

On Improving the Legal Process of Claim Interpretation: Administrative Alternatives

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Claims are the most important part of the modern patent document. They are the “metes and bounds” of patent rights; they “define[] the scope of the patentee’s rights.”¹ Their proper interpretation is frequently the central issue in infringement litigation.²

It was not always so. Two hundred years ago, patent law and practice knew of nothing resembling a modern claim, with all its intricacies and formalities of drafting.³ The patent claim evolved during the nineteenth century and assumed its place as the central textual definition of the rights conferred by the patent. In those hundred years, the claim’s remarkable evolution was so far completed that a claim drafted at the very beginning of the twentieth

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1. *Markman v. Westview Instruments, Inc.* 517 U.S. 370, 372 (1996).

2. *See, e.g., Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 989 (Mayer, J., concurring) (“to decide what the claims mean is nearly always to decide the case”). The observation is not unique to the United States. *See, e.g., Molnlycke AB v. Procter & Gamble Ltd.*, 26 IIC 92, 100 (Patents Court 1993) (“As is often the case the issue [of infringement] is largely determined by deciding the proper construction of the patent.”).

3. Robert Fulton’s patent on the steamboat is generally credited with the “first examples of real patent claims in the modern sense.” William Redin Woodward, *Definiteness and Particularity in Patent Claims*, 46 MICH. L. REV. 755, 758 (1948); *see also id.* (humorously noting that “Fulton might more properly be credited with the invention of the ‘claim’ than of the steamboat”); Karl B. Lutz, *Evolution of the Claims of U. S. Patents*, 20 J. PAT. OFF. SOC’Y 134, 136 (1938) (crediting Fulton’s patent with “the first real ‘claims,’ in the modern patent meaning”). The Patent Act of 1836 codified the statutory requirement for claims. *See* Act of July 4, 1836, ch. 157, § 5, 5 Stat. 117, 119; Woodward, *supra*, at 759-60 (noting codification); Lutz, *supra*, 142-143 (same). Claim drafting practice continued its development through the nineteenth century, *see id.* at 143-56, 377-99, 457-89 (detailing the development), and today whole books are dedicated to the subject. *See* ROBERT C. FABER, *LANDIS ON THE MECHANICS OF PATENT CLAIM DRAFTING* (4th ed. 1998); THOMAS J. GREER, JR., *WRITING & UNDERSTANDING U.S. PATENT CLAIMS* (1979); *THE ART OF DRAFTING PATENT CLAIMS* (Joseph Gray Jackson & G. Michael Morris eds., 1966).

century could easily serve as an examination question for law students at the end of the century.⁴ The success of the modern patent claim is demonstrated by its universal adoption in the patent law of all major industrialized countries.

In the technology of law, the nineteenth century's creation of the patent claim ranks as one of the most important innovations in the field of patent law, which is itself a significant innovation of the past five centuries. But the advent of the patent claim is by no means the culmination of legal process development in the field of patent law. This article examines one area in which recent development has been especially swift, and in which new innovations are likely in the future.

Only a half decade ago the law governing the allocation of power to interpret patent claims could be characterized as radically underdeveloped. Even on such a basic issue as whether the jury had any role in interpreting claims, case law gave conflicting signals without thoroughly discussing the matter.⁵ The law in the area was like a primitive technology to which little thought yet had been devoted. In the last five years, this has begun to change. Two major cases—one decided by a unanimous Supreme Court, the other by a deeply divided in banc Federal Circuit—have clarified a few basic issues.⁶ Yet that case law has already created additional puzzles that need solutions, while leaving obvious gaps in which the law remains underdeveloped. Similarly, although many commentators have examined the proper approach to claim interpretation,⁷ few have

4. A good example is a patent claim for the world famous 1903 invention by Orville and Wilbur Wright of a system for achieving stable flight, which served well on the examination to my introductory patent class (coincidentally administered on the ninety-fifth anniversary of the Wrights' historic flight of December 17, 1903). The claim contained an ambiguity that led to years of litigation with Glen Curtiss, whose improvement to the Wrights' technology was ultimately held to fall within their broadly drafted claim. *See Wright Co. v. Herring-Curtiss Co.*, 177 F. 257, 259-60 (C.C.W.D.N.Y. 1910) (finding Curtiss's aileron structure infringed the Wrights' patent and granting preliminary injunction), *rev'd on other grounds*, 180 F. 110 (2d Cir. 1910) (*per curiam*); *Wright Co. v. Herring-Curtiss Co.*, 204 F. 597, 607-08 (W.D.N.Y. 1913) (finding infringement after full trial), *aff'd* 211 F. 652 (2d Cir. 1914) (*per curiam*).

5. *See infra* note 13 and accompanying text.

6. *See infra* notes 14-57 and accompanying text.

7. *See, e.g.*, the collection of articles in the symposium, *International Perspectives on the Legal Interpretation of Patent Claims*, 1 CASRIP (1994), the excellent comparative study by TOSHIKO TAKENAKA, INTERPRETING PATENT CLAIMS: THE UNITED STATES, GERMANY AND

studied in depth the allocation of interpretative power among the legal actors in the patent system. They have focused on the *how* of claim interpretation, not the *who*. Further development in the area seems inevitable, and new innovation likely.

Examining the legal process of claim interpretation requires attention to institutional development and innovation. Unfortunately, as Professor Williamson notes, “the study of organizational innovation has never been more than a poor second cousin to the study of technological innovation.”⁸ Any scholar of the patent system should reject that bias, for the history of patent law shows that the technological progress so valued in our culture is inextricably intertwined with the advancement of the legal and social norms by which society organizes itself and provides incentives for productive activity. To combat that bias, this article will adopt a method that parallels methods of technological innovation. Patent law will be examined as if it were itself an area of technology being studied by a technician who wishes to understand and advance the area. Thus, in addition to reassessing a particular doctrinal area, this article also provides a study of, and an experiment in, method: It will employ the innovator’s method to seek insight into a small but significant part of the legal process of innovation.

Innovation and progress begin with a thorough understanding of both the current technology and its shortcomings. Thus, part I of this article introduces the existing law governing the institutional allocation of the power to interpret patent claims. In the course of this survey, part I highlights a specific procedural problem: By treating claim construction as a pure issue of law subject to *de novo* review

JAPAN (1995), and the study by Judge Giles Sutherland Rich, *Extent of Protection and Interpretation of Claims—American Perspectives*, 21 INT’L REV. INDUS. PROP. & COPYRIGHT L. 497, 499 (1990). The few articles to consider the interpretation of claims at the administrative level include Craig Allen Nard, *Legitimacy and the Useful Arts*, 10 HARV. J. L. & TECH. 515 (1997) (arguing for greater deference to the PTO’s patent claim constructions), and Jochen Pagenberg, *The Scope of Art. 69 European Patent Convention: Should Sub-Combinations Be Protected?—A Comparative Analysis on the Basis of French and German Law*, 24 INT’L REV. INDUS. PROP. & COPYRIGHT L. 314 (1993), reprinted in 1 CASRIP 163, 185-87 (1994) (discussing the EPO’s approach to claim interpretation). Klaus Boehm also considered the allocation of power in a patent system generally. KLAUS BOEHM, *THE BRITISH PATENT SYSTEM: I. ADMINISTRATION* 148-62 (1967) (critiquing the “decision-taking” process of the British patent system). That study, however, is now dated.

8. OLIVER E. WILLIAMSON, *THE ECONOMIC INSTITUTIONS OF CAPITALISM* 404 (1985).

on appeal, the case law has centralized claim interpretation in the Federal Circuit. While such centralization can produce a desirable uniformity in claim interpretation, it can also lead to dramatic procedural inefficiencies. For example, a significant number of infringement trials may be wasted if, as is likely, institutional differences create frequent divergence between trial and appellate interpretations.⁹ The challenge of reform is to eliminate procedural inefficiency without sacrificing uniformity.

Concentrating on one specific problem is consistent with this article's overall goal of tracking the methods of innovation. "Necessity is the mother of invention" is such a familiar adage precisely because specific needs, problems, and questions help to focus thought and clarify reasoning. Furthermore, targeting a discrete problem is consistent with the large body of literature suggesting that innovation often proceeds incrementally, with dramatic change resulting only from the cumulation of many small improvements.¹⁰

Part II might be considered this article's "Winslow Tableau," for it is patterned after *In re Winslow's* image of the inventor "working in his shop with the prior art references . . . hanging on the walls around him."¹¹ *Winslow's* image is compelling precisely because it contains some truth. After identifying a problem, inventors often seek inspiration from solutions tried in other contexts and other technical fields. Part II thus provides a compendium of "the relevant prior art"—the existing legal mechanisms that could be useful in analyzing the technical problem introduced in part I. The tableau goes beyond

9. See, e.g., *Elf Atochem N. Am, Inc. v. Libbey-Owens-Ford Co.*, 894 F. Supp. 844, 857 (D. Del. 1995) (lamenting that "in spite of a trial judge's ruling on the meaning of disputed words in a claim, should a three-judge panel of the Federal Circuit disagree, the entire case could be remanded for retrial").

