

# HOLISTIC CLAIM CONSTRUCTION

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*Jurisprudence in the area of defining patent scope is opaque and inconsistent. District courts and litigants cannot be certain of the bounds of the exclusive territory covered by a patent—defined by the patent’s claims—until the Court of Appeals for the Federal Circuit—the single patent appellate court in the nation—says what it is in an appeal after final judgement. The appellate court appears to simply redo the analysis of the district courts, yet often inexplicably reaches a different conclusion based on the patent’s text. Though much has been written about the Federal Circuit’s unpredictable, textualist approach to claim construction, no scholarship has focused on the fact that the problem may stem from the court’s inconsistent treatment of ex post information in the analysis—information that was uncovered after patent issuance.*

*Because the Federal Circuit generally presents claim scope as immutably set ex ante at patent grant, it only erratically acknowledges the relevance of ex post information in the claim construction inquiry. This Article proposes a more functional, holistic approach to claim construction that forces the courts to expressly acknowledge the relevance of ex post information in every case. A court reassessing the scope of a patent would ask: If a decision-maker had known everything ex ante that has since been discovered ex post in the course of the litigation, would they have still granted the patent as written?*

*The proposal is based on the underappreciated reality that claims are meant to be temporally flexible in order to incentivize innovation. And although the Federal Circuit does not explicitly admit to this, its opinions indicate that claim construction is not a stand-alone, objective analysis based only on facts and arguments made before patent grant. Therefore, the proposal simply attempts to make express what is already being done implicitly on the appellate level—it encourages courts to look at the determination of patent scope during claim construction in a more integrated way to consider how the scope relates to the other issues in the case. Using this*

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*approach, courts automatically help align their reasoning in claim construction with patent law's purpose of promoting innovation. The transparency and principled reasoning resulting from the Federal Circuit implementing such a proposal would help develop a more orderly common-law doctrine of claim construction, providing much-needed guidance to district courts and patent litigants.*

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## INTRODUCTION

Intangible rights—privacy, goodwill, free speech, intellectual property—are hard to grasp. Courts sometimes use analogies in the tangible world to gain a better understanding of areas of the law involving such rights. Courts and scholars discuss marketplaces of ideas for free speech<sup>1</sup> and analogize trademarks to riparian rights.<sup>2</sup> To that end, patent rights have often been compared to plots of private land or someone’s house.<sup>3</sup> In these analogies, patent scope, delineated by a patent’s claims, is the fence to someone’s property, or the walls of someone’s house—marking the outer periphery of excludable territory.<sup>4</sup> The Court of Appeals for the Federal Circuit, the single appellate court for all federal patent litigation, seems to approach patent rights this way. When it comes to construing patent claims, the court treats the inquiry as a textual exercise that divines the single correct construction for a claim, one that does not change *ex post*.<sup>5</sup> In other words—your fence stays where you put it. In fact, it is an idealized fence—one unaffected by erosion or surveying difficulties. If your intellectual property is later found to be invalid by a court, it is because you had put the fence on someone else’s land all along,<sup>6</sup> and not because no one really knew at patent grant exactly where the fence lay in the first place.

Though scholars have extensively criticized the Federal Circuit’s property-idealized, textualist approach to claim construction,<sup>7</sup> none have

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<sup>1</sup> See *e.g.*, *Abrams v. United States*, 250 U.S. 616, 630 (1919) (Holmes, J., dissenting); see also *e.g.*, Jared Schroeder, *Shifting the Metaphor: Examining Discursive Influences on the Supreme Court’s Use of the Marketplace Metaphor in Twenty-First-Century Free Expression Cases*, 21 COMM. L. & POL’Y 383, 412–30 (2016) (describing different contexts of the “marketplace of ideas,” which refers to the ability of citizens to choose the dominant ideas among the “market”).

<sup>2</sup> *E.g.*, Adam Mossoff, *Trademark as a Property Right*, 107 KY. L.J. 1, 5 (2018).

<sup>3</sup> See, *e.g.*, Tun-Jen Chiang, *Fixing Patent Boundaries*, 108 MICH. L. REV. 523, 525 (2010) (house analogy); Edmund W. Kitch, *The Nature and Function of the Patent System*, 20 J.L. & ECON. 265, 266 (1977) (“The patent system so viewed is closely analogous to the American mineral claim system for public lands.”); Mark A. Lemley, *Property, Intellectual Property, and Free Riding*, 83 TEX. L. REV. 1031 (2005) (land analogy).

<sup>4</sup> Dan L. Burk & Mark A. Lemley, *Fence Posts or Sign Posts? Rethinking Patent Claim Construction*, 157 U. PA. L. REV. 1743, 1744 (2009) (“[The] words of a [patent] claim form a sort of conceptual ‘fence’ that marks the edge of the patentee’s rights.”).

<sup>5</sup> See *infra* Part II.

<sup>6</sup> See *infra* Section III.B (discussing that invalidity considerations are usually not a factor in claim construction); see also Greg Reilly, *The Complicated Relationship of Patent Examination and Invalidation*, 69 AM. U. L. REV. 1095, 1114 (2020) (“[A]n *ex post* finding of invalidity is typically seen as ‘prov[ing] that the patent never should have issued in the first place,’ but for a mistake by the Patent Office, because it failed the statutory criteria of patentability at the time of issuance.” (second alteration in original) (quoting *Microsoft Corp. v. i4i Ltd. P’ship*, 564 U.S. 91, 96 (2011))).

<sup>7</sup> J. Jonas Anderson & Peter S. Menell, *Informal Deference: A Historical, Empirical, and Normative Analysis of Patent Claim Construction*, 108 NW. U. L. REV. 1, 4 n.6 (2013) (listing

focused specifically on the Federal Circuit's inconsistent approach to how ex post information<sup>8</sup> fits into the analysis—information that was not reasonably available or did not exist at the time of patent grant. This Article emphasizes the time-dependent nature of defining patent scope to propose a more holistic<sup>9</sup> and flexible approach to claim construction that requires a decision-maker to expressly consider ex post information that becomes available in the course of litigation. After all, patent rights are created by statute and constitutionally designed to “promote the Progress of . . . [the] useful Arts.”<sup>10</sup> A court is thus always determining, whether expressly or implicitly, the optimal claim scope based on economic efficiency considerations<sup>11</sup>—balancing the reward due to the inventor with the impact of this monopoly on follow-on innovation.<sup>12</sup> A

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scholarship criticizing the Federal Circuit's claim construction jurisprudence); see also BJ Ard, *More Property Rules than Property? The Right to Exclude in Patent and Copyright*, 68 EMORY L.J. 685, 687 (2019) (critiquing “inflexible deployment of property rules” in intellectual property law); Craig Allen Nard, *A Theory of Claim Interpretation*, 14 HARV. J.L. & TECH. 1, 8, 11, 36 (2000) (discussing “the potential adverse effect of hypertextualism” in patent law); Burk & Lemley, *supra* note 4, at 1744 (“Patent law has provided none of the certainty associated with the definition of boundaries in real property law.”); Lemley, *supra* note 3, at 1036–37 (“[T]he rhetoric of property rights in treating intellectual property and related cases . . . may inherently affect the way in which people think about intellectual property rights.” (footnote omitted)); Peter S. Menell & Michael J. Meurer, *Notice Failure and Notice Externalities*, 5 J. LEGAL ANALYSIS 1, 12 (2013) (discussing “the chilling effect of property rights with fuzzy boundaries”); Chiang, *supra* note 3, at 530 (“A property whose boundaries are constantly shifting is a bad vehicle for investment—both for the property owner and any potential trespassers.”).

<sup>8</sup> I use the word “information” broadly to encompass not just facts but also invalidity and infringement arguments.

<sup>9</sup> Other scholars have used the term “holistic” in a different sense, as generally looking at evidence beyond the “ordinary” meaning of claims. See R. Polk Wagner & Lee Petherbridge, *Is the Federal Circuit Succeeding? An Empirical Assessment of Judicial Performance*, 152 U. PA. L. REV. 1105, 1132–33, 1138 (2004) (categorizing the “holistic” approach to claim construction as emphasizing the patent specification over ordinary meaning); Anderson & Menell, *supra* note 7, at 34 (defining “holistic[]” judges as those “who interpret patent claim terms using an open-ended methodology drawing upon the full range of interpretive tools—claim language, specification, prosecution history, dictionaries, and expert testimony”).

<sup>10</sup> U.S. CONST. art. I, § 8, cl. 8; see also Arti K. Rai, *Engaging Facts and Policy: A Multi-Institutional Approach to Patent System Reform*, 103 COLUM. L. REV. 1035, 1122 (2003) (discussing patent law as an incentive-based system).

<sup>11</sup> See Tun-Jen Chiang, *Forcing Patent Claims*, 113 MICH. L. REV. 513, 534–35 (2015) (arguing that courts perform economic balancing when determining “optimal patent scope”).

<sup>12</sup> See Peter Lee, *Substantive Claim Construction as a Patent Scope Lever*, 1 IP THEORY no. 2, 2010, at 100, 100 (“The key is to strike the right balance, one where patents induce the creation of new inventions without unduly stifling subsequent advances in the field.” (citing Michael Abramowicz & John F. Duffy, *The Inducement Standard of Patentability*, 120 YALE L.J. 1590 (2011))); Robert P. Merges & Richard R. Nelson, *On the Complex Economics of Patent Scope*, 90 COLUM. L. REV. 839, 843 (1990) (“Without extensively reducing the pioneer's incentives, the law should attempt at the margin to favor a competitive environment for improvements . . .”); Nard, *supra* note 7, at 8, 36 (discussing “ex post innovation” theories that require consideration of “not

patent right cannot stay immutable and clearly defined like a chain-link fence; it must be reassessed and clarified *ex post* to make sure it is still serving its purpose of rewarding innovators and protecting follow-on research.<sup>13</sup>

This Article proposes that in *ex post* reassessment of patent scope one should ask: If a decision-maker had known everything *ex ante* that has since been discovered *ex post* in the course of the litigation, would they have still granted the patent as written? Two types of *ex post* information are instrumental in this reassessment and would normally be presented—as evidence or arguments—during the invalidity and infringement portions of a district court case.<sup>14</sup> Type one includes information that actually existed *ex ante* but was not reasonably available to the decision-maker due to resource constraints. An example of this category is new documents found for litigation that demonstrate the state of the art at the time of patenting. Type two includes information that, while revealing something about the state of the world *ex ante*, only emerges *ex post*. For example, how a patent is later asserted or the development of technology since patenting. Both types of *ex post* information provide updated insight into whether the patent scope as granted, in view of the claim and patent language, is still where it should be to balance the reward due the inventor with the impact of this monopoly on follow-on innovation.<sup>15</sup> That is a balance that a decision-maker automatically considers in the course of patent litigation: when assessing whether a patent is infringed and whether it meets the statutory criteria for patent validity.<sup>16</sup>

Holistic claim construction has historical origins in twentieth-century Supreme Court precedent,<sup>17</sup> and the idea of a more functional approach to claiming has been recently mulled over by a number of academics.<sup>18</sup> In contrast to other recent scholarship, the holistic claim

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only the patentee's inventive contribution to society, but also the contribution of the patentee's competitors").

<sup>13</sup> See *infra* Section II.B.

<sup>14</sup> Infringement arguments are by definition necessarily *ex post* as there can be no infringement before a patent grant. And presumably, litigants would rarely introduce invalidity arguments in the exact *ex ante* form in which they were already considered and dismissed by the examiner. Presentation of new evidence, or at the very least, new arguments about old evidence, is likely the norm. Therefore, invalidity evidence and arguments in litigation are primarily in one of the two *ex post* categories as well.

<sup>15</sup> See *infra* Section IV.A.

<sup>16</sup> See *infra* Section IV.B.

<sup>17</sup> Lee, *supra* note 12, at 109.

<sup>18</sup> See, e.g., Lee, *supra* note 12, at 105, 107 (proposing a different, but related, holistic approach to claim construction “as a ‘tiebreaker’ where traditional claim construction methodology does not provide a clear answer”); Burk & Lemley, *supra* note 4, at 1783 (proposing central claiming).

construction proposed herein does not aim to change the nature of claiming itself.<sup>19</sup> Instead, while it recognizes the importance of claims in providing notice and forcing information from applicants,<sup>20</sup> it positions the construction inquiry as part of the overall *ex post* determination of whether a patent is invalid or infringed. Under this approach, because relevant *ex post* information becomes available in every patent litigation, patent scope must be reassessed every time in view of that information in addition to the text of the claims and the rest of the patent document.<sup>21</sup> And such proposed consideration of *ex post* information is not an occasional tool or tiebreaker to add to the current claim construction approach.<sup>22</sup> It is instead something a court would necessarily consider as part of the overall case presented by the parties.

The proposed approach embraces the reality that claim construction cannot be a stand-alone, objective analysis in a case divorced from other issues. Courts have a choice as to how to provide more specificity to indeterminate claim language, and the proposal herein points out that there is gap-filling *ex post* information—often provided naturally in the course of a patent litigation in the evidence and arguments of invalidity and infringement—that can guide that discretion. Moreover, as claim term meaning is often outcome determinative for invalidity or infringement in a case, this approach embraces the interconnected nature of these inquiries and encourages courts to openly acknowledge that relationship. A district court should continue to reevaluate, at least for some portion of the case, the meaning it initially assigns to a claim term, as more information is learned throughout the proceeding, through an iterative process akin to “rolling” construction.<sup>23</sup> For example, a term that seems to have a plain meaning at the beginning of the litigation may, at the infringement stage of the case, need to be more precisely defined in terms of whether it contains the specific feature of an accused device.<sup>24</sup>

The Federal Circuit’s claim construction jurisprudence does not seem to acknowledge the indeterminacy or time dependence of the claim

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<sup>19</sup> Unlike the proposals to restore central claiming. See Burk & Lemley, *supra* note 4, at 1783; see also Chiang, *supra* note 11, at 523 (asserting that recent scholarship on claims seems to indicate they should either be abolished or ignored).

<sup>20</sup> Claims serve an important information-forcing function in the patent system, and I do not propose to eliminate them. See Chiang, *supra* note 11, at 538–42 (discussing the information-forcing theory).

<sup>21</sup> See *infra* Section IV.A.

<sup>22</sup> In contrast to Peter Lee’s proposal for holistic claim construction as a tie breaker or an additional “lever” in “calibrating patent scope.” See Lee, *supra* note 12, at 100–01.

<sup>23</sup> See, e.g., *Jack Guttman, Inc. v. Kopykake Enters., Inc.*, 302 F.3d 1352, 1361 (Fed. Cir. 2002) (“District courts may engage in a rolling claim construction, in which the court revisits and alters its interpretation of the claim terms as its understanding of the technology evolves.”).

<sup>24</sup> See *infra* notes 167–73 and accompanying text.

interpretation process. As a result, it inconsistently considers some categories of ex post information and only some of the time.<sup>25</sup> For example, the court sometimes allows district courts to consider the accused product in its claim construction analysis<sup>26</sup> but emphasizes that invalidity is irrelevant to claim construction.<sup>27</sup> Therefore, bizarrely, if a district court is contemplating a broader claim construction, it can consider the impact of that decision on whether the accused product infringes the patent, but must not be influenced by whether or not it thinks that broader scope is legally valid. For instance, a district court can decide that a company that makes *wireless* smart hospital beds infringes a patent that generally claims smart hospital beds, but it cannot consider whether the patent actually discloses enough information about wireless technology to allow such broad scope.<sup>28</sup>

And this is just in the cases where the Federal Circuit even considers ex post information. More often than not, the Federal Circuit ignores all ex post information and focuses only on a limited ex ante record and its formalistic, textual analysis thereof.<sup>29</sup> Either way, the court puts out opaque, panel-dependent opinions where it seems to simply redo the fact-heavy, case-specific job of the district court and reach a different conclusion based on the same (usually limited) record.<sup>30</sup> This unpredictability on appeal is not only doctrinally incoherent,<sup>31</sup> but also undermines the legitimacy of the inquiry, and perhaps even of the Federal Circuit itself.<sup>32</sup>

If the Federal Circuit were to embrace the approach proposed in this Article, it would allow the court to write more transparent and principled opinions, providing overarching guidance to district courts about how to properly consider the relevance of ex post information in claim construction. Then, a more orderly common-law doctrine of claim construction can truly develop, providing much-needed guidance to district courts and patent litigants. The approach would also align claim construction with other flexible patent law doctrines that consider ex post

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<sup>25</sup> See *infra* Part III.

<sup>26</sup> See *infra* Section III.A.

<sup>27</sup> See *infra* Section III.B.

<sup>28</sup> Hypothetical based on facts from *Hill-Rom Services, Inc. v. Stryker Corp.*, 755 F.3d 1367 (Fed. Cir. 2014).

<sup>29</sup> See *infra* Section II.D.

<sup>30</sup> See *infra* Section III.B.

<sup>31</sup> See *infra* Section III.C.

<sup>32</sup> See *infra* Section III.C.

information,<sup>33</sup> and with the purpose of patent law in promoting innovation.

