

John M. Golden\*

Construing Patent Claims According to Their "Interpretive Community":  
A Call for an Attorney-plus-Artisan Perspective

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## I. INTRODUCTION

Determination of the scope of a patented invention is one of the most contentious and difficult tasks of modern patent law. Claims -- numbered clauses at the end of a patent -- are meant to provide notice of what a patent covers and to describe a patented invention in a way that distinguishes it from prior art. n2 Because of claims' centrality to determinations of patent scope and patent validity, the stakes in trying to improve the predictability of claim construction are large.

Patents play a critical role in modern business planning and finance. n3 Moreover, as with other types of intellectual property, the importance of patents appears to be increasing: n4 recently, the number of United States patents issued each year has grown faster than the real gross domestic product. n5 The pace and breadth of modern patenting has fed concerns that overlapping or fragmented patent rights may act to retard innovation rather than "promote . . . Progress." n6

[\*323] The certainty with which patent scope is defined is a crucial variable in determining whether the net impact of patents is positive or negative. Relative certainty regarding a patent's scope can promote the development and dissemination of related technology by providing a sense of security both to investors in patent rights and to investors in activities that might be vulnerable to charges of patent infringement. n7 Greater certainty may also facilitate licensing that promotes efficient levels of inventive and productive activity. n8 Parties may be more likely to avoid expensive litigation and agree to licensing terms if they can first agree on a patent's scope. n9 Further, probable correlates of certainty -- such as the coherence of claim construction law and the predictability of courts' constructions-- are likely to make processes of construing claims, forecasting court constructions, and drafting claims that adequately cover an invention less taxing and less error-prone.

Several developments of the last few decades were intended to bring greater predictability and rationality to claim construction. In 1982, Congress created the United States Court of Appeals for the Federal Circuit, a new appellate court with exclusive jurisdiction over appeals in cases that arise under federal patent law. n10 In 1996, the Supreme [\*324] Court's opinion in *Markman v. Westview Instruments, Inc.* n11 affirmed the Federal Circuit's holding that claim construction is a task for judges rather than juries. n12 Two years later, the Federal Circuit held that claim construction is not only a judicial task, but also a purely legal one, the entirety of which is subject to de novo review. n13 Thus, for about a decade, a single and relatively expert court of appeals has had the development of claim construction law firmly and clearly under its thumb.

Nonetheless, claim construction jurisprudence continues to bear hallmarks of unpredictability. n14 Reversal rates of district court claim constructions stand at roughly 34%, n15 and commentators have repeatedly [\*325] observed that different Federal Circuit judges favor different claim construction methodologies. n16

The Federal Circuit has not been insensitive to these concerns. In 2005, its en banc opinion in *Phillips v. AWH Corp.* n17 quashed an extreme, dictionary-driven approach to claim construction that some members of the court had championed. n18 The approach rejected in *Phillips* had displayed a dismaying capacity to produce contextually implausible "plain meanings." In *International Rectifier Corp. v. IXYS Corp.*, n19 for example, the Federal Circuit held that a claim's use of the term "polygonal" to describe regions in semiconductor devices required a physical impossibility. The court acknowledged that "one of ordinary skill in the art would understand from the written description that . . . diffusion . . . will naturally cause some blurring of the [regions'] corners and sides." n20 But the court relied on a general-purpose dictionary's definition of "polygon" to hold that the claim's "regions" had to have the truly straight-edged and sharp-angled shape of geometric polygons. n21 According to such a geometric definition, the rough-edged nature of Egypt's Great Pyramids would mean that they are not "pyramidal"!

Aside from rejecting such extreme excursions in dictionary-driven literalism, however, *Phillips* generally reaffirmed existing precedent. n22 Of particular relevance here, *Phillips* reemphasized the [\*326] importance of the rule that claims must be construed from the perspective of one having ordinary skill in the relevant technological art, where the "relevant technological art" is that of the patented invention, rather than some other "technical art" that might be thought relevant, such as the art of claim drafting or claim construction. n23

The Federal Circuit's restatement of this ordinary artisan rule was not surprising. Although the Supreme Court failed to mention the rule in *Markman*, its continued validity may be one of the few points on which Federal Circuit judges n24 and commentators n25 have consistently agreed. Indeed, both judges and commentators have invoked the rule as a basis for proposed reforms to the law of claim construction. [\*327] Commentators have repeatedly cited it as a reason to rely more on evidence, such as expert testimony, that is "extrinsic" to the patent and its prosecution history. n26 Likewise, Chief Judge Michel of the Federal Circuit recently argued for reconsideration of claim construction's status as a purely legal issue by contrasting the inquiry under the ordinary artisan rule ("How would the average artisan in the relevant field of technology understand the disputed claim terms . . . ?") with that undertaken in interpreting a statute ("What does the disputed term mean to me, the judge, as an artisan in the law?"). n27

I take the heterodox position of challenging the ordinary artisan rule for claim construction. This Article argues that, at least within a patent system that, like ours, relies primarily on claims to mark the boundaries of patent scope, a fundamental distinction should be drawn between technology-centered questions of patent validity and more lawyerly questions of claim meaning. n28 For validity questions such as whether a claimed invention is obvious or inadequately disclosed, reliance on the perspective of the ordinary artisan is both appropriate and statutorily required. n29 In the context of claim construction, however, adherence to an ordinary artisan perspective is neither statutorily required nor likely to be socially optimal. In this context, the optimal perspective is likely to be that of a patent attorney, albeit one who has not only legal expertise but also access to the technical knowledge of an artisan.

The argument of this Article proceeds in three Parts. Part 11 examines how determining the proper governing perspective for claim construction relates to concerns about economic efficiency. In particular, [\*328] Part II discusses why it makes economic sense to use a perspective for claim construction that matches the perspective of claims' basic "interpretive community." n30

Part III explains how use of an ordinary artisan perspective in assessing nonobviousness and enablement has led to a common but incorrect assumption that the entire patent must be read, for all purposes, as addressed to an artisan. Part III shows not only that this assumption has a surprisingly weak historical pedigree, but also that it is substantially contradicted by reality. Generally speaking, artisans work with technology, not with patent claims. Such claims are not generated primarily to increase scientific or technological understanding, but instead to provide notice of patent scope to United States Patent and Trademark Office ("USPTO") examiners, patent attorneys and agents, and interested businesspersons. These individuals typically lack the skill in the art that an ordinary artisan possesses. Artisans as artisans are not typically part of this interpretive community.

Part IV argues for replacing the ordinary artisan rule with a rule declaring the governing perspective of claim construction to be a hybrid one: the perspective of a patent attorney with access to the technological knowledge of an ordinary artisan. Because of artisans' general lack of participation in the interpretive community for patent claims, their views on claim meaning are likely to be too idiosyncratic and personal for a legal regime that seeks to use claims to achieve broad notice of patent scope. Hence, it should not be surprising that the various subrules and conventions of claim construction, which have a strong tendency to reflect the views and mores of claims' actual interpretive community, have become disconnected from the ordinary artisan perspective.

The proposed attorney-plus-artisan perspective would more accurately match the nature of claims' interpretive community. Use of this perspective instead of the ordinary artisan perspective should therefore help improve not only the law's coherence and transparency, but also its predictability. The hybrid perspective would help determine how properly to weigh different kinds of evidence regarding claim meaning. It may also help courts to resolve nettlesome questions about claim construction's "legal," as opposed to "factual," nature. n31 The hybrid perspective acknowledges both the legal and the factual aspects of claim construction, while making clear the general primacy of its "legal" component. Consequently, if courts recognized that this [\*329] perspective properly governs claim construction, they could more comfortably declare construction to be primarily a legal question while also acknowledging its potential reliance on facts, such as technological information that an attorney might ask an artisan to supply....

#### IV. ELIMINATING THE DISJUNCTION BETWEEN STATED RULE AND PRACTICE

Part III has shown that claim construction is a largely lawyerly exercise substantially divorced from the artisan perspective alleged to govern it. The question for this Part is what, if anything, should be done about the disjunction between stated rule and actual practice.

##### *A. Problems with an Ordinary Artisan Perspective*

If having a meaningful governing perspective is a good idea, why not simply retain today's ordinary artisan rule, but alter the subrules of claim construction to conform to it? If predictability and efficiency are goals, there are at least two problems with this approach: (1) the relevant group of artisans can be difficult to identify; and (2) an artisan's perspective is unlikely to act as a useful point of reference because artisans do not typically constitute an actual interpretive community for patent claims. Because ordinary artisans are not typically in the business of interpreting claims, they are not likely to have developed rules, conventions, or consensus views to guide claim construction. Under these circumstances, efforts to adhere to an artisan's perspective make a fetish of a phantom

by subjecting claim construction to governance by a perspective that likely has no existence outside of litigation.

Judges currently determine the literal scope of patent rights by construing claims as a matter of law. n234 Further, unlike a patent's written description, claims tend not to be designed to communicate substantive technological know-how. n235 Hence, as indicated in Part III.B, there is no intrinsic reason why claim construction must be governed [\*369] by the same artisan perspective that the Patent Act requires for assessing questions of nonobviousness and enablement.

