opt for context-based standards such as trade usage. *See Kennedy, supra* note 26, at 1704-05 (“[T]he drafters of Article 2 proceeded on the conviction that general commercial law was prototypically adapted to standards. This choice was explicitly based on the claim that ideas like ‘reasonableness’ and ‘good faith’ provide greater predictability in practice than the intricate and technical rule system they have replaced.”); Carol M. Rose, *Crystals and Mud in Property Law*, 40 STAN. L. REV. 577, 609 (1988) (“At least in some instances, there is a great deal more clarity and certainty about a mud rule than a crystal one. . . . Mud rules . . . can take on a greater clarity in a social setting among persons with some common understanding—who know, for example, that a ‘baker’s dozen’ numbers thirteen.”).

231. *See supra* notes 65-66, 137 and accompanying text.

232. Joseph Scott Miller & James A. Hilsenteger, *The Proven Key: Roles and Rules for Dictionaries at the Patent Office and the Courts*, 54 AM. U. L. REV. 829, 913-14 (2005) (providing data demonstrating that the Federal Circuit used thirty different dictionaries in conducting claim construction between April 1995 and June 2004).

233. Under the *Texas Digital* approach, judges could also look to a dictionary *sua sponte*, regardless of whether the parties had offered a dictionary definition into evidence or not. *Tex. Digital Sys., Inc. v. Telegenix, Inc.*, 308 F.3d 1193, 1203 (Fed. Cir. 2002).

234. *See Samuel A. Thumma & Jeffrey L. Kirchmeier, The Lexicon Has Become a Fortress: The United States Supreme Court’s Use of Dictionaries*, 47 BUFF. L. REV. 227, 274 (1999) (“Once the word to be defined and the specific dictionary to be used have been selected, the Court is not then left with the mechanical task of following a single definition set forth in that dictionary. Indeed, most terms have multiple definitions, requiring the reader to consider context and other factors in selecting the proper definition.”).

235. *See, e.g., Miller & Hilsenteger, supra* note 232, at 867, 870 (discussing uncertainty resulting from courts’ dictionary-centric approach to claim construction).

236. *See, e.g., Free Motion Fitness, Inc. v. Cybex Int’l, Inc.*, 423 F.3d 1343, 1348 (Fed. Cir.

achieve meaningful certainty was further decreased in such cases because the sources over which the parties were battling provided meanings in a vacuum, divorced from technological context and the viewpoint of the touchstone person of ordinary skill in the art.

At the same time, the tiered substantive methodology also advances the public notice function of claims by emphasizing the fixed public record consisting of the patent itself and the prosecution history in the claim construction process. In the hierarchy of sources for claim construction, the specification and the prosecution history, which provide the immediate context<sup>237</sup> for the claims, are the primary interpretative tool under the tiered substantive approach.<sup>238</sup> In addition, extrinsic evidence cannot be used to contradict the words in the claims.<sup>239</sup> These aspects of the tiered substantive methodology preserve the fixed record on which the public is entitled to rely, thereby also furthering the public notice function of the claims in this way.<sup>240</sup>

Although the admission of extrinsic evidence may introduce elements of uncertainty, these are uncertainties that go to evidentiary issues and the weight of the evidence. For example, the *Phillips* court noted that extrinsic evidence, prepared in anticipation of litigation, may suffer from bias, or may not be prepared by or for persons of skill in the art.<sup>241</sup> These concerns, however, are directed to whether such evidence is relevant.<sup>242</sup> Extrinsic evidence that does not reflect the knowledge of a person of ordinary skill in the art or that is not credible obviously should not be admitted or given much weight. All cases present evidentiary issues, and these concerns present problems—evaluating and weighing evidence—that district courts are well equipped to handle.<sup>243</sup> Keeping in mind the specific context of the

2005) (presenting each party’s different dictionary definitions of the claim term “adjacent”); *Bilstad v. Wakalopoulos*, 386 F.3d 1116, 1121-22 (Fed. Cir. 2004) (rejecting each party’s proposed dictionary definition of the claim term “plurality” and instead relying on a third dictionary definition of its own choosing); *Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc.*, 334 F.3d 1294, 1299-1300 (Fed. Cir. 2003) (demonstrating the parties’ reliance on different entries within the same dictionary of the term “remote”).

237. This is in contrast to the larger technological context in general.

238. See *supra* notes 167-69 and accompanying text.

239. *C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 862 (Fed. Cir. 2004) (“[O]ur caselaw suggests that extrinsic evidence cannot alter any claim meaning discernible from intrinsic evidence.”).

240. See *Cotropia*, *supra* note 62, at 95-133 (suggesting that the public notice function of claims is served by public availability of claims and supporting documents).

241. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1318 (Fed. Cir. 2005) (en banc), *cert. denied*, 126 S. Ct. 1332 (2006).