Part I provides a brief background of how claims are created during patent examination, formally reassessed by a district court, and how that claim construction analysis is reviewed by the Federal Circuit on appeal. Part II of this Article introduces the Federal Circuit's current immutable patent right approach<sup>34</sup> to claim construction and argues that it is inconsistent with the flexibility inherent in patent law and the indeterminacy in claims that results from that flexibility. Part III provides concrete examples of how the Federal Circuit inconsistently treats ex post information in its review of claim construction decisions and the deleterious effects this has on patent doctrine and litigation. Finally, Part IV proposes an alternative approach—holistic claim construction. It explains what kinds of information become available after patent examination and how it is useful in shedding light on claim scope reassessment. Part IV also explains the benefits of the holistic approach and discusses the respective roles of the district and appellate courts if it were to be adopted. In addition, this Part addresses some possible costs of and objections to the proposal.

## I. WHAT IS CLAIM CONSTRUCTION?

The single-sentence claims at the end of a patent document—which also contains the description of the invention—describe the legally enforceable metes and bounds of the inventor's protectable right.<sup>35</sup> Claims define claim scope.<sup>36</sup> Other than requiring that “claims particularly point[] out and distinctly claim[] the subject matter which the inventor . . . regards as the invention,”<sup>37</sup> most standards and

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<sup>33</sup> See Dmitry Karshtedt, *Nonobviousness: Before and After*, 106 IOWA L. REV. 1609, 1663 (2021) (“[C]ourts have already allowed [ex post] hindsight evidence . . . with proper safeguards to inform inquiries in other areas of patent law.”).

<sup>34</sup> One could argue that the patent right does not change over time (i.e., it is not truly “immutable”) but that it is just not well-defined in the first place. Either way, the Federal Circuit does not acknowledge this flexibility or indeterminacy.

<sup>35</sup> 35 U.S.C. § 112(b) (“[C]laims [should] particularly point[] out and distinctly claim[] the subject matter which the inventor or a joint inventor regards as the invention.”); *Aro Mfg. Co., Inc. v. Convertible Top Replacement Co., Inc.*, 365 U.S. 336, 339 (1961) (“[C]laims made in the patent are the sole measure of the grant . . . .”); see also ERNEST BAINBRIDGE LIPSCOMB, *PATENT CLAIMS* § 1:3 (3rd ed. 2022).

<sup>36</sup> The scope of the patent is “how much intellectual space resides within the metes and bounds of the patent claims.” Janet Freilich, *The Uninformed Topography of Patent Scope*, 19 STAN. TECH. L. REV. 150, 161 (2015).

<sup>37</sup> § 112(b).



principles of claim construction, even the ones used by the Patent Office during examination, are judicially developed.<sup>38</sup>

#### A. Examination: Claim Scope Is Born

Examiners are responsible for construing claims as they are proposed initially by the applicant and determining whether the claims meet the statutory criteria of patentability.<sup>39</sup> Under the patent statute, the invention captured by the claim must be useful,<sup>40</sup> novel,<sup>41</sup> and nonobvious.<sup>42</sup> For an invention to be nonobvious, it must advance the current state of technology.<sup>43</sup> The patent application also has to have enough detail in the rest of the description of the invention (submitted along with the claims) to enable others to make or use the invention.<sup>44</sup> And the invention has to be one of the judicially recognized categories of patentable subject matter.<sup>45</sup>

During patent examination, also called “prosecution,” there is a standard number of sources of information available to the examiner to determine whether the claims meet these statutory criteria. Examiners read the patent description and the claims.<sup>46</sup> They perform a “prior art” search of technical documents published before the date of filing to determine novelty and nonobviousness.<sup>47</sup> Examiners do not expressly spell out their understanding of the meaning or scope of a claim.<sup>48</sup> Instead, if the examiner decides, as is often the case, that the claims fail to meet one of the statutory validity requirements, they negotiate with the applicant to narrow the claim language to correspond to the examiner’s (implicit) perception of the scope of the invention the applicant is entitled

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<sup>38</sup> Rai, *supra* note 10, at 1118.

<sup>39</sup> *Id.* at 1045.

<sup>40</sup> See 35 U.S.C. § 101 (containing usefulness requirement).

<sup>41</sup> See *id.* § 102(a) (containing novelty requirement).

<sup>42</sup> See *id.* § 103 (containing nonobviousness requirement).

<sup>43</sup> Rai, *supra* note 10, at 1045.

<sup>44</sup> 35 U.S.C. § 112 (containing disclosure requirement).

<sup>45</sup> § 101 (listing the categories of patentable inventions); Paul R. Gugliuzza, *Quick Decisions in Patent Cases*, 106 GEO. L.J. 619, 621 (2018) (discussing how § 101 has been limited by judge-made exceptions to patentability).

<sup>46</sup> 37 C.F.R. §§ 1.71(a), 1.75(a) (2023) (description and claim requirements).

<sup>47</sup> *Id.* § 1.104(a). Prior art is documentary evidence used to help the examiner determine the invention’s place in the state of the art, primarily as a way to determine if the invention was obvious or anticipated.

<sup>48</sup> Reilly, *supra* note 6, at 1144–45 (“Examiners do not normally explicitly identify their understanding of claim scope during examination.”).

to assert.<sup>49</sup> This negotiation becomes part of an administrative record of the examination proceeding entitled “prosecution history.”<sup>50</sup>

### B. *Enforcement: District Court Construction*

Claims are also what a patentee enforces against accused infringers in court. And the scope of claims is assessed formally by a district court judge during such enforcement actions.<sup>51</sup> A claim construction dispute is not really about scope as an amorphous concept, however, but about the meaning of a single term or phrase in the context of the claim.

And deciding claim scope of a term or phrase can often be outcome determinative in a case.<sup>52</sup> The more specific a word’s definition becomes in the claim, the narrower its scope, and the fewer potential accused infringers the patentee can assert rights against.<sup>53</sup> But if a claim term is construed too broadly, it can sometimes render a patent invalid for trying to exclude the public from intellectual property that the patentee is not entitled to.<sup>54</sup>

For example, in *Phillips v. AWH Corp.*,<sup>55</sup> the latest en banc effort by the Federal Circuit to spell out how claims should be construed, the dispute focused on determining what the term “baffles” meant in a claim for vandalism-resistant walls.<sup>56</sup> Specifically, the parties disputed whether “baffles” were limited to non-perpendicular, projectile-deflecting objects in the walls, as shown in the diagrams of the patent application.<sup>57</sup> The district court limited the word “baffles” to non-perpendicular structures, which resulted in a finding of non-infringement for a competing wall panel manufacturer.<sup>58</sup>

Aside from grappling with the facts of the case, the court in *Phillips* delineated a general hierarchy for sources of evidence to be used in claim

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<sup>49</sup> See 37 C.F.R. § 1.111.

<sup>50</sup> Rai, *supra* note 10, at 1046 n.42.

<sup>51</sup> See *Markman v. Westview Instruments, Inc. (Markman II)*, 517 U.S. 370, 372 (1996) (assigning the role of claim construction exclusively to judges, not juries).

<sup>52</sup> Rai, *supra* note 10, at 1059 (“Claim construction is often determinative of all other questions in the case—as famously noted by Judge Rich, a longtime member of the Federal Circuit, ‘the claim is the name of the game.’”).

<sup>53</sup> See Tun-Jen Chiang, *The Levels of Abstraction Problem in Patent Law*, 105 NW. U. L. REV. 1097, 1099–110 (2011).

<sup>54</sup> See Mark A. Lemley & Mark P. McKenna, *Scope*, 57 WM. & MARY L. REV. 2197, 2200 (2016) (explaining infringement and invalidity concepts in intellectual property law, and the tension between them).

<sup>55</sup> 415 F.3d 1303 (Fed. Cir. 2005) (en banc).

<sup>56</sup> *Id.* at 1309–10.

<sup>57</sup> *Id.* at 1310.

<sup>58</sup> *Id.* at 1309.

construction. It explained the order in which these sources of evidence should be consulted if claim language continues to remain unclear. First, a court is to look to the “ordinary and customary meaning” of the claim language “to a person of ordinary skill in the art in question at the time of the invention.”<sup>59</sup> Sometimes, the Federal Circuit admitted, a disputed term’s meaning “may be readily apparent” and construction “involves little more than the application of the widely accepted meaning of commonly understood words.”<sup>60</sup> If that is not the case, the court can look to the other claims in the patent that use the same disputed term for guidance about the meaning of the term.<sup>61</sup> The court then can look to the rest of the patent description for guidance,<sup>62</sup> followed by the prosecution history of the patent, including the prior art cited during prosecution.<sup>63</sup> Only after the court has exhausted all this “intrinsic evidence” should it turn to “extrinsic evidence” that “consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.”<sup>64</sup>

### C. Appeal: Reviewing District Court Construction

In *Markman v. Westview Instruments, Inc. (Markman II)*,<sup>65</sup> the Supreme Court decided that claim construction is to be decided exclusively by judges, not juries.<sup>66</sup> The Federal Circuit took *Markman II* as Supreme Court support for its long-held practice of treating claim construction as a purely legal question to be reviewed de novo on appeal.<sup>67</sup> In 2015, the Supreme Court in *Teva Pharmaceuticals USA, Inc. v. Sandoz, Inc.*<sup>68</sup> clarified that claim construction has “evidentiary underpinnings”<sup>69</sup> and may, “[i]n some cases,” require a judge to look

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<sup>59</sup> *Id.* at 1312–13; see also *Markman v. Westview Instruments, Inc. (Markman I)*, 52 F.3d 967, 986 (Fed. Cir. 1995) (en banc) (defining the task of “construing disputed terms in claim language” as determining “what one of ordinary skill in the art at the time of the invention would have understood the term to mean”), *aff’d*, 517 U.S. 370 (1996).

<sup>60</sup> *Phillips*, 415 F.3d at 1314.

<sup>61</sup> *Id.*

<sup>62</sup> *Id.* at 1315.

<sup>63</sup> *Id.* at 1317.

<sup>64</sup> *Id.* (quoting *Markman I*, 52 F.3d at 980).

<sup>65</sup> *Markman II*, 517 U.S. 370 (1996).

<sup>66</sup> *Id.* at 372.

<sup>67</sup> *Lighting Ballast Control LLC v. Philips Elecs. N. Am. Corp.*, 744 F.3d 1272, 1276–77 (Fed. Cir. 2014) (en banc).

<sup>68</sup> 574 U.S. 318 (2015).

<sup>69</sup> *Id.* at 326–27.

“beyond the . . . intrinsic evidence.”<sup>70</sup> Yet the Supreme Court seemed to wholeheartedly support the idea that claim construction is usually “solely . . . a determination of law,”<sup>71</sup> and any factual dispute requiring a judge to look at “extrinsic evidence” beyond the “intrinsic” record would occur only “occasionally.”<sup>72</sup> Again, since *Teva*, the Federal Circuit has continued to review claim construction disputes on appeal as a question of law, rarely finding the need to look at extrinsic evidence to resolve a dispute.<sup>73</sup>

## II. IMMUTABLE RIGHTS APPROACH TO PATENT SCOPE

The Federal Circuit has always maintained that claims are determinate and their scope is set at the time of patent grant, similar to a deed to a property.<sup>74</sup> All a district court is doing in claim construction is divining what has already been clearly set.<sup>75</sup> There is no need to address judicial discretion or policy-driven analysis because it does not exist in claim construction—there are no gaps to fill.<sup>76</sup>

Section II.A below synthesizes from the literature the various reasons why, at first glance, it seems perfectly logical for patent rights to be, as the Federal Circuit sees them, immutable as set *ex ante*. Section II.B explains that immutable patent rights cannot work in reality because the patent system requires that patent rights remain flexible with time. Section II.C describes the implications of such flexibility for the notice system of patent rights: that the flexibility of patent rights infuses indeterminacy into our disclosure-based system of notice. Finally, Section II.D argues that the Federal Circuit has historically and continues to perceive patent rights as immutable. It posits that this approach ignores

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<sup>70</sup> *Id.* at 331.

<sup>71</sup> *Id.*

<sup>72</sup> *Id.* at 329, 331–32.

<sup>73</sup> See Jason Rantanen, *Teva, Nautilus, and Change Without Change*, 18 STAN. TECH. L. REV. 430, 450 (2015) (describing how the Federal Circuit avoided deference despite *Teva*).

<sup>74</sup> *Autogiro Co. of Am. v. United States*, 384 F.2d 391, 396 (Ct. Cl. 1967) (“Courts can neither broaden nor narrow the claims to give the patentee something different than what he has set forth. No matter how great the temptations of fairness or policy making, courts do not rework claims.” (footnote omitted)); see also Jason Rantanen, *The Malleability of Patent Rights*, 2015 MICH. ST. L. REV. 895, 900, 905–06; Mark A. Lemley, *The Changing Meaning of Patent Claim Terms*, 104 MICH. L. REV. 101, 111 (2005) (“In practice, courts have approached claim construction as if the claims had a single meaning throughout time.”); Reilly, *supra* note 6.

<sup>75</sup> See *Abtox, Inc. v. Exitron Corp.*, 122 F.3d 1019, 1023 (Fed. Cir. 1997) (“Claim interpretation is the process of giving proper meaning to the claim language. . . . Therefore, the language of the claim frames and ultimately resolves all issues of claim interpretation.”).

<sup>76</sup> *SmithKline Beecham Corp. v. Apotex Corp.*, 403 F.3d 1331, 1339 (Fed. Cir. 2005) (“Claim construction . . . is not a policy-driven inquiry. . . . [I]t is a contextual interpretation of language.”).

the reality that the indeterminacy of the patent disclosure (due to the availability of information at the time of filing) requires some alternative method of claim construction that recognizes the time-dependent nature of the inquiry.

### A. *Justifications for Immutable Right Theory*

This view of an immutable patent right has doctrinal, rhetorical, normative, and practical bases. First, the statutory language of many patent provisions implies that claims do not change over time. For example, 35 U.S.C. § 112(a) requires that “[t]he specification . . . contain a written description of *the invention*.” Many other provisions related to patentability use similar language. As Jason Rantanen points out, “the reference to ‘the invention’ implies that there is a thing—the invention—to which rights are being granted.”<sup>77</sup> He notes that scholars and courts alike use this language when discussing the immutability of the patented right.<sup>78</sup>

The patent statute also creates the sense that the only relevant time for patent doctrine is *ex ante*—at the time the invention was made, or the patent application was filed. For instance, a court needs to determine whether an invention “would have been obvious *before the effective filing date* of the claimed invention”<sup>79</sup> or whether “the claimed invention was patented, described in a printed publication, or in public use, on sale, or otherwise available to the public *before the effective filing date* of the claimed invention.”<sup>80</sup>

Normatively, the construct of claims not changing over time aligns with the general property-law rhetoric typical in patent law. Mark Lemley has pointed out that “[t]he rhetoric and economic theory of real property are increasingly dominating the discourse and conclusions of the . . . world of intellectual property.”<sup>81</sup> Economic theories of patent law that attempt to model and reform the system likewise assume a patent right does not change after issuance.<sup>82</sup> The Federal Circuit and the Supreme Court have both extensively relied on the rhetoric of property

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<sup>77</sup> Rantanen, *supra* note 74, at 901 (quoting 35 U.S.C. § 154).

<sup>78</sup> *Id.* at 903–04.

<sup>79</sup> 35 U.S.C. § 103 (emphasis added).

<sup>80</sup> *Id.* § 102(a)(1) (emphasis added).

<sup>81</sup> Lemley, *supra* note 3, at 1033; see also Ard, *supra* note 7, at 687 (providing a more recent but similar critique).

<sup>82</sup> Rantanen, *supra* note 74, at 905–06.

rights in discussing patents.<sup>83</sup> The conceptualization of patents as a property right carries with it the normative and often subconscious idealization of property rights as absolute.<sup>84</sup> We have a visceral reaction to the idea of someone constantly trespassing on our land or evicting us from our house.<sup>85</sup>

From a practical perspective, predictable, *ex ante* determination of claim scope is also desirable for notice purposes. A patent right whose trespass is treated as a strict liability tort requires a proper system of *ex ante* notice of that right.<sup>86</sup> Notice is also important from an economic perspective because it lowers the transaction costs of commercialization based on licensing or protecting patent rights.<sup>87</sup> Finally, emphasizing notice can be seen as a way to limit gamesmanship in litigation.<sup>88</sup>

### B. *Patent Law Requires Flexibility of Rights*

Given the doctrinal and normative underpinnings of this conceptualization, why would anyone argue that patent rights should seemingly change over time or be subject to repeated *ex post* reassessment? Why should a patent ostensibly for smart hospital beds wired to the wall suddenly include wireless hospital beds? That is because an inflexible system of patent rights would not sufficiently incentivize or reward invention.

If patentees were limited to the exact physical embodiment of their invention as described in their patent application, then patent rights

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<sup>83</sup> Lemley, *supra* note 3, at 1036 (providing examples); *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005) (en banc) (“[T]he specification is a ‘component part of the patent’ and ‘is as much to be considered with the [letters patent] in construing them, as any paper referred to in a deed or other contract.’” (second alteration in original) (quoting *Hogg v. Emerson*, 47 U.S. (6 How.) 437, 482 (1848))); *In re Vamco Mach. & Tool, Inc.*, 752 F.2d 1564, 1577 n.5 (Fed. Cir. 1985) (“The function of claims is (a) to point out what the invention is in such a way as to distinguish it from what was previously known, i.e., from the prior art; and (b) to define the *scope of protection* afforded by the patent. In both of those aspects, claims are not technical descriptions of the disclosed inventions but are legal documents like the descriptions of lands by metes and bounds in a deed which *define the area* conveyed but *do not describe the land*.”).