Indeed, because claims are written to define legal bounds rather than to communicate technological understanding, business decision-makers, lawyers, and patent examiners are more likely than ordinary artisans to be the real parties in interest for questions about claim meaning. n236 Once an application is before the USPTO, interchanges about the meaning of claims typically occur between a patent examiner and a patent attorney or agent n237 -- persons who have some technological training, but who frequently neither share the same background nor possess training or experience sufficient to make them persons of ordinary skill in the technology of the claimed invention. n238 For such parties, the largest common denominator for understanding is not likely to be the language of any particular technology -- even assuming that such a technology-specific language is in fact well defined. Instead, their most fluent *lingua franca* [\*370] is likely to be "patent claim English," that peculiar dialect that has resulted from practice, precedent, and USPTO rules. n239

The nature of claims' primary audience does not change too dramatically after a patent issues. Decisions that claim interpretation is meant to inform -- such as whether to pursue a particular course of research and development, to launch a new product or service, to invest in another's efforts to do either of these, or to make one's own separate business reliant on a potentially infringing product or service n240 -- are business decisions typically made by people having little, if any, skill in the relevant technology. n241

Courts currently recognize the existence of a non-artisan audience for patents in multiple contexts. When the Supreme Court emphasized the public notice function of patent claims in *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, n242 the Court explicitly referred to the concerns of "competitors," whose investment, manufacturing, and litigation decisions might be affected by perceptions of patent scope. The Court did not even mention the concerns of artisans. n243

The Federal Circuit has acknowledged the non-artisan nature of claims' interpretive community in two other contexts involving concerns of public notice: assessing claim definiteness and determining the applicability of prosecution history estoppel. Prosecution history estoppel occurs when a patent applicant is deemed to have confined the scope of potential infringement to a claim's literal terms by [\*371] amending the claim or making statements to the USPTO during examination. n244 In the estoppel context, it is well established that "[t]he relevant inquiry is whether a *competitor* would reasonably believe that the applicant had surrendered the relevant subject matter." n245 When required to choose between the "reasonable competitor" and "ordinary artisan" perspectives in applying the doctrine of estoppel, the Federal Circuit facially denied that a difference existed, but effectively declared a preference for the former, saying, "[T]he point is the *knowledge* of one reasonably skilled in the art who views the question from the *perspective* of a competitor in the marketplace." n246 Likewise, the court has emphasized:

The primary purpose of the definiteness requirement is to ensure that the claims are written in such a way that they give notice to the public of the extent of the legal pro-

tection afforded by the patent, so that interested members of the public, e.g., *competitors* of the patent owner, can determine whether or not they infringe. n247

[\*372] The law of willful infringement is a further context where courts have, at least implicitly, recognized a non-artisan audience for claims. Willful infringement, which is currently defined as infringement with at least objectively reckless disregard of another's patent rights, n248 can trigger a heavy penalty -- up to treble damages. n249 Significantly, an opinion from a patent attorney saying that relevant patent claims are either not valid or not infringed has long been an important safeguard against a later finding of willfulness. For decades, the courts even held that "actual notice of another's patent rights" triggered a "duty to seek and obtain competent legal advice from counsel before the initiation of any possible infringing activity." n250 The Federal Circuit has recently eliminated this duty n251 and declared that failure to obtain an attorney opinion will "no longer provide an adverse inference or evidentiary presumption that such an opinion would have been unfavorable." n252 Nonetheless, a reliable attorney opinion can still be crucial evidence for establishing lack of willfulness. n253 A favorable artisan's opinion is unlikely to provide nearly as much assurance. n254

Thus, the law of willfulness provides a powerful reason for considering a patent attorney's perspective to be the perspective that governs claim construction. As a result of the peculiar nature of claim language and the law of willful infringement, the perspective of the [\*373] interested businesspersons referenced in opinions like *Festo* is likely to be primarily the perspective of a patent attorney that such a businessperson employs. The often abstruse nature of "patent claim English" is likely to alert a businessperson of the need to seek legal counsel, n255 and the law of willfulness multiplies the force of that intuition. When a substantial investment is at stake, most businesspersons are likely to consider it no more than due diligence to consult an attorney -- not an artisan -- to assess the risk of treading on valid patent rights. n256

Even if the law of willfulness permitted greater confidence in an artisan's opinion, primary reliance on an unalloyed artisan's view -- one not guided by the understandings of an experienced reader of patent claims -- seems intrinsically unlikely to provide a reliable basis for predictable construction.

To the extent an artisan's view is the focus of claim construction, the threshold problem of identifying the nature of the ordinary artisan becomes significantly more crucial. If taken seriously, this threshold problem can itself trigger a number of difficult sub-questions. For example, it might be difficult to specify the relevant art. If the invention is a new kind of plastic fishing lure formed by mixing salt with plastic, is the relevant "art" the art of making plastic fishing lures or the art of plastics manufacturing? n257 Alternatively, if a claim specifies a mean particle diameter, should that average be determined as a researcher in the field would determine it (by numerically averaging diameters of all individual particles) or as a manufacturer would determine it for use in specifications for customers (by calculating the diameter corresponding to the average volume of an individual particle)? n258

Even if the identity of the relevant art is clear, there will be questions regarding more specific characteristics of the ordinary artisan. How many years of post-graduate education must such an artisan have? How many years of experience in industry? How much knowledge of patents and patent law? Is the ordinary artisan familiar with [\*374] the linguistic conventions of last year's college graduates, last year's Ph.D. recipients, the subset of artisans who regularly attend professional conferences, or the subset who have substantial experience in explaining their art to non-artisans? In

speaking or writing, does the ordinary artisan tend toward linguistic abstraction and metaphor, or instead toward strict literalism? Does the ordinary artisan speak in different ways on the shop floor, in a formal presentation to other artisans, to a lay audience, to a businessperson, and to an attorney? If so, which of these manners of speaking should govern our understanding of patent claims?

The uncertainty generated by such questions n259 is likely to leave a party with little confidence that any particular artisan it consults will have a viewpoint matching the one that a court will ultimately find to govern claim construction. Even if there is agreement on the general characteristics of an ordinary artisan, any individual artisan may have only relatively personal and idiosyncratic views on claim meaning. n260 Because artisans as a class are not a well-constituted interpretive community for claims, a party may need to expend substantial effort simply to determine whether there is any well-defined "artisan view."

The resulting costs and uncertainty from an artisan rule are less tolerable for claim construction than for questions of enablement, nonobviousness, or equivalence. For those questions, resort to an artisan perspective is justified by a fundamental concern with technological similarity or disclosure. Moreover, for those questions, the uncertainty produced by an ordinary artisan rule is confined either by a strong presumption of patent validity or by "on-off" doctrines that limit the applicability of such analysis, such as prosecution history estoppel. The costs and uncertainty associated with an ordinary artisan rule are more troublesome in the claim construction context for at least two reasons: the utility of an ordinary artisan perspective is more doubtful, n261 and the multipolar nature of claim construction makes it less susceptible to simplification through strong presumptions like that applied to binary questions of validity.

Such concerns about having claim construction turn on the nature of the ordinary artisan bear a strong relation to reasons for confining the role of extrinsic evidence in claim construction. Courts and commentators have long recognized that limiting the role of extrinsic evidence can advance the public notice function of patent claims. Someone who reads claims in advance of litigation may not have the [\*375] time, resources, or access rights necessary to survey all the extrinsic evidence that a court could consider, and will, more generally, only be able to speculate about the precise contents of a later-developed extrinsic record. n262 Further, as the Federal Circuit observed in its recent en banc opinion in *Phillips v. AWH Corp.*, there are a number of reasons to believe that extrinsic evidence is less reliable and more manipulable than intrinsic evidence: n263 (1) extrinsic evidence may not be well suited for "explaining the patent's scope and meaning" because it is not "created at the time of patent prosecution for [that] purpose"; (2) extrinsic evidence such as dictionary definitions may provide a purposely distorted image of reality because it may be cherry-picked from a "virtually unbounded universe"; and (3) extrinsic evidence, such as expert testimony, "can suffer from bias" because it may be "generated at the time of and for the purpose of litigation." n264

A further concern with extrinsic evidence is that it can drive a wedge between the information available to courts and that available to USPTO examiners. Examiners generally cannot call on outside experts for help and are even severely restricted, due to confidentiality concerns, in doing Internet searches relating to the subject matter of unpublished applications. n265 Thus, to the extent it is desirable for examiners to be able accurately to predict how courts will interpret the claims that examiners allow, courts' use of extrinsic evidence unavailable to examiners can make such accurate prediction less likely.