242. See *id.*

243. As the *Phillips* court noted, the district court should exercise “its sound discretion to admit and use such evidence. . . . [T]he court should keep in mind the flaws inherent in each type of evidence and assess that evidence accordingly.” *Id.* at 1319.

invention, in light of the larger context of the person of ordinary skill in the art, will also alleviate the problem.<sup>244</sup> Perhaps most importantly, these uncertainties, present in all cases, are outweighed by the certainty that results from reaching an accurate result.

One common and especially noteworthy indictment of substantive methods of interpretation is cost.<sup>245</sup> A substantive method of claim construction entails looking at far more information than necessary under a formalist regime, requiring investigation into the understanding of a person of ordinary skill in the art in particular circumstances, and is necessarily more costly.<sup>246</sup> Obtaining contextual information may demand research reaching back decades, given that the relevant time frame for determining claim meaning is usually long past by the time a patent is litigated.<sup>247</sup> Expanding the universe of permissible evidence for interpretation beyond the discrete set of resources most commonly used in patent cases inevitably leads to the collection of more information that may prove fruitless and distracting to the courts and litigants, increasing the already-high cost of patent disputes.<sup>248</sup> The relative expenses of

244. See *id.* (“[E]xtrinsic evidence . . . is unlikely to result in a reliable interpretation of patent claim scope *unless considered in the context of the intrinsic evidence.*” (emphasis added)).

245. Indeed, the concern with cost is not trivial; it is, however, an entirely separate concern. See, e.g., Alan Schwartz & Robert E. Scott, *Contract Theory and the Limits of Contract Law*, 113 *YALE L.J.* 541, 573 (2003) (noting that in the context of contract interpretation “[a]n interpretive style can be assessed along two dimensions: (1) the likelihood that the style will generate the correct answer . . . and (2) the costs that the style imposes on courts and parties”). An interpretive method driven by considerations of cost, either to the public, to the courts, or to both, would likely look very different than the landscape described herein and warrants separate exploration.

246. See Bowers, *supra* note 37, at 1273 (noting that a context-based interpretation for Uniform Commercial Code Article 2 sales contracts “means expensive lawyering” in contrast to a formalist strategy that would permit a lawyer to interpret the contract “using only the document and a dictionary”); David Charny, *The New Formalism in Contract*, 66 *U. CHI. L. REV.* 842, 850 (1999) (recounting the economic argument that “[c]risp formal rules save the courts the task of deciphering reasonable expectations in particular circumstances—a task that becomes more costly as understandings become more diverse”); Katz, *supra* note 26, at 497 (noting that, where the set of interpretive materials is broad and requires reasonably thorough attention, “the definitive resolution of interpretive questions requires a relatively larger degree of time and effort than would be the case under a system that put stricter limits on the materials to be considered or on the resources to be devoted to their consideration”); Schwartz & Scott, *supra* note 245, at 587 (noting that in the contract realm “litigation is more costly in a contextualist interpretive regime”).

247. Many litigants, however, already collect many such contextual documents as a matter of course during research and development. Some corporations build extensive libraries containing a variety of different types of technical materials, such as reports, journal articles, international presentations given by employees, and physical samples, relevant to their areas of research and development. See Catherine C. Marshall et al., *Making Large-Scale Information Resources Serve Communities of Practice*, *J. MGMT. INFO. SYS.*, Spring 1995, at 65, 68.

248. According to a 2005 study conducted by the American Intellectual Property Law Association, a national intellectual property bar association, the median cost to try a patent case with between \$1 and \$25 million at risk is \$2 million. *AM. INTELL. PROP. LAW ASS’N, LAW*

substantive interpretation are meaningful.

Nevertheless, while “a set of simple formal rules saves on the cost of administering the legal system, it may do so at the risk of drastically increasing the costs of transacting.”<sup>249</sup> With a formalist mode of interpretation, it was incumbent on a patent drafter to expend the resources necessary to ensure that a court would construe the claims against the appropriate background, to make express the meanings that were natural to a person of ordinary skill in the art.<sup>250</sup> As section B discusses, patent drafters may still choose to expend those resources, but they are not forced to do so under a substantive mode of interpretation. In addition, the cost of uncertainty is more meaningful than the cost of administering a substantive methodology.<sup>251</sup>

As courts further refine claim construction jurisprudence,<sup>252</sup> they should continue in the direction of a substantive methodology. The tiered substantive approach to claim construction better serves the public notice function of claims. It also provides a baseline level of certainty that, as the next section discusses, can be further enhanced in the private sector by those writing patents.

### B. Formalism in Patent Design

Methodology for interpretation has a wide operating sphere. Although the task of interpretation is most visible and necessary when conducted by the courts, it is also undertaken, to some degree, by other actors in the patent system. For example, examiners in the patent office will engage in some level of claim construction during the course of determining whether

PRACTICE MGMT. COMM., AIPLA REPORT OF ECONOMIC SURVEY 2005, at 22, 109 (2005).