<sup>84</sup> Lemley, *supra* note 3, at 1037.

<sup>85</sup> Chiang, *supra* note 3, at 525 (“Imagine a real property system where your neighbor is permitted to move his fence to encompass your new house.”); *id.* at 530 (“A property whose boundaries are constantly shifting is a bad vehicle for investment—both for the property owner and any potential trespassers.”).

<sup>86</sup> See Saurabh Vishnubhakat, *An Intentional Tort Theory of Patents*, 68 FLA. L. REV. 571, 591–92 (2016).

<sup>87</sup> Rantanen, *supra* note 74, at 952–53.

<sup>88</sup> See *infra* note 148 and accompanying text.

would be much less valuable.<sup>89</sup> Patentees have imperfect information at the time of filing their patent application.<sup>90</sup> They do not know at the time of patent filing how technology will develop<sup>91</sup> and how the invention will be used by others.<sup>92</sup> Therefore, for the patent system to function, some ex post flexibility in patent scope is necessary to allow the inventor the ability to sue infringers who use the underlying concept of the invention, but still create new (sometimes trivially different) physical embodiments of the invention in ways that inventor did not anticipate.<sup>93</sup> Otherwise, no one would file patents.

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<sup>89</sup> Tun-Jen Chiang, *The Levels of Abstraction Problem in Patent Law*, 105 NW. U. L. REV. 1097, 1115 (2011) (“If patent scope is limited to those embodiments that the patentee could build at the time of filing (and thus teach in the specification), then every patent becomes worthless practically from the moment it is issued.”); Freilich, *supra* note 36, at 156 (“[T]here is no basis in current knowledge to predict the scope of the claimed invention, because parts of the claimed invention do not yet exist.”); Merges & Nelson, *supra* note 12, at 845 (“At first blush it might seem to make sense to limit the rights of a patentee to only those embodiments of the invention she has disclosed in her specification. . . . But imitators would soon find some minor variation over the disclosed embodiments. . . [which] would soon render patents useless.”).

<sup>90</sup> See Freilich, *supra* note 36, at 162 (“Scope is set early in the life of a patent, while the information necessary to define the scope of a patent [for infringement purposes] is created much later.”); Burk & Lemley, *supra* note 4, at 1782 (“[P]eripheral claiming. . . purport[s] to set forth the maximal boundary of the patent grant during the application process, before the measure of the inventor’s contribution or the different variants that competitors might adopt can be properly assessed.”).

<sup>91</sup> See Oskar Liivak, *Finding Invention*, 40 FLA. ST. U. L. REV. 57, 92 (2012) (“[M]ost agree that patents should cover after-arising technology to some degree. After all, if they cannot, then many worry that most patents would quickly become worthless, as copyists could ride the coattails of an initial patent while evading its exclusive reach due to some technological change that had been unavailable at the time the initial patent was filed.”).

<sup>92</sup> See Timothy R. Holbrook, *Patents, Presumptions, and Public Notice*, 86 IND. L.J. 779, 805 (2011) (“In patent law, the patent applicant must attempt to foresee what may happen over the course of the life of the patent while drafting the application.”).

<sup>93</sup> Lemley, *supra* note 74, at 120 (“The protection provided by a patent may be hollow if it does not confer the ability to prevent logical applications of the principle of the invention to new and unforeseen circumstances.”). It is of course possible to imagine a universe where broad and immutable rights are provided to patentees as a reward for their invention, as proposed by Edmund Kitch. Edmund W. Kitch, *The Nature and Function of the Patent System*, 20 J.L. & ECON. 265, 276 (1977). This, in theory, may obviate the need for the aforementioned flexibility. Kitch seems to imagine a world where an inventor would coordinate future development through licensing and collaboration. *Id.* at 277–78. But this would be a poor way to balance the stifling of follow-on innovation due to the high transaction costs of such a scheme because of the same notice problems detailed in the text. See Rai, *supra* note 10, at 1121 (“Kitch appears to recognize that the transaction costs of reassignment are such that the scope of the initial allocation [of patent rights] does matter. . . .”). In addition, Kitch’s theory has not gained traction with modern scholars because it ignores the economic inefficiencies created by patent rights. *Id.* at 1112 (“While conventional economic analysis of patents is concerned with the deadweight loss and impediments to future innovation that patents may create, and hence asserts that patents should issue only to the extent they are necessary to induce invention, an ‘ordinary property’ view dismisses the possibility that patents create monopoly-like difficulties.” (footnotes omitted)).

The need for this flexibility is reflected in our current claiming system. Inventors are allowed to claim an inventive principle or idea instead of a specific embodiment of their invention.<sup>94</sup> This is why we allow patent scope to be defined by functional language (i.e., how something works) or by broad categories (i.e., “plastic coating” to cover many different types of plastic).<sup>95</sup> Otherwise, Gillette would not have been able to prevent imitators from making its first ever disposable safety razor by claiming “a detachable razor-blade of such thinness and flexibility as to require external support to give rigidity to its cutting edge.”<sup>96</sup> The courts understood that the flat backing of the razor holder used by the imitator, Clark Blade and Razor Company, in contrast to the curved holder provided as an example in the Gillette patent, did not allow Clark to escape infringement when the two were “mechanical[ly] equivalent.”<sup>97</sup> This is also why Elias Howe did not need to anticipate every sewing machine iteration in which his “eye pointed needle” would be used in order to enforce his patent for the needle.<sup>98</sup> As Professor Jeffrey A. Lefstin has phrased it: “[A]ll claims are genus claims,” covering “entities characterized by a common property.”<sup>99</sup>

Therefore, the patent disclosure (including the patent description and the claims) is not a chain-link fence around patent rights, but more of an “elastic leash.”<sup>100</sup> The patentee does not have to actually disclose every way in which their invention can be applied but merely has to

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<sup>94</sup> Chiang, *supra* note 11, at 519–20, 533; *Winans v. Denmead*, 56 U.S. (15 How.) 330, 343 (1853) (“[I]t is the duty of courts and juries to look through the form for the substance of the invention . . .”); *Cont’l Paper Bag Co. v. E. Paper Bag Co.*, 210 U.S. 405, 418–19 (1908) (“The principle of the invention is a unit, and invariable; the modes of its embodiment in the concrete invention may be numerous and in appearance very different from each other.” (quoting 2 WILLIAM C. ROBINSON, *THE LAW OF PATENTS FOR USEFUL INVENTIONS* § 485, at 75 (Boston, Little, Brown & Co. 1890))).

<sup>95</sup> See Dmitry Karshedt, Mark A. Lemley & Sean B. Seymore, *The Death of the Genus Claim*, 35 HARV. J.L. & TECH. 1, 13 (2021); see also Jeffrey A. Lefstin, *The Formal Structure of Patent Law and the Limits of Enablement*, 23 BERKELEY TECH. L.J. 1141, 1168–70 (2008) (arguing that most claims include categories because reciting “a chair with four legs” would cover “chairs made of all sorts of materials, chairs of all sizes, chairs including contoured backrests, and chairs with roller wheels, etc.”).

<sup>96</sup> *Merges & Nelson*, *supra* note 12, at 845–46 (quoting *Gillette Safety Razor Co. v. Clark Blade & Razor Co.*, 187 F. 149, 149 (C.C.D.N.J. 1911), *aff’d*, 194 F. 421 (3d Cir. 1912)).

<sup>97</sup> *Gillette*, 187 F. at 156–57.

<sup>98</sup> *Deering v. Winona Harvester Works*, 155 U.S. 286, 302 (1894) (“The invention of a needle with the eye near the point is the basis of all sewing machines used; but the methods of operating such a needle are many, and if Howe had been obliged to make his own method a part of every claim in which the needle was an element his patent [would] have been practically worthless.”).

<sup>99</sup> Lefstin, *supra* note 95, at 1168, 1213.

<sup>100</sup> Rantanen, *supra* note 74, at 919, 924.



enable someone of ordinary skill in the art to make and use the invention.<sup>101</sup>

Since claims cover broader ideas and categories that may change over time, no one understands the full impact that the claimed invention will have in the future or has the incentive, at the time of patent filing, to expend resources into precisely determining its validity.<sup>102</sup> It should then come as no surprise that the interpretation of claim scope also changes as more information becomes available about the invention. Professor Gregory Reilly has described some of the ways in which subsequent litigation can alter claim scope, explaining that litigation “can serve . . . as the first opportunity to evaluate the aspects of the patentability determination not amenable to the structure of *ex ante* patent examination or the aspects of the patentability determination that have changed since examination.”<sup>103</sup> With the passage of time and developments in the technology area, judges and litigants can begin to form a more salient and relevant understanding of the claimed invention through concrete examples and facts.<sup>104</sup> That is because humans are best at understanding general categories—such as those defined in claims—through exemplars.<sup>105</sup> The time-dependent nature of the claim construction inquiry is, therefore, a direct result of the flexibility that is deliberately incorporated into patent rights to preserve inventor incentives.

And this is not just an issue of claiming. Patent law, as whole, is structured to deal with temporal flexibility because of the impossibility of having all information necessary at the time of filing to determine optimal claim scope.<sup>106</sup> The infringement inquiry can change due to new

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<sup>101</sup> 35 U.S.C. § 112(a); see also Timothy R. Holbrook, *Possession in Patent Law*, 59 SMU L. REV. 123, 157 (2006) (“Enablement doctrine performs th[e] role of confining the scope of the claims to what the inventor actually possessed.”).

<sup>102</sup> See *infra* Section IV.A.

<sup>103</sup> Reilly, *supra* note 6, at 1141.

<sup>104</sup> See *infra* note 300; see also *infra* Section IV.A.

<sup>105</sup> Janet Freilich, *Patent Clutter*, 103 IOWA L. REV. 925, 969 (2018); see also Jeanne C. Fromer, *Claiming Intellectual Property*, 76 U. CHI. L. REV. 719, 763 (2009) (“According to this [cognitive science] research, people’s categories are formed and comprehended not with a list of necessary and sufficient criteria to test for membership, as the classical Aristotelian view would suggest, but rather with prototypes against which to compare potential category members for sufficient similarity.”(footnote omitted)).

<sup>106</sup> Chiang, *supra* note 11, at 535–36 (“[T]he entire reason for having a patent system at all is that the government (including a court) lacks sufficient information to determine directly the social costs and benefits of a particular patent.”).

technological developments.<sup>107</sup> And patent invalidity is also reassessed after grant to consider new information that has since been discovered.<sup>108</sup>

Even type two ex post information, the type of ex post information that did not exist at the time of patent filing, has become part of a variety of invalidity doctrines, despite its more prejudicial nature.<sup>109</sup> Although invalidity is framed in the statute as a backwards-looking inquiry, calibrated to the time of invention,<sup>110</sup> many current invalidity doctrines allow a court to use type two ex post information to reassess whether the invention should have been granted in the first place. That is because even type two ex post information can reveal something about the state of the world ex ante.<sup>111</sup> Type two ex post information in an obviousness analysis allows a court to reconsider the significance of the contribution the invention made to the state of the art.<sup>112</sup> For example, a court can consider whether an invention rendered a later-made product more commercially successful. In the analysis of enablement, ex post information about reproducibility attempts by others can help determine whether the disclosure provided enough detail to teach follow-on innovators how to make and use the invention.<sup>113</sup> And other invalidity doctrines, such as the written-description and patent-eligibility doctrines, have also been used by the courts to invalidate patents that had a stifling ex post effect on follow-on innovators.<sup>114</sup>

Despite the patent system's acceptance of the relevance of ex post information (both type one and type two) for invalidity doctrines,

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<sup>107</sup> Either through genus/category claiming, or the doctrine of equivalents, which I address later. See *infra* notes 128–31 and accompanying text.

<sup>108</sup> See Reilly, *supra* note 6, at 1142 (“Some circumstances where ex post invalidation performs an initial examination function, rather than a review and correction function, are readily identifiable because they are based on one of the categories of prior art not amenable to ex ante examination.”); Karshedt, *supra* note 33, at 1663.

<sup>109</sup> Karshedt, *supra* note 33, at 1618–19 (discussing the more indirect way in which type two ex post evidence is used in obviousness analysis).

<sup>110</sup> See *supra* text accompanying notes 79–80.

<sup>111</sup> See *supra* Introduction (discussing the two types of ex post information).

<sup>112</sup> Karshedt, *supra* note 33, at 1671 (discussing ex post evidence relevant to obviousness inquiry).

<sup>113</sup> See, e.g., *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1336 (Fed. Cir. 2003) (considering postfiling evidence for enablement inquiry).

<sup>114</sup> *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1358 (Fed. Cir. 2010) (noting “the vast scope of these generic claims” as a reason to invalidate the patent under the written description doctrine); *Mayo Collaborative Servs. v. Prometheus Lab’ys., Inc.*, 566 U.S. 66, 86 (2012) (“And so there is a danger that the grant of patents that tie up the[] use [of natural laws] will inhibit future innovation premised upon them, a danger that becomes acute when a patented process amounts to no more than an instruction to ‘apply the natural law,’ or otherwise forecloses more future invention than the underlying discovery could reasonably justify.”).

however, its use for claim construction is not clearly established, as detailed in Part III.

### C. Flexible Rights Create Notice Difficulties

The flexibility inherent in patent law doctrine creates notice issues. A predictable system of notice is necessary to allow patentees to license or otherwise commercialize the invention, and for others to design around or build on it.<sup>115</sup> A legal structure based on intangible rights designed to maintain flexibility to accommodate for ex ante informational deficiencies will of course have difficulties with predictable notice.<sup>116</sup>

Before 1870, the U.S. patent system relied on “central claiming,” where a patent application described the central features of an invention and courts of law decided the scope of the invention based on the significance of its contribution and its similarity to an accused device.<sup>117</sup> As this system was perceived as too flexible to provide sufficient notice, patent law transitioned to the current “peripheral claiming” system, where separate claims were used to determine the outer boundaries of an invention.<sup>118</sup>

Switching to peripheral claiming did not transition U.S. patent law from a flexible rights system to an immutable rights system, however. Peripheral claiming simply provided the illusion of improved notice.<sup>119</sup> The need for flexibility remained. The focus on a single textual sentence to describe an intangible asset infused claim construction with an inherent uncertainty.<sup>120</sup> Since all the details of the invention could not be spelled out in a single sentence, claims began to use abstract language to define the main principle of the invention.<sup>121</sup> Claim construction in its current state involves deciding how much of the details of the specific way

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<sup>115</sup> Lidiya Mishchenko, *Thank You for Not Publishing (Unexamined Patent Applications)*, 47 *BYU L. REV.* 1563, 1603–04 (2022).

<sup>116</sup> See Menell & Meurer, *supra* note 7, at 52 (“Intangible resources are inherently more difficult to describe and identify.”); Burk & Lemley, *supra* note 4, at 1745.

<sup>117</sup> Burk & Lemley, *supra* note 4, at 1746.

<sup>118</sup> See Fromer, *supra* note 105, at 762 (discussing “the assertion that peripheral claims provide clear ex ante content notice to the public”).

<sup>119</sup> Burk & Lemley, *supra* note 4, at 1782 (“[P]eripheral claiming . . . purport[s] to set forth the maximal boundary of the patent grant during the application process, before the measure of the inventor’s contribution or the different variants that competitors might adopt can be properly assessed.”).

<sup>120</sup> See sources cited *supra* note 116.

<sup>121</sup> Burk & Lemley, *supra* note 4, at 1745 (“[C]laim construction may be inherently indeterminate: it may simply be impossible to cleanly map words to things.”).

in which the patentee performed their invention—as detailed in the rest of the patent document—should be imported into defining the abstract words in the claim.<sup>122</sup> The uncertainty in the level of abstraction required by claim construction therefore leaves a lot of discretion to the decision-maker in how the words are construed.<sup>123</sup> Many scholars have come to agree that some level of probability or malleability is a fact of the way patent law is structured today.<sup>124</sup>

In *Phillips*, the Federal Circuit attempted to address this gap by explaining that the claim language and the patent document (also called a “specification”) provide the primary sources of claim meaning.<sup>125</sup> Yet the case did not clarify the tension in prior case law about *how much* one should import from the patent document to interpret the claim.<sup>126</sup> Are the details about the invention in the patent document merely examples of a broader scope, or should these details be read to limit the claims? If a claim has the word “board” but all the examples in the specification refer only to wooden boards, does that mean the word “board” should be narrowed in scope to mean “wooden board”?<sup>127</sup>

The uncertainty in claim construction also increased more recently to accommodate the demise of another legal doctrine that had previously provided flexibility—the doctrine of equivalents.<sup>128</sup> That doctrine allowed courts to expand scope for infringement purposes in order to include applications of an invention that would have been unforeseeable at the time of filing.<sup>129</sup> Just as with central claiming, this doctrine was perceived

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<sup>122</sup> See Chiang, *supra* note 89, at 1128–29 (text accompanying Figure 2).

<sup>123</sup> Chiang, *supra* note 89, at 1124 (“[J]udges are required to engage in the delicate and policy-laden line-drawing task of finding the ‘right’ level of abstraction for a particular patent.”); *SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1347 (Fed. Cir. 2001) (Dyk, J., concurring) (“[O]ur decisions provide inadequate guidance as to when it is appropriate to look to the specification to narrow the claim by interpretation and when it is not appropriate to do so. Until we provide better guidance, I fear that the lower courts and litigants will remain confused.”).