10. See, e.g., Robert P. Merges & Richard R. Nelson, *On the Complex Economic of Patent Scope*, 90 COLUM. L. REV. 839, 881-82 (1990); SAMUEL HOLLANDER, *THE SOURCES OF INCREASED EFFICIENCY: A CASE-STUDY OF DU PONT RAYON MANUFACTURING PLANTS* (1965). See also John L. Enos, *A Measure of the Rate of Technological Progress in the Petroleum Refining Industry*, 6 J. INDUS. ECON. 180, 180, 190 (1958) (finding that "improving a process contributes even more to technological progress than does its initial development," but also that "there are diminishing returns to process improvement").

11. *In re Winslow*, 365 F.2d 1017, 1020 (C.C.P.A. 1966) (Rich, J.). The late Judge Rich's image of walls covered with prior art reference has gained a modicum of fame and is often referred to as the "Winslow Tableau." See DONALD S. CHISUM ET AL., *PRINCIPLES OF PATENT LAW* 615 (1998); ROBERT PATRICK MERGES, *PATENT LAW AND POLICY* 557 (2d ed. 1997).

American patent law to identify possible solutions from other branches of domestic law as well as the law of other jurisdictions. For expositional purposes, the proposed solution—a system of administrative claim interpretation—is introduced early, but otherwise part II remains consistent with this article’s general goal of following the method of innovation.

Part III addresses the last and most difficult issue, albeit the one simplest to grasp. The success of a technical invention is typically evaluated by quantitative results. In the domain of technology, practicality counts—not abstract analogies, nor a priori conjectures, nor unsubstantiated predictions. For most technologies, quantitative results are easy; the market provides them. The proof of the better mousetrap is not that the world will beat a path to your door, but that it will pay money once it gets there.

For innovations in legal process, however, market mechanisms for testing innovations often do not exist. Or, perhaps it is better to say, developing market-like mechanisms to test a legal technology can itself be an accomplishment of great ingenuity. One such market for legal technology involves the competition among American States for corporate charters, a competition perennially won by Delaware. While similar jurisdictional competitions are not likely for patent law, more modest mechanisms are not unrealistic and could provide useful testing for some legal process innovations. Part III discusses one such mechanism and its application to the procedural innovation introduced in part II.

Finally, it should be noted that the method adopted by this article has its costs. By focusing on a specific technical problem in the legal process of patenting, the article necessarily delves into the details of patent administration. So too in considering the legal mechanisms from outside American patent law, doctrinal detail is unavoidable. Technological innovation requires gathering rays of insight from all possible sources and then bringing them to bear—concentrating them as with a lens—on the specific problem. Such a focus requires an intensity and attention to detail that may delight only those curious about the complexities of an intricate system. For those who prefer generalities, Justice Cardozo’s advice is apt: “The timorous may stay

at home.”¹² For those undeterred, let us immerse ourselves in detail.

I. INTRODUCING THE PROBLEM: THE CURRENT LEGAL PROCESS OF CLAIM INTERPRETATION

In 1995 the Federal Circuit observed that its own case law contained “inconsistent statements as to whether and to what extent claim construction is a legal or factual issue, or a mixed issue.”¹³ Since the distinction between law and fact has traditionally been one of the principal devices for allocating decisional power among various actors in the legal process, the acknowledgment of inconsistency signaled an important gap in the law governing the patent system. The courts have begun to fill this gap in the last five years, but not without difficulty. Subpart A below traces the efforts of courts in allocating the power to interpret claims and introduces the problem noted earlier—by centralizing judicial claim interpretation in the Federal Circuit, a large number of infringement trials could be wasted due to interpretive divergences between the generalist trial courts and the specialized appellate court. Subpart B examines an issue the case law has not yet considered thoroughly—the allocation of interpretive power between the courts and an administrative agency. As this article will show, the two matters are related.

A. Interpretative Power Within the Courts: Markman and Cybor

In *Markman v. Westview Instruments, Inc.*, the Supreme Court unanimously held that the Seventh Amendment does not secure a right to have a jury interpret patent claims, even in cases where expert testimony has been introduced to clarify the meaning of a disputed term of art in the claims.¹⁴ The scope and importance of the Court’s decision is well demonstrated by the facts of the *Markman* case itself.

The patent in *Markman* was on an “inventory control and

12. *Murphy v. Steeplechase Amusements Co.*, 166 N.E. 173, 174 (N.Y. 1929) (Cardozo, J.).

13. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995) (in banc).

14. 517 U.S. 370 (1996), *aff’g*, 52 F.3d 967 (Fed. Cir. 1995) (in banc).

reporting system” for dry-cleaning businesses.¹⁵ Two problems faced by dry cleaners are (1) that customers’ clothing is occasionally lost at an unknown point in the dry-cleaning process, and (2) that some unscrupulous employees send unreported clothing through the process and then pocket the cost of dry cleaning. The system invented by Herbert Markman addressed these problems by, in the language of the claims, “maintain[ing] an *inventory* total” in a computer system that could be used to “detect and localize spurious additions to *inventory* as well as spurious deletions therefrom.”¹⁶ Interpreting the word “inventory” in Markman’s patent claims became the central issue in the Markman-Westview litigation.

The allegedly infringing system manufactured by Westview was similar to Markman’s patented system. Both systems included a keyboard for entering data about a customer’s clothing, a printer for generating bar-codes to be attached to the clothing, an optical scanner for reading the bar-codes as the clothing passed through the dry-cleaning process, and a computer for keeping track of the data.¹⁷ Westview’s computer system did not, however, retain information about the articles of clothing; it remembered only the dollar amount of invoices. Markman’s patent, as interpreted by Westview, covered only systems maintaining an “inventory” that included descriptions of customers’ articles of clothing. Westview contended that because its system tracked only an inventory of money, it would not infringe Markman’s patent under that interpretation of “inventory.”¹⁸ In contrast, Markman argued that the word “inventory” in the patent could refer to descriptions of clothing *or* tallies of cash.¹⁹

Long before the *Markman* litigation, it was settled law that patent claims are interpreted as they would be understood by those skilled in the art and, therefore, “[e]xpert testimony, including evidence of how those skilled in the art would interpret the claims,” may be used for

15. 52 F.3d at 972 (quoting claim one of Markman’s patent).

16. *Id.* (emphasis added).

17. *Id.* at 972-73.

18. *Id.* at 973 (“It is undisputed that Westview’s system . . . does not retain information regarding the particular articles of clothing, but rather only a listing of the invoices and the cash total of the inventory.”).

19. 52 F.3d at 974.

claim interpretation.²⁰ Markman offered in support of his claim interpretation his own testimony and testimony of an “patent expert.”²¹ In contrast, Westview offered no testimony at trial to support its interpretation of the claims and instead relied on the patent specification and prosecution history.²² Though the jury found infringement, the district court held claim construction to be “a matter of law for the court,” adopted Westview’s interpretation, and granted judgment as a matter of law to Westview.²³

The cornerstone of Markman’s case on appeal was the expert testimony presented at trial. Markman argued that the meaning of the word “inventory” to a person skilled in the art was a question of fact and that the expert testimony required the jury to make determinations of fact and credibility. Therefore, Markman argued, since the jury found against Westview, the Seventh Amendment required federal courts to grant a significant amount of deference to the jury’s finding.

Markman’s argument implicated the allocation of power not only between the actors *within* the district court (the trial judge and jury), but also between the district court and the Federal Circuit. If Markman’s argument had been accepted, the courts would have had to assume that the jury agreed with Markman’s expert testimony, and the Seventh Amendment makes such jury findings very difficult to overturn on appeal.²⁴ Markman’s situation was not unique—many

20. *Fonar Corp. v. Johnson & Johnson*, 821 F.2d 627, 631 (Fed. Cir. 1987). *See also* *McGill Inc. v. John Zink Co.*, 736 F.2d 666, 675 (Fed. Cir. 1984) (holding that “testimony of expert witnesses may be used to construe claims” because “[s]uch testimony is evidence of construction of the claims as they would be construed by those skilled in the art”). A trial court’s refusal to admit expert testimony on claim construction can be reversible error. *See, e.g.*, *Moellar v. Ionetics, Inc.*, 794 F.2d 653, 657 (1987) (holding that trial court abused its discretion in refusing to admit expert testimony on the meaning of the patent claims in dispute).

21. 52 F.3d at 973. Markman’s expert was actually just a retained patent attorney, but as the Federal Circuit noted, Markman himself was competent to testify as a person of “ordinary skill”—perhaps, because he was an inventor, even “extraordinary” skill—in the relevant art. *Id.* at 983.

22. *Id.* at 974.

23. *Markman v. Westview Instruments, Inc.*, 772 F. Supp. 1535, 1536 (E.D. Pa. 1991); *see also* 52 F.3d at 973 (noting the jury verdict for Markman was in the form of answers to general interrogatories).

24. The Seventh Amendment provides: “In Suits at common law, where the value in controversy shall exceed twenty dollars, the right of trial by jury shall be preserved, and no fact tried by a jury shall, be otherwise re-examined in any Court of the United States, than according

patent trials turn on disputes over the proper interpretation of terms of art in a claim—and therein lies the importance of the argument, for there is no guarantee that judges and juries would reach identical resolutions of those disputes.