249. Charny, *supra* note 246, at 850.

250. This has been noted in other areas, such as contract drafting. *See, e.g.*, Steven L. Harris, *Rules for Interpreting Incomplete Contracts: A Cautionary Note*, 62 LA. L. REV. 1279, 1280 (2002) (“Like other documents, contracts are drafted against a host of background assumptions and understandings, some of which are quite basic. . . . [T]he cost of bringing all these assumptions from the background to the conscious mind and reducing them to writing often is prohibitive.”).

251. *See supra* notes 63-64 and accompanying text.

252. For example, one passionately debated and unresolved issue in the *Phillips* case was the deference owed to district courts in claim construction. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1330-31 (Fed. Cir. 2005) (en banc) (Mayer, J., dissenting) (arguing that claim construction jurisprudence will remain counterfeit until the deference issue is addressed), *cert. denied*, 126 S. Ct. 1332 (2006). A more substantive approach to claim construction, with its potentially broad evidentiary universe, may give rise to increased issues of fact, possibly counseling in favor of granting deference to lower court interpretations of the claims. In addition, courts might be confronted with new sources of context-based information, such as survey evidence, *see supra* note 207 and accompanying text, and should keep the substantive methodology in mind in evaluating that evidence.



to grant a patent in the first instance.<sup>253</sup> Competitors, potential competitors, and the general public may construe claims in trying to decipher the sphere of prohibited patent territory and the relative risks and rewards of working inside and outside of that territory. Patentees themselves undertake a claim construction analysis when assessing their rights and making determinations such as whether to grant a license or file suit against a competitor.<sup>254</sup>

Patentees are favorably situated to work within the confines of the tiered substantive methodology: They not only possess the requisite contextual knowledge of the person of ordinary skill in the art, but patentees also have the *ex ante* opportunity to consider the court's methodology. Patentees should draft the patent document against this interpretive background, as well as against the backdrop of the wealth of technical information surrounding the development of the invention. They inherently possess or have ready access to much of the contextual information necessary to substantive interpretation. Prospective patent owners can and should take into account methodology in preparing and prosecuting patents.<sup>255</sup> Indeed, one of the reasons for articulating interpretive methodologies is to improve drafting behavior,<sup>256</sup> a much needed change in patent law.<sup>257</sup>

253. Patent examiners are situated somewhat differently than courts because they typically have some relevant technological expertise and must give claims their broadest possible interpretation for purposes of passing on the patentability of an invention, *see In re Zletz*, 893 F.2d 319, 321 (Fed. Cir. 1989) (“During patent examination the pending claims must be interpreted as broadly as their terms reasonably allow.”), but their goal of viewing the claims as a person of ordinary skill in the art is the same, *see Bristol-Myers Squibb Co. v. Rhône-Poulenc Rorer, Inc.*, No. 95 Civ. 8833, 2001 WL 1263299, at \*2-3 (S.D.N.Y. Oct. 19, 2001).

254. *See supra* note 105 and accompanying text.

255. The majority of proposals for reform of the patent system have focused on the judiciary and on the patent office. *See, e.g.*, Robert A. Armitage, *The Conundrum Confronting Congress: The Patent System Must Be Left Untouched While Being Radically Reformed*, 5 J. MARSHALL REV. INTELL. PROP. L. 267, 272, 285-89 (2006). Yet, in terms of quality control, improvements at the front end, *i.e.*, in drafting, are of equal if not greater value.

256. As Professor Sunstein has explained in the context of statutory interpretation, one of the functions of expressed interpretative methodologies is to encourage better writing:

The “plain meaning” principle, for example, might be an effort not to discover what Congress meant in the particular case, but instead to tell Congress to be careful with statutory language. . . . The hope—probably a false one—is that the principle will lead Congress to express itself clearly in the future.

Cass R. Sunstein, *Interpreting Statutes in the Regulatory State*, 103 HARV. L. REV. 405, 457 (1989); *see also* Summers, *supra* note 213, at 1193 (noting that “[l]egislators would not know how to draft statutes in the first place” without knowledge of courts’ interpretative methodology).