<sup>124</sup> Rantanen, *supra* note 74, at 950; see, e.g., Mark A. Lemley & Carl Shapiro, *Probabilistic Patents*, 19 J. ECON. PERSPS., Spring 2005, at 75, 75 (observing that “[f]or many years, economists typically conceptualized patents as well-defined property rights” but noting that this belief has changed more recently).

<sup>125</sup> *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314–15 (Fed. Cir. 2005) (en banc).

<sup>126</sup> See *id.* at 1323 (“[U]pon reading the specification in . . . context, it will become clear whether the patentee is setting out specific examples of the invention to accomplish [the goals of the invention], or whether the patentee instead intends for the claims and the embodiments in the specification to be strictly coextensive.”).

<sup>127</sup> Example based on facts in *Nystrom v. Trex Co.*, 424 F.3d 1136 (Fed. Cir. 2005).

<sup>128</sup> *Burk & Lemley*, *supra* note 4, at 1746, 1764 (discussing the now-defunct system of central claiming and the erosion of the doctrine of equivalents).

<sup>129</sup> Lemley, *supra* note 74, at 120.

to undermine predictable notice.<sup>130</sup> Yet, the need for flexibility remains, and the uncertainty had to be shifted from that doctrine to claim construction.<sup>131</sup>

#### D. *Federal Circuit Disregards All Indeterminacy*

Instead of acknowledging the inherent uncertainty in claim construction, or the necessity for flexibility to reassess claim scope *ex post*, the Federal Circuit has doubled down on the immutable rights theory of patent scope. From the immutable rights theory of claims, and its emphasis on the importance of notice, the court has conceptualized of the exercise of claim construction as being purely legal. The fact that the Supreme Court affirmed the Federal Circuit's *Markman I* decision<sup>132</sup> and agreed that claim construction is a task solely for the court<sup>133</sup> helped bolster this notion.

In the Federal Circuit's *Markman I* decision, the court explained its theoretical view of claim construction. The court explained that “[w]hen a court construes the claims of the patent, it . . . is defining the federal legal rights created by the patent document.”<sup>134</sup> It then emphasized the connection between immutability of the right, notice, and construction as a legal exercise:

[C]ompetitors should be able to rest assured, if infringement litigation occurs, that a judge, trained in the law, will . . . analyze the text of the patent and its associated *public record* and apply the established rules of construction, and in that way arrive at the *true and consistent scope* of the patent owner's rights to be given legal effect.<sup>135</sup>

Therefore, the analogy between statutory construction and claim construction seemed apt to the court. The court explained that, like statutes, “patents[] are enforceable against the public” and “all persons are presumed to be aware of and are bound” by the language of a patent.<sup>136</sup> Just as with claims, “[t]here can be only one correct interpretation of a

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<sup>130</sup> Paul R. Michel, *The Role and Responsibility of Patent Attorneys in Improving the Doctrine of Equivalents*, 40 IDEA: J.L. & TECH. 123, 123 (2000) (calling the doctrine of equivalents “the most difficult and least predictable of all doctrines in patent law to apply”).

<sup>131</sup> See Burk & Lemley, *supra* note 4, at 1764 (discussing how the erosion of the doctrine of equivalents has put emphasis back on literal claim construction).

<sup>132</sup> *Markman I*, 52 F.3d 967 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996).

<sup>133</sup> *Markman II*, 517 U.S. 370, 372 (1996).

<sup>134</sup> *Markman I*, 52 F.3d at 978.

<sup>135</sup> *Id.* at 979 (emphasis added).

<sup>136</sup> *Id.* at 987.

statute that applies to all persons.”<sup>137</sup> And, in the court’s view, just like with statutory construction, claim construction involves consideration of traditional canons of construction and a publicly available record of the document’s formation.<sup>138</sup>

The *Markman I* opinion was quite extreme in its view of claims as being immutable, legally divined constructs without any factual underpinnings that may need to be considered to resolve their indeterminacy. That court contended that “extrinsic evidence cannot add, subtract, or vary the limitations of the claims,”<sup>139</sup> and that “[i]t is not [factual] ambiguity in the document that creates the need for extrinsic evidence but rather unfamiliarity of the court with the terminology of the art to which the patent is addressed.”<sup>140</sup>

Since that opinion, some current members of the Federal Circuit have softened to the idea that claim construction may have underlying issues of fact.<sup>141</sup> Yet the signs of the old formalist approach of immutable rights and perfect notice still linger. For instance, in the *Phillips* opinion, which was decided ten years after *Markman I*, the court still downplayed the relevance of ex post information in comparison to intrinsic evidence. For example, it encouraged “a court [to] discount any expert testimony ‘that is clearly at odds with the claim construction mandated by the claims themselves, the written description, and the prosecution history, in other words, with the written record of the patent.’”<sup>142</sup> The court proceeded to decide the claim dispute in the case based only on its reading of the specification and claim language.<sup>143</sup> And the court refused to consider whether its claim construction was so broad as to render the patent invalid.<sup>144</sup> It emphasized that consideration of invalidity is not “a regular component of claim construction.”<sup>145</sup>

And when the court sat en banc to review the question of the nature of claim construction again in 2014, for *Lighting Ballast Control LLC v. Philips Electronics North America Corp.*, a majority of the court still voted to treat claim construction as a question of law.<sup>146</sup> The majority opinion still made reference to its old statutory construction analogy it

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<sup>137</sup> *Id.*

<sup>138</sup> *Id.*

<sup>139</sup> *Id.* at 985.

<sup>140</sup> *Id.* at 986.

<sup>141</sup> See *Lighting Ballast Control LLC v. Philips Elecs. N. Am. Corp.*, 744 F.3d 1272, 1296 (Fed. Cir. 2014) (O’Malley, J., dissenting).

<sup>142</sup> *Phillips v. AWH Corp.*, 415 F.3d 1303, 1318 (Fed. Cir. 2005) (quoting *Key Pharms. v. Hercon Lab’ys Corp.*, 161 F.3d 709, 716 (Fed. Cir. 1998)).

<sup>143</sup> See *id.* at 1324–27.

<sup>144</sup> *Id.* at 1326–27.

<sup>145</sup> *Id.* at 1327.

<sup>146</sup> 744 F.3d at 1276–77 (reaffirming de novo review of district court claim construction).

had also referenced in *Markman I*.<sup>147</sup> And Judge Lourie has emphasized (in another case) the importance of notice in curbing abuse:

Courts should be reluctant to go beyond the written [intrinsic] record . . . . It is too subject to ex post facto thinking based on self-interest; the inventor had his chance to define his invention and should not be heard in later testimony to get another bite at the apple by redefining that language.<sup>148</sup>

Therefore, the Supreme Court's *Teva* opinion<sup>149</sup> in 2015 changed little about the Federal Circuit's general theory of claim construction.<sup>150</sup> In recognizing that the analysis of the type of evidence the Federal Circuit generally ignores—extrinsic evidence<sup>151</sup>—may involve questions of fact, the Supreme Court hardly made any difference in the Federal Circuit's approach. The Federal Circuit has continued to look primarily at intrinsic evidence to construe claims as a matter of law.<sup>152</sup>

Treating the claim construction inquiry as a pure question of law or as a primarily textual exercise denies the flexibility inherent in the process, a flexibility mandated by a foundational, functional patent law rationale.<sup>153</sup> The Federal Circuit's approach seems to extricate most merit-based considerations and ex post information from the process. Though other scholars have acknowledged the indeterminacy of claim scope<sup>154</sup> and have advocated for various functional, fact-intensive approaches to claim construction,<sup>155</sup> none have addressed the need for ex post information in the analysis.<sup>156</sup> But it is illogical to isolate the claim

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<sup>147</sup> *Id.* at 1284 (“Reference to technical understanding and usage at the time of enactment does not convert statutory interpretation from law to fact.”); see also *Markman I*, 52 F.3d 967, 987 (Fed. Cir. 1995) (en banc).

<sup>148</sup> *Lighting Ballast*, 744 F.3d at 1293 (Lourie, J., concurring).

<sup>149</sup> *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 574 U.S. 318 (2015).

<sup>150</sup> See Rantanen, *supra* note 73, at 448, 450.

<sup>151</sup> See, e.g., Anderson & Menell, *supra* note 7, at 47 (noting that only 12.1% of claim construction cases on appeal referred to expert testimony).

<sup>152</sup> See Rantanen, *supra* note 73, at 450–51.

<sup>153</sup> See *supra* Section II.B.

<sup>154</sup> Chiang, *supra* note 89, at 1109 (commenting on claim construction indeterminacy); Burk & Lemley, *supra* note 4, at 1745 (same).

<sup>155</sup> Holbrook, *supra* note 92, at 780 (proposing that intrinsic evidence creates a conclusion about claim scope that can be rebutted with extrinsic evidence); J. Jonas Anderson, *Specialized Standards of Review*, 18 STAN. TECH. L. REV. 151, 181 (2014) (proposing a standard of review that “would maintain *de novo* review of the ultimate question of claim interpretation, yet require the Federal Circuit to defer to evidentiary findings of the district court that look more like fact than the overall interpretive process”).

<sup>156</sup> Craig Nard has advocated for a “pragmatic textualism” approach to claim construction that “is more sensitive to [general] consequences.” Nard, *supra* note 7, at 35. He has also emphasized that courts should “properly balance the incentives of the original patentee with those of the improver.” *Id.* at 40. But Professor Nard was critiquing hypertextualism and advocating for greater

construction inquiry from the rest of the merits of the case and from the information that became available *ex post*. If the indeterminacy of claim scope is accepted, then the court's current approach of siloing the claim construction inquiry is either random or evasive. Whether the court is randomly choosing claim scope, blind to the outcome, or is actually considering the outcome but not expressing its reasoning, either way, the process is illegitimate.<sup>157</sup> Instead, the court needs to develop a claim construction doctrine that provides guidance to district courts about how to fill this discretionary gap with information that accounts for the interests of both inventors and follow-on innovators.

### III. THE FEDERAL CIRCUIT APPROACH IN ACTION

So what is the relevance of *ex post* information to claim construction? Under the most idealized version of the Federal Circuit's immutable right construction, the answer would be "none." A court should be able to determine claim scope as a textual exercise, without needing to know anything about the accused device or any other information that was not reasonably available to the PTO at the time of examination. And the outcome of this exercise should be predictable because this is a legal inquiry—no messy facts to weigh. This is the way it should work: claims provide *ex ante* notice; market participants know what the boundaries of inventions are; and district courts, if they follow

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emphasis on the standard forms of extrinsic evidence already used by courts in claim construction. See *id.* at 6. He was not proposing express consideration of *ex post* information—such as invalidity and infringement arguments—in claim construction analysis. Peter Lee has proposed that courts consider "exogenous subject matter" such as "a patented invention's technological contribution, attributes of the allegedly infringing device, and the competitive landscape in which these technologies operate" in their claim construction analysis. Lee, *supra* note 12, at 105, 107. He did not, however, propose a fundamental shift in how courts treat *ex post* information in claim construction, or even assert that such evidence is relevant in every case. *Id.* at 107 (explaining that his proposal is "quite modest" and "intended merely as a 'tiebreaker' where traditional claim construction methodology does not provide a clear answer."). Instead, he viewed claim construction as an additional lever to enact policy. *Id.* at 100–01.

<sup>157</sup> For example, with facts based loosely on *Sitrick v. Dreamworks, LLC*, a court can decide that a method claim can include both video games and movies, but then invalidate the same claim as not being enabled for movies. 516 F.3d 993, 996 (Fed. Cir. 2008). It seems odd, then, that the court does not consider enablement in its initial claim construction inquiry. If the claim scope was ambiguous enough to be disputed, then a specification that does not enable both video games and movies may indicate that claim scope may likewise be narrower. *Id.* at 1000. As Timothy Holbrook puts it, "it would seem more appropriate, if we do value patents, for the courts to err on the side of offering narrower claim constructions that may result in noninfringement, but nevertheless preserve validity." Holbrook, *supra* note 92, at 803. And if the court wants to punish patentees for asserting claims too broadly or for drafting them imprecisely, then it should expressly say so, instead of purporting to objectively construe the claims.



the rules, should reach predictable outcomes that everyone expects.<sup>158</sup> There is no indeterminacy; no room for discretion or policy.

And, as discussed above, the Federal Circuit has not strayed very far from this idealization of claim construction. The below discussion provides examples of how the Federal Circuit ignores the inherent uncertainty in claim construction and inconsistently acknowledges the need for ex post information in reassessing claim scope for infringement and validity purposes.

### A. *Infringement*

The Federal Circuit has inconsistently considered ex post information in claim construction cases related to infringement, clouding its guidance in this context. The Federal Circuit's formalist approach to claim construction—that it is a question of law with a correct, determinate answer independent of any ex post contextual information—has recently been softening when it comes to infringement inquiries. The court used to worry that the consideration of the accused device or the infringement analysis would somehow introduce bias into the claim construction process, and make it “a matter of judicial whim.”<sup>159</sup> It used to “repeatedly state[] that a court must construe claims without considering the implications of covering a particular product or process.”<sup>160</sup>

But more recent cases have admitted that the factual context of a case—the context constituting the infringement inquiry—is often necessary to perform claim construction. Perhaps some members of the court have realized that it is difficult to appreciate the full scope of claim language with the limited or abstractly defined examples provided in the patent document.<sup>161</sup> In *Wilson Sporting Goods Co. v. Hillerich & Bradsby Co.*, the court admitted that “knowledge of [the accused] product or process provides meaningful context for the first step of the infringement

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<sup>158</sup> But see David L. Schwartz, *Practice Makes Perfect? An Empirical Study of Claim Construction Reversal Rates in Patent Cases*, 107 MICH. L. REV. 223, 258 n.161 (2008) (“[D]istrict court judges do not appear to improve at claim construction as they hear more cases.”).

<sup>159</sup> *SRI Int'l v. Matsushita Elec. Corp. of Am.*, 775 F.2d 1107, 1118 (Fed. Cir. 1985) (“A claim is [not] construed . . . in light of the accused device. . . . [C]laims are not construed ‘to cover’ or ‘not to cover’ the accused device. That procedure would make infringement a matter of judicial whim. It is only *after* the claims have been *construed without reference to the accused device* that the claims, as so construed, are applied to the accused device to determine infringement.”); see also *NeoMagic Corp. v. Trident Microsystems, Inc.*, 287 F.3d 1062, 1074 (Fed. Cir. 2002) (“[C]laims may not be construed by reference to the accused device.”).

<sup>160</sup> *SmithKline Beecham Corp. v. Apotex Corp.*, 403 F.3d 1331, 1340 (Fed. Cir. 2005).

<sup>161</sup> See Reilly, *supra* note 6, at 1128–29.

analysis, claim construction.”<sup>162</sup> And despite the fact that only claim construction issues were on appeal in that case,<sup>163</sup> the Federal Circuit panel was frustrated because without “information about the accused products,” it was also unable to “assess the accuracy of any infringement or validity determination.”<sup>164</sup>

Although some language in *Wilson Sporting Goods* appeared to hint that the court considers invalidity and infringement in its claim construction inquiry, the court was still cautious in that case to explain that “a trial court should certainly not prejudge the ultimate infringement analysis by construing claims with an aim to include or exclude an accused product or process.”<sup>165</sup> Two years later, however, in *Jang v. Boston Scientific Corp.*, the Federal Circuit was less cautious about blurring the line between infringement and claim construction, “not[ing] the difficulty of construing claims without the ability to compare the accused products to the asserted claims.”<sup>166</sup> But comparing the accused products to the asserted claims is the very analysis of infringement. Therefore, the court more or less admitted in *Jang* that those two inquiries are difficult to separate in practice.

If the *Jang* case was not explicit enough, the court truly crossed the line from claim construction to infringement analysis in *O2 Micro International Ltd. v. Beyond Innovation Technology Co.*<sup>167</sup> In that case, the invention pertained to a circuit used to power laptop backlights.<sup>168</sup> To prevent circuit damage, the circuit operated “only if” a signal in the circuit was above a certain threshold.<sup>169</sup> The accused infringer argued that the accused device did not meet this claim limitation because it continued to operate when this signal was below the threshold during startup and delay periods.<sup>170</sup> The patentee, O2 Micro, in turn argued that the claims do not apply to startup or delay periods, but only to steady state operation, and that there was thus still infringement.<sup>171</sup> Although the district court appreciated that the dispute was over “whether or not ‘there can be an

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<sup>162</sup> 442 F.3d 1322, 1326–27 (Fed. Cir. 2006).

<sup>163</sup> “In this case, the parties stipulated that the accused device infringed under the trial court’s claim construction.” *Id.* at 1331.

<sup>164</sup> *Id.* at 1327.

<sup>165</sup> *Id.* at 1326.

<sup>166</sup> 532 F.3d 1330, 1337 (Fed. Cir. 2008).

<sup>167</sup> 521 F.3d 1351, 1354 (Fed. Cir. 2008); see Jason R. Mudd, *To Construe or Not to Construe: At the Interface Between Claim Construction and Infringement in Patent Cases*, 76 MO. L. REV. 709, 726 (2011) (discussing how *O2 Micro* encouraged district courts to “construe away factual questions of infringement”).

<sup>168</sup> *O2 Micro*, 521 F.3d at 1354.

<sup>169</sup> *Id.* at 1355–56.

<sup>170</sup> *Id.* at 1356–57.