Markman's argument suffered rejection by every court to consider it, including, unanimously, the Supreme Court. The Supreme Court, however, did not gloss over the difficulty in characterizing claim interpretation as an issue of law or fact. Acknowledging that construing a term of art in a claim following the receipt of evidence was "a mongrel practice,"²⁵ the Court first tried to apply its "historical test" for resolving Seventh Amendment questions, which requires the Court to consider whether "the particular trial decision must fall to the jury in order to preserve the substance of the common-law right as it existed in 1791."²⁶ Of course, that test was indeterminate because the patent claim itself was a legal process innovation of the nineteenth century and the state of jury patent practice at the end of the eighteenth century was "primitive."²⁷ Failing to find an answer in the pre-1791 common law, the Court considered its own precedent but again found "no clear answers."²⁸

Ultimately, the Court turned to "functional considerations" to resolve the issue.²⁹ After again acknowledging that the issue in the case fell "somewhere between a pristine legal standard and a simple historical fact," the Court relied on two functional considerations—expertise in textual interpretation and the need for uniformity—to hold that "judges, not juries, are the better suited to find the acquired meaning of patent terms."³⁰ In considering the relative expertise of the actors, the Court found that a "judge, from his training and discipline, is more likely to give a proper interpretation to such

to the rules of the common law." U.S. CONST. amend. VII.

25. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 378 (1996).

26. *Id.* at 376.

27. *Id.* at 380. *See also id.* at 378-79 ("Prior to 1790 nothing in the nature of a claim had appeared in British patent practice or in that of the American states.") (quoting Karl B. Lutz, *Evolution of the Claims of U.S. Patents*, 20 J. PAT. & TRADEMARK OFF. SOC'Y 134 (1938)). For additional history on the evolution of patent claims, see *supra* note 3.

28. 517 U.S. at 388.

29. *Id.*

30. *See id.* (citing *Miller v. Fenton*, 474 U.S. 104, 114 (1985)).

instruments than a jury.”³¹ True, the Court acknowledged, expert testimony may be needed for interpreting terms of art, and “credibility judgments have to be made about the experts who testify in patent cases.”³² Though a jury is generally thought to be the appropriate institution for judging the credibility of witnesses, the Court believed that the jury’s advantage in this area did not outweigh the judge’s relative competence in textual interpretation since, “[i]n the main, . . . any credibility determinations will be subsumed within the necessarily sophisticated analysis of the whole document.”³³ Furthermore, there was an overriding need for national “uniformity” in defining patent rights.³⁴ Uniformity was, the Court noted, the very reason that Congress created the Federal Circuit in 1982, and that goal would be “ill served by submitting issues of document construction to juries.”³⁵

The Court’s ruling in *Markman* provides a clear answer to the question of whether juries will have any role in claim interpretation—they will not. But unlike juries, all other institutions in the patent system (the agency, the trial courts and the appellate courts) *must* necessarily interpret patent claims in the course of performing their functions. The terms of the Court’s opinion—particularly its repeated acknowledgment that claim interpretation involved a mixture of factual and legal inquiries—added uncertainty concerning the allocation of power among those actors in the patent system.

Two years after *Markman*, the Federal Circuit addressed the allocation of power between trial and appellate judges, and the interests in national uniformity carried the day. In *Cybor Corp. v. FAS Technologies, Inc.*, a divided in banc panel of the Federal Circuit held that it would treat claim construction “as a purely legal question” and would review the issue “*de novo* on appeal including any allegedly fact-based questions relating to claim construction.”³⁶ For clarity the *Cybor* court expressly “disavow[ed] any language in

31. 517 U.S. at 388-89 (quoting *Parker v. Hulme*, 18 F. Cas. 1138, 1140 (C.C.E.D. Pa. 1849) (No. 10,740)).

32. *Id.* at 389.

33. *Id.*

34. *Id.* at 390.

35. *Id.* at 391.

36. 138 F.3d 1448, 1456 (Fed. Cir. 1998) (in banc).

previous opinions of [the] court that holds, purports to hold, states, or suggests anything to the contrary.”³⁷

Yet despite the emphatic tones of the court’s opinion, a number of factors limit *Cybor*’s value as a precedent. The majority opinion was accompanied by no less than five separate opinions, each of which either qualified or rejected the majority’s holding on the standard of review.³⁸ *Cybor* was also a very awkward vehicle for deciding the issue. The trial judge had not made any findings of fact in construing the claims, so the question of appellate deference to such findings was not presented.³⁹ Moreover, not one judge on the court of appeals disagreed with the trial court’s claim construction.⁴⁰ The dispute over the standard of review thus had a hypothetical quality that stands quite in contrast to *Markman*, where the relevant issue was well framed by the conflict between the jury verdict and the judicial construction of the patent.

The most significant weakness of *Cybor* opinion, however, is that the court did little to reconcile its holding with a larger universe of legal materials. That omission is unfortunate because the general problem confronting the Federal Circuit—the allocation of decisional power between trial and appellate courts for mixed questions of fact and law—arises in many contexts outside of the patent law.⁴¹

37. *Id.*

38. For a catalog of the separate opinions, see *infra* notes 47–49 and accompanying text.

39. See 138 F.3d at 1473 n.1 (Rader, J., concurring) (noting that the issue decided by the majority was not as well presented in *Cybor* as it had been in *Fromson v. Anitec Printing Plates, Inc.*, 132 F.3d 1437 (Fed. Cir. 1997), where the district judge relied upon extrinsic evidence and made findings of fact in interpreting the claims).

40. The case involved a patent on a dual stage pumping system that filtered and dispensed precise amounts of liquid onto semiconductor wafers during their fabrication. 138 F.2d at 1451. The dispute between the parties on claim construction concerned whether the “second pumping means” described in FAS’s patent claims covered a pump that, like *Cybor*’s system, had an external reservoir for fluid. *Id.* at 1457. All the judges in the case agreed that the “second pumping means” described in the patent did cover a pump with an external reservoir, as contained in the infringing product. Thus, the three judges who disagreed with the majority’s holding on *de novo* review nonetheless concurred in the judgment affirming the district court. See 138 F.3d at 1463, 1473, 1478 (Mayer, Rader, & Newman, JJ., concurring).

41. One sentence in the *Cybor* majority’s opinion states that “[n]othing in the Supreme Court’s [Markman] opinion supports the view... that claim construction may involve subsidiary or underlying questions of fact.” 138 F.3d at 1455. As the majority acknowledged later, however, the *Markman* Court had described claim construction as a “mongrel practice” falling “somewhere between the a pristine legal standard and a simple historical fact.” *Id.* (citing 517 U.S. at 378, 388). Additionally, in the same year in which *Markman* was decided,

No statutory law governs this area, and the only rule of procedure remotely relevant, Federal Rule of Civil Procedure 52(a), merely requires that, in actions tried without a jury, the trial judge's findings of fact shall not be set aside by an appellate court "unless clearly erroneous."⁴² Because statutory law and procedural rules provide no answer, appellate courts have developed judge-made common law to govern the standards of appellate review over mixed issues of fact and law.⁴³ Yet that judge-made law has not been a model of clarity. As the Supreme Court has noted, whether appellate courts should afford deference in reviewing mixed questions is a "much-mooted issue" with "substantial authority in the Circuits on both sides of th[e] question."⁴⁴ The fractured court in *Cybor* mirrors that divergence of authority.

The approaches championed by the judges in *Cybor* for reviewing a trial court's claim construction parallel three separate themes in the case law governing appellate review of mixed questions of law and fact. The dominant theme is that trial court rulings on mixed questions are subject to de novo appellate review, which is the standard adopted by the *Cybor* majority.⁴⁵ Another theme, not

one Justice expressly classified *Markman* as a case involving "mixed questions of law and fact." *Gasperini v. Center For Humanities, Inc.*, 518 U.S. 415, 443 (1996) (Stevens, J., dissenting). Acknowledging claim construction as a mixture of law and fact does not undermine the majority's holding in *Cybor* because the dominant theme in other legal contexts is that conclusions of lower courts on such issues are subject to de novo appellate review. *See id.* (describing independent appellate review of mixed questions as "proper"); *see also infra* notes 45-50 and accompanying text.

42. FED. R. CIV. P. 52(a).

43. The courts may even choose to apply the clear error standard in Rule 52(a) as a matter of common law, even though the rule is technically inapplicable. *See, e.g.*, *United States v. Page*, 302 F.2d 81, 85 (9th Cir. 1962) (applying Rule 52(a) "by analogy" because no statutory provision nor rule of procedure governed the standard of review for a trial court's factual determinations made in a hearing to suppress evidence in a criminal case).

44. *Pullman-Standard v. Swint*, 456 U.S. 273, 289-90 n.19 (1982). *See also Cooter & Gell v. Hartmarx Corp.*, 496 U.S. 384, 401 (1990) (noting "the difficulty of distinguishing between legal and factual issues" in determining correct standard of appellate review); *Spencer v. NLRB*, 712 F.2d 539, 564 (D.C. Cir. 1983) (noting the doctrinal difficulties concerning "so-called 'mixed questions of law and fact' whose vulnerability to review by appellate courts is extraordinarily confused"). Nor is it unusual for the judges of a circuit to be unable to agree on the appropriate review standard for mixed question of law and fact. *See, e.g.*, *United States v. McKinney*, 919 F.2d 405, 418-19 (7th Cir. 1990) (Posner, J., concurring) (noting then-existing disagreement within the Seventh Circuit on the standard of appellate review for mixed questions of fact and law).