257. *See* John R. Thomas, *On Preparatory Texts and Proprietary Technologies: The Place of Prosecution Histories in Patent Claim Interpretation*, 47 UCLA L. REV. 183, 230 (1999) (noting

The Federal Circuit has properly oriented the methodology of claim interpretation in a substantive direction. Formalism, however, still has a potentially prominent role to play in claim construction. Faced with the current tiered substantive approach to claim construction, a patent drafter has two options: (1) rely on extrinsic evidence to establish the meaning of her words in context to a court, or (2) write a more formalistic patent by including more of the necessary context on the face of the patent itself. The first option, as discussed above, already presents a baseline level of certainty that is an improvement in claim construction and may be acceptable to many patentees. It is the default for claim construction. The second option is made possible by the tiered nature of the *Phillips* substantivism. Because the court will consider extrinsic evidence only if necessary to resolve the interpretative question at hand,<sup>258</sup> patent drafters have the opportunity to shape the degree to which the court will engage in substantive interpretation. The second option, the focus of this section, essentially allows a patentee to opt out of the substantive mode of interpretation.<sup>259</sup>

It is likely that many patentees will indeed take advantage of this option. It is a common response for legal actors to respond to flexible standards with increased formalism.<sup>260</sup> In patent law, many commentators prefer greater formalism in claim construction.<sup>261</sup> An increase in the use of formalistic drafting techniques in patent drafting is beneficial and can advance the public notice function of claims. By forcing patentees to be more efficient, thoughtful, systematic, and organized in preparing their patent documents, formalistic drafting may further enhance the public

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that “modern patents do a woefully poor job of recording the proprietary interests of inventors”).

258. See *supra* notes 202-205 and accompanying text.

259. This opting out would be a matter of degree. See *infra* text accompanying notes 273-75.

260. See Rose, *supra* note 230, at 582-90 (noting the trend, in various aspects of property law, for private bargainers to utilize bright-line “crystal” rules in their contractual arrangements as the law has become more “muddy”).

261. See, e.g., Brief for Amicus Curiae Parus Holdings, Inc. at 2-3, *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed Cir. 2005) (en banc) (Nos. 03-1269, 03-1286), 2004 U.S. Fed. Cir. Briefs LEXIS 448, at \*\*3-4 (“The public notice function of patent claims is best served by referencing technical and general purpose dictionaries and similar sources first. . . . The dictionary approach to claim construction inherently provides uniformity and predictability because dictionaries provide only a few possible meanings for any given claim term.”); Brief of Amicus Curiae, Ass’n of Patent Law Firms in support of Neither Party and Neither Affirmance or Reversal at 3, *Phillips*, 415 F.3d 1303 (Nos. 03-1269, 03-1286), 2004 U.S. Fed. Cir. Briefs LEXIS 38, at \*\*6-7 (“Dictionaries, both technical and general, should be consulted first, followed by the specification, in determining the ordinary meaning of a claim term.”); Brief of Amicus Curiae Patent Law Professors R. Polk Wagner & Joseph Scott Miller at 15-16, *Phillips*, 415 F.3d 1303 (Nos. 03-1269, 03-1286), 2004 U.S. Fed. Cir. Briefs LEXIS 256, at \*\*24 (“[A] uniform reliance on [dictionaries, treatises, etc.] as a basic component of the claim construction process offers far more predictability and transparency than apparent alternative resources for ordinary meaning.”).

notice function of claims.

For example, formally drafted patents may enhance the public notice function of claims by providing generalist judges<sup>262</sup> with more of the context necessary to interpret the claims within the four corners of the patent, thus ensuring that a judge's interpretation most closely matches that of a person of ordinary skill in the art. In this way, formalist drafting implicitly recognizes the tension inherent in a generalist judge interpreting words from a specialized, technical standpoint. It is an effort to ease the obstacles facing judges in trying to stand in the place of a person of ordinary skill in the art. Although much of this additional, contextual information would be unnecessary to a person of ordinary skill in the art,<sup>263</sup> it has the potential to assist the judge in interpretation. Under the *Phillips* methodology, the patentee is not obligated to provide this aid. The law has prepared for the possibility that this information will be absent by providing that the court may freely turn to extrinsic evidence as necessary.<sup>264</sup> Drafters accordingly must decide how detailed to make their disclosures in order to affect the degree to which the court will engage in substantive interpretation.

This decision may be influenced by a number of legal, economic, and psychological factors.<sup>265</sup> Many patentees will be satisfied with the default substantive interpretation. For example, a patentee who is able to accept a higher degree of risk of an adverse claim construction and less control over the meaning of her words may choose to include the least possible amount of information necessary to meet the statutory requirements<sup>266</sup> or to employ vague terms in order to avoid giving competitors an

262. See Miller & Hilsenteger, *supra* note 232, at 851-52 (discussing the role of generalist judges in claims construction cases).

263. Indeed, the "person of ordinary skill in the art" standard allows for the omission of such information. See Burk & Lemley, *supra* note 109, at 1156 ("The more skill those in the art have, the less information an applicant has to disclose . . .").

264. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1317 (Fed. Cir. 2005) (en banc), *cert. denied*, 126 S. Ct. 1332 (2006).