<sup>171</sup> *Id.* at 1357, 1360.

exception' to the 'only if' language," it declined to construe the term "only if" and submitted the infringement inquiry to the jury.<sup>172</sup>

The Federal Circuit found error in the district court's decision to submit what it deemed a "dispute over the scope of the asserted claims" to the jury because it was "a question of law."<sup>173</sup> Yet this case demonstrates that to resolve a claim construction dispute such as this one, the court basically had to assess a hypothetical question of infringement: Does the claim's "only if" language include the accused device's exceptions to operating when a signal is not above a certain threshold?<sup>174</sup>

Interestingly enough, after explaining that claim construction is "a question of law," the appeals court in *O2 Micro* still recognized that "the district court is in the best position to determine the proper construction of this claim term in the first instance" and remanded.<sup>175</sup> Notably, the court did not explain why the district court is in a better position to determine claim construction. How can a district court be in a better position to determine a question of law that is clearly defined through a textual exercise of construction? The court did not grapple with this inconsistency.

Perhaps for that reason, remanding to the district court for claim construction is not typical behavior.<sup>176</sup> Even after *O2 Micro*, the Federal Circuit has continued, as it had before, to simply proclaim its own assessment of what the correct claim construction should be in a case because of its plenary review over the issue and a lack of any hesitation in essentially finding facts on appeal (without admitting it).<sup>177</sup> The pretense that claim construction is a question of law that (usually) does not depend on ex post information thus continues, even in the context of infringement.

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<sup>172</sup> *Id.* at 1357–58 (quoting *O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co.*, No. 04-CV-32, 2005 WL 6343460, at \*1 (E.D. Tex. Aug. 26, 2005)).

<sup>173</sup> *Id.* at 1361–63; see also *id.* at 1362 n.3 ("[T]he court, and not the jury, should resolve claim construction disputes.").

<sup>174</sup> Mudd, *supra* note 167, at 725 ("[The *O2 Micro* opinion] demonstrates that claim construction can sometimes be thought of as an exercise in assessing hypothetical questions of infringement."). The court itself admitted the dispute was not a question about the "meaning" of the term "only if" but about its "scope." *O2 Micro*, 521 F.3d at 1361.

<sup>175</sup> *O2 Micro*, 521 F.3d at 1361, 1363.

<sup>176</sup> Rai, *supra* note 10, at 1060 (explaining that the Federal Circuit often makes its own claim construction determinations and is "tempted" to not even remand for the district court to retry infringement based on the new construction).

<sup>177</sup> *Id.* at 1059 (discussing how the Federal Circuit "arrogate[s] power over issues even it admits are largely factual, such as infringement"). For instance, in *Pressure Products Medical Supplies, Inc. v. Greatbatch Ltd.*, 599 F.3d 1308 (Fed. Cir. 2010), a post-*O2 Micro* case, the Federal Circuit selected a claim construction for the district court instead of remanding on that point, *id.* at 1318 (adopting magistrate's original construction).

## B. Invalidity

The Federal Circuit has been even more vehement that a court should not consider invalidity in its claim construction decisions, ignoring the time-dependent nature of claim scope assessment. The *Phillips* opinion stated that the practice of construing claims to preserve their validity is “a doctrine of limited utility” and is not “a regular component of claim construction.”<sup>178</sup> The Federal Circuit warned in *Hill-Rom Services, Inc. v. Stryker Corp.* that “[c]ourts should be cautious not to allow claim construction to morph into a mini-trial on validity.”<sup>179</sup> In *SmithKline Beecham Corp. v. Apotex Corp.*, the line was drawn again:

Claim construction . . . is not a policy-driven inquiry. . . . [I]t is a contextual interpretation of language. The scope of patent claims can neither be broadened nor narrowed based on abstract policy considerations regarding the effect of a particular claim meaning. “[I]t is well settled that no matter how great the temptations of fairness or policy making, courts do not redraft claims.”<sup>180</sup>

This description of claim construction is in tension not just with the functional policy considerations requiring ex post flexibility of patent rights,<sup>181</sup> but also with the court’s softening stance on the same issues when it comes to infringement. Claims are construed to have the same meaning for infringement and invalidity purposes.<sup>182</sup> This integrated approach to claim construction is not just intuitively logical but prevents gamesmanship by parties attempting to argue for more favorable construction for one set of purposes than for another.<sup>183</sup> After all, someone cannot be an infringer if they are practicing something that is in the public domain. One cannot infringe an invalid patent. But if the court has pushed claim construction into the realm of considering hypothetical infringement scenarios, how can the same court be unable to consider the validity implications of those hypothetical scenarios?

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<sup>178</sup> *Phillips v. AWH Corp.*, 415 F.3d 1303, 1327–28 (Fed. Cir. 2005).

<sup>179</sup> 755 F.3d 1367, 1374 (Fed. Cir. 2014).

<sup>180</sup> 403 F.3d 1331, 1339–40 (Fed. Cir. 2005) (second alteration in original) (citation omitted) (quoting *Quantum Corp. v. Rodime, PLC*, 65 F.3d 1577, 1584 (Fed. Cir. 1995)).

<sup>181</sup> See *supra* Section II.B; see also *Phillips*, 415 F.3d at 1333 (Mayer, J., dissenting) (describing claim construction as being similar to obviousness analysis).

<sup>182</sup> Lemley & McKenna, *supra* note 54, at 2269 (“[C]ourts . . . [have] rebelled against the idea that the same claim should have different meanings [for infringement and invalidity].”); *Markman I*, 52 F.3d 967, 998 n.8 (Fed. Cir. 1995) (en banc) (Mayer, J., concurring) (noting the “traditional rule that patents are interpreted for validity just as they are for infringement”).

<sup>183</sup> See Lemley & McKenna, *supra* note 54, at 2241 (“[P]atent owners are often willing to trade a greater risk of eventual invalidity to gain a broad scope for their possibly invalid patent claims.”).

The line between claim construction and invalidity is sometimes very thin, but the court has been careful not to cross it, hiding behind arguments about intrinsic evidence. In *Kinetic Concepts, Inc. v. Blue Sky Medical Group, Inc.*, a panel of the Federal Circuit seemed to split about the meaning of the term “wound” in a claim for treating hard-to-heal wounds by applying suction.<sup>184</sup> The majority decided to limit the term to skin wounds based on the examples in the specification,<sup>185</sup> while the dissent argued that the specification only provided examples and did not intend to limit the term “wound” this way.<sup>186</sup> Just as in *Phillips*, the panel refused to recognize the discretion inherent in deciding how much of the specification should be imported into the scope of the claim.<sup>187</sup>

And the discretion seemed to be related to the other factor at play in the opinion—invalidity based on ex post evidence. The accused infringer had argued that the claims are obvious based on prior art documents that had not been presented to the examiner.<sup>188</sup> These new references and the new arguments of obviousness based thereon were compelling enough that the patentee attempted to narrow the scope of the term “wound” to avoid them.<sup>189</sup> The panel majority thought there was “[s]ubstantial [e]vidence of [n]onobviousness” “under the proper [narrower] construction” of the term “wound.”<sup>190</sup> The dissent contended that there was “uncontroverted evidence demonstrat[ing] obviousness under the [broader] construction” of the term.<sup>191</sup>

Although neither the majority nor the dissent admitted that considerations of invalidity influenced their claim construction decision, there seems to be no other principled reason why one would pick one definition of “wound” over the other. The panel seemed to be reassessing

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<sup>184</sup> 554 F.3d 1010 (Fed. Cir. 2009).

<sup>185</sup> *Id.* at 1019.

<sup>186</sup> *Id.* at 1027 (Dyk, J., dissenting).

<sup>187</sup> See Chiang, *supra* note 89, at 1109.

<sup>188</sup> Jury instructions and the patent document confirm that most of the prior art documents presented at trial were not presented to the examiner. Compare U.S. Patent No. 5,636,643 (filed Mar. 9, 1993) (listing references cited during examination), with *Kinetic Concepts, Inc. v. BlueSky Med. Corp.*, No. SA-03-CA-0832, 2006 WL 3825816 (W.D. Tex. July 14, 2006) (jury instructions listing “[a]greed [p]rior [a]rt”).

<sup>189</sup> *Kinetic Concepts*, 554 F.3d at 1026 (Dyk, J., dissenting) (“At trial, Plaintiffs argued the definition of ‘wound’ to the jury in an effort to distinguish the prior art . . .”).

<sup>190</sup> *Id.* at 1019 (majority opinion). The court, agreeing “that ‘wound,’ as used in the asserted patents, does not cover the fistulae described in the Chariker-Jeter publications and the ‘pus pockets’ described in the Davydov references,” *id.* at 1018, was critical in determining that the patent was not obvious in view of those references, see *id.* at 1029 (Dyk, J., dissenting) (“Extensive evidence was presented at trial of public uses to heal fistula’s [sic] caused by surgical incisions, by both Dr. Chariker and Dr. Jeter.”); see also *id.* at 1017 (majority opinion) (not negating the argument that the “construction of ‘wound’ . . . was critical to the obviousness inquiry”).

<sup>191</sup> *Id.* at 1029 (Dyk, J., dissenting).

the scope of the invention based on ex post evidence of invalidity. Though we can only guess, it seems like the majority believed that the invention was significant enough of a contribution to the state of the art that it should not be invalidated in its entirety. The dissent favored outright invalidity, perhaps based on the new prior art evidence.<sup>192</sup> But all we have in the opinion is a discussion of the specification. The rest is guesswork. All the reader is left with is the sense that the Federal Circuit, in the words of one of its own judges, “decide[s] cases according to whatever mode or method results in the outcome [it] desire[s].”<sup>193</sup>

The court’s stilted approach appeared in another case, *Hill-Rom*. The invention was smart hospital beds—beds equipped with sensors for patient monitoring.<sup>194</sup> The claims included a remote “processing station” that “receiv[ed] . . . bed condition messages over [a] datalink.”<sup>195</sup> The dispute was over whether the term “datalink” included a wireless connection.<sup>196</sup>

The majority decided that the term does include wireless communication, reversing the district court.<sup>197</sup> The opinion reflects the court’s archetypal textual approach to claim construction, focusing on a term’s “plain and ordinary meaning,”<sup>198</sup> and using its standard canonical language, such as “we do not read limitations from the embodiments in the specification into the claims.”<sup>199</sup> Although the specification only used examples where “datalink” is a wired connection, the court insisted “absent some language in the specification or prosecution history suggesting that the wired connection is important . . . there is no basis to narrow the plain and ordinary meaning of the term datalink to one type of datalink—a cable.”<sup>200</sup>

The majority completely disregarded the district court’s concern that the patent would not be enabled if its scope included wireless connections<sup>201</sup> because, as the district court explained, the patent “fail[ed] to describe wireless data transfer.”<sup>202</sup> It insisted that “we do not rewrite

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<sup>192</sup> *Id.* at 1025–26 (“Under the correct construction of this claim term, the asserted claims . . . would have been obvious.”).

<sup>193</sup> *Phillips v. AWH Corp.*, 415 F.3d 1303, 1330 (Fed. Cir. 2005) (Mayer, J., dissenting).

<sup>194</sup> *Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1370 (Fed. Cir. 2014).

<sup>195</sup> *Id.* at 1370–71 (first emphasis omitted).

<sup>196</sup> *Id.* at 1371.

<sup>197</sup> *Id.* at 1375, 1382.

<sup>198</sup> *Id.* at 1371.

<sup>199</sup> *Id.*

<sup>200</sup> *Id.* at 1373.

<sup>201</sup> *See id.* at 1374.

<sup>202</sup> *Hill-Rom Servs., Inc. v. Stryker Corp.*, No. 11-cv-1120, 2013 WL 364568, at \*7 (S.D. Ind. Jan. 30, 2013).

the claim to preserve its validity.”<sup>203</sup> The opinion did not even address the district court’s finding that, if wireless technology were contemplated by the patent, then the description “would present a practical problem without providing the technological support for it.”<sup>204</sup> Specifically, because “a hospital bed that wirelessly transmits information to a remote location could be located anywhere in the hospital,” the “patent[] do[es] not contemplate that problem or disclose technological support for locating the beds.”<sup>205</sup>

The dissent pointed out the fact that the majority disregarded other *ex post* evidence in reaching its claim construction decision—evidence that would have likely been considered later, at the invalidity stage of a case. Specifically, that “fourteen years after the filing date of the patents-in-suit, [the patentee] filed [a patent application that] was expressly directed to wireless bed connections.”<sup>206</sup> That later-filed application characterized the older disputed patent as having only a wired connection, and similarly distinguished other prior art for not using wireless technology.<sup>207</sup> The dissent explains that “[t]he only reasonable conclusion that can be drawn” from this evidence is that a person of ordinary skill in the art would understand the disputed patent “as lacking a wireless datalink.”<sup>208</sup>

Again, we are only left to guess why the majority disregarded all of these *ex post* data points in choosing to read the claim more broadly. Perhaps the majority believed that the contribution of the patented invention was significant enough to warrant broader scope? Again, we will never know.

### C. *Problems with the Current Approach*

While previous literature has criticized the textualism and formalism in the Federal Circuit’s claim construction approach,<sup>209</sup> no scholarship has posited that the problems may stem from the court’s inconsistent treatment of *ex post* information in the analysis.<sup>210</sup>

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<sup>203</sup> *Hill-Rom*, 755 F.3d at 1374.

<sup>204</sup> *Hill-Rom*, 2013 WL 364568, at \*7.

<sup>205</sup> *Id.*

<sup>206</sup> *Hill-Rom*, 755 F.3d at 1383 (Reyna, J., dissenting).

<sup>207</sup> *Id.* at 1383–84.

<sup>208</sup> *Id.* at 1384.

<sup>209</sup> See sources cited *supra* note 7.

<sup>210</sup> *Cf. supra* note 156.

## 1. Hidden Bias and Legitimacy Issues

The above examples demonstrate several problems. The most obvious one is that of transparency. We can only guess why the majority and dissenting judges decided to broaden or narrow the claims. It is possible that ex post issues, such as evidence and arguments of invalidity and infringement, influenced their opinions.

One issue with a lack of transparency is that it allows for hidden bias. In contract law, the idea that focusing on the “plain meaning” of the text to reduce hidden judicial bias has been largely debunked. Professor Arthur Corbin’s theory that consideration of extrinsic evidence actually reduces the influence of a judge’s hidden bias has been widely accepted in contract law.<sup>211</sup> He argued that “when a judge refuses to consider relevant extrinsic evidence on the ground that the meaning of written words is to him plain and clear, his decision is formed by and wholly based upon the completely extrinsic evidence of his own personal education and experience.”<sup>212</sup>

Therefore, the Federal Circuit’s focus on the intrinsic record and textual analysis may also be masking bias by specific judges. For example, the majority in *Hill-Rom* may have been attempting to use the case as a way to promote a pro-patent bias. Perhaps it was not the facts of the case, but a general tendency by the judges on the majority to construe patent claims broadly to reward patentees.

Fortunately, there are reasons to believe that lack of transparency is not hiding any sinister form of judicial capture.<sup>213</sup> Empirical studies show that the Federal Circuit judges tend to come out differently on cases depending on their facts, instead of having an observable pro- or anti-patent bias.<sup>214</sup> Presumably, the trend is the same for cases involving claim construction disputes. Moreover, scholars such as Professor Arti K. Rai have analyzed the court’s jurisprudence and have concluded that “although there are reasons to be concerned about capture, the capture theory does not provide the most comprehensive explanation of the court’s jurisprudence.”<sup>215</sup> The fact that capture is a possibility, however,

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<sup>211</sup> Stephen F. Ross & Daniel Tranen, *The Modern Parol Evidence Rule and Its Implications for New Textualist Statutory Interpretation*, 87 GEO. L.J. 195, 197 (1998).

<sup>212</sup> Arthur L. Corbin, *The Interpretation of Words and the Parol Evidence Rule*, 50 CORNELL L.Q. 161, 164 (1965).

<sup>213</sup> See Rai, *supra* note 10, at 1110 (discussing the theory that “the Federal Circuit has been captured by the patent bar and is using a thin veneer of formalism to disguise this capture”).

<sup>214</sup> John R. Allison & Mark A. Lemley, *How Federal Circuit Judges Vote in Patent Validity Cases*, 27 FLA. ST. U. L. REV. 745, 766 (2000) (“[T]he outcome of patent validity cases in the Federal Circuit has depended on the facts of the case, and not on the composition of the panel.”).

<sup>215</sup> Rai, *supra* note 10, at 1112.



still hurts the legitimacy of the Federal Circuit's claim construction jurisprudence.<sup>216</sup> The awkward opacity in the court's jurisprudence invites scholars, and even the judges of the court, to speculate about the hidden policy decisions underlying its reasoning.<sup>217</sup>

## 2. No Principled Reasoning

Another problem with the opacity of the Federal Circuit's claim construction opinions is that they provide no principled reasoning beyond the limited facts the court chooses to consider in the case. What do we learn from cases like *Kinetic Concepts* or *Hill-Rom*? How much do examples in a specification really limit claim construction? Apparently, as seen by the vehement dissents in these cases, reasonable minds often disagree. When the court is not forced to grapple with the case in an integrated fashion, or to explain its claim construction decisions in the context of the infringement and validity outcomes, much remains hidden, and little can be gleaned for future guidance.