45. *See, e.g.*, *Haley v. Retinas*, 138 F.3d 1245, 1249 (8th Cir. 1998) ("This is a mixed

necessarily inconsistent with the first, is that subsidiary findings of fact should be reviewed only for clear error.⁴⁶ Two of the twelve judges on the *Cybor* in banc panel stressed this second theme in arguing that some deference was appropriate in reviewing a trial court's claim construction.⁴⁷ A third and final theme in the case law suggests the possibility of an intermediate level of deference, not necessarily as much as a clearly erroneous standard would afford, that would apply to part or all of a trial court ruling on a mixed question.⁴⁸ Three judges in *Cybor*, including two who concurred in

question of law and fact, which we review de novo.”); *Bedford Affiliates v. Sills*, 156 F.3d 416, 427 (2d Cir. 1998); *Louisiana-Pacific Corp. v. Asarco Inc.*, 24 F.3d 1565, 1576 (9th Cir. 1994). 9A CHARLES ALAN WRIGHT & ARTHUR R. MILLER, *FEDERAL PRACTICE AND PROCEDURE* § 2589, at 608 (2d ed. 1995) (noting the “substantial authority” that mixed questions of fact and law are “freely reviewable”).

46. See *Gilbane Bldg. Co. v. Federal Reserve Board of Richmond*, 80 F.3d 895, 905 (4th Cir. 1996) (reviewing mixed questions of fact and law “under a hybrid standard, applying to the factual portion of each inquiry the same standard applied to questions of pure fact and examining de novo the legal conclusions derived from those facts.”); see also *Louisiana-Pacific Corp.*, 24 F.3d at 1576 (“To the extent, however, that specific factual findings made by the district court are in question, we review for clear error.”) (citing Rule 52(a)). The Seventh Circuit had taken the position that the clearly erroneous standard applies generally not only to subsidiary findings of fact, but also to a mixed question of fact and law. See, e.g., *United States v. Baldwin*, 60 F.3d 363, 365 (7th Cir. 1995) (Posner, C.J.) (holding “that appellate review of determinations of mixed questions of fact and law should be governed by the standard of clear error”), *vacated*, 517 U.S. 1231 (1996). In *Ornelas v. United States*, 517 U.S. 690 (1996), however, the Supreme Court reversed the Seventh Circuit and held that de novo review applies to mixed questions of fact and law involving the Fourth Amendment. Nonetheless, the Seventh Circuit has continued to apply the clearly erroneous standard in cases not directly governed by the holding in *Ornelas*. See *In re Teranis*, 128 F.3d 469, 471 (7th Cir. 1998) (holding that the clear error standard applies in mixed questions of law and fact in bankruptcy without addressing the Supreme Court's holding in *Ornelas*). The Seventh Circuit's approach appears to be distinctly in the minority.

47. 138 F.3d at 1464-65 (Mayer, C.J., concurring the judgment) (endorsing application of the clearly erroneous test to trial court findings of fact); *id.* at 1481 (opinion of Newman, J.) (arguing that a “trial court's factual findings with respect to evidence relevant to claim construction should be treated, on appeal, like any other finding of the trial court”).

48. See, e.g., *Loehrer v. McDonnell Douglas Corp.*, 98 F.3d 1056, 1061 (8th Cir. 1996) (“Though we normally exercise plenary review over mixed questions, we will afford deference to the district court's decision if ‘application of the rule of law to the facts requires an inquiry . . . that is founded on the application of the fact-finding tribunal's experience with the mainsprings of human conduct.’” (quoting *United States v. McConney*, 728 F.2d 1195, 1202 (9th Cir.) (en banc))); *Reich v. Newspapers of New England, Inc.*, 44 F.3d 1060, 1069-70 (1st Cir. 1995) (applying to mixed questions of law and fact a “somewhat nuanced standard of review” that depends on where the question falls along a “degree-of-deference continuum: the more fact dominated the question, the more likely it is that the trier's resolution of it will be accepted unless shown to be clearly erroneous”) (internal quotations omitted).

the majority opinion, endorsed this approach.⁴⁹ All three themes can be seen in the Supreme Court's recent decision in *Ornelas v. United States*, which held that, in reviewing trial court rulings on Fourth Amendment issues, appellate courts should (1) apply an "independent . . . *de novo*" review standard to a trial court's "ultimate determinations" on the mixed questions of law and fact; (2) review the trial court's "findings of historical fact only for clear error;" and (3) "give due weight" to the trial court's "inferences" from the historical facts.⁵⁰

The choice between the possible approaches to reviewing such questions cannot be made on the basis of metaphysical distinctions between fact and law. As Chief Judge Posner has noted, trying to decide what "really" constitutes fact and law is an "absurd" approach to the problem.⁵¹ Indeed, even if the courts found a transcendent touchstone to discern law from fact, no statute or other constraint aside from the courts' own case law would preclude granting deference to lower court decisions on issues of law.⁵² Thus, as in *Markman*, courts are making the choice on the basis of functional considerations, including the comparative abilities of the institutions in performing the interpretive task, the need for uniformity, and general considerations of procedural efficiency.⁵³

49. 138 F.3d at 1462 (Plager, J., concurring) (arguing that, though the standard of review may be formally denominated *de novo* review, "common sense dictates that the trial judge's view will carry weight" and "the comparative advantage in claim construction effort and accuracy . . . will no doubt influence the weight given to the trial court's view"); *id.* at 1463 (Bryson, J., concurring) ("Simply because a particular issue is denominated a question of law does not mean that the reviewing court will attach no weight to the conclusion reached by the tribunal it reviews."); *id.* at 1478 (Rader, J., concurring in the judgment) (arguing for "some deference where appropriate").

50. 517 U.S. 690, 697, 699 (1996).

51. *United States v. McKinney*, 919 F.2d 405, 419 (7th Cir. 1990) (Posner, J., concurring) ("The point is not that it is 'really' a question of fact; that would be absurd."). The distinction between law and fact "is purely a creature of convention," Gary Lawson, *Proving Law*, 86 NW. U.L. REV. 859, 863 (1992), and, as some commentators have noted, the legal methods of establishing propositions of law are analytically similar to the methods of proving facts. *See id.* at 862; Peter Tillers, *The Value of Evidence in Law*, 39 N. IR. LEGAL Q. 167 (1988) (arguing that legal actors rely on evidentiary proof to establish propositions of law).

52. The Supreme Court has stated that the grant of general appellate jurisdiction found in 28 U.S.C. § 1291 "implies the requisite authority to review independently a lower court's determinations." *Salve Regina College v. Russell*, 499 U.S. 225, 231 (1991). But the Court has not held that § 1291 requires *de novo* review.

53. Those considerations generally govern the allocation of decisional responsibility over

The difficult problem in *Cybor* was that, unlike in *Markman*, the relevant functional considerations do not all favor one result. As the *Cybor* majority noted, a desire for national uniformity still supports treating claim interpretation more like an issue of law, with de novo appellate review.⁵⁴ But the comparative abilities of trial and appellate courts in interpreting claims are debatable. Unlike juries, both trial and appellate judges have expertise in textual interpretation. More subtle factors distinguish the two institutions. Because of its specialized jurisdiction, the Federal Circuit may be more familiar with the “highly technical” art of claim drafting.⁵⁵ Trial courts may have better access to, and may be better able to evaluate, expert testimony concerning how those skilled in the art would interpret the claims—a point stressed repeatedly by the concurring judges in *Cybor*.⁵⁶ Finally, general considerations of judicial administration support resolving claim interpretation early in litigation because lengthy patent trials often must be repeated when an appellate court reverses a trial court’s claim interpretation.⁵⁷

Unfortunately, the *Cybor* court did little to acknowledge the dilemma posed by allocating decisional power between trial and appellate courts. The majority’s holding in favor of de novo review must be viewed as an implicit determination that the need for uniformity outweighs the efficiency costs of more vigorous appellate review. But that choice could change with time and with new information.

Together *Markman* and *Cybor* have, at least for the present, centralized judicial power to interpret claims in the Federal Circuit. Of the two cases, *Markman* seems most likely to endure as a stable

mixed questions of law and fact. *See, e.g.*, *United States v. McConney*, 728 F.2d 1195, 1202 (9th Cir. 1984) (en banc) (stating that these considerations are “the concerns of judicial administration—efficiency, accuracy, and precedential weight”).

54. 138 F.3d at 1455 (noting that deference to a trial judge’s claim construction would undermine “this court’s role in providing national uniformity”).

55. *Markman*, 517 U.S. at 389 (quoting William R. Woodward, *Definiteness and Particularity in Patent Claims*, 46 MICH. L. REV. 755, 765 (1948)).

56. *See* 138 F.3d at 1465 (Mayer, C.J., concurring in the judgment); *Id.* at 1477 (Rader, J., concurring in the judgment); *Id.* at 1480 (Newman, J., concurring in the judgment).

57. *See* 138 F.3d at 1474-76 & nn.2-3 (Rader, J., concurring) (detailing the procedural difficulties created by de novo review and the Federal Circuit’s high reversal rate of trial court claim constructions); *see also id.* at 1479 (Newman, J., concurring) (also discussing the procedural inefficiencies created by de novo review).

feature of the law. The Supreme Court is unlikely to reconsider a unanimous constitutional ruling; the decision is consistent with the law in other areas; and, perhaps most importantly, the functional considerations in favor of allocating decisional power to the jury are weak.