Finally, even aside from concerns about identifying a representative artisan or relying on extrinsic evidence about an artisan's views, there is the question of whether an artisan perspective best

minimizes and resolves ambiguities in patent scope. Whatever the nature of a representative artisan, it is unlikely that the artisan belongs to any meaningful interpretive community for patent claims. Indeed, the artisan is probably unaccustomed to, and perhaps even unsympathetic with, demands to articulate claim boundaries with the precision necessary [\*376] to decide a particular case. n266 After all, the artisan's expertise and interest are in working with, developing, and understanding technology, not in defining its legal boundaries. In contrast, patent attorneys and agents, USPTO examiners, and claim-construing courts are part of a meaningful interpretive community for patent claims. n267 It is at least plausible that the members of such a community can develop an approach to claim drafting and interpretation that provides more certainty than would result from relying on the views of an artisan whose experience, skills, and interests lie elsewhere. n268

### *B. Undesirability of the Disjunction Between Rule and Practice*

Should the mismatch between claim construction practice and the ordinary artisan rule trouble us? If the courts' misguided invocation of the ordinary artisan perspective has not tightly constrained practice, is it worth bothering to correct the error? The sophisticated target audience of claims will probably act in accordance with what courts and others actually do, so it might be argued that there is little harm from the courts' mouthing of the empty ordinary artisan mantra.

Nonetheless, there are a number of reasons why it makes sense to revisit the governing perspective for claim construction. As a general matter, even when a rule is not closely followed in practice, its frequent statement can mislead and distract. Open adoption of a perspective [\*377] that is in greater harmony with claim construction's subrules would promote greater transparency and coherence in the law. n269 Increased transparency and coherence would make the law easier to understand and apply, thus clearing the way for a more realistic assessment of the law's condition and how it might be improved.

At best, the ordinary artisan rule prevents use of an alternative rule that might provide better guidance. n270 At worst, it invites detrimental reliance by suggesting to the unwary that the key to accurate claim interpretation is consultation with ordinary artisans, rather than with someone experienced in claim construction law and practice. Although the highly stylized and facially legalist nature of claims is likely to put even unsophisticated readers on notice that they should consult a legal expert, the law should not confuse the issue by also signaling the contrary.

Moreover, the ordinary artisan rule has demonstrated a capacity to mislead or distract even the legal cognoscenti. Legal commentators have cited the rule to support arguments for making claim construction more responsive to extrinsic evidence. n271 The Federal Circuit's Chief Judge has invoked the rule to argue for reconsideration of whether appellate review of claim construction should be wholly *de novo*. n272 Such invocations of the ordinary artisan rule not only distract advocates from more productive discussions, but also risk triggering an ill-considered increase in courts' reliance on extrinsic evidence, with all the disadvantages that could entail. n273

Indeed, patent law may already have suffered damage from mistaken invocation of the ordinary artisan rule. The ordinary artisan rule inevitably generates tension with subrules of claim construction that are strongly suspicious of extrinsic evidence. n274 An ordinary artisan cannot share this suspicion. The ordinary artisan necessarily begins the process of claim construction with what the courts consider disfavored [\*378] extrinsic evidence. To construe claims as the courts construe them, the ordinary artisan would have to ignore embedded views on meaning and read the claims and specification not as an ordinary artisan, but as someone else. n275

The tension that results from this conflict between the ordinary artisan rule and actual practice helps explain the courts' inability to find a comfortable resting place on such issues as how to weigh different kinds of evidence and whether to treat claim construction as a pure question of law. Because the practice of claim construction is so disconnected from the ordinary artisan rule, that rule can provide little guidance for the practice. It should not be surprising if the result is a claim construction jurisprudence that seems rootless and unusually vulnerable to methodological swings.

The courts' recent, abortive experiment with extreme dictionary-driven claim construction is a case in point. The ordinary artisan rule contributed to this experiment by indicating that claims' true meaning lies in the minds of artisans and thus outside both the patent document and the understandings of its real-world interpretive community. Given judges' suspicions of litigation-generated extrinsic evidence, they likely perceived dictionaries as the best way to access the artisan's noumenal world. n276 An approach to claim construction that focuses on a more accessible perspective -- one defined by the customs and experience of a true interpretive community -- would reduce the temptation to clutch at straws.

### *C. A Hybrid Alternative to the Ordinary Artisan Rule*

What alternatives are there to the current empty invocation of an ordinary artisan perspective for claim construction? Part IV.A argued [\*379] against trying to follow the ordinary artisan rule in actual practice. The following additional alternatives are considered in turn:

- (1) no paradigm perspective at all -- for example, use of a simple standard of reasonableness without reference to any governing perspective;
- (2) an ordinary artisan rule that is publicly acknowledged to be merely a proxy for use of the specification to understand the claims;
- (3) a pure patent attorney rule requiring that claims be interpreted from the perspective of an ordinary patent attorney, based solely on the intrinsic evidence and independently generated extrinsic evidence such as dictionaries or treatises; and
- (4) a hybrid rule requiring that claims be construed from the perspective of a reasonable patent attorney who has access to an ordinary artisan's technological knowledge. n277

The first possibility -- abandoning efforts to tie claim construction to a particular perspective -- would eliminate problematic invocation of an ordinary artisan's perspective while leaving in place a host of subrules for claim construction. n278 These subrules might be thought to provide enough instruction.

Such faith in subrules, however, would quickly be dashed. The subrules themselves are often conflicting and indeterminate. n279 Reference to a governing perspective can help break ties that the subrules generate. A governing perspective can do this by referring the courts to the habits and capacities of a well-defined interpretive community, thereby suggesting the objectives that should drive construction and the evidence that should be considered and weighed. n280 For example, current reference to an ordinary artisan's perspective can suggest that extrinsic evidence like expert testimony should have a greater role in [\*380] claim construction. n281 On the other hand, reference to a patent attorney's perspective would favor intrinsic evidence and fidelity to established rules for claim interpretation. The "no governing perspective" approach would therefore deny courts a reference point that might tip difficult cases in a predictable way.

The second proposal -- retention of the artisan rule combined with public acknowledgment that it is merely a proxy for reliance on the specification -- suffers from the same limitations as the "no governing perspective" approach. In essence, this proposal simply gives one subrule (fidelity to the specification) a favored place without further instruction on how to mediate conflicts with or between other subrules.

Moreover, the proposal seems a manifestly clumsy way to emphasize the importance of fidelity to the specification. As the recent experience with dictionary-driven claim construction suggests, n282 the artisan rule may in fact encourage reliance on evidence outside the specification. If the real goal is to stress the importance of the specification, why not do so more unequivocally and directly? Why not return to the CCPA's instruction to read "[c]laim language . . . in light of the specification as it would be interpreted by one of ordinary skill in the art"? n283 History has proven that invocation of an ordinary artisan's perspective is not necessary to make courts recognize that the remainder of the patent should be used as an aid in interpreting the claims. n284

What about the next alternative perspective -- a pure patent attorney's view? Such a perspective would point a construer of claims to the likely views of a true interpretive community. Anchorage in this community would avoid the problems of rootlessness and overly individualized artisan dependence created by reference to the perspective of artisans who are not regular, active members of such a larger interpretive group. Once the reference point is the perspective of someone who belongs to a true interpretive community, the approach to claim construction becomes rooted in the views of that community rather than an individual. There is a natural reduction in the importance of, first, defining detailed individual characteristics of the relevant perspective holder and, then, obtaining expert testimony from an individual [\*381] with those characteristics. Whatever the particular background of a competent patent attorney, the attorney's views on the proper construction of claim language will be conditioned by the practices and rules of the larger interpretive group. n285

Further, that community's practices and rules are to a substantial extent already recorded in readily accessible public materials: court and agency rulings on claim meanings; USPTO rules and guidance; n286 issued patents and their prosecution histories (which commonly involve interpretations of claim meaning by examiners and explanations of such meaning by patent attorneys or agents); and also books and bar journals. Those practices and rules have, in turn, commonly been designed to advance fundamental goals of claim construction law -- namely, efficiency, the public notice function of claims, and the certainty that comes from clarity. n287 The patent attorney perspective should therefore be more determinate of claim meaning than the perspective of an ordinary artisan. Moreover, because the patent attorney perspective is essentially a legal one, a court, patent attorney or agent, or USPTO examiner can assume this perspective more easily than that of the ordinary artisan, and with comparatively little need for technological expertise.

On the other hand, there are times when detailed technological knowledge is needed for a sensible construction of patent claims. By not incorporating explicit reference to technological knowledge, a pure patent attorney rule could fail to exploit the baseline guidance that such knowledge can provide. Reference to artisan knowledge can ensure that an attorney's construction is not founded on an incorrect understanding of the patent's technological disclosure, and can help to discourage claim constructions that are technologically absurd. n288

[\*382] Moreover, a pure patent attorney rule would chafe against current practice in situations where claims explicitly or implicitly rely on the specification's technological disclosure or otherwise undisclosed understandings of the art. One set of such situations involves means-plus-function limi-

tations, which make technological equivalents part of a claim's literal scope. n289 Another set involves situations where the court needs an artisan to define terms of art n290 -- for example, by explaining how an ordinary artisan would measure a quantity specified by a claim where different techniques are plausible. n291 A further set involves situations where claims use terms such as n292 "about" or "effective amount" n293 in ways that suggest reference to an associated technological condition or purpose. n294

A pure patent attorney rule could obscure the need to make the technology-specific inquiry that such claim language suggests. Indeed, a pure patent attorney rule could even signal that such an inquiry is fundamentally illegitimate. It could demand that a claim requiring such an inquiry be held invalid for indefiniteness. Thus, a pure patent attorney rule might tend to impose unreasonable and excessively costly burdens on claim drafting. Predictable and sensible claim interpretation that does not rely on implicit technological understandings may be impossible. n295 In any event, any argument that it is achievable goes well beyond the bounds of this paper.