Principled decisions are ones that are capable of general application as legal precedent. Judge Posner has argued that “maintain[ing] the uniformity and coherence of the law” is the “main responsibility” of an appellate court.<sup>218</sup> Professor Evan Tsen Lee has gone one step further in arguing that Judge Posner views “oversee[ing] the development of doctrine” as “the *only* legitimate function of appellate courts,”<sup>219</sup> and “that appellate courts are not directly concerned with ensuring that the correct result is reached as between the litigants at bar.”<sup>220</sup>

Claim construction opinions, as written by the Federal Circuit, focus so much on the case-specific facts (mostly in the intrinsic record) that “an attempt to build context into the [otherwise overinclusive] rule [stemming from one of these opinions] would destroy its generality and

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<sup>216</sup> See Jeffrey A. Lefstin, *Claim Construction, Appeal, and the Predictability of Interpretive Regimes*, 61 U. MIA. L. REV. 1033, 1033 (2007) (“But if interpretation is at the core of patent law, there are many who claim that core is now rotten.”).

<sup>217</sup> Chiang, *supra* note 89, at 1124 (“[C]onflicts in claim construction are more accurately viewed as disagreements over policy, not over textual methods.”); see also *Phillips v. AWH Corp.*, 415 F.3d 1303, 1330 (Fed. Cir. 2005) (Mayer, J., dissenting) (criticizing the Federal Circuit's approach of claim construction as “decid[ing] cases according to whatever mode or method results in the outcome we desire”).

<sup>218</sup> *Mucha v. King*, 792 F.2d 602, 605–06 (7th Cir. 1986) (citing *Brock v. TIC Int'l Corp.*, 785 F.2d 168, 171 (7th Cir. 1986)).

<sup>219</sup> Evan Tsen Lee, *Principled Decision Making and the Proper Role of Federal Appellate Courts: The Mixed Questions Conflict*, 64 S. CAL. L. REV. 235, 248 (1991).

<sup>220</sup> *Id.*

rob it of any meaningful precedential value.”<sup>221</sup> A number of Federal Circuit judges recently admitted as much:

Claim construction disputes are very fact specific—patents do not follow a formulaic structure, or even contain oft repeated language. . . . It is rare that any two claims we review contain the same phrasing, and even more rare that the context in which the phrasing is used would not alter the meaning of even almost identical words. . . . [Our jurisprudence] provides little practical guidance regarding how any claim construction dispute might be resolved in this forum . . . .<sup>222</sup>

For example, what would the rule resulting from the *Hill-Rom* case be? It cannot be that one is prohibited from importing limitations from the specification into the meaning of the claims. Plenty of Federal Circuit decisions have found the opposite.<sup>223</sup> And it cannot be that ex post information is never relevant to claim construction decisions. The Federal Circuit’s line of cases related to infringement and claim construction negate that rule.<sup>224</sup> It is just that, for the specific invention in *Hill-Rom* (smart hospital beds), with this specific patent description (and how it defined the word “datalink”), this panel majority felt it was appropriate to disregard ex post evidence (of later filed applications) that may have indicated the claim should be understood narrowly.<sup>225</sup>

Professor Lee explains why “[a] highly contextual rule such as this has virtually no precedential value.”<sup>226</sup> He adds that “[i]t is inconceivable that a future case would contain identical facts. At the same time, such a rule contains no guidance as to which of the facts are critical . . . . A future court would be left clueless.”<sup>227</sup>

### 3. Doctrinal Incoherence

Moreover, the court does not reconcile its sporadic consideration of ex post information on appeal (in claim construction and in other doctrines) with the theory of immutable patent rights. What relevance do

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<sup>221</sup> *Id.* at 265.

<sup>222</sup> *E.g.*, *Lighting Ballast Control LLC v. Philips Elecs. N. Am. Corp.*, 744 F.3d 1272, 1301–02 (Fed. Cir. 2014) (O’Malley, J., dissenting).

<sup>223</sup> *See, e.g.*, *Nystrom v. Trex Co., Inc.*, 424 F.3d 1136, 1143 (Fed. Cir. 2005) (defining “board” to mean “wood cut from a log” based on specification); *Kinetic Concepts, Inc. v. Blue Sky Med. Grp., Inc.*, 554 F.3d 1010, 1019 (Fed. Cir. 2009) (limiting the word “wound” to “skin wounds” based on specification).

<sup>224</sup> *See supra* Section III.A.

<sup>225</sup> *See supra* Section III.B.

<sup>226</sup> Lee, *supra* note 219, at 265.

<sup>227</sup> *Id.*

new arguments about obviousness, enablement, or infringement have in a world where rights are set *ex ante*? Why do we allow *ex post* information to invalidate a patent, but not to better define its scope? Why does the court believe examiners can make mistakes about validity—and thus consider *ex post* information to invalidate a patent<sup>228</sup>—but not necessarily about claim language? That logic only makes sense in a world where claim language is clearly determinate—a world that we do not live in.

For example, the majority in *Hill-Rom* seemed to be embracing a flexible meaning approach to claim construction. It said that just because a patent does not “teach” what is contained in an embodiment, such as a wireless receiver, does not mean that the patent cannot claim it.<sup>229</sup> That is because “a patent specification need not disclose or teach what is known in the art.”<sup>230</sup> Therefore, the majority was implicitly admitting that *ex post* information influenced how the scope of the patent was currently being perceived—as including wireless smart hospital beds—even though, *ex ante*, neither the examiner nor the applicant had foreseen such a possibility.<sup>231</sup>

But if that is the case, then how can the majority have dismissed the relevance of whether such an embodiment was enabled by the patent disclosure?<sup>232</sup> How can a court expand patent scope *ex post* without considering the effect this would have on its validity? Until the Federal Circuit abandons the pretense of immutable, property-like patent rights, we may never learn the answer.

#### 4. Frivolous Litigation

Denying the time-dependent, flexible nature of patent right interpretation and excising claim construction from the rest of the case leads to frivolous claim construction arguments. Scholars lament that the textualist bent of the modern claim construction inquiry divorces claim construction from the functional goal of patent law in promoting innovation.<sup>233</sup> Most debates over claim construction in litigation are focused on legal arguments about textual ambiguity, instead of the

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<sup>228</sup> See *supra* Section II.B.

<sup>229</sup> *Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1373 (Fed. Cir. 2014).

<sup>230</sup> *Id.*

<sup>231</sup> See *id.*

<sup>232</sup> See *id.* at 1374.

<sup>233</sup> Burk & Lemley, *supra* note 4, at 1765 (“The result is that, in modern patent litigation, patent scope—the key policy lever courts can use to ensure that patents encourage innovation—depends not on what the patentee invented but on what terms the patent prosecutor chose to use and how clever patent litigators are in twisting the meaning of those terms.”).

technological contribution of the patented invention.<sup>234</sup> This approach does not consider patent law's basic economic incentive structure in rewarding inventors while promoting follow-on technological work.<sup>235</sup> The current approach also raises the costs of litigation and allows gamesmanship by both patentees and accused infringers.<sup>236</sup> It is easier to lead astray a district court judge when parties focus only on how textual arguments can expand or narrow claim scope *ex post* in their favor. As Dan Burk and Mark Lemley have aptly put this, “[w]e have . . . taken our eyes off of the ball.”<sup>237</sup>

#### D. *Effect on District Courts*

Treating claim construction as a siloed, objective analysis in a case divorced from other issues has had deleterious effects on district courts. The lack of principled reasoning in claim construction opinions on appeal, along with the *de novo* standard of review, has made claim construction unpredictable and costly.<sup>238</sup> District courts get reversed more often on claim construction than any other issue.<sup>239</sup> And as even the few examples above demonstrate, the unpredictability of these reversals is in part due to the opaque nature of the claim construction inquiry, where much of the actual reasoning is hidden behind a veneer of textual pontification.<sup>240</sup> Claim construction decisions have been accused of being “panel-dependent and result-oriented.”<sup>241</sup> The same claim language has

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<sup>234</sup> See *id.* at 1752–56, 1760.

<sup>235</sup> See *supra* note 12.

<sup>236</sup> Burk & Lemley, *supra* note 4, at 1762 (“The shift in focus from the invention to the claim language allows both sides to game the process.”).

<sup>237</sup> *Id.* at 1762.

<sup>238</sup> Anderson & Menell, *supra* note 7, at 68–69 (arguing that *de novo* review “deprive[s] the district court of critical evidence bearing on claim meaning” and “undermines the appellate process” by leaving “[t]he parties, the public, and the appellate court” with “an anemic record—typically limited to the intrinsic evidence”); 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, 208 (2001) (criticizing the high rate of reversal of district court claim construction and the delay in certainty caused by the need to take a case to final judgment before claim construction issues can be appealed); Rai, *supra* note 10, at 1089 (discussing the “delayed certainty” in litigation caused by *de novo* review); see also *Lighting Ballast Control LLC v. Philips Elecs. N. Am. Corp.*, 744 F.3d 1272, 1310 (Fed. Cir. 2014) (O’Malley, J., dissenting).

<sup>239</sup> Anderson & Menell, *supra* note 7, at 40, 42 (documenting a 29.5% reversal of district court claim constructions on appeal from 2005 to 2011, which is higher than the 20% average rate for all appealed issues).

<sup>240</sup> See sources cited *supra* note 123.

<sup>241</sup> *Lighting Ballast*, 744 F.3d at 1301 (O’Malley, J., dissenting) (quoting Donald R. Dunner, *A Retrospective of the Federal Circuit’s First 25 Years*, 17 FED. CIR. B.J. 127, 130 (2007)); *id.* (noting

even led to different outcomes depending on when it was appealed in the course of a district court litigation.<sup>242</sup>

The unpredictability not only hurts the legitimacy of the claim construction process, but also has practical costs for district courts. The importance of claim construction issues to the outcome of the case and the unpredictability of the Federal Circuit's decision on appeal delay certainty for the parties.<sup>243</sup> Such review discourages settlement and encourages appeals.<sup>244</sup> Since the Federal Circuit refuses interlocutory appeals for claim construction issues (all while maintaining that the inquiry is primarily legal and textual), a district court must take a case to final judgment before being reversed on claim construction, often necessitating a new trial on remand.<sup>245</sup>

The Federal Circuit's approach to review of claim construction also discourages district courts from investing sufficient resources into producing cogent claim construction opinions. The Federal Circuit does so via two mechanisms. First, by emphasizing the intrinsic record and the legal nature of the inquiry, and by deemphasizing extrinsic evidence, the Federal Circuit has created a narrative that claim construction can be done quickly and early in a case.<sup>246</sup> This is reinforced by the court's adamant insistence that there is no need to consider validity arguments in claim construction, and perhaps not even infringement issues.<sup>247</sup> Therefore, most district courts complete claim construction before

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panel dependence of claim construction opinions); Anderson & Menell, *supra* note 7, at 50 (noting a six percent rate of dissent for claim construction opinions).

<sup>242</sup> *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1476–77 (Fed. Cir. 1998) (Rader, J., concurring in part and dissenting in part) (providing an example of a case where “the Federal Circuit reversed its own earlier claim interpretation as a question of law when the defendant and stage of the proceedings changed”); *Lighting Ballast*, 744 F.3d at 1314 n.8 (O’Malley, J., dissenting) (“It is curious that, when reserving the right to change our own claim constructions at later points in a single case, we justify that position on grounds that the greater fulsomeness of the record at the final judgment stage better informs our claim construction analysis. . . . If the trial record is effectively meaningless to the claim construction inquiry as we now hold, what more could we know about claim construction later in a case than we knew when we first visited it?”).

<sup>243</sup> Rai, *supra* note 10, at 1089.

<sup>244</sup> Anderson & Menell, *supra* note 7, at 70; see RICHARD A. POSNER, THE FEDERAL COURTS: CHALLENGE AND REFORM 89–92 (1996) (“[U]ncertainty as to outcome is the key to the settlement rate. . . .” (emphasis omitted)). *But see Lighting Ballast*, 744 F.3d at 1291 (showing that the percentage of appeals to the Federal Circuit declined from 1994 to 2013, as did the number of cases that proceeded to trial).

<sup>245</sup> Anderson & Menell, *supra* note 7, at 70–71; Bender, *supra* note 238, at 208–09.

<sup>246</sup> *Lighting Ballast*, 744 F.3d at 1287 (“Early claim construction is essential to permit the parties to file summary judgment motions, or to engage in informed settlement discussions, before they have to incur potentially unnecessary discovery and other pre-trial costs. . . .” (quoting Brief of Google, Inc. et al. as Amici Curiae in Support of Appellant at 4–5, *Lighting Ballast*, 744 F.3d 1272 (Fed. Cir. 2014) (No. 2012-1014), 2013 WL 3008282)).

<sup>247</sup> See *supra* Sections III.A–B.

summary judgment motions.<sup>248</sup> And there seems to be anecdotal evidence that courts do not like to change their construction once they have ruled on it.<sup>249</sup>

Second, some scholars have posited that the unpredictability and low cost of appeal for litigants may also be discouraging district courts from feeling invested in the process:

Because review by the Federal Circuit is *de novo*, there is little reason for a district court to hear the entirety of evidence in the case before determining the meaning of the claim terms. . . . [T]he court's absorption of all of the evidence prior to interpreting the claims is a waste of courts' and the litigants' time, not to mention that of the jurors.<sup>250</sup>

There is anecdotal evidence that the uncertain value of extrinsic evidence in the claim construction process has led "district judges . . . to provide little or no reasoning for their claim constructions."<sup>251</sup> The overall result is that district courts do not tend to engage in any in-depth claim construction analysis or consider *ex post* information about patent scope. What they tend to put out is a sparsely reasoned, primarily textual analysis of the intrinsic record.

The Federal Circuit justifies its approach of reversing district courts on claim construction because it sees itself as a final arbiter on claim construction issues. In *Lighting Ballast*, the court argued it "should retain plenary review of claim construction . . . [to] provid[e] national uniformity, consistency, and finality to the meaning and scope of patent claims."<sup>252</sup> Judge Lourie argued in the concurrence against "hamper[ing] the court's] ability to interpret claims with full authority."<sup>253</sup>

Putting to the side whether *de novo* review does in fact greatly improve national uniformity of claim scope,<sup>254</sup> the court's approach may instead be justified in the minds of Federal Circuit judges for another

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<sup>248</sup> See PETERS, MENELL ET AL., PATENT CASE MANAGEMENT JUDICIAL GUIDE § 2.1.3.2.4 (3d ed. 2016); see also *Lighting Ballast*, 744 F.3d at 1285 ("Claim construction is often a preliminary proceeding in the district court, before trial of infringement, validity, damages, etc.").

<sup>249</sup> See Burk & Lemley, *supra* note 4, at 1764 ("[D]istrict courts that construe claims . . . are unwilling to undo the work of claim construction . . .").

<sup>250</sup> William F. Lee & Anita K. Krug, *Still Adjusting to Markman: A Prescription for the Timing of Claim Construction Hearings*, 13 HARV. J.L. & TECH. 55, 85 (1999).

<sup>251</sup> Anderson & Menell, *supra* note 7, at 68.

<sup>252</sup> *Lighting Ballast*, 744 F.3d at 1277.

<sup>253</sup> *Id.* at 1293 (Lourie, J., concurring).

<sup>254</sup> Rebecca S. Eisenberg, *A Functional Approach to Judicial Review of PTAB Rulings on Mixed Questions of Law and Fact*, 104 IOWA L. REV. 2387, 2410–11 (2019) (explaining that uniformity through *de novo* appellate review of claim construction is of limited practical feasibility); Anderson & Menell, *supra* note 7, at 72 ("Thus, *de novo* review focused on often ambiguous intrinsic evidence produces an artificial sense of clarity and uniformity.").

reason. The appellate court may feel that it is in a better position than the district court to have a bird's eye view of the entire case when it is making claim construction decisions on appeal.<sup>255</sup> But because the Federal Circuit does not actually *acknowledge* that it is considering the outcome of the rest of the case when reviewing claim construction,<sup>256</sup> the result is not one that provides any legitimacy to the court's approach to review. The output from the appeals court is not a principled decision that can be applied to other cases, but is simply a second, opaque take at the same case-specific, textual question already answered by the district court. The district court says "wound" means one thing, and the Federal Circuit either agrees or disagrees. Little forward-looking guidance is provided by such reasoning.

#### IV. HOLISTIC CLAIM CONSTRUCTION

I have listed many problems with the Federal Circuit's approach to claim construction: lack of transparency, doctrinal incoherence, lack of principled reasoning, and the deleterious effects on district court litigation. In this Part, I propose an alternative—holistic<sup>257</sup> claim construction—and explain its benefits. This approach positions the inquiry as part of the overall *ex post* determination of invalidity or infringement and requires a court to expressly consider *ex post* information that becomes available in the course of litigation in its reassessment of claim scope.

As an example, the Supreme Court's early approach to claim construction was similarly holistic.<sup>258</sup> The Court considered whether an invention contributed significantly to the state of the art in its field (now encapsulated in the obviousness requirement) and decided the patent's scope (and thus whether an accused device infringes) depending on the level of this contribution.<sup>259</sup> The Court explained: "If what [the patentee] has done works only a slight step forward [in progressing the state of the art] . . . then his patent, if sustained, will be given a narrow scope, and

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<sup>255</sup> See, e.g., *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1462 (Fed. Cir. 1998) (Plager, J., concurring) ("On appeal, this court has the benefit of the trial judge's considered view, and the record of the effort made at trial . . .").