265. These considerations are similar to those that commercial entities face in drafting sales contracts. As one commercial law scholar has explained:

Some future exigencies are so remote that it will never be worthwhile for parties to bear the expense of contracting over them ex ante. Some causes of contractual incompleteness result from the unobservability or the unverifiability of the appropriate future contingencies the parties would prefer to contract on. Some parties will refuse to include efficient clauses in their contracts because, merely by proposing such a clause, they risk revealing valuable private information to the other party without any assurance of being adequately compensated.

Bowers, *supra* note 37, at 1258-59.

266. See *supra* text accompanying note 88 (discussing statutory disclosure requirements).

advantage<sup>267</sup> by disclosing information about the invention itself, information that may indirectly reveal future plans of the inventive entity,<sup>268</sup> or information that the inventive entity has chosen to maintain as a trade secret. Similarly, a patentee may choose to employ deliberately broad, ambiguous, or obscure language in order to later capture unforeseen changes to her invention<sup>269</sup> or simply on the grounds of short-term expediency. Such a patentee will rely on ex post judicial determinations and contextual information presented during litigation to give meaning to her words and may factor the necessity of litigation into her overall business decisions. Other aspects of patent doctrine may also impact a patentee's decision to include more information. For example, if a patentee fears dedicating subject matter to the public that she was not required to disclose,<sup>270</sup> she will be restrained in the information included.

Many patentees faced with the substantive interpretive methodology, however, will respond with greater formalism in their drafting. An inventor who is risk-adverse and who seeks quickly obtained protection for technology on which efficient transactions can be based without recourse to the courts may draft a tightly worded, formalistic patent limited to the precise commercial embodiment of the invention utilized in its business.<sup>271</sup>

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267. This is a common explanation for the utilization of vague contract terms. See, e.g., George G. Triantis, *The Efficiency of Vague Contract Terms: A Response to the Schwartz-Scott Theory of U.C.C. Article 2*, 62 LA. L. REV. 1065, 1071 (2002) (“[W]hen information is asymmetric between the parties, the better-informed party may refrain from proposing a more complete contract because, in doing so, she may communicate private information to the other party and thereby compromise her share of the contracting surplus.”).

268. This is even more of a concern now that the law regarding publication of patent applications has changed. Patent applications in the United States used to be kept “secret” within the PTO until the laws were changed to bring them into compliance with United States obligations under the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS). See John F. Duffy, *Harmony and Diversity in Global Patent Law*, 17 BERKELEY TECH L.J. 685, 688, 715-16 (2002). Under the new legislation, patent applications, with few exceptions, are published by the PTO eighteen months after they are filed. 35 U.S.C. § 122(b) (2000).

269. In resulting in more formalistic drafting in at least some cases, the substantive interpretive regime has the incidental advantage of discouraging such rent-seeking behavior.

270. Pursuant to the disclosure dedication rule, information that is disclosed in the specification but not claimed is dedicated to the public. See *Toro Co. v. White Consol. Indus., Inc.*, 383 F.3d 1326, 1331 (Fed. Cir. 2004). Presumably, the types of disclosures suggested here would not consist of unclaimed information but merely information that *explains* the claimed information, but the disclosure dedication rule is nonetheless a doctrine that may result in patentees including less information of any kind in their patents.

271. See *Rose*, *supra* note 230, at 577-78 (“Economic thinkers have been telling us for at least two centuries that the more important a given kind of thing becomes for us, the more likely we are to have these hard-edged rules to manage it. We draw these ever-sharper lines around our entitlements so that we know who has what, and so that we can trade instead of getting into the confusions and disputes that would only escalate as the goods in question became scarcer and more highly valued.” (footnote omitted)).

Similarly, an inventor may prefer more formalism so that a patent can be tailored to a specific activity that is known to be infringing.<sup>272</sup> Although a less formalistic approach to drafting may leave a patentee more flexibility *ex post* to make arguments about what her claims cover, a patentee who relies on the substantive approach to interpretation is relinquishing control over the meaning of her words. Parties in patent infringement litigation have asymmetric information, with the patentee likely having years of development records on the invention that an opponent lacks. Taking into account extrinsic evidence has a leveling effect, allowing opponents to gather their own information about the meaning of the terms, and may result in the admission of information that the patentee had not considered. Although some contextual information will benefit a patentee, the patentee is taking the risk that it will not. More formalistic drafting could render such information unnecessary, allowing a patentee to maintain greater control over the meaning of the words and the sources that will be used to construe them. Many patentees will find it attractive to maintain that higher level of control.