[\*383] Reference to a hybrid perspective -- that of a patent attorney with access to the knowledge of an ordinary artisan -- would avoid such problems. The hybrid perspective would make the patent attorney's viewpoint dominant but would also provide for consultation of an artisan's knowledge. The result should be an approach to claim construction that combines proper respect for (1) a patent's intrinsic record, (2) established rules and conventions regarding claim construction, and (3) technological understanding. A hybrid perspective thus is well designed to foster interests not only in promoting uniformity and predictability, but also in ensuring that claim construction remains anchored in technological reality.

By making clear that the perspective of a patent attorney is primary, the hybrid perspective provides a well-defined starting viewpoint, one informed by publicly documented rules and the conventions of an active interpretive community. Members of this community would typically have less technological expertise than an ordinary artisan. Thus, they would be more likely to rely heavily on the specification to understand the nature of a claimed invention. The resulting emphasis on the specification would track an old intuition, re-embraced by the Federal Circuit in *Phillips*, that the patent's written description should be the primary aid to understanding claims. n296

On the other hand, by explicitly referring to the artisan's knowledge, the hybrid perspective could help resolve longstanding questions about the legal or factual status of claim construction. The hybrid perspective could suggest to courts how to acknowledge the factual aspects of claim construction, while still viewing claim construction as primarily "legal." In applying the perspective of a patent attorney, a court would be acting substantially "legally." But when calling for factual information outside of the patent and its prosecution history (as a patent attorney might in the course of the attorney's work on a patent application), the court would be making a fundamentally factual inquiry.

The hybrid perspective might nonetheless be criticized for sacrificing methodological purity and failing to resolve precisely when and to what degree the knowledge of the artisan should be called upon to aid the patent attorney. But such criticism is blunted by a long history of patent attorneys acting as mediators between raw technological understanding and the claims' public notice function. The hybrid perspective may not be pure, but it is well designed to draw from the lessons [\*384] of established practice. Understanding how the hybrid perspective operates will not require navigating in a vacuum.

*Gillette Co. v. Energizer Holdings, Inc.*, n297 discussed in Part III.A, can be used to show how reference to a hybrid standard can guide claim construction. The key claim language in *Gillette* included words such as "comprising" that have special meanings within the arts of claim drafting and claim construction, but that generally do not have special meanings within any relevant technological art. n298 The centrality of such language to the issue in *Gillette* accords with the hybrid perspective's emphasis on a patent attorney's view as the primary reference point for construction.

On the other hand, a patent attorney -- or a legal system -- interested in ensuring that a claim interpretation makes technological sense would not have stopped with consultation of this perspective. The attorney or system would check any technological assumptions that lay behind the interpretation. For example, in holding that the claim language did not exclude a four-blade razor, the *Gillette* majority assumed that the specification's account of prior problems with multi-blade razors did not teach against such a four-blade embodiment. n299 Indeed, the majority even stated explicitly that the disclosed "principles of progressive blade exposure and progressive blade span could apply equally to four or five blades." n300 This finding was a technological one that an attorney would appropriately resolve through consultation with an artisan.

Indeed, a patent attorney would likely ask an artisan multiple questions before making such a finding. Would an artisan have understood the problems with multi-blade razors to suggest that the solution in *Gillette*'s patent could not be extended to four-blade razors? How hard would the artisan have expected it to be to extend *Gillette*'s solution to more than three blades? If the artisan would have anticipated difficulty, would it derive simply from a need for significant effort or from a need for a further conceptual breakthrough? The attorney-plus-artisan perspective would encourage a court to demand that such questions be answered.

Of course, any rule requiring that claims be viewed from the perspective of an attorney is likely to be denounced as an attorney employment act. A rule that demands legal sophistication in claim interpretation might be criticized as yet another blow to the idea of a patent system for all -- yet another "reform" that favors wealthy inventors or assignees who can afford the best legal representation. But [\*385] such criticisms may be fundamentally misguided. More predictable, coherent, and transparent claiming rules and practices may provide the best hope for those of limited means to establish clear patent rights through the patent application process itself, a far cheaper process than patent litigation. n301 Moreover, patent law has already arranged itself in a way that places a premium on legal sophistication in claim drafting, patent prosecution, and claim construction. In this context, more forthright acknowledgment claim construction's already "legal" perspective would do little to erode patent law "democracy" while offering the possibility of valuable gains in legal transparency, coherence, and predictability....

## Footnotes:

\* Assistant Professor, University of Texas School of Law. For helpful comments and discussions, I thank Oren Bracha, William Fisher, Mark Gergen, Daniel Halperin, Scott Hemp-hill, Timothy Holbrook, James Lampert, Thomas Lee, Jeffrey Lefstin, Mark Lemley, Michael Meurer, Larry Sager, Greg Vetter, participants in the Intellectual Property and Communications Law Scholars Workshop at Michigan State University, and the editors of the *Harvard Journal of Law & Technology*.

n1 517 U.S. 370, 388 (1996) (quoting *Parker v. Hulme*, 18 F. Cas. 1138, 1140 (C.C. Pa. 1849)).

n2 See *In re Warmerdam*, 33 F.3d 1354, 1360 (Fed. Cir. 1994); see also *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) ("It is a 'bedrock principle' of patent law that 'the claims of a patent define the invention to which the patentee is entitled the right to exclude.'" (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004))).

n3 See, e.g., FTC, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY ch. 3, at 1-3, 9-11 & n.48, 17-20 (2003) [hereinafter FTC REPORT] (noting predictions that "the absence of patents would eliminate" or more than halve "innovation in the pharmaceutical industry"); Henry G. Grabowski, *Patents and New Product Development in the Pharmaceutical and Biotechnology Industries*, in SCIENCE AND CENTS: EXPLORING THE ECONOMICS OF BIOTECHNOLOGY 87, 88-92, 99-101 (John V. Duca & Mine K. Yucel eds., 2003) (proceedings of the 2002 Conference on Exploring the Economics of Biotechnology) (on file with the *Harvard Journal of Law & Technology*) ("Based on a survey of U.K. R&D managers, [two British economists] estimated that pharmaceutical R&D expenditures would be reduced by 64 percent in the absence of patent protections.").

n4 See Jay P. Kesan & Thomas S. Ulen, *Foreword: Intellectual Property Challenges in the Next Century*, 2001 U. ILL. L. REV. 57, 58 n.4 (2001) ("In the last two decades, the portion of businesses' worth attributable to intellectual assets has quadrupled from roughly one-sixth to more than two-thirds."); cf. Gregg S. Sharp, *A Layman's Guide to Intellectual Property in Defense Contracts*, 33 PUB. CONT. L.J. 99, 103-04 (2003).

n5 See John M. Golden, *"Patent Trolls" and Patent Remedies*, 85 TEX. L. REV. 2111, 2111 n.3 (2007).

n6 U.S. CONST. art. 1, § 8, cl. 8 (giving Congress the power "[t]o promote the Progress of Science and useful Arts" through grants of patents); see, e.g., Michael A. Heller & Rebecca S. Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, 280 SCIENCE 698, 698 (1998) ("A proliferation of intellectual property rights upstream may be stifling life-saving innovations further downstream in the course of research and product development.").

n7 See *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 732 (2002) ("If competitors cannot be certain about a patent's extent, they may be deterred from engaging in legitimate manufactures outside its limits, or they may invest by mistake in competing products that the patent secures."); FTC REPORT, *supra* note 3, ch. 5, at 3-4 (listing negative "impacts of uncertainty"); Craig Allen Nard, *A Theory of Claim Interpretation*, 14 HARV. J.L. & TECH. 1, 7 (2000) (noting that "a patent claim having seemingly migratory borders" might discourage "future innovation"). See generally Robert P. Merges & Richard R. Nelson, *On the Complex Economics of Patent Scope*, 90 COLUM. L. REV. 839, 839, 908-16 (1990) (concluding that "[w]hen a broad patent is granted or expanded via the doctrine of equivalents, its scope diminishes incentives for others to stay in the invention game").

n8 Cf. A. MITCHELL POLINSKY, AN INTRODUCTION TO LAW AND ECONOMICS 12 (2d ed. 1989) (describing "the simple version of the Coase Theorem" as stating that "[i]f there are zero transaction costs, the efficient outcome will occur regardless of the choice of legal rule"); Joseph Scott Miller, *Enhancing Patent Disclosure for Faithful Claim Construction*, 9 LEWIS & CLARK L. REV. 177, 196 (2005) ("[I]t is well-accepted that clearer property boundaries promote efficiency by lowering the transaction costs associated with bargaining over rights.").