<sup>256</sup> Chiang, *supra* note 11, at 554 ("When we look at what patent judges *do* rather than merely at what they *say*, it becomes quite obvious that such judges routinely consider external evidence during claim construction and hence depart from plain textual meaning." (emphasis added)).

<sup>257</sup> See *supra* note 9 (explaining how my use of the word "holistic" may differ from other scholars).

<sup>258</sup> See Lee, *supra* note 12, at 109.

<sup>259</sup> *Id.* (citing *Eibel Process Co. v. Minn. & Ontario Paper Co.*, 261 U.S. 45, 63 (1923)).

infringement will be found only in approximate copies of the new device.”<sup>260</sup>

Although the holistic claim construction analysis proposed herein necessarily considers the text of the specification and claims of the patent, it acknowledges that the flexible and indeterminate nature of these textual instruments necessarily requires a court to consider other forms of evidence. The proposed approach forces a decision-maker to consider the impact of claim scope on the outcome of infringement and invalidity issues in a case. Such considerations automatically require the court to balance the reward due the inventor with the impact of the patent monopoly on follow-on innovation.

#### A. *Ex Post Information for Holistic Claim Construction*

Holistic claim construction simply allows for consideration of more ex post information than permitted under current Federal Circuit doctrine. Specifically, it allows the consideration of the arguments and factual bases of the parties’ invalidity and infringement positions.

Holistic claim construction applies to a court’s ex post reassessment of claim scope. This reassessment must occur because of the flexibility we have infused into the patent system to maintain the proper balance of rights between patentees and the public.

This flexibility inherently makes it impossible for an examiner to have sufficient information to establish scope once and for all ex ante. In theory, because applicants are forced to narrow their claims during examination, the claim scope examiners allow all the examiners’ concerns about invalidity. But examiners have (often very) limited information about invalidity at the time of patent grant, and no information about future infringement.<sup>261</sup>

Some type one ex post information is data that may have been theoretically available ex ante (i.e., during examination) but would not have been reasonable for a decision-maker (i.e., the examiner) to have acquired or appreciated its relevance of at the time. For instance, examiners do not get the benefit of an adversarial process with sophisticated parties who hire experts to explain the technological landscape at the time of patent filing.<sup>262</sup> Examiners, unlike hired experts,

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<sup>260</sup> *Eibel*, 261 U.S. at 63.

<sup>261</sup> See *Reilly*, *supra* note 6, at 1128 (“Patent Office examination only provides a snapshot evaluation of the patentability of the claimed invention as it exists at one point in time.”).

<sup>262</sup> See *id.* at 1119 (“Examination lacks a motivated adversary that could offset the examiner’s lack of investigatory and inquisitorial powers by, for example, conducting an investigation to find and provide relevant information not found in formal databases or the applicant’s possession.”);



cannot perform experiments to test whether a patent works.<sup>263</sup> Examiners do not even have the resources to find all the documentary evidence that may indicate that a patent does not meet the criteria for patentability.<sup>264</sup>

Even if *ex ante* proceedings were made adversarial, however, there would still be no concrete dispute involving actual or impending infringement.<sup>265</sup> The parties involved would, therefore, not have sufficient financial incentives to marshal the extensive resources needed for a thorough reassessment of claim scope. With perhaps some exceptions in the pharmaceutical space, patentees usually do not invest significant resources into patent filings.<sup>266</sup> They often do not even perform a basic prior art search to assess the validity of their claims.<sup>267</sup> And given the unpopularity of administrative adversarial proceedings that take place near the time of grant,<sup>268</sup> it appears that third parties also

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see also *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1474 (Rader, J., concurring in part and dissenting in part) (“When confronted with sophisticated technology, district court judges often seek testimony from experts to help them understand and interpret the claim.”).

<sup>263</sup> See Janet Freilich, *Ignoring Information Quality*, 89 *FORDHAM L. REV.* 2113, 2124 (2021).

<sup>264</sup> See Reilly, *supra* note 6, at 1119; Michael D. Frakes & Melissa F. Wasserman, *Irrational Ignorance at the Patent Office*, 72 *VAND. L. REV.* 975, 978 (2019) (“On average, a U.S. patent examiner spends only eighteen hours reviewing an application, which includes reading the application, searching for prior art, comparing the prior art with the application, writing a rejection, responding to the patent applicant’s arguments, and often conducting an interview with the applicant’s attorney.” (footnote omitted)).

<sup>265</sup> Patentees tend to file patents at a very early stage of development, sometimes having no working prototype or product. See Christopher A. Cotropia, *The Folly of Early Filing in Patent Law*, 61 *HASTINGS L.J.* 65, 67–87 (2009); Janet Freilich, *Prophetic Patents*, 53 *U.C. DAVIS L. REV.* 663, 666 (2019) (“The Patent and Trademark Office (‘PTO’) and the courts explicitly permit made-up experiments and fictional data in patents.”); *id.* at 697 (showing that at least thirty-eight percent of chemistry and biology applications filed between 2001 and 2017 had at least one prophetic (i.e., hypothetical, untested) example in the specification).

<sup>266</sup> Jeremy W. Bock, *Patent Quantity*, 38 *U. HAW. L. REV.* 287, 310–15 (2016) (discussing the typical “high-volume-low-cost approach to patenting” for companies that maintain patent portfolios); see also Cotropia, *supra* note 265, at 72–78 (discussing the common practice of filing too early, before an invention is fully developed).

<sup>267</sup> See Michael Risch, *The Failure of Public Notice in Patent Prosecution*, 21 *HARV. J.L. & TECH.* 179, 200 (2007) (“[B]ecause the applicant is not required to search for prior art, the initial claims represent what the patentee thinks *might* be novel and nonobvious.”); Bhaven N. Sampat, *When Do Applicants Search for Prior Art?*, 53 *J.L. & ECON.* 399, 401–02 (2010) (providing empirical evidence that “in many cases, applicants do not conduct even cursory searches for prior art”); IAIN M. COCKBURN & REBECCA HENDERSON, *SURVEY RESULTS FROM THE 2003 INTELLECTUAL PROPERTY OWNERS ASSOCIATION SURVEY ON STRATEGIC MANAGEMENT OF INTELLECTUAL PROPERTY*, at F.8 (2003), [https://ipo.org/wp-content/uploads/2013/04/survey\\_results\\_revised.pdf](https://ipo.org/wp-content/uploads/2013/04/survey_results_revised.pdf) [<https://perma.cc/7MJB-ZUMQ>] (seventeen percent of responding corporations spent less than one hour, if any, on a patent search before filing an application).

<sup>268</sup> John Marlott, *PGRs Still Rare—Is Estoppel the Reason?*, *PTAB LITIGATION BLOG* (June 4, 2021), <https://www.ptablitigationblog.com/pgrs-still-rare-is-estoppel-the-reason/> [<https://perma.cc/4R4A-8HJY>] (noting the unpopularity of the proceeding, which must be commenced within nine months of patent issuance).

rarely have the proper incentives to challenge a patent so early on in its lifetime.

Therefore, scope reassessment must be made at some later time, when more motivation, and thus more information, is available. By the time a patentee asserts a claim against an accused infringer, years have passed since the date of patent filing.<sup>269</sup> And because of the requirement of Article III standing, district court litigation can only commence when there is already a concrete instance or plan of infringement by a third party.<sup>270</sup> The passage of time since examination and the existence of a concrete controversy supply a slew of ex post information, some simply unappreciated—type one—and some entirely new—type two.

A dispute that reaches the level of district court litigation naturally supplies highly motivated adversaries that can expend considerable time and money into digging up more information.<sup>271</sup> After all, a loss in a patent case can result in the invalidation of a patent or can bankrupt an accused infringer.<sup>272</sup> A loss of a brand-name pharmaceutical patent can cost the company billions of dollars in sales.<sup>273</sup> Accused infringers are therefore motivated to dig up obscure or non-documentary evidence that the invention was anticipated or obvious.<sup>274</sup> They can hire experts to test whether a prior art document was, in fact, within the scope of the granted

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<sup>269</sup> Brian J. Love, *An Empirical Study of Patent Litigation Timing: Could a Patent Term Reduction Decimate Trolls Without Harming Innovators?*, 161 U. PA. L. REV. 1309, 1335 tbl.5 (2013) (finding that an average of 5.7 years pass after patent filing before a first product company litigation, and nine years for a non-practicing entity).

<sup>270</sup> Megan M. La Belle, *Patent Law as Public Law*, 20 GEO. MASON. L. REV. 41, 78 (2012) (discussing that the Federal Circuit requires that the plaintiff has “produced, or made meaningful preparations to produce, an allegedly infringing product” to have standing to sue).

<sup>271</sup> Patent litigation that makes it through trial can cost hundreds of thousands, if not millions, of dollars. Russ Krajec, *Current Patent Litigation Costs Are Between \$2.3 to \$4M - From the BlueIron Blog*, AP NEWS (July 10, 2020, 8:02 AM), <https://apnews.com/press-release/news-direct-corporation/technology-business-intellectual-property-patents-a5dd5a7d415e7bae6878c87656e90112> [<https://perma.cc/3MSQ-EM2J>] (“For the entire trial, the AIPLA says that for less than \$1M at risk, the trial will cost \$700,000, while the very high value cases will cost \$4M or more.”).

<sup>272</sup> *The Increasing Prevalence of Bet the Company Lawsuits*, MCGEHEE CHANG, LANDGRAF, FEILER (Mar. 28, 2021), <https://lawtx.com/the-increasing-prevalence-of-bet-the-company-lawsuits/> [<https://perma.cc/2SQL-FJGL>] (“An intellectual property dispute can end up barring a company from producing a product or even continuing the very operations of that enterprise.”).

<sup>273</sup> Jack DeRuiter & Pamela L. Holston, *Drug Patent Expirations and the “Patent Cliff,”* U.S. PHARMACIST (June 20, 2012), <http://www.uspharmacist.com/content/s/216/c/35249/-title=Drug#sthash.kKeV00nv.dpuf> [<https://perma.cc/B2V4-JVDJ>] (“Once drugs lose patent protection, lower price generics quickly siphon off as much as 90% of their sales.”).

<sup>274</sup> See John R. Allison & Mark A. Lemley, *Who’s Patenting What? An Empirical Exploration of Patent Prosecution*, 53 VAND. L. REV. 2099, 2120 (2000) (providing evidence that patent examiners primarily look at patents and patent applications as prior art, which “is particularly striking given that in many areas of technology, other patents may not be the best source of prior art”).

claims, rendering the claims invalid.<sup>275</sup> They can also use experts and secondary sources to explain the state of the art and the understanding of a claim term in the scientific community at the time of filing.<sup>276</sup>

The counsel and briefing in patent litigation is also sophisticated. The accused infringer can hire good lawyers who can put together well-supported arguments for why the patent may be invalid because it is obvious, anticipated, or the subject matter is ineligible. The patentee is likewise motivated to expend resources into contradicting these invalidity arguments with evidence of how novel or groundbreaking the invention was at the time of filing—evidence that may not have necessarily existed at the time of filing (type two ex post information), such as the commercial success of the patented product.<sup>277</sup> All this evidence and briefing helps the court become more comfortable with the technology, and also helps it assess the significance of the patented invention at the time of filing. The fact that an invention was a significant or incremental leap forward can assist the court in determining the scope of the patent in terms of inventor reward—i.e., how much the inventor should be rewarded in bounds of their monopoly.<sup>278</sup>

Other ex post information introduced by the parties can help a court determine effects on follow-on innovators. Courts have a significant advantage over examiners, who must rely only on an abstract disclosure of an invention and an even more abstract set of claims. Examiners can only try to guess how a patentee will later assert the meaning of a claim term or how technology will develop after patent filing.<sup>279</sup> A court does not have to guess. A concrete dispute provides all this type two ex post information. In litigation, patentees are forced to map the words of the claim to a specific accused product or method.<sup>280</sup>

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<sup>275</sup> See, e.g., *Immunex Corp. v. Sanofi*, No. CV 17-02613, 2018 WL 6252460, at \*2 (C.D. Cal. Aug. 24, 2018) (discussing the testing methodology of the prior art by a party expert).

<sup>276</sup> *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1474 (Fed. Cir. 1998) (Rader, J., concurring in part and dissenting in part) (“As this court acknowledges, a trial court must often resort to experts to learn complex new technologies.”).

<sup>277</sup> See *Graham v. John Deere Co. of Kan. City*, 383 U.S. 1, 17–18 (1966) (listing “secondary considerations [such] as commercial success, long felt but unsolved needs, failure of others, etc. . . . [a]s indicia of obviousness or nonobviousness” of an invention).

<sup>278</sup> John F. Duffy, *Innovation and Recovery*, 14 MARQ. INTELL. PROP. L. REV. 237, 260 (2010) (“[I]f the courts do not know what the true merit of the invention is, they will have great difficulty applying the patent system fairly.”).

<sup>279</sup> See Reilly, *supra* note 6, at 1128–29 (“Patent Office examination only provides a snapshot evaluation of the patentability of the claimed invention as it exists at one point in time. . . . Even if the examiner had sufficient referents to perfectly understand the claim at the time of examination, the scope can still expand in the future in a way that the examiner could not predict in examination.”).

<sup>280</sup> Courts usually require “claim charts” that provide such mapping in preparation for claim construction hearings. See *MENELL ET AL.*, *supra* note 248, app. § 2.2b, at 2-106 (“Plaintiff shall

Moreover, the court will be made aware of other cases where the patent has been or is currently being asserted and how the patentee is interpreting claim terms in that context.<sup>281</sup> Finally, the accused infringer and the patentee will also argue over whether the patent description provides enough detail to support the claim scope the patentee is now asserting.<sup>282</sup> All these anchoring points provide the court with information about how the state of the art has developed since patent filing, and how a broader or narrower construction of a claim will impact follow-on innovators (including the accused infringer).

In sum, the court is provided more information than was available to or could be appreciated by the examiner, and also has the benefit of significant amounts of new ex post data points. This allows it to reassess if the originally granted claim scope still properly balances the reward due the inventor with the impact of this monopoly on follow-on innovation.<sup>283</sup>

### B. *Benefits of the Approach*

Aligning claim construction with the ex post determination of invalidity and infringement has several benefits. Most importantly, holistic claim construction helps correlate the inquiry better with patent

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produce an initial claim chart relating each known accused product to the asserted claims each such product allegedly infringes.”).

<sup>281</sup> See, e.g., 6 ROBERT A. MATTHEWS, JR., ANNOTATED PATENT DIGEST § 38:77 (2023) (“Judicial estoppel, otherwise referred to as the doctrine of inconsistent position, is a discretionary doctrine to prevent litigants from taking a position that contradicts or is inconsistent with a prior position successfully asserted in a prior judicial or administrative proceeding.”).

<sup>282</sup> 35 U.S.C. § 112(a) (“The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains . . . to make and use the same . . .”).

<sup>283</sup> Although holistic claim construction recognizes a certain time dependence of claim scope, some predictability can be infused into the system with a better system of estoppel. Any resulting nationwide nonuniformity of claim scope or abuse by parties can be dampened by adjustment of the doctrine of issue preclusion for district court claim constructions. In particular, the finality and essentiality requirements of issue preclusion can be altered, in appropriate circumstances, to make district court claim constructions more likely to be binding on other courts. See, e.g., C. Joel Van Over, *Collateral Estoppel and Markman Rulings: The Call for Uniformity*, 45 ST. LOUIS U. L.J. 1151, 1182 (2001) (claim construction should be preclusive even if parties settle); Rachel Marie Clark, Note, *Collateral Estoppel of Claim Interpretation After Markman*, 86 MINN. L. REV. 1581, 1599–602, 1610–13 (2002) (discussing the disagreements between courts about when claim construction is final or essential to a judgment). This would not be a significant compromise of the flexible nature of claim construction because a district court under the proposed approach would already consider co-pending and past litigation in determining claim scope. Moreover, no new claim construction may even be necessary if no new ex post information develops from one case to the next. The gap of information between examination and first litigation is likely greater because of the case or controversy requirement.

law's constitutional purpose of "promot[ing] the Progress of... [the] useful Arts."<sup>284</sup> Litigation can now focus on the technological contribution of an invention, instead of on minor nuances of text in a document. Wasteful gamesmanship and wordsmithing by attorneys should give way to technical and economic analysis. This should reduce frivolous arguments.

Consideration of invalidity and infringement also automatically forces a court to balance the interests of the patentee with that of the public and the accused infringer. The goal of invalidity and infringement doctrines is to reward patentees for adding something new to the state of the art without prohibiting others from practicing what is in the public domain. Infringement analysis determines whether a patent covers an accused product, but invalidity makes sure that, even if it does, the patent is of a legal scope and does not take over the public domain. Patentees use infringement arguments to argue for broader claim scope<sup>285</sup> while accused infringers use invalidity arguments to argue for narrower scope.<sup>286</sup> But because claim terms must have the same meaning for both purposes, a court necessarily must consider both interests in reaching a conclusion.<sup>287</sup> The holistic approach is thus a well-balanced one. This is in contrast to the now-moribund doctrine of equivalents, which provided flexibility for expanding claim scope for infringement purposes due to changed circumstances but did not counterbalance this with updated invalidity considerations.<sup>288</sup>

Holistic claim construction also frees the courts from the charade of immutable patent rights. Courts can recognize explicitly that they are reassessing claim scope based on improved ex post information, and not just the original language of the patent document. This leads to greater transparency of why a claim was considered to have particular scope, reducing the chance of hidden bias. For example, a court under this approach can decide that a narrower construction is appropriate to preserve validity, based on all the presented evidence and arguments. This is what the Federal Circuit may have been doing implicitly in *Kinetic Concepts* by narrowing the definition of "wound" to skin wounds to avoid invalidity based on obviousness.<sup>289</sup> Construing a claim to preserve

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<sup>284</sup> U.S. CONST. art. I, § 8, cl. 8.