As with the factors affecting the desired level of formalism in the patent, various considerations can influence drafters' choices in determining which aspects of an invention warrant the effort<sup>273</sup> of formalistic drafting.<sup>274</sup> Not all claim terms justify the expense of formalistic drafting, however. The transaction costs of specifying every possible form of each aspect of the invention, even assuming that they can be foreseen, may exceed the gains. For example, many claims are directed to the use of an invention in its larger commercial context, where only one portion of the claim consists of something that might be the focus of controversy. In that circumstance, it would be wise for an inventor to expend more effort on those terms that are likely to be disputed. A patent drafter may also choose to emphasize situations that are most likely to recur or to expressly define terms that impact more than one patent.<sup>275</sup> For

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272. See *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 909 n.2 (Fed. Cir. 2004) (“[I]t is not improper for an applicant to broaden his claims during prosecution in order to encompass a competitor’s products, as long as the disclosure supports the broadened claims.”); *Kingsdown Med. Consultants, Ltd. v. Hollister, Inc.*, 863 F.2d 867, 874 (Fed. Cir. 1988) (“[N]or is it in any manner improper to amend or insert claims intended to cover a competitor’s product the applicant’s attorney has learned about during the prosecution of a patent application.”).

273. See *infra* note 291 and accompanying text (noting costs of formalistic drafting).

274. Inventors are reasonably and appropriately faced with similar decisions during the drafting process. See, e.g., Doug Lichtman, *Substitutes for the Doctrine of Equivalents: A Response to Meurer and Nard*, 93 GEO. L.J. 2013, 2013 (2005) (noting that patent drafters must “decid[e] how much to invest in the process of drafting original claim language, [or] how much to rely on the doctrine of equivalents, and whether and when to make use of both the reissue proceeding and continuation application[ ]” as alternate means for expanding claim scope).

275. Related patents often share the identical specification. *E.g.*, *Geneva Pharms., Inc. v.*

patent drafters who wish merely to obtain an issued patent that is not intended to be enforced,<sup>276</sup> this effort would not be worthwhile. As noted previously, various other considerations may weigh in a patent drafter's decision to expend the effort to write a more formal patent document.<sup>277</sup> Patent drafters are in the best position to determine what the most significant portion of their claims are and allocate their drafting resources accordingly.

The choice of form over substance thus ultimately rests with the drafter. The success of a patent having the scope desired by the inventor depends, as it should, on the words and techniques that the inventor selects.<sup>278</sup> The numerous choices involved in claim drafting vary depending on the drafter's objectives, some of which are described above. If a patentee chooses to take advantage of this approach, she has a variety of tools to shape the degree of formalism in her patent.

One way a patentee can control the level of formalism in her patent is by including her own glossary of terms within the four corners of the patent itself.<sup>279</sup> “[A] patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification or file history.”<sup>280</sup> This allows a patentee to “contract out” of the usage of those of skill in the art and choose to define her own terms.<sup>281</sup> These drafter-authored definitions may be direct or indirect.<sup>282</sup> The extensiveness

GlaxoSmithKline PLC, 349 F.3d 1373, 1375 (Fed. Cir. 2003) (noting that all seven patents-in-suit originated from a single patent application); *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1311 (Fed. Cir. 1999) (noting that the patent-in-suit “was one of several patents to be issued based upon the same written description disclosure”). The investment in formalistic drafting, such as the preparation of a comprehensive glossary of terms, can be highly efficient in these situations.

276. Less than 2% of patents are legally enforced. Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495, 1501 (2001) (estimating that “at most only about two percent of all patents are ever litigated, and less than two-tenths of one percent of all issued patents actually go to court”). Yet, patents may function in other useful ways, as advertising tools, for example. Indeed, scholars have noted that patents may have value wholly independent of the exclusivity rights they convey. *See, e.g.*, Paul J. Heald, *A Transaction Costs Theory of Patent Law*, 66 OHIO ST. L.J. 473, 476 (2005) (arguing that firms seek patents in order to reduce transaction costs in business dealings); Clarisa Long, *Patent Signals*, 69 U. CHI. L. REV. 625, 625 (2002) (arguing that patents are “a means of credibly publicizing information”).

277. *See supra* notes 265-72 and accompanying text.

278. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1321 (Fed. Cir. 2005) (en banc) (discussing a patentee's responsibility to describe her invention), *cert. denied*, 126 S. Ct. 1332 (2006).

279. Miller, *supra* note 63, at 203-04 (suggesting that patents contain or designate a lexicon for their claim terms).

280. *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996).

281. Even if the patentee's definitions do not differ significantly from the usage of those skilled in the art, a patent drafter may choose to write her own definitions rather than rely on the possible uses of a term by those skilled in the art.

282. *See, e.g.*, *Boss Control, Inc. v. Bombardier Inc.*, 410 F.3d 1372, 1377 (Fed. Cir. 2005)

of the glossary will affect the level of formalism of the patent. An elaborate, comprehensive set of definitions limits the evidentiary basis upon which interpretation will take place, whereas the absence of definitions will require increased recourse to contextual information. Writing one's own definitions is thus more formalistic. It forces a less substantive mode of interpretation under *Phillips*.