n9 See Robert P. Merges, *Intellectual Property Rights and the New Institutional Economics*, 53 VAND. L. REV. 1857, 1866 (2000); cf. Paul J. Heald, *A Transaction Costs Theory of Patent Law*, 66 OHIO ST. L.J. 473, 489 (2005) (arguing that the definition of inventions through patents can aid negotiations); Mark A. Lemley, *The Changing Meaning of Patent Claim Terms*, 104 MICH. L. REV. 101, 102 (2005) ("[O]nce the court construes the claims, most patent cases settle, and those that do not are often decided on summary judgment.").

n10 28 U.S.C. § 1295(a)(1) (2000). See generally William M. Landes & Richard A. Posner, *An Empirical Analysis of the Patent Court*, 71 U. CHI. L. REV. 111, 111 (2004) (describing reasons for creating the Federal Circuit).

n11 517 U.S. 370 (1996).

n12 *Id.* at 372, 388 ("hold[ing] that the construction of a patent, including terms of art within its claim, is exclusively within the province of the court").

n13 *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1455-56 (Fed. Cir. 1998) (en banc).

n14 Given that patent rights exist at the evolving edges of technology and, like contracts, effectively "regulate the future," Richard A. Posner, *The Law and Economics of Contract Interpretation*, 83 TEX. L. REV. 1581, 1582 (2005), it is debatable whether demands for certainty in patent scope can ever be satisfied. *Cf.* H.L.A. HART, *THE CONCEPT OF LAW* 128 (Clarendon Press 2d ed. 1994) (1961) ("[U]ncertainty at the borderline is the price to be paid for the use of general classifying terms in any form of communication concerning matters of fact."); Dan L. Burk & Mark A. Lemley, *Quantum Patent Mechanics*, 9 LEWIS & CLARK L. REV. 29, 52 (2005) (suggesting that "the whole search for a 'plain' or 'ordinary' or 'settled' meaning of patent claims is doomed to failure"); Paul M. Janicke, *On the Causes of Unpredictability of Federal Circuit Decisions in Patent Cases*, 3 NW. J. TECH. & INTELL. PROP. 93, 97 (2005) (asserting that the unpredictability of claim construction is, "to a large extent, an expected byproduct of a legal system that tries to express technical exclusivity with words"); David L. Schwartz, *Practice Makes Perfect? An Empirical Study of Claim Construction Reversal Rates in Patent Cases*, 107 MICH. L. REV. (forthcoming 2008) (manuscript at 40, available at <http://ssrn.com/abstract=1012949>) ("Claim construction may be inherently indeterminate.").

n15 Kimberly A. Moore, *Markman Eight Years Later: Is Claim Construction More Predictable?*, 9 LEWIS & CLARK L. REV. 231, 233, 239 (2005) (reporting a 34.5% reversal rate for claim constructions since the Supreme Court's 1996 *Markman* decision); *see also Cybor*, 138 F.3d at 1476 n.4 (Rader, J., dissenting) (citing figures showing a 38.3% reversal rate between April 5, 1995 and November 24, 1997). *But cf.* Jeffrey A. Lefstin, *Claim Construction, Appeal, and the Predictability of Interpretive Regimes*, 61 U. MIAMI L. REV. 1033, 1037-39 (2007) (questioning the probative value of many studies of reversal rates). Reversal rates in civil cases decided by other courts of appeals recently averaged about 12%. OFFICE OF JUDGES PROGRAMS, ADMIN. OFFICE OF THE U.S. COURTS, FEDERAL JUDICIAL CASELOAD STATISTICS 26 (2005), available at <http://www.uscourts.gov/caseload2005/contents.html>. Of course, the relatively high reversal rates for patent claim construction could be explained by litigants' greater selectivity in choosing which claim constructions to appeal, rather than any atypical failure on the part of courts. *See* Arti K. Rai, *Engaging Facts and Policy: A Multi-Institutional Approach to Patent System Reform*, 103 COLUM. L. REV. 1035, 1059 (2003) ("[S]election effect problems suggest that these statistics on claim construction reversals should be read cautiously."); *cf.* PETER L. STRAUSS ET AL., *GELLHORN AND BYSE'S ADMINISTRATIVE LAW* 1046 (rev. 10th ed. 2003) (arguing that "rates of affirmance and reversal" may simply reflect "the discounted value of bringing actions"). The consensus, however, is that the causes of high claim construction reversal rates are not so benign. T.S. Ellis, III, *Letter from Judge Ellis*, 16 FED. CIR. B.J. 1, 1-2 (2006) ("[E]ven those who believe (as I do) that the problem is not so dire as to justify radical structural changes in the judiciary cannot doubt that there is a problem . . .").

n16 *See* Michael S. Connor & John A. Wasleff, *Where Do We Go from Here? A Critical Examination of Existing Claim Construction Doctrine*, 86 J. PAT. & TRADEMARK OFF. SOC'Y 878, 878 (2004) (noting competing "paradigms of claim construction" in Federal Circuit opinions); Timothy R. Holbrook, *Substantive Versus Process-Based Formalism in Claim Construction*, 9 LEWIS & CLARK L. REV. 123, 146 (2005) (noting "a significant split at the Federal Circuit" over approaches to claim construction); Nard, *supra* note 7, at 4-6 (discussing the use of "textualist" and "hyper-textualist" claim construction methodologies); R. Polk Wagner & Lee Petherbridge, *Is the Federal Circuit Succeeding? An Empirical Assessment of Judicial Performance*, 152 U. PENN. L. REV. 1105, 1112 (2004) (classifying Federal Circuit judges as "Proceduralists," "Holistics," or "Swing Judges"). *But cf.* Janicke, *supra* note 14, at 110 (arguing that the Federal Circuit's success in settling a number of issues "is obscured by diversity of thought about the new, finer questions invariably generated by those very achievements").

n17 415 F.3d 1303 (Fed. Cir. 2005) (en banc).

n18 *Id.* at 1320-23.

n19 361 F.3d 1363 (Fed. Cir. 2004).

n20 *Id.* at 1371.

n21 *Id.* at 1370-71.

n22 *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc) (reaffirming "the basic principles of claim construction" set forth in earlier cases); *see also* Joseph Scott Miller & James A. Hilsenteger, *The Proven Key: Roles and Rules for Dictionaries at the Patent Office and the Courts*, 54 AM. U. L. REV. 829, 907 (2005) ("The court in *Phillips* effectively dials its claim construction jurisprudence back to October 15, 2002, just before *Telegenix* was decided."); Kristen Osenga, *Linguistics and Patent Claim Construction*, 38 RUTGERS L.J. 61, 80 (2006) ("Instead of embracing the opportunity, the Federal Circuit withdrew to the same unclear method of claim construction that had always existed."); Michael Saunders, Note, *A Survey of Post-Phillips Claim Construction Cases*, 22 BERKELEY TECH. L.J. 215, 215 (2007) ("*Phillips* excises certain portions of disfavored case law while reaffirming the basic structure of claim construction . . .").

n23 *Phillips*, 415 F.3d at 1313-14. In this Article, the word "technological" is generally used to refer to the kind of technical knowledge possessed by, or meant to be conveyed by a patent to, one of skill in the art of a patented invention -- even though, strictly speaking, a patented invention may not need to be associated with a recognized "technological art[.]" *Ex parte Lundgren*, 76 U.S.P.Q.2d (BNA) 1385, 1388 (B.P.A.I. 2005). *But cf. In re Comiskey*, 499 F.3d 1365, 1375 (Fed. Cir. 2007) ("The Constitution explicitly limited patentability to the national purpose of advancing the useful arts -- the process today called technological innovation." (internal quotation marks omitted)).

n24 Craig Allen Nard has observed:

Upon reading Federal Circuit opinions written by both hypertextual-ists and pragmatic textualists, one reads time and again that "the focus in construing disputed terms in claim language is . . . on the *objective* test of what one of ordinary skill in the art at the time of the invention would have understood the term to mean."