Cybor, however, is different. An obvious but nonetheless significant point is that, due to personnel changes, the judges who would give at least some weight to trial court interpretations are no longer in the minority on the Federal Circuit.⁵⁸ Moreover, courts in other contexts have not provided any consistent or rigid rule to govern appellate review on mixed questions of law and fact, and with good reason. Both deferential and de novo standards trade one set of costs for another and, because the choice between the standards is governed by judge-made common law, the courts have been free to adopt different approaches in different contexts. Variations occur among the circuits, and it would be little surprise if the Federal Circuit's approach varies over time.

However, any formal change may matter little: Some judges will still favor de novo review on every aspect of claim interpretation; some will not; and all will agree that certain matters concerning claim interpretation are to be independently reviewed. Whatever the formal rule, the Federal Circuit's common law for reviewing lower court claim interpretations will have as much predictability and utility as the general common law governing review of mixed questions of fact and law. The general tenor of that common law is best demonstrated by a case such as *Ornelas*, where the Supreme Court tried to resolve a test for reviewing a particular class of mixed questions, but the clarity of the Court's guidance is compromised by the indeterminate standard—"due weight"—incorporated into the test. Hopes for a more definite resolution are unlikely to be soon fulfilled precisely because the choice between de novo and deferential review involves a difficult trade-off between uniformity and procedural expedience.

The interesting question then is not whether the claim interpretations of trial courts will remain formally subject to de novo appellate review, but whether the courts will permit or pursue

58. Five of the ten currently active judges on the Federal Circuit wrote opinions in *Cybor* calling for some weight or deference to the trial court.

procedural experimentation that may avoid hard choices between uniformity and procedural efficiency. The Federal Circuit seems to have rejected one alternative—permitting interlocutory review of claim interpretations certified by a trial court pursuant to 28 U.S.C. § 1292(b).⁵⁹ While interlocutory appeals would avoid the waste of trials where the district court’s interpretation differs from the Federal Circuit, they would be expensive and time-consuming, because the appellate process usually extends several months from the time of docketing to decision and typically requires formal briefing and oral argument. Other possibilities, including administrative alternatives, should be considered. In part II, this article investigates one such alternative—using administrative claim interpretations to assist trial courts in claim interpretation. An evaluation of this alternative, however, first requires an understanding of the allocation of power between the courts and the Patent and Trademark Office (PTO) in claim interpretation.

B. Administrative Claim Interpretations: The Uncertain Relationship Between the Agency and the Courts

Prior to *Markman* and *Cybor*, the law governing the allocation of interpretive power among actors within the judicial system could be characterized as underdeveloped: Cases gave conflicting signals on the appropriate allocation of power without devoting significant attention to the matter.⁶⁰ After *Markman* and *Cybor*, that is no longer true. The courts have considered the relevant issues so thoroughly

59. Section 1292(b) permits a district court to certify for immediate appeal “a controlling question of law as to which there is substantial ground for difference of opinion,” but the statute gives the court of appeals “discretion” to hear the appeal. 28 U.S.C. § 1292(b) (1993). When *Cybor* was decided, the Federal Circuit had declined to hear such appeals. *See Cybor*, 138 F.3d at 1479 (opinion of Newman, J.). *See also* *Schering Corp. v. Amgen, Inc.*, 35 F. Supp. 2d 375, 377 (D. Del. 1999) (noting that “[t]he Federal Circuit disfavors direct appeals from *Markman* decisions”). Pursuant to 28 U.S.C. § 1292(e), the Supreme Court could, by rule, make interlocutory claim interpretations appealable by right. Such an intrusion by the Court into the mechanics of patent litigation, however, seems highly unlikely given the Court’s recent statement that it would respect the Federal Circuit’s “sound judgment in this area of its special expertise.” *Warner-Jenkinson Co. v. Hilton Davis Chemical Co.*, 520 U.S. 17, 40 (1997). *See also id.* at 39 n.8 (“leav[ing] it to the Federal Circuit how best to implement procedural improvements to promote certainty, consistency, and reviewability to this area of the law”).

60. *See supra* note 13 and accompanying text.

that, even where uncertainty remains, that uncertainty is predictable (for example, deference, perhaps sub rosa, may continue to creep into appellate review, just as it does in other cases of mixed question of law and fact). However, the law governing the allocation of interpretative power between the courts and the PTO remains underdeveloped.

Mere fragments of case law address the standard by which courts review administrative interpretations, and those fragments are not consistent. In some cases, the Federal Circuit has afforded deference to PTO claim interpretations. For example, *In re Morris* held that a court reviewing a PTO claim interpretation should determine merely “whether the PTO’s interpretation of the disputed claim language is ‘reasonable.’”⁶¹ Also, in *American Hoist & Derrick Co. v. Sowa & Sons*, the Federal Circuit held that, where a patent is challenged on the basis of prior art references considered by the PTO, the party challenging the patent must “overcom[e] the deference that is due to a qualified government agency” which is “assumed to have some expertise in interpreting the references.”⁶² Other cases, however, state that the courts should review administrative claim constructions de novo.⁶³ Neither set of cases provides an extended discussion of the issue nor tries to reconcile the competing line of cases. The courts

61. 127 F.3d 1048, 1055 (Fed. Cir. 1997). The *Morris* court also held that nothing in *Markman* required a change in the PTO’s claim construction methodology. *Id.* at 1053-54. See also *In re Paulsen*, 30 F.3d 1475, 1478 (Fed. Cir. 1994) (applying “clearly erroneous” standard to an anticipation issue that turned on the proper construction of the word “computer” in the applicant’s claims).

62. 725 F.2d 1350, 1359 (Fed. Cir. 1984). See also *Ultra-Tex Surfaces, Inc. v. Hill Bros. Chem. Co.*, 204 F.3d 1360, 1367 (Fed. Cir. 2000). In addition to the PTO’s interpretive expertise, the statutory presumption of validity in 35 U.S.C. § 282 has been cited as a basis for this deference. See *Kloster Speedsteel Ab v. Crucible Inc.*, 793 F.2d 1565, 1571 (Fed. Cir. 1986); *Fromson v. Advance Offset Plate, Inc.*, 755 F.2d 1549, 1555 (Fed. Cir. 1985).

63. See, e.g., *Gechter v. Winter*, 116 F.3d 1454, 1457 (Fed. Cir. 1997) (applying, in an appeal from the PTO, the rule that “[c]laim construction is a question of law and therefore reviewed *de novo*.”); *In re Donaldson Co., Inc.*, 16 F.3d 1189, 1192 (Fed. Cir. 1994) (in banc) (holding, in an appeal from the agency, that “claim construction, where, as here, there are no underlying factual issues, is also a question of law that we review *de novo*”). See also *Credle v. Bond*, 25 F.3d 1566, 1571 (Fed. Cir. 1994) (“The proper interpretation of [an interference] court, like the proper interpretation of a claim, is a question of law that this court reviews *de novo*.”); *Davis v. Loesch*, 998 F.2d 963, 967 (Fed. Cir. 1993) (“Interpretation of an interference count is a question of law, which we review *de novo*.”). Cf. *In re Freeman*, 30 F.3d 1459 (Fed. Cir. 1994) (holding that the PTO is bound by the judicial interpretation of a claim once it has been finally litigated in an infringement action).

simply have not yet devoted much attention to the issue.

Determining the appropriate standard for review of administrative claim interpretations may, at first glance, seem complicated by the doctrine that, in passing on patent applications, the PTO must “give claim language its broadest reasonable interpretation.”⁶⁴ This doctrine does not, however, mean that the courts and the agency employ different methods of claim construction. Both institutions apply the “broadest reasonable interpretation” method to construe claims not yet issued.⁶⁵ The justification for the interpretive method is that, “when claims can be amended, ambiguities should be recognized, scope and breadth of language explored, and clarification imposed.”⁶⁶ Where that justification does not apply, both institutions apply ordinary rules of claim construction. Thus, for example, the PTO would not use the “broadest reasonable interpretation” method in construing the claims of issued prior art patents, and as *American Hoist* demonstrates, the courts still presume that the agency has interpretive expertise.⁶⁷

In developing more coherent doctrine to govern review of administrative claim constructions, the courts should resort to general administrative law governing judicial review of agency decisions.⁶⁸

64. *Morris*, 127 F.3d at 1053 (citations omitted). See also *In re Bond*, 910 F.2d 831, 833 (Fed. Cir. 1990) (“It is axiomatic that, in proceedings before the PTO, claims in an application are to be given their broadest reasonable interpretation consistent with the specification.”) (citations omitted).

65. *In re Kebrich*, 201 F.2d 951, 954 (C.C.P.A. 1953) (“Whatever may be the practice of the courts in the interpretation of claims in infringement proceedings in order to sustain patents once granted, it is very definitely settled by a line of consistent decisions rendered during a long period of time that . . . the tribunals [of the Patent Office] and the reviewing courts in the initial consideration of patentability will give claims the broadest interpretation which, within reason, may be applied.”).