Another formalist tool for drafting is the citation to desired interpretative sources. "Incorporation by reference provides a method for integrating material from various documents into a host document . . . by citing such material in a manner that makes clear that the material is effectively part of the host document as if it were explicitly contained therein."<sup>283</sup> This allows a patent drafter to designate which sources should inform the meaning of her claims without the burden of expressly including the content of those sources in her document.<sup>284</sup> Information incorporated by reference can include other patents,<sup>285</sup> journal articles, and technical treatises, to name just a few.

Another mechanism for increasing the level of formalism in a patent is the use of examples. For instance, a drafter may set forth embodiments that do and do not work.<sup>286</sup> A similar strategy would be to list categories of items that are included within the meaning of a term; such a list may be exhaustive or non-exhaustive. The use of contrasting categories also allows a drafter to define her invention more precisely. By demonstrating what the invention is *not*, the drafter provides a clearer boundary line.

To be sure, what the patent drafter can achieve with these tools is limited; after all, they involve more words. Scholars have recently debated the feasibility and benefits of improved claim drafting in the context of reforming patent law's doctrine of equivalents.<sup>287</sup> It is often said that

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("The specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication." (quoting *Vitronics*, 90 F.3d at 1582)); *Nazomi Commc'ns, Inc. v. Arm Holdings, PLC*, 403 F.3d 1364, 1369 (Fed. Cir. 2005) ("In this patent, it appears that the inventor defined 'instructions' [the disputed claim term] in an indirect manner. Specifically, the specification refers primarily to what the instructions do and where they may do it.").

283. *Advanced Display Sys., Inc. v. Kent State Univ.*, 212 F.3d 1272, 1282 (Fed. Cir. 2000).

284. *See, e.g., Cook Biotech, Inc. v. ACell, Inc.*, 460 F.3d 1365, 1377 (Fed. Cir. 2006) (construing claims based on another patent incorporated by reference).

285. *See Edward C. Walterscheid, Incorporation by Reference: A Case History of the Evolution of a Doctrine in Patent Law*, 22 *IDEA* 63, 66 (1981).

286. Although it is unlikely that a patentee would want to reveal failures of her claimed invention, such information is often disclosed in order to demonstrate the superiority of the claimed invention or to distinguish it from the prior art so that the examiner will be persuaded to issue a patent.

287. *Compare 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, 1975-78 (2005) (arguing that sophisticated claim drafting techniques allow patentees to address problems with claim scope), *with Lichtman, supra* note 274, at 2015-19 (arguing that Professors Meurer and

because patentees cannot foresee future variations on their inventions to which they should be entitled protection, they cannot precisely define their inventions.<sup>288</sup> Even accepting this as a difficulty, it does not present an unusual or undue burden.<sup>289</sup> Claims are intended to cover the “subject matter which the [inventor] regards as his invention,”<sup>290</sup> and it is reasonable to expect an inventor to know and be able to describe what he invented.<sup>291</sup> The inherent limitations of language and difficulties they present in describing an invention is a challenge shared equally by those reading patents. Drafters appropriately bear at least some of the responsibility of increasing predictability of outcomes.

The tiered substantive approach preserves the patent drafter’s autonomy, permitting formalism where desired. It serves a proscriptive purpose by encouraging the drafter—who is in the best position to put the public on notice of what the claims mean—to write more clearly. The patent drafter has an interest in communicating her meaning to the public. The substantive interpretative approach further encourages the drafter to examine her language carefully.

Complete or absolute formalism may be too costly<sup>292</sup> or impossible to achieve.<sup>293</sup> But claims are interpreted on a term-by-term basis, and

Nard overestimate the reasonable abilities of patent drafters).

288. See, e.g., Martin J. Adelman, *The New World of Patents Created by the Court of Appeals for the Federal Circuit*, 20 U. MICH. J.L. REFORM 979, 994 (1987) (recognizing the fundamental “difficulty of defining at the time of the patent grant all of the ways of using existing technology to make or use the patented invention”).

289. Parties face this challenge frequently in both private and public law settings. See, e.g., Karen Eggleston et al., *The Design and Interpretation of Contracts: Why Complexity Matters*, 95 NW. U. L. REV. 91, 92 (2000) (“Because any of an indefinitely large set of events could influence the cost or value of the performance, a desirable contract would condition performance on all of these events.”); Julian B. McDonnell, *Purposive Interpretation of the Uniform Commercial Code: Some Implications for Jurisprudence*, 126 U. PA. L. REV. 795, 830, 836 (1978) (noting the “legislature’s inability to foresee the types of disputes that will arise” and that “ordinary prose cannot always be easily molded into a reasonably compact statement that evidences precisely the conditions and consequences of its application”).