Nard, *supra* note 7, at 52 (quoting *Markman v. Westview Instruments, Inc. (Markman I)*, 52 F.3d 967, 986 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996)).

n25 *See, e.g.,* Jennifer K. Bush et al., *Six Patent Law Puzzlers*, 13 TEX. INTELL. PROP. L.J. 1, 11 (2004) ("*[E]veryone agrees . . . that (absent situations where the patentee clearly adopts another definition) claims must be given their ordinary meaning to a person of ordinary skill in the art . . .*" (emphasis added)); Connor & Wasleff, *supra* note 16, at 880 (criticizing the Federal Circuit for "los[ing] track of the intended audience of the patent document . . . a person of ordinary skill in the art"); Miller, *supra* note 8, at 187-88 (2005) (suggesting that claim interpretation would benefit from emphasizing fidelity to "the perspective of a person having ordinary skill in the art"); Miller & Hilsenteger, *supra* note 22, at 883 (accepting that the "ordinary meaning" to be determined is that to a "person of ordinary skill in the art"); Kelly Casey Mullally, *Patent Hermeneutics: Form and Substance in Claim Construction*, 59 FLA. L. REV. 333, 365 (2007) ("A substantive methodology properly emphasizes the person of ordinary skill in the art at the *forefront* of the claim construction inquiry and the vast amount of knowledge attributed to that person." (emphasis added)); Nard, *supra* note 7, at 53 ("[O]nly patent law's [ordinary artisan] is positioned to provide the technical knowledge that is needed to arrive at a meaning consistent with how the disputed claim language is understood in the germane technological community."); Osenga, *supra* note 22, at 101-02 (arguing that "the community whose understanding and shared reaction should be the *focus* of interpretation is that collectively represented by the [ordinary artisan]" (emphasis added)); Rai, *supra* note 15, at 1046 ("[U]nder long-established patent case law, patent claims are *not* directed at the ordinary speaker of English; rather, they are directed at the aforementioned [ordinary artisan]."); Michael Risch, *The Failure of Public Notice in Patent Prosecution*, 21 HARV. J.L. & TECH. 179, 204 (2007) (arguing for use of an ordinary artisan rule in United States Patent and Trademark Office ("USPTO") examinations as well as in litigation).

n26 *See, e.g.,* James B. Altman et al., *The Law of Patent Claim Interpretation: The Revolution Isn't Finished*, 8 FED. CIR. B.J. 93, 112 (1998) (criticizing "the unfounded expectation that judges normally can construe patents in line with the 'skilled in the art' standard without the benefit of extrinsic evidence"); Connor & Wasleff, *supra* note 16, at 892 ("[T]he exclusion of expert testimony from the claim construction process is a fundamental mistake that defeats the doctrinal goal of understanding the patent from the view of a person of skill in the art."); Nard, *supra* note 7, at 56 (arguing that the special role of the ordinary artisan in patent law means that "extrinsic evidence is as much a part of the public record as is intrinsic evidence"); Osenga, *supra* note 22, at 103 ("In order to truly return the [ordinary artisan] to the claim construction table, a number of changes in current claim construction methodology must be implemented."); *cf.* Mullally, *supra* note 25, at 365 (arguing that a "substantive methodology properly emphasis[ing] the person of ordinary skill in the art . . . necessitates an expansive inquiry into context"). A patent's "prosecution history" is the official record of correspondence between an applicant and the USPTO during the latter's pre-issuance examination of the patent. *See*

DONALD S. CHISUM ET AL., PRINCIPLES OF PATENT LAW 936 (3d ed. 2004) (defining the "prosecution history" as "the record of proceedings in the PTO on the application upon which the patent was issued").

n27 *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 469 F.3d 1039, 1040 (Fed. Cir. 2006) (Michel, C.J., dissenting from denial of reh'g en banc) (internal quotation marks omitted).

n28 See Joseph Mueller, *Claims as Pointers: The Statutory Approach to Claim Construction*, 12 J. INTELL. PROP. L. 501, 504 (2005).

n29 See 35 U.S.C. § 112 para. 1 (2000) (setting forth the Patent Act's enablement requirement).

n30 STANLEY FISH, IS THERE A TEXT IN THIS CLASS? THE AUTHORITY OF INTERPRETIVE COMMUNITIES 14 (1980) ("[I]t is interpretive communities, rather than either the text or the reader, that produce meanings and are responsible for the emergence of formal features.").

n31 Cf. *Amgen*, 469 F.3d at 1040 (Michel, C.J., dissenting from denial of reh'g en banc) (questioning "the premise that claim construction is always a purely legal exercise, devoid of factual content").

n234 *Markman v. Westview Instruments, Inc. (Markman II)*, 517 U.S. 370, 391 (1996) (holding that construction of a claim term was "an issue for the judge, not the jury"); *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1456 (Fed. Cir. 1998) (en banc) (stating that "as a purely legal question, we review claim construction de novo on appeal").

n235 In regimes not characterized by peripheral claiming but instead by claims that operate as mere pointers to the written description, Mueller, *supra* note 28, at 505, it would make more sense for the audience of claims to be viewed as equivalent to that for the written description, since there no longer would be as significant a distinction between claims and the written description themselves.

n236 See, e.g., FOUNDATIONS OF INTELLECTUAL PROPERTY 128 (Robert P. Merges & Jane C. Ginsburg eds., 2004) ("[T]he 'interpretative audience' for most patents is likely to be primarily customers and competitors of the patentee . . . ."); THOMAS J. GREER, JR., WRITING AND UNDERSTANDING U.S. PATENT CLAIMS 1 (1979) ("[W]ith the exception of a few federal judges and an occasional engineer or executive, only two groups of people are familiar with patent claims. Namely, patent attorneys who write them and examiners in the U.S. Patent and Trademark Office . . . ."); Jeanne C. Fromer, *Patent Disclosure*, 94 IOWA L. REV. (forthcoming 2009) (manuscript at 22, available at <http://ssrn.com/abstract=1116020>) (characterizing a patent's "legal layer describing the metes and bounds of the patent right" as "of interest to competitors . . . , the PTO . . . . courts . . . , and lawyers, usually patent specialists"); Lutz, *supra* note 166, at 490 ("[T]he present system of claims evolved mainly to meet the requirements of the courts and the Patent Office."). Such decision-makers may even actively discourage the reading of patents by scientists and engineers. See Golden, *supra* note 5, at 2157. By the time a patent or patent application is published, most of its useful information will likely be available via other channels, such as conference proceedings or scientific journals. Thus, reading such patents or applications will probably provide little substantive benefit for scientific or engineering purposes, but will increase the risk of enhanced damages due to a finding of willful infringement.

n237 See Lichtman, *supra* note 94, at 161 (noting that "approximately two thirds of the applications" among 20,000 "identif[ied] the law firm that represented the applicant during prosecution").

n238 An individual can meet the educational qualifications for being an examiner by having an undergraduate degree in any of a number of scientific or engineering fields, along with an overall undergraduate grade-point-average of a B- or better. See U.S. Patent & Trademark Office, Examine the Possibilities: Qualifications, <http://www.uspto.gov/go/ac/ahrpa/ohr/jobs/qualifications.htm> (last modified Apr. 17, 2007) (listing qualifying degrees and course hours, and stating that the basic requirement of "Superior Academic Achievement" is satisfied by a "[g]rade point average (GPA) of at least 2.66 out of a possible 4.0 for all courses completed during your entire undergraduate education or during the final 2 years of your undergraduate curriculum"). Likewise, an individual can show "the required scientific and technical training" to apply for the patent bar by "provid[ing] an official transcript showing that a Bachelor's degree was awarded in" any of a number of scientific or engineering fields. U.S. PATENT & TRADEMARK OFFICE, GENERAL REQUIREMENTS BULLETIN FOR ADMISSION TO THE EXAMINATION

FOR REGISTRATION TO PRACTICE IN PATENT CASES BEFORE THE UNITED STATES PATENT AND TRADEMARK OFFICE 4 (2008), available at <http://www.uspto.gov/web/offices/dcom/olia/oed/grb.pdf>.

n239 See *supra* text accompanying notes 69 to 89.

n240 See *Gen. Elec. Co. v. Wabash Co.*, 304 U.S. 364, 369 (1938) ("The inventor must 'inform the public during the life of the patent of the limits of the monopoly asserted, so that it may be known which features may be safely used or manufactured without a license and which may not.'" (quoting *Permutit Co. v. Graver Corp.*, 284 U.S. 52, 60 (1931))); see also *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 732 (2002) ("If competitors cannot be certain about a patent's extent, they may be deterred from engaging in legitimate manufactures outside its limits, or they may invest by mistake in competing products that the patent secures.").

n241 A company, such as a law firm deciding what types of computers to use, may act in a purely consumptive role with respect to potentially infringing products or services, and may therefore lack any personnel with true expertise in the relevant technology (for example, computer or computer-part design or manufacturing).

n242 535 U.S. 722 (2002).

n243 *Id.* at 732; see *Consolidated Elec. Light Co. v. McKeesport Light Co.*, 159 U.S. 465, 474 (1895) ("The object of [the Patent Act's requirement of a written description and claims] is to apprise the public of what the patentee claims as his own, the courts of what they are called upon to construe, and competing manufacturers and dealers of exactly what they are bound to avoid."); *FABER*, *supra* note 69, at 1-1 to 1-2 (describing the Patent Act as requiring that claims "define 'the invention' . . . in such detail that the patent examiner and, later, the world of prospective infringers and judges who construe the claims can understand what the claimed subject matter is"); John F. Duffy, *On Improving the Legal Process of Claim Interpretation: Administrative Alternatives*, 2 WASH. U. J.L. & POL'Y 109, 159 (2000) ("If patent attorneys advising their clients can reliably predict how particular claim language will be interpreted in enforcement proceedings, then the claim has served its purpose.").

n244 MUELLER, *supra* note 138, at 298-300. In the absence of estoppel, infringement can generally occur not only when an unauthorized product or process satisfies the literal scope of a claim's terms, but also when, even though outside the claim's literal scope, a product or process is "equivalent" to the claimed invention on an element-by-element basis. See *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 21, 28-30 (1997).