66. *Burlington Industries, Inc. v. Quigg*, 822 F.2d 1581, 1583 (Fed. Cir. 1987). See also *In re Prater*, 415 F.2d 1393, 1405 (C.C.P.A. 1969) (noting that “the thought” behind interpreting unissued claims broadly is “to reduce the possibility that, after the patent is granted, the claims may be interpreted as giving broader coverage than is justified”). Because the ability to amend the claims is key, the broadest possible interpretation methodology is applied in reissue and reexamination proceedings where claims are also subject to amendment. See *In re Yamamoto*, 740 F.2d 1569, 1572 (Fed. Cir. 1984) (applying doctrine to reexamination proceedings because the patentee had “an opportunity during reexamination in the PTO to amend his claims to correspond with his contribution to the art”); *In re Reuter*, 651 F.2d 751 (C.C.P.A. 1981) (applying the broadest reasonable interpretation doctrine to reissue proceedings).

67. See *American Hoist*, 725 F.2d at 1359.

68. See *Dickinson v. Zurko*, 119 S. Ct. 1816, 1819 (1999) (stressing “the importance of

That law almost certainly dictates a deferential standard of review. The key point is that, unlike appellate review of lower court decisions on mixed questions of law and fact, judicial review of agency decisions on such questions is ordinarily subject to a rule of deference.⁶⁹ This is not to say that the administrative law governing review of mixed questions is free from uncertainty; it is not. Throughout the entire twentieth century, courts and commentators endlessly debated the proper approach to judicial review of administrative determinations on mixed questions.⁷⁰ Yet though

maintaining a uniform approach to judicial review of administrative action” and holding that judicial review of the PTO should be governed by the general “court/agency review standards” supplied by statute).

69. See *NLRB v. Hearst Publications, Inc.*, 322 U.S. 111, 131 (1944) (holding that, where the “question is one of specific application of a broad statutory term in a proceeding in which the agency administering the statute must determine it initially”—a question frequently thought to be mixed question of law and fact—“the reviewing court’s function is limited” to determining whether the agency’s decision “has ‘warrant in the record’ and a reasonable basis in law”); *Dobson v. Commissioner*, 320 U.S. 489, 501 (1943) (holding that, in reviewing “mixed questions of law and fact,” the court should adhere to the rule that “the judicial function is exhausted when there is found to be a rational basis for the conclusions approved by the administrative body”) (internal quotations omitted); *ICC v. Union Pacific R.R.*, 222 U.S. 541, 547 (1912) (“In determining these mixed questions of law and fact, the court confines itself to the ultimate question as to whether the Commission acted within its power. It will not consider the expediency or wisdom of the order, or whether, on like testimony, it would have made a similar ruling.”); *Public Utilities Comm’n v. Federal Energy Regulatory Comm’n*, 900 F.2d 269, 275 n.5 (D.C. Cir. 1990) (noting the rule that the courts “owe deference to an agency’s decision on a mixed question of fact and law”); *San Diego Newspaper Guild v. NLRB*, 548 F.2d 863, 867 (9th Cir. 1977) (noting that agency decision is entitled to “great weight by the courts” if “it is a finding on a mixed question of law and fact which is within the particular expertise of the [agency]”); see also BERNARD SCHWARTZ, *ADMINISTRATIVE LAW* § 10.32, at 698 (3d ed. 1991) (noting that whether an issue “is viewed as one of fact or one on a mixed question of law and fact, the agency is entitled to deference”).

70. Judicial efforts to define the appropriate approach to, and the appropriate terminology for, administrative decisions on mixed questions of law and fact include Justice Jackson’s acknowledgment of mixed questions in *Dobson*, 320 U.S. at 501; Justice Frankfurter’s attempt to divide law and fact in *Deputy v. DuPont*, 308 U.S. 488, 499 (1940) (Frankfurter, J., concurring); and Judge Friendly’s three-tiered approach in *NLRB v. Marcus Trucking Co.*, 286 F.2d 583, 590-91 (2d Cir. 1961).

The very recognition of a category for mixed question of law and fact has been controversial among many commentators. See, e.g., CHARLES H. KOCH, JR., 3 *ADMINISTRATIVE LAW AND PRACTICE* § 12.22, at 206 (1997) (noting that “the line between fact and law is somewhat ambiguous” but nonetheless criticizing the “unfortunate idea . . . of mixed question of law and fact”); BERNARD SCHWARTZ, *ADMINISTRATIVE LAW* § 10.36, at 705-06 (3d ed. 1991) (criticizing the terminology of mixed questions of law and fact as “obscur[ing] the drastic shift in review theory that had occurred”); LOUIS L. JAFFE, *JUDICIAL CONTROL OF ADMINISTRATIVE ACTION* 547 (1965) (criticizing the doctrinal category of mixed question of

uncertainty reigns in verbal forms and analytic approaches to the issue, the results of the cases—and the terms of the relevant statutory law—show that reviewing courts will afford, and should afford, much greater deference to administrative agencies on mixed questions of fact and law than to lower courts.

Two explanations for such deference can be provided—one based on judge-made or common law and the other on statutory law.⁷¹ Both approaches would probably require deference for administrative claim interpretations, although the issue is a closer one under the statutory approach.

Under a common-law approach, judicial deference to agency decisions on mixed questions of fact and law follows a fortiori from the case law requiring deference to agencies even on *pure* issues of law. The force of the administrative common law on this point is well demonstrated by the current dominance of the so-called *Chevron* doctrine, which holds that courts *must* defer to an agency's reasonable construction of an ambiguous statute administered by the agency.⁷² *Chevron* is merely one example of judicial deference to agency decisions of law. Another is the *Seminole Rock* doctrine, which requires courts to grant deference to an agency's interpretation of its own regulations.⁷³ A third example is found in the case law

law and fact as “complicat[ing] description of what the court is doing and conceals the true character of this aspect of judicial review”). See also KENNETH C. DAVIS, 5 ADMINISTRATIVE LAW TREATISE §§ 29.9-29.10, at 365-75 (criticizing the approach of the courts as inconsistent). But after rejecting the terminology of mixed question of law and fact, those commentators divide into two camps. One camp would recognize deference on issues of law, thereby decreasing the importance of the law-fact distinction. See, e.g., JAFFE, *supra*, at 554 (arguing that “[i]t is appropriate that in certain cases . . . an agency should have *primary* responsibility for law-making”). The other would not, thereby increasing the importance of the distinction. See KOCH, *supra*, § 12.22, at 205 (endorsing *de novo* review on issues of law) & § 12.34[1], at 273 (urging courts to “make every effort to separate the two review responsibilities); see also SCHWARTZ, *supra*, § 10.36 at 706-08 (similar).

71. These two different approaches can be observed on a wide variety of issues concerning judicial review of agency action. See John F. Duffy, *Administrative Common Law in Judicial Review*, 77 TEX. L. REV. 113 (1998).

72. *Chevron, U.S.A., Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837, 843 (1984) (“[I]f the statute is silent or ambiguous with respect to the specific issue, the question for the court is whether the agency’s answer is based on a permissible construction of the statute.”); *id.* at 844 (holding that the court “may not substitute its own construction of a statutory provision for a reasonable interpretation made by the administrator of an agency”).

73. *Bowles v. Seminole Rock Co.*, 325 U.S. 410, 414 (1945) (holding that courts must defer to an agency’s interpretation of its own regulations unless the interpretation “is plainly

requiring courts to defer to administrative interpretation of contracts.⁷⁴ Such broad doctrines of deference on legal issues are unknown in the law governing appellate review of lower courts.⁷⁵

The common law consistently stresses agency expertise as a principle reason for courts to grant deference to agency determinations of law.⁷⁶ In the case of claim interpretation, Federal Circuit case law already recognizes that the PTO has the interpretive expertise that is the necessary predicate for deference.⁷⁷ Deference to agency expertise in claim interpretation is particularly appropriate because the language of claims is “highly technical in many

erroneous or inconsistent with the regulation”). *See also* *Thomas Jefferson Univ. v. Shalala*, 512 U.S. 504, 512 (1994) (describing the “broad deference” due to an agency’s interpretation of its regulations); *Udall v. Tallman*, 380 U.S. 1, 16-17 (1965) (applying *Seminole Rock* and holding that “deference is even more clearly in order” for an agency’s construction of its regulations than for its statutory interpretations). *Cf.* *Allentown Mack Sales and Service, Inc. v. NLRB*, 528 U.S. 359, 377 (1998) (stating that judicial review of an agency’s interpretation of its own rules is governed by the arbitrary and capricious test of the Administrative Procedure Act, 5 U.S.C. § 706(2)(A)).

74. *See, e.g., Williams Natural Gas Co. v. FERC*, 3 F.3d 1544, 1549-51 (D.C. Cir. 1993) (holding that deference is due to an agency’s contractual interpretation even where the contract did not need the agency’s approval to take effect); *Northwest Pipeline Corp. v. FERC*, 61 F.3d 1479, 1486 (10th Cir. 1995) (adopting the D.C. Circuit’s holding in *Williams Natural Gas*); *National Fuel Gas Supply Corp. v. FERC*, 811 F.2d 1563, 1570 (D.C. Cir. 1987) (relying on *Chevron* to hold that courts must presume that the agency’s contract interpretation “profits from familiarity with the field of enterprise to which the contract pertains” and that therefore deference must be granted to an administrative interpretation of a contract within an agency’s regulatory field) (quoting *Kansas City v. FERC*, 723 F.2d 82, 87 (D.C. Cir. 1983)); *Western Union Tel. v. FCC*, 541 F.2d 346, 351 (3d Cir. 1976) (rejecting the argument that an agency’s application of “general common law precepts of contract construction” is not entitled to deference and holding that courts should employ deferential review when a contract “falls within the ambit of the [agency’s] expertise” notwithstanding “the fact that these are private agreements”).