290. 35 U.S.C. § 112 (2000); see also *Phillips v. AWH Corp.*, 415 F.3d 1303, 1321 (Fed. Cir. 2005) (en banc) (“The patent system is based on the proposition that claims cover only the invented subject matter.”), cert. denied, 126 S. Ct. 1332 (2006).

291. *Merrill v. Yeomans*, 94 U.S. 568, 573-74 (1876) (“It seems to us that nothing 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, and for what he claims a patent.”).

292. See, e.g., Lichtman, *supra* note 274, at 2015 (“[T]he costs of drafting bulletproof claim language can be substantial.”).

293. This is debatable. At least one scholar has implied that such a level of formalism in claim drafting is possible. See Miller, *supra* note 63, at 180 (arguing that “[t]he patent document itself should . . . contain the information that is vital to its proper construction”). The Federal Circuit has recognized this possibility. See *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 986 (Fed. Cir. 1995) (en banc) (“[I]deally there should be no ‘ambiguity’ in claim language to one of ordinary



individual terms may be susceptible to formalist interpretation. The patent drafter can choose which terms warrant the additional resources of formalist drafting. Significantly, the substantive approach to interpretation, as the default mode of interpretation, will compensate for the shortcomings the patent document possesses. In addition, although more formal claims are more costly for drafters to write, that cost may be offset in the avoidance of greater costs to the public<sup>294</sup> and the avoidance of litigation.

Because all patents will not be drafted in such a way that they are susceptible to formalist interpretation, formalism in interpretation as a general rule fails. However, a tiered substantive approach to interpretation can influence behavior in a formalistic direction. Patent drafters who object to a substantive mode of interpretation have the opportunity to reign in the sources that the court will consider in construing their claims. They are able to educate and persuade a judge within the four corners of the patent document. In this way, greater substantivism in claim interpretation has the potential to lead to increased formalism in drafting and improve certainty, thus advancing the public notice function of claims.

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skill in the art that would require resort to evidence outside the specification and prosecution history.”), *aff'd*, 517 U.S. 370 (1996). Indeed, courts have resolved cases without looking further than the specification and prosecution history in arriving at the correct claim construction. *See, e.g.*, *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582-85 (Fed. Cir. 1996) (construing claims without resort to extrinsic evidence). Professors Burk and Lemley offer a contrary view, relying on contract law. *See Burk & Lemley, supra* note 22, at 50-51 (arguing that meaning can only be found with reference to context outside the document itself); *see also* Lichtman, *supra* note 274, at 2015-19 (noting obstacles faced by patent drafters and “the difficulty of identifying and articulating the essence of a genuinely new invention”).

294. As the court in *Sage Products, Inc. v. Devon Industries, Inc.*, 126 F.3d 1420 (Fed. Cir. 1997), explained, some rules in patent law

place[ ] a premium on forethought in patent drafting. Indeed this premium may lead to higher costs of patent prosecution. However, the alternative rule [of allowing a patentee to deviate from the literal scope of her claims] . . . also leads to higher costs. Society at large would bear these latter costs in the form of virtual foreclosure of competitive activity within the penumbra of each issued patent claim. . . . [B]ur[ring] the line of demarcation between infringing and non-infringing activity . . . creates a zone of uncertainty, into which competitors tread only at their peril. Given a choice of imposing the higher costs of careful prosecution on patentees, or imposing the costs of foreclosed business activity on the public at large, this court believes the costs are properly imposed on the group best positioned to determine whether or not a particular invention warrants investment at a higher level, that is, the patentees.

*Id.* at 1425 (citations omitted).

## VI. CONCLUSION

Examining the formal and substantive characteristics of claim construction deepens understanding of the process and illuminates the choices that have to be made in drafting and construing patent claims. Theories of form and substance inform both the design of rules governing claim construction on the one hand and the design of the patent document itself on the other. These perspectives should be considered together in examining claim interpretation in order to lead to an effective, complete claim construction scheme that properly allocates burdens and control and is consonant with the fundamentals of the patent system.

Approaching the problem in this way, a substantive approach to claim interpretation coupled with a formalist approach to patent drafting presents the ideal claim construction scheme. It best furthers the public notice function of patents and most closely comports with the statutorily mandated touchstone of claim construction, the person of ordinary skill in the art. It is also consistent with two hallmarks of a well-functioning patent system: information dissemination for the public good and the preservation of autonomy and incentives for inventors. Incentivizing formalism in drafting is appropriate given patents' potential to garner significant exclusionary rights in their holders and to thereby have a significant public impact. At the same time, if a patent drafter chooses not to expend the additional resources necessary to prepare a formalistically written patent, she is still left with the substantive approach to claim construction that takes into account context and the background assumptions of her field, resulting in more certainty than under a formalist mode of interpretation.