<sup>285</sup> Lemley & McKenna, *supra* note 54, at 2241.

<sup>286</sup> Liebel-Flarsheim Co. v. Medrad, Inc., 481 F.3d 1371, 1380 (Fed. Cir. 2007) ("The irony of this situation is that Liebel successfully pressed to have its claims include a jacketless system, but, having won that battle, it then had to show that such a claim was fully enabled, a challenge it could not meet.").

<sup>287</sup> See sources cited *supra* note 182.

<sup>288</sup> See *supra* notes 128–31 and accompanying text.

<sup>289</sup> See *supra* text accompanying notes 184–91.

validity might also be appropriate in situations where the infringement arguments are weak based on the text of the claims and the description of the patent, but the invalidity arguments also do not necessarily seem to apply to the entire claim scope.<sup>290</sup>

In addition, explicit reasoning would allow a court to fully explain the relevance of specific *ex post* information and to reconcile its claim construction with infringement and invalidity issues, as well as the text of the patent document. For instance, in cases where there is less textual ambiguity and where infringement arguments convince a court that the claims can be fairly read to encompass a broad range of devices, it may be appropriate to construe the claims broadly despite the potential for invalidation.<sup>291</sup> In contrast, for cases with greater textual ambiguity, a court could choose a broader scope for a disputed term during construction if it finds sufficient evidence that the new claim scope could still be supported by the disclosure. Therefore, in *Hill-Rom*, if the court wanted to allow the claim to cover wireless smart beds, it would have had to explain why it believed, based on the record, that they were enabled by the patent description.

If the Federal Circuit were to wholeheartedly embrace holistic claim construction, another benefit of the approach could be more principled reasoning in appellate decisions. By forcing the Federal Circuit to explicitly discuss the balancing of patentee and public interest, there is an opportunity for the court to make review of claim construction decisions more generalizable and less case specific. Instead of just reassessing the same facts and quibbling over text, the Federal Circuit can help guide district courts in providing better reasoning and in considering the full record in a way that is internally consistent. The Federal Circuit can explain what factors of infringement or invalidity bases or arguments are or are not relevant to such balancing. With the court's policy reasoning

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<sup>290</sup> See *supra* note 157.

<sup>291</sup> Perhaps that is what happened in *Liebel-Flarsheim Co. v. Medrad, Inc.*, 481 F.3d 1371 (Fed. Cir. 2007). The patentee first convinced the Federal Circuit to read the claims broadly to win on infringement, but then lost the enablement challenge that ensued. *Id.* at 1380. There was textual ambiguity, with the district court deciding to construe the claims narrowly (partly in view of invalidity arguments), and the Federal Circuit construing claims broadly despite invalidation concerns. It is possible that the Federal Circuit was attempting to punish the patentee for trying to broaden claims during examination to capture a competitor's product despite evidence that the patentee had not actually invented the competitor's version of the invention. See *id.* at 1375 (“[T]he [examination] history indicates that the asserted claims *purposefully* did not include a pressure jacket limitation in order to cover devices that lacked a pressure jacket.” (emphasis added)); *id.* at 1379 (“The inventors admitted that they tried unsuccessfully to produce a pressure-jacketless system and that producing such a system would have required more experimentation and testing.”). If such balancing of notice and invalidity considerations were an explicit part of the claim construction analysis, the multiple appeals in this case could have been prevented.

finally in the open, a more predictable, common-law doctrine of claim construction can truly develop.

### C. *Role of District and Appellate Courts in Holistic Claim Construction*

It is important to address the standard of review in claim construction and the relative division of tasks between the district and appellate courts for this new regime. Holistic claim construction involves a balancing of interests, akin to policymaking. If the Federal Circuit is allowed to balance interests, then so is the district court as the court of first instance. Thus, the Federal Circuit would have to relinquish some control over policymaking to district courts. Some scholars have posited that the Federal Circuit is retaining its current stilted approach to claim construction because it does not trust the district courts to do the more holistic analysis that it itself is likely performing on appeal.<sup>292</sup> Although a fully developed analysis of trial court competence in patent factfinding is beyond the scope of this Article, it is important to appreciate that the Federal Circuit's current approach comes at a great cost to transparency and guidance for district courts and litigants. The proposed holistic approach, though handing some policymaking power back to district courts, still constrains the claim construction analysis with patent doctrine and patent text.<sup>293</sup> Moreover, a requirement for explicit reasoning under the proposed approach would actually help the Federal Circuit to identify cases where claim construction needs to be reshaped or corrected.

The Federal Circuit can still choose a less deferential standard of review to maintain its control over patent policy.<sup>294</sup> After all, appellate courts should be in a better position to create broad policy.<sup>295</sup> But it should resist redoing the work of district courts and performing case-

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<sup>292</sup> See Rai, *supra* note 10, at 1059 (discussing “[t]he Federal Circuit’s desire to control claim construction” by not deferring to district court factfinding).

<sup>293</sup> See *supra* Section IV.B.

<sup>294</sup> See *U.S. Bank Nat’l Ass’n ex rel. CWCapital Asset Mgmt. LLC v. Vill. at Lakeridge, LLC*, 138 S. Ct. 960, 967 (2018) (“[Some questions] require courts to expound on the law, particularly by amplifying or elaborating on a broad legal standard. . . . [In such cases, where the inquiry] involves developing auxiliary legal principles of use in other cases—appellate courts should typically review [such] a decision *de novo*.”); Lee, *supra* note 12, at 107 (proposing “a hybrid standard [of review] . . . in which the Federal Circuit reviews policy determinations *de novo*”).

<sup>295</sup> Rai, *supra* note 10, at 1102; Lee, *supra* note 12, at 107 n.45 (“Given its vast exposure to patent litigation, the Federal Circuit is well-positioned to identify industry-specific dynamics that affect technological progress.”).

specific, fact-heavy analysis.<sup>296</sup> Instead, the required transparency of the holistic claim construction approach will force the Federal Circuit to perform its role as an appellate court—to provide more principled, broader appellate decisions. These should make claim construction more predictable over time as the Federal Circuit begins to develop a clearer set of parameters for district courts to consider in claim construction. Such guidance will eventually reduce the appeal and reversal rate of claim construction decisions as litigants and district courts begin to learn from this new regime.

At the very least, even if the Federal Circuit does not fully embrace holistic claim construction, it should still stop discouraging district courts from considering the entire (or a greater) slew of ex post information made available to them during trial, even if not on a conscious level. It should more consistently embrace “rolling” claim construction, where a district court changes its construction in the course of a trial.<sup>297</sup> It should also remand cases where parties simply stipulated to infringement or invalidity based on claim construction early on in the case.<sup>298</sup>

In some ways, this second-best solution of not fully embracing holistic claim construction sounds less disruptive and is likely the state of things for some Federal Circuit judges already.<sup>299</sup> District courts would not perform holistic claim construction on a conscious, or at least explicit, level in this alternative. Yet, it would still be beneficial to encourage district courts to wait until later in the case to make claim construction decisions from a subconscious learning perspective.<sup>300</sup> As the case proceeds, the district court becomes a mini expert on the invention, its place in the state of the art at the time of filing, and how the patentee is currently asserting its monopoly. Over the course of the litigation, the

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<sup>296</sup> Rai, *supra* note 10, at 1127 (providing one example of how the Federal Circuit would provide broader guidance but leave factfinding to the lower court).

<sup>297</sup> See *supra* note 23.

<sup>298</sup> See *Wilson Sporting Goods Co. v. Hillerich & Bradsby Co.*, 442 F.3d 1322, 1331 (Fed. Cir. 2006) (remanding to district court for construction where “the parties stipulated that the accused device infringed under the trial court’s claim construction” and “[the] court had before it absolutely no evidence on record about the accused devices”).

<sup>299</sup> Anderson & Menell, *supra* note 7, at 6 (providing evidence of “an era of ‘informal deference’” at the Federal Circuit since 2005).

<sup>300</sup> Jeremy Bock discusses the subconscious effects of learning new information in a patent case. See Jeremy W. Bock, *Behavioral Claim Construction*, 102 MINN. L. REV. 1273, 1290–91 (2018) (discussing subconscious “anchoring” of district courts based on infringing device); *id.* at 1293 (discussing how description of the invention can cause a reader to “stereotype” the invention); *id.* at 1305 (“[A] district judge is provided with adversarial briefing, which can ease the cognitive burden of exploring interpretive possibilities under the current claim construction regime . . .”). Although Bock discusses these data points in a negative light of *bias*, I would argue that the subconscious absorption of so many different “anchoring” points actually allows a judge to make a more balanced decision.



court starts to better understand the meaning of the specification and the claims in view of the entire record and what different claim constructions mean for this bigger picture. Claim terms having the same meaning for both invalidity and infringement inquiries also helps the court maintain a balanced approach. Therefore, although claim construction opinions would not explicitly reflect this improved understanding under this covert approach, it would still become a more well-informed and holistic process (on a subconscious or unexpressed level).

Yet this informal deference alternative is not wholly satisfactory. The Federal Circuit would miss an opportunity to create broader policy through case law. And even district court opinions would remain opaque for current and future litigants. Moreover, in contrast to the full-throated approach above, this one leaves *more* discretion to district courts in a hidden way. Since the Federal Circuit would not openly acknowledge the relevance of *ex post* information here, it would be forced to either remand many decisions or affirm with very little explanation. Though this may reduce reversal rate, it will not lead to greater predictability, since the reasoning of the district and appellate courts will remain opaque. Litigants may be less likely to appeal, since their appeal is less likely to succeed, but they will learn little about which arguments are appropriate or effective for claim construction. This may even exacerbate forum shopping for district court judges. Without an effective appeal process, the litigants will simply learn to predict and accommodate the views of a small number of district court judges. Therefore, most of the benefits of holistic claim construction can be achieved only with a full recognition of the approach by the Federal Circuit.

#### D. *Costs and Other Objections*

The predominant costs of the proposed approach will likely stem from initial inefficiencies it introduces to district court litigation. Currently, most courts decide claim construction early in a case, before dispositive motions, or even before fact or expert discovery.<sup>301</sup> This early, separate claim construction proceeding in a patent litigation, called a *Markman* hearing, is meant to save parties the burden of proposing different theories of infringement and invalidity based on multiple potential constructions of key claim terms.<sup>302</sup> For that reason, although

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<sup>301</sup> MENELLE ET AL., *supra* note 248, § 2.1.3.2.4; Edward Tulin, *Practical Strategies for Markman Hearings Amid COVID-19*, LAW360 (May 15, 2020, 5:16 PM EDT), <https://www.law360.com/articles/1272814/practical-strategies-for-markman-hearings-amid-covid-19> [https://perma.cc/FDZ9-CR8P].

<sup>302</sup> See MENELLE ET AL., *supra* note 248, § 2.1.3.2.4.

rolling construction is practiced by courts and not prohibited by the Federal Circuit,<sup>303</sup> it does not seem to be standard practice.<sup>304</sup>

The holistic approach proposed here would certainly add complexity to the status quo. Under this approach, courts would have to reassess claim construction multiple times in each case as information—in the form of evidence and arguments—is presented. There would not necessarily be a significant increase in the volume of information gathered by the parties or considered by the court, as most of the *ex post* information contemplated by the approach would naturally be produced by the parties in the course of the case. The parties and the court, however, would have to grapple with the temporary lack of finality of any construction, which would complicate briefing and add to litigation costs. The proposal here leaves room for flexibility, however. There may be discretion for a district court to artificially cut off the claim construction process at any point in litigation, especially if it finds that the increase in accuracy from new information would not outweigh the increased costs or possible gamesmanship by the parties that may accompany an indefinite rolling approach.<sup>305</sup>

Although there is no denying that the proposed approach may increase costs in the short term, in the long run, it should counterbalance some of these costs by providing predictability. A more principled common-law claim construction doctrine will provide more guidance to district courts and litigants about the likely outcome of such inquiries. Increased predictability should result in earlier and higher rates of settlement and decreased rates of appeal, lowering litigation costs.<sup>306</sup>

The other possible objection to the proposed approach is that it will ultimately lead to *more* uncertainty and unpredictability of claim scope because of the task's complexity. There are two responses to this objection. First, the current approach to claim construction already provides little certainty due to the inherent indeterminacy of claiming

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<sup>303</sup> See *Jack Guttman, Inc. v. Kopykake Enters., Inc.*, 302 F.3d 1352, 1361 (Fed. Cir. 2002) (“District courts may engage in a rolling claim construction, in which the court revisits and alters its interpretation of the claim terms as its understanding of the technology evolves.”); see also *Pfizer, Inc. v. Teva Pharms. USA, Inc.*, 429 F.3d 1364, 1377 (Fed. Cir. 2005).

<sup>304</sup> Tulin, *supra* note 301 (“[T]he most commonly used strategy is to hold a formal *Markman* hearing prior to trial . . .”).

<sup>305</sup> In one potential example of abuse, parties may persist (sometimes needlessly) to argue about the meaning of the court's construction, in a process dubbed “metaconstruction.” Burk & Lemley, *supra* note 4, at 1762. The Federal Circuit has also warned about “the potential for surprise and prejudice in a late adjustment to the meaning of claim terms.” *Pressure Prods. Med. Supplies, Inc. v. Greatbatch Ltd.*, 599 F.3d 1308, 1315–16 (Fed. Cir. 2010) (finding revision of claim construction permissible because “the district court made the adjustment early enough in the trial to give [the defendant] an opportunity to consider the new construction and adjust its arguments to account for the change”).

<sup>306</sup> See sources cited *supra* note 244.

and the opaque and inconsistent approach of the courts to the inquiry.<sup>307</sup> Dan L. Burk and Mark A. Lemley have commented that the current system of “peripheral claiming has already failed . . . and in fact has failed catastrophically.”<sup>308</sup> Many others share the sentiment that claim construction, as it stands, is dysfunctional and costly, and that it is difficult to predict how a court will construe claim language in any given case.<sup>309</sup> Second, there are sound theoretical arguments, put forward by William N. Eskridge, Jr. and others, for why transparency in decision-making may be the best first step towards predictable judicial outcomes in textual interpretation.<sup>310</sup> It is difficult to imagine how claim construction can become more predictable if litigants and district courts are not made privy to the true reasoning underlying claim construction or provided guidance about how to fill that interpretive gap.<sup>311</sup>

### CONCLUSION

The Federal Circuit’s opaque approach to claim construction is dysfunctional and unpredictable. It denies the indeterminate character of claims stemming from the flexible nature of the patent system. And it results in inconsistent, unprincipled opinions that leave litigants and district courts at a loss. The court should embrace the context and time-dependent nature of claim construction that uses ex post information to reassess claim scope. Only then can it provide the type of guidance that

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<sup>307</sup> Lee, *supra* note 12, at 113 (“[T]he current system does not provide much certainty anyway.”).

<sup>308</sup> Burk & Lemley, *supra* note 4, at 1791.

<sup>309</sup> See, e.g., *supra* note 216; Bender, *supra* note 238, at 209–17 (discussing sources of uncertainty in claim construction, including the lack of clear canons of construction and their inconsistent application); Jay P. Kesan & Gwendolyn G. Ball, *How Are Patent Cases Resolved? An Empirical Examination of the Adjudication and Settlement of Patent Disputes*, 84 WASH. U. L. REV. 237, 300 (2006) (noting the high cost of patent claim construction); Fromer, *supra* note 105, at 774 (“Because of the uncertainty in patent law’s peripheral claims, Judge S. Jay Plager of the Federal Circuit has said that the patent grant is actually ‘little more than a right to litigate.’” (quoting *An Interview with Circuit Judge S. Jay Plager*, 5 J. PROPRIETARY RTS., Dec. 1993, at 2, 6)).

<sup>310</sup> WILLIAM N. ESKRIDGE, JR., *DYNAMIC STATUTORY INTERPRETATION* 276 (1994); William N. Eskridge, Jr. & Philip P. Frickey, *An Historical Introduction to the Legal Process*, in HENRY M. HART, JR. & ALBERT M. SACKS, *THE LEGAL PROCESS: BASIC PROBLEMS IN THE MAKING AND APPLICATION OF LAW* 1viii, 1viii (William N. Eskridge, Jr. & Philip P. Frickey eds., 1994) (noting realist view that “[l]aw would actually become more predictable and just if judges candidly articulated the theretofore submerged policy assumptions of their decisions”).

<sup>311</sup> See Tun-Jen Chiang & Lawrence B. Solum, *The Interpretation-Construction Distinction in Patent Law*, 123 YALE L.J. 530, 611 (2013) (“[C]ourts should recognize that claim text cannot itself provide all the answers, and thus policy considerations will necessarily come into play. Failure to acknowledge this fact won’t make it go away; it will only result in courts issuing empty ‘interpretations . . .’”).

the patent bar desperately needs to stop the endless cycle of waging appeals.