n245 *Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 813 (Fed. Cir. 2002) (emphasis added) (citing *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1457 (Fed. Cir. 1998) (en banc)); cf. *Spring Windows Fashions LP v. Novo Indus., L.P.*, 323 F.3d 989, 995 (Fed. Cir. 2003) (viewing a "reasonable competitor" perspective as the proper viewpoint from which to evaluate whether the scope of claims should be understood to be restricted by prosecution history disclaimer). While deciding a claim construction question in *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350 (Fed. Cir. 1999), the Federal Circuit invoked both competitor and artisan viewpoints, rejecting an argument that the specification provided a definition for a claim term on the ground that quoted material did "not so clearly redefine [claim language] so as to put a reasonable competitor or one reasonably skilled in the art on notice." *Id.* at 1357 (emphasis added).

n246 *Haynes Int'l, Inc. v. Jessop Steel Co.*, 8 F.3d 1573, 1578 n.4 (Fed. Cir. 1993), amended by 15 F.3d 1076 (Fed. Cir. 1994) (emphasis added).

n247 *All Dental Prodx, LLC v. Advantage Dental Prods., Inc.*, 309 F.3d 774, 779-80 (Fed. Cir. 2002) (emphasis added); see also *Markman v. Westview Instruments, Inc. (Markman I)*, 52 F.3d 967, 978 (Fed. Cir. 1995), *aff'd*, 517 U.S. 370 (1996) ("[I]t is only fair (and statutorily required) that competitors be able to ascertain to a reasonable degree the scope of the patentee's right to exclude."). The case law seems somewhat unclear on another technical point -- namely, the standard for overcoming a presumption that a patentee surrendered an argument of infringement under the doctrine of equivalents. The Supreme Court has stated that, to do so, "[t]he patentee must show that at the time of the amendment one skilled in the art could not reasonably be expected to have drafted a claim that would have literally encompassed the alleged equivalent." *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd.*, 535 U.S. 722, 741 (2002) (emphasis added). This statement has led the authors of one casebook to ask, "Which art? Is it the art of claim drafting, or

the technological field of the particular invention?" MERGES & DUFFY, *supra* note 91. at 877. At least one member of the Federal Circuit has recently indicated a belief that the relevant art is that of claim drafting. *See Festo*, 344 F.3d at 1377 (Rader, J., concurring) ("[A]ny after-arising technology . . . would not fall within the scope of what the drafter would have foreseen and claimed. After all, a skilled patent drafter is a legal technician, not an inventor.").

n248 *In re Seagate Tech., LLC*, 497 F.3d 1360, 1371 (Fed. Cir. 2007) (en banc).

n249 35 U.S.C. § 284 (2000).

n250 *Underwater Devices Inc. v. Morrison-Knudsen Co.*, 717 F.2d 1380, 1389-90 (Fed. Cir. 1983), *overruled en banc by Seagate*, 497 F.3d 1360.

n251 *Seagate*, 497 F.3d at 1371 (abrogating "the affirmative duty of due care" and stressing "that there is no affirmative obligation to obtain opinion of counsel").

n252 *Knorr-Bremse Systeme fuer Nutzfahrzeuge GmbH v. Dana Corp.*, 383 F.3d 1337, 1346 (Fed. Cir. 2004) (en banc).

n253 *See Seagate*, 497 F.3d at 1374 (assuming the continued existence of issues "stemming from an advice of counsel defense to willfulness"); *Cohesive Techs., Inc. v. Waters Corp.*, 526 F. Supp. 2d 84, 103-04 (D. Mass. 2007) (stating that, in assessing willfulness, "a court should consider . . . whether the infringer solicited or followed the advice of counsel," and finding lack of proof of willfulness in part because the infringer had "obtained an opinion of counsel in good faith"); *see also Union Carbide Chems. & Plastics Tech. Corp. v. Shell Oil Co.*, 425 F.3d 1366, 1380-81 (Fed. Cir. 2005) (affirming a jury verdict of no willful infringement where the defendants reasonably relied on the opinion of "an in-house patent attorney" with a Ph.D. in chemical engineering); *Harris Corp. v. Ericsson Inc.*, 417 F.3d 1241, 1259 (Fed. Cir. 2005) (affirming a jury verdict of willful infringement in part because "evidence provided the jury with some basis for believing . . . that [outside counsel's] opinion was simply a rehashing of [the defendant]'s own internal conclusions on noninfringement").

n254 *See, e.g., Velcro Indus. B.V. v. Taiwan Paiho Ltd.*, No. Civ. 04-CV-242-JD, 2005 WL 2573383, at \*7 (D.N.H. Oct. 12, 2005) (observing that the plaintiff could "use [an] interrogatory answer to argue that [the defendant] did not in fact receive a 'legal opinion,' but merely oral advice from a 'Patent Engineer'").

n255 *See supra* text accompanying notes 93 to 95.

n256 Of course, incurring the cost required for a reliable assessment of patent scope may not make economic sense if little is perceived to be at stake because, for example, a potential infringer is making a minimal investment. The lack of any provision for criminal liability for patent infringement may help maintain the perception of small stakes in such a situation.

n257 *See Arkie Lures, Inc. v. Gene Larew Tackle, Inc.*, 119 F.3d 953, 958 (Fed. Cir. 1997) ("Whether some plastics manufacturers knew how to mix salt and plastisol, as was argued in the district court, did not make it obvious to proceed against the general view in the field of plastic fish lures.").

n258 *See OSRAM GmbH v. ITC*, 505 F.3d 1351, 1356 (Fed. Cir. 2007) (observing that "OSRAM's witness distinguished the way powders are sold from the way they are characterized by scientists working on LED development").

n259 *Cf. Mullally, supra* note 25, at 352 ("The level of skill thus varies greatly and can change within a given discipline over time as the field advances and new information becomes available.").

n260 *Cf. Scott A. Turk, The Proper Method for Using Dictionaries to Construe Patent Claims*, 6 CHI.-KENT J. INTELL. PROP. 43, 60 (2006).

n261 *See infra* text accompanying notes 266-268.

n262 *Cf.* Vitronics Corp. v. Conceptronic, Inc. 90 F.3d 1576, 1583 (Fed. Cir. 1996) ("[C]ompetitors are entitled to review the public record, apply the established rules of claim construction, ascertain the scope of the patentee's claimed invention and, thus, design around the claimed invention."); Kaiser, *supra* note 41, at 1033 (arguing in favor of "the court bas[ing] its claim construction primarily on the documents available to the competitor"). *See generally* Lefstin, *supra* note 15, at 1063 ("If all observers (judicial or otherwise) begin with approximately the same set of information, we maximize the likelihood of achieving consistent interpretations."); Toshiko Takenaka, *Claim Construction and the Extent of Patent Protection: A Comparative Analysis of the Phillips en banc Federal Circuit Decision*, 1 J. INTELL. PROP. L. & PRAC. 119, 130 (2005) ("Courts should keep in mind that claims are drafted by a human being, not a super-human hypothetical person . . .").

n263 Phillips v. AWH Corp., 415 F.3d 1303, 1318 (Fed. Cir 2005) (en banc).

n264 *Id.* (listing five reasons to consider extrinsic evidence "less reliable than the patent and its prosecution history in determining how to read claim terms").

n265 *See supra* note 64.

n266 *Cf.* Marmor, *supra* note 35, at 10 ("[P]art of what makes context often clearer than one would have assumed is the fact that the law typically speaks to a legal community, not to lay people.").

n267 *See* John R. Thomas, *On Preparatory Texts and Proprietary Technologies: The Place of Prosecution Histories in Patent Claim Interpretation*, 47 UCLA L. REV. 183, 185 n.6 (1999) ("[W]e can at least acknowledge that the patent professionals form an interpretative community.").

n268 *See, e.g.,* MERGES & DUFFY, *supra* note 91, at 29 (stating that "specialized words" for use in patent claims "have been selected over time to describe elements and their interaction in the most succinct and yet *most general* manner"); Woodward, *supra* note 69, at 755 ("[P]rofessional jargon, if properly used, may aid rather than detract from certainty of interpretation . . ."); *cf.* Autogiro Co. of Am. v. United States, 384 F.2d 391, 397 (Ct. Cl. 1967) ("Since the ability to verbalize is crucial in statutory enactment, legislators develop a facility with words not equally developed in inventors."). It might be argued that patent attorneys and even Federal Circuit judges have incentives to make claim construction unpredictable: greater difficulty in claim construction may generate more attorney business, and a wider range of interpretive choices may give judges more discretionary power. But a comparison of claim construction law today with the law before the creation of the Federal Circuit suggests that the Federal Circuit has made the rules of claim construction clearer. Moreover, although practitioners often push against the boundaries of claim construction in particular cases, greater overall predictability may be in the bar's net economic interest. To the extent claim construction is unpredictable, clients may have little reason to invest in either patents or attorney advice regarding them. Although greater uncertainty might yield more litigation per patent, it could also lead to lower overall investment in patents, patent-related legal services, and innovation. Similarly, although incoherent claim construction law may give Federal Circuit judges more discretionary power in individual cases, it limits their ability to use precedential rulings to project their views over a broad range of cases.