75. Indeed, deference to lower court decisions on issues of law is so unusual that the Supreme Court overturned a very modest doctrine that permitted courts of appeals to afford some formal deference to lower court decisions of state law. *See Salve Regina College v. Russell*, 499 U.S. 225 (1991).

76. *See, e.g., Thomas Jefferson Univ.*, 512 U.S. at 512 (noting that “broad deference” to an agency’s interpretation of its own regulation “is all the more warranted when, as here, the regulation concerns a complex and highly technical regulatory program”) (citations omitted); *Chevron*, 467 U.S. at 865 (noting “technical and complex” nature of the regulatory scheme as a reason justifying deference to the agency’s statutory construction); *National Fuel Gas Supply*, 811 F.2d at 1570 (justifying deference to an agency’s construction of a contract on a presumption that the agency’s construction will be influenced by its “expertise in the technical language of that field and by its greater knowledge of industry conditions and practices”).

77. *See American Hoist*, 725 F.2d at 1359; *Ultra-Tex Surfaces*, 204 F.3d at 1367.

respects.”⁷⁸ Furthermore, the agency itself has been responsible for “develop[ing] a complex and rigid code of rules” to govern claim format,⁷⁹ and although courts have also influenced claim format, the Supreme Court has identified the PTO as the institution having “primacy” in ensuring the proper coverage of claims.⁸⁰ Finally, while the Federal Circuit also has expertise in claim interpretation, such expertise is not a sufficient reason, under the case law, to deny deference to the agency.⁸¹ Thus, under the judge-made administrative law, the expertise and authority of the PTO would almost certainly establish the prerequisites for judicial deference to the agency’s claim interpretations, even if claim interpretation is considered a “pure” issue of law.

An alternative approach to determining the proper standards for judicial review focuses on the relevant statutory law. As I have noted in another article, judge-made administrative law is not always consistent with statutory law and, though the courts are beginning to reconcile the two bodies of law by changing or abandoning judge-made law not grounded in statutory law, differences between the two approaches remain.⁸² Nowhere is this troubling divergence more evident than in the standards of review for questions of law.

78. *Markman*, 517 U.S. at 389 (quoting William R. Woodward, *Definiteness and Particularity in Patent Claims*, 46 MICH. L. REV. 755, 765 (1948)).

79. Karl B. Lutz, *Evolution of the Claims of U.S. Patents*, 20 J. PAT. & TRADEMARK OFF. SOC’Y 457, 488 (1938).

80. *Warner-Jenkinson*, 520 U.S. at 33.

81. In *United States v. Hagggar Apparel Co.*, the Supreme Court held that the Court of International Trade (CIT)—and, on appeal the Federal Circuit—must apply the *Chevron* doctrine even though the CIT has both a nationwide jurisdiction and “expertise . . . in making complex determinations in a specialized area of the law.” 119 S. Ct. 1392, 1400 (1999). Similarly, the D.C. Circuit has consistently granted deference to the Federal Energy Regulatory Commission’s contract interpretations, even though that the Circuit has a nationwide (albeit nonexclusive) jurisdiction over that agency and some expertise in the field. *See supra* note 74 (D.C. Circuit cases deferring to FERC contractual interpretations); 15 U.S.C. § 3416 (1997) (granting the D.C. Circuit nonexclusive nationwide jurisdiction to review FERC orders). The Supreme Court’s decision in *Hagggar* also undermines any argument that the courts should not defer to the PTO’s patent claim construction because the patent laws “express[] Congress’ intent that the courts should play a fully independent role in interpret[ation].” *National Fuel Gas Supply Corp.*, 811 F.2d at 1571 (providing possible exception to the rule that courts should defer to agency interpretations of contracts). The *Hagggar* court rejected an argument that the *Chevron* doctrine was inapplicable due to 28 U.S.C. § 2643, which requires the CIT “to reach the correct decision” in reviewing custom orders. *See* 119 S. Ct. at 1399.

82. *See generally* Duffy, *supra* note 71.

Section 706 of the Administrative Procedure Act (APA) provides that “the reviewing court *shall decide all relevant questions of law*, interpret constitutional and statutory provisions, and determine the meaning or applicability of the terms of an agency action.”⁸³ Section 706’s text, structure, legislative history, and even judicial interpretations—when the courts look to this statute rather than their own common law—all confirm that this provision requires courts to apply a *de novo* standard of review to issues of law.⁸⁴ Thus, unlike the standard for appellate review of trial court decisions of law, the standard for judicial review of agency legal decisions has been fixed by statute.⁸⁵

In deciding the proper standard of review for claim interpretations, a court could make the following simple syllogism: Since § 706 requires *de novo* review on questions of law, and since claim interpretation is a question of law, § 706 requires *de novo* review of claim interpretations. This logic would be flawed, however, because claim interpretation should not be considered purely a “question[] of law” for purposes of § 706.⁸⁶

Section 706 does not define what constitutes a “question[] of law,” although the structure of the statute implies that “interpret[ing] constitutional and statutory provisions, and determin[ing] the meaning or applicability of the terms of an agency action” should be considered questions of law for the courts.⁸⁷ Of those categories, claim interpretation comes closest to “determin[ing] the meaning and applicability of the terms of an agency action.”⁸⁸ Yet claims are written by the patent applicant or the applicant’s attorney, not the agency. Indeed, in cases reviewing a denial of a patent application—a typical situation where a court might review an administrative claim interpretation—the agency has *rejected* the claims, so it would be difficult to view them as the agency’s action.

Because § 706 does not define what constitutes a “question[] of

83. 5 U.S.C. § 706 (1994) (emphasis added).

84. See Duffy, *supra* note 71, at 193-95.

85. Cf. *supra* note 52 and accompanying text (noting that no statutory law governs standard for appellate review of trial court legal decisions).

86. 5 U.S.C. § 706.

87. *Id.*

88. *Id.*

law,” the courts would almost certainly rely on functional or policy considerations to classify a “mongrel practice,” such as claim interpretation, that falls “somewhere between a pristine legal standard and a simple historical fact.”⁸⁹ The policy analysis follows the same pattern as in *Markman* and (to the limited extent that the court discussed policy) in *Cybor*. But here, the relevant factors tilt the analysis in favor of deference. Unlike a jury, the PTO is not disadvantaged compared to the courts in either expertise or ability to achieve national uniformity.⁹⁰ Indeed, the agency is probably superior to the courts on both points. Because of its “primacy” in ensuring the proper coverage of claims,⁹¹ the PTO interprets claims far more frequently than any court, including the Federal Circuit, and therefore possesses at least a quantitative expertise not duplicated in the judiciary. The agency also establishes national uniformity whenever it interprets a claim, whereas the courts achieve uniformity only in appellate interpretations. Thus, unlike in *Cybor*, where national uniformity favored classifying claim construction as a question of law subject to de novo review, here the policy cuts against such a classification.

If claim construction does not constitute a “question[] of law” for purposes of § 706, deference to the agency’s claim interpretations would be due under several theories. For example, the courts could treat the issue as a mixed question of law and fact subject to review

89. 517 U.S. at 378, 388 (internal quotations omitted). Administrative law commentators have long supported having the law-fact distinction turn on policy considerations. *See* Davis, *supra* note 70, § 29.14, at 393 (urging courts to use “comparative qualifications” analysis in determining whether to grant deference to an agency’s decision on mixed questions of law and fact); JOHN DICKINSON, ADMINISTRATIVE JUSTICE AND THE SUPREMACY OF LAW IN THE UNITED STATES 55 (1927) (noting that there is “no fixed distinction” between law and fact, and that “[t]he knife of policy alone effects an artificial cleavage at the point where the court chooses to draw the line between public interest and private right”). The Federal Circuit has expressly adopted such an approach in determining the proper standard for judicial review of mixed questions. *See* Campbell v. Merit Systems Protection Bd., 27 F.3d 1560, 1565 (Fed. Cir. 1994) (“balanc[ing] considerations of judicial economy, comparative institutional advantage (e.g., the relative expertise of agencies and relative *non*-expertise of juries vis-a-vis judges), and constitutional concerns (e.g., the separation of powers in administrative appeals, and the right of trial by jury in actions at law) against the effect of appellate deference on consistency and uniformity in the law” in determining whether to classify issue as law or fact for purposes of judicial review of agency decision).

90. *Cf. Markman*, 517 U.S. at 388-91.

91. *Warner-Jenkinson*, 520 U.S. at 33.

only under Section 706(2)(A)'s arbitrary and capricious test.⁹² Alternatively, courts could try to separate the factual and legal components in claim interpretation, granting deference, for example, to explicit agency findings concerning the meaning of terms to persons skilled in the art,⁹³ but reviewing *de novo* more general matters such as the agency's interpretive method.⁹⁴ Other approaches are possible, but provided that claim construction is not classified as a pure question of law, § 706 requires a reviewing court to afford deference to the agency.