n269 *See* Saunders, *supra* note 22, at 239 (arguing that *Phillips* has produced "subterfuge," in which courts "use dictionary definitions under the guise of 'ordinary meaning' without indicating what sources to which [they] refer").

n270 Although courts in a number of countries putatively use an ordinary artisan perspective for claim construction, they have used this perspective to justify strikingly different interpretive methodologies. This fact further suggests that the ordinary artisan perspective is little more than a makeweight, meaninglessly invoked in relation to any of a wide range of approaches. *See* TAKENAKA, *supra* note 150, at 127-29 (noting that German "courts use the perspective of a hypothetical person in the art . . . to expand the literal meaning" to include "variations and equivalents," whereas Japanese courts historically invoked this perspective "to support a narrow claim construction" tied to "disclosed embodiments").

n271 *See supra* note 26 and accompanying text.

n272 *See supra* note 27 and accompanying text.

n273 See *supra* text accompanying notes 261 to 265.

n274 See, e.g., *Phillips v. AWH Corp.*, 415 F.3d 1303, 1318 (Fed. Cir. 2005) (en banc) ("[C]onclusory, unsupported assertions by experts as to the definition of a claim term are not useful to a court.").

n275 In *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576 (Fed. Cir. 1996), the Federal Circuit made clear that direct evidence of an artisan's views on claim meaning is generally disfavored:

Had the district court relied on the expert testimony and other extrinsic evidence solely to help it understand the underlying technology, we could not say the district court was in error. But testimony on the *technology* is far different from other expert testimony . . . on the *proper construction* of a disputed claim term, relied on by the district court in this case.

*Id.* at 1585.

n276 See, e.g., *Tex. Digital Sys., Inc. v. Telegenix, Inc.*, 308 F.3d 1193, 1202-03 (Fed. Cir. 2002) (repeatedly justifying a dictionary-driven approach to claim construction as a way to construe claims according to the views of "those skilled in the art"); *Miller, supra* note 8, at 191 ("This increased reliance on dictionaries and the like. . . appears rooted in a desire to obtain adequate information about the meaning of claim terms to people having ordinary skill in the art . . . without falling prey to biased advocacy masquerading as expert testimony."); cf. *Miller & Hilsenteger, supra* note 22, at 909 ("Given . . . that expert testimony continues to bear the taint of comparatively greater bias, one must expect some courts to prefer dictionaries as sources for ordinary meaning.").

n277 With some rough equivalence but a shift in emphasis, this last possibility might also be characterized as the perspective of an ordinary artisan working with a reasonable patent attorney. This characterization might ease transition from current invocations of an ordinary artisan rule to an analog of the hybrid perspective proposed in the text, and would fit with case law holding "that inventors represented by counsel are presumed to know the law" for purposes of assessing inequitable conduct. *Brasseler, U.S.A. I, L.P. v. Stryker Sales Corp.*, 267 F.3d 1370, 1385 (Fed. Cir. 2001).

n278 The USPTO's current rule for claim construction in interferences demonstrates the ability to state a rule for "reasonable" construction that makes no reference to a governing perspective. 37 C.F.R. § 41.200(b) (2008) ("A claim shall be given its broadest reasonable construction in light of the specification of the application or patent in which it appears.").

n279 The rules that claims should be read in light of the specification and that the specification should not limit the claims are examples. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1323 (Fed. Cir. 2005) (en banc) ("[W]e recognize that the distinction between using the specification to interpret the meaning of a claim and importing limitations from the specification into the claim can be a difficult one to apply in practice.").

n280 See *supra* Part II.

n281 See *supra* note 26.

n282 See *supra* text accompanying note 276.

n283 *In re Johnson*, 558 F.2d 1008, 1016 (C.C.P.A. 1977).

n284 See *supra* note 214 and accompanying text; see also 6 ERNEST BAINBRIDGE LIPSCOMB III, LIPSCOMB'S WALKER ON PATENTS §21:32, at 372-73 (3d ed. 1987) ("An uncommon word in a claim is to be construed in the light of the description, rather than . . . the dictionary, because the patentee presumably knew the description . . . and because the reader of a patent may reasonably be expected to consult the description before he consults the dictionary. . .").

n285 *Cf.* STANLEY FISH, *DOING WHAT COMES NATURALLY: CHANGE, RHETORIC, AND THE PRACTICE OF LEGAL THEORY IN LITERARY AND LEGAL STUDIES* 153 (1989) ("Interpretive communities are no more than sets of institutional practices . . .").

n286 *See Foreword* to MPEP, *supra* note 64 ("This Manual is published to provide . . . patent examiners, applicants, attorneys, agents, and representatives of applicants with a reference work on the practices and procedures relative to the prosecution of patent applications before the USPTO.").

n287 *See supra* note 268 and accompanying text.

n288 A rule disfavoring technologically nonsensical constructions is consistent with similar discouragement of absurd constructions in the interpretation of contracts and statutes. *See, e.g.,* FutureSource LLC v. Reuters Ltd., 312 F.3d 281, 284 (7th Cir. 2002) ("Nonsensical interpretations of contracts, as of statutes, are disfavored."); *South Dakota v. Yankton Sioux Tribe*, 522 U.S. 329, 346 (1998) (adopting "a 'sensible [statutory] construction' that avoids [an] 'absurd conclusion'" (quoting *United States v. Granderson*, 511 U.S. 39, 56 (1994))). Such a rule might have demanded a different result in the Federal Circuit case in which the term "polygonal" was construed to require a degree of geometric perfection beyond what the patent's own disclosure suggested it was even possible to attain *See Int'l Rectifier Corp. v. IXYS Corp.*, 361 F.3d 1363, 1371 (Fed. Cir. 2004); *see also supra* text accompanying notes 19 to 21.

n289 *See* 35 U.S.C. § 112 para. 6 (2000).

n290 *See Vanderlande Indus. Nederland BV v. ITC*, 366 F.3d 1311, 1321 (Fed. Cir. 2004) ("[W]here evidence -- such as expert testimony credited by the factfinder, or technical dictionaries -- demonstrates that artisans would attach a special meaning to a claim term . . . general-usage dictionaries are rendered irrelevant with respect to that term . . .").

n291 *See, e.g.,* OSRAM GmbH v. ITC, 505 F.3d 1351, 1357 (Fed. Cir. 2007) ("When there is more than one method of measurement and the patent does not explicitly discuss the methods, persons experienced in the field are reasonably deemed to select the method that better measures the parameters relevant to the invention."). *But cf.* *Cordis Corp. v. Medtronic AVE, Inc.*, 511 F.3d 1157, 1168-69 (Fed. Cir. 2008) (leaving unanswered whether "the methodology of measurement should have been deemed an issue of law for the court [i.e., a question of claim construction] rather than an issue of fact that was part of the infringement inquiry submitted to the jury"). In *Markman v. Westview Instruments, Inc.*, the Supreme Court characterized "construing a term of art following receipt of evidence" as a "mongrel practice." 517 U.S. 370, 378 (1996).

n292 *Ortho-McNeil Pharm., Inc. v. Caraco Pharm. Labs., Ltd.*, 476 F.3d 1321, 1327-28 (Fed. Cir. 2007) (determining that "about 1:5" should be construed narrowly in light of the intrinsic evidence, and then relying on expert testimony to set precise numerical bounds).

n293 *In re Watson*, 517 F.2d 465, 477 (C.C.P.A. 1975) (holding that, because "[t]hose skilled in the art will be able to determine from the disclosure . . . what an effective amount of germicide is," claim language requiring "an effective amount of [germicide]" was not indefinite).

n294 *See Nard, supra* note 7, at 57 (observing that "the oft-used claim words 'substantially equal to,' 'closely approximate,' or 'close to' . . . are ambiguous when viewed a contextually").

n295 Even while arguing that applicants should clarify claim meaning by specifying "reference sources, such as technical treatises or dictionaries," to be used in construing claims, Miller, *supra* note 8, at 184, Joseph Miller has recognized that implicit understandings derived from context will necessarily be crucial to proper interpretation. *Id.* at 187 ("One cannot hope to understand the art-specific words in a patentee's claims correctly unless one keeps that particular technological context in mind.").

n296 *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005) (en banc).

n297 405 F.3d 1367 (Fed. Cir. 2005).

n298 *See id.*; *supra* notes 96-120 and accompanying text.

n299 *See Gillette II*, 405 F.3d at 1371-72.

n300 *Id.* at 1371.

n301 Legal fees for patent prosecution typically amount to about \$ 10,000 to \$ 20,000. Comm. on Econ. of Legal Practice, *Report of Economic Survey*, 2007 AM. INTELL. PROP. L. ASS'N 21 (reporting median legal fees for an original application ranging from \$ 6500 to \$ 12,000, and for an amendment or argument ranging from \$ 1600 to \$ 3000). On the other hand, even a patent suit in which less than \$ 1 million is at stake typically requires a party to spend hundreds of thousands of dollars on legal services. *Id.* at 25.