A statutory approach to determining the proper standard of judicial review leads to one final point concerning claim construction: The courts must afford proper respect to the agency's rules concerning claim interpretation. Where Congress has conferred an administrative power to make rules, the agency has power to

92. Section 706 has no provision expressly governing mixed questions of fact and law, but the arbitrary and capricious test in § 706(2)(A) has been interpreted as a catch-all provision applicable to all agency decisions not covered by more specific provisions in § 706. *See* Ass'n of Data Processing Serv. Orgs., Inc. v. Board of Governors, 745 F.2d 677, 683 (D.C. Cir. 1984) (Scalia, J.). Applying the arbitrary and capricious test to mixed questions of law and fact would be a sensible interpretation of § 706, in part because it would be consistent with the case law prior to the enactment of the APA. Under that case law, courts reviewed mixed questions of law and fact to ensure that the agency's decision had a rational basis or, equivalently, a warrant in the record and a reasonable basis in law. *See* NLRB v. Hearst Publications Inc., 322 U.S. 111, 131 (1944); ICC v. Union Pacific R.R., 222 U.S. 541, 547 (1912). While the judicial review provisions of the APA do not restate earlier judge-made law, they also were not intended to depart dramatically from pre-existing law. *See* Duffy, *supra* note 71, at 119. Absent evidence in the text, structure or legislative history of the statute, an interpretation of § 706 that reconciles pre-existing law should be marginally preferred over other interpretations.

93. Section 706 provides that issues of fact shall be reviewed under a deferential standard, excepting certain rare circumstances not present in the patent system. *See* 5 U.S.C. § 706(2)(E) (authorizing judicial review of agency determinations of fact reached in certain proceedings under a "substantial evidence" test); 5 U.S.C. § 706(2)(A) (generally authorizing reviewing courts to overturn "arbitrary" and "capricious" agency decisions). *See also* Dickinson v. Zurko, 119 S. Ct. 1816 (1999) (holding that judicial review of PTO factual findings must use either the substantial evidence or the arbitrary and capricious test of § 706). For a discussion of the rare circumstances in which the APA authorizes *de novo* review of facts, *see* *Citizens to Preserve Overton Park, Inc. v. Volpe*, 401 U.S. 402, 415 (1971).

94. Thus, under this theory, a court would not defer if the agency's method of construing claims were inconsistent with statutory law. *See, e.g., In re Donaldson Co., Inc.*, 16 F.3d 1189 (Fed. Cir. 1994) (in banc) (holding the PTO's interpretation of "means-plus-function" claims violated 35 U.S.C. § 112 ¶ 6). *See also* R. Carl Moy, *The Interpretation of Means Expressions During Prosecution*, 68 J. PAT & TRADEMARK OFF. SOC'Y 246 (1986) (identifying the divergence between the statutory law governing "means-plus-function" claims and the agency's interpretive method).

“prescribe law” within the ambit of the rulemaking authorization.⁹⁵ Although the PTO does not possess a substantive rulemaking power,⁹⁶ it does have the power to make rules governing “the conduct of [its] proceedings.”⁹⁷ In at least some circumstances, the PTO should be able to rely on that power to create rules governing the drafting and interpreting of claims.⁹⁸

The cases have not yet discussed much of this in detail. But attention to the standard for judicial review of administrative claim interpretations is an obvious next step in the wake of *Markman*, *Cybor*, and the general increase in attention to the legal process of claim interpretation. The remainder of this article will consider the effect that administrative claim interpretations should have in infringement litigation (part II), and the possibility that legal process issues can be resolved less on ad hoc guesstimates of policy and more on objective criteria (part III).

95. See 5 U.S.C. § 551(4) (1996) (equating an agency’s power to make rules as a power to “prescribe law”). Describing such respect for the agency’s lawmaking power as “deference” to the agency’s interpretations of law is potentially confusing because of the apparent conflict with § 706’s rule of de novo review on questions of law. Nonetheless it is accurate to say that even though the courts review question of law de novo, they are sometimes bound by agency decisions on legal issues. They are bound because, in construing the statutory law de novo, they discover that the statute gives the agency authority to make the relevant legal rule. See Duffy, *supra* note 71, at 202 (noting that “[t]he illusion of deference is created by the agency’s delegated authority to fill in the details of the statute, which will affect a court’s interpretation of the more general language in the statute”). This approach reconciles § 706 with a large part of the *Chevron* case law, and it appears to be gaining acceptance as the courts retreat from fashioning administrative common law without consideration of the relevant statutory law. See *Haggar Apparel*, 119 S. Ct. at 1399 (noting that de novo review on issues of law is not necessarily inconsistent with *Chevron* because “[v]alid regulations establish legal norms”).

96. As the Federal Circuit has held, the absence of a substantive rulemaking power makes the *Chevron* doctrine inapplicable to the PTO’s interpretations on the substance of the Patent Act. *Merck & Co. v. Kessler*, 80 F.3d 1543 (Fed. Cir. 1996). See also Duffy, *supra* note 71, at 204-05 (identifying *Merck* as a decision that correctly limits the *Chevron* doctrine to cases in which the agency has exercised a rulemaking power).

97. 35 U.S.C. § 2(b)(2)(A) (2000).

98. The PTO might even be able to use its rulemaking power to change preexisting rules of claim interpretation developed by the courts. Recognition of such a power would not allow the agency to “flout[] judicial precedent.” *Rowe v. Dror*, 112 F.3d 473, 479 n.2 (Fed. Cir. 1997). Like enactment of a new statute, promulgation of a valid rule changes the applicable law, and the case law developed prior to the promulgation of the rule could not have considered the effect of that change. See *id.* (sustaining agency’s procedural rules because prior “case law did not deal with” the relevant legal situation).

II. A TABLEAU OF ALTERNATIVES: PRIMARY JURISDICTION AND ADMINISTRATIVE CLAIM INTERPRETATIONS IN OTHER PATENT SYSTEMS

Confronted with a choice between a procedural rule that would further nationally uniform claim interpretations versus a rule likely to be less costly, the judges in *Cybor* chose national uniformity despite the expense. Yet perhaps this dilemma can be avoided altogether.

As seen in the previous section, conventional principles of administrative law almost certainly require the courts to defer to the PTO's expertise in interpreting patent claims. Unlike deference to a decentralized system of trial courts, deference to an administrative agency does not undermine national uniformity in claim interpretation. Indeed, a traditional reason for resorting to administrative processes is to achieve national uniformity quickly and inexpensively.⁹⁹ Thus, the dilemma in *Cybor* can be avoided to the extent that trial courts can obtain administrative claim interpretations. As shown in subpart A below, a standard doctrine of administrative law—the primary jurisdiction doctrine—permits and sometimes even requires that courts seek administrative opinions in circumstances quite analogous to those present in infringement trials. Subpart B examines the patent law of other countries and finds that, in many, statutory law already expressly provides for patent infringement courts to obtain advisory opinions from national or international patent offices. In sum, the primary jurisdiction doctrine could provide a practical solution to the procedural difficulties confronting infringement courts, and it is a solution similar to procedures found in the patent law of other industrialized countries.

A. The Administrative Law Doctrine of Primary Jurisdiction and Its Application to Patent Claim Interpretation

The primary jurisdiction doctrine in administrative law governs

99. See JAMES L. LANDIS, THE ADMINISTRATIVE PROCESS 33 (1938) (noting that the growth of administrative processes occurred in part because "it seemed desirable to have some uniformity in approach, a uniformity that under the judicial process could only be attained by the time-consuming and expensive process of appeals to the court of last resort").

situations where a court has jurisdiction over a case but an administrative decision on some issue may be helpful, or necessary, for the judicial resolution of the case.¹⁰⁰ Because issues implicating the expertise of an administrative agency can arise in a variety of different situations, the Supreme Court has stressed that “[n]o fixed formula exists for applying the doctrine of primary jurisdiction,”¹⁰¹ and both the courts and commentators agree that much of the doctrine’s strength lies in its flexibility and pragmatism.¹⁰²

The general procedures associated with the doctrine are easily described. Once it decides to invoke the doctrine, a court “enable[s] a ‘referral’ to the agency” by giving the parties a “reasonable opportunity to seek an administrative ruling” on an issue relevant to the case before the court.¹⁰³ Such a “reasonable opportunity” can be afforded by granting a stay of proceedings or, in the court’s discretion, by other means.¹⁰⁴ Importantly, “referral of the issue to the administrative agency does not deprive the court of jurisdiction.”¹⁰⁵ The court retains power to regulate all aspects of the doctrine and may even establish a time limit beyond which the court will proceed without the agency’s ruling.¹⁰⁶

United States v. Western Pacific Railroad Co.,¹⁰⁷ one of the most

100. See *United States v. Western Pac. R.R. Co.*, 352 U.S. 59, 63-64 (1956) (“‘Primary jurisdiction’ . . . applies where a claim is originally cognizable in the courts, and comes into play whenever enforcement of the claim requires the resolution of issues which, under a regulatory scheme, have been placed within the special competence of an administrative body”); see also *Reiter v. Cooper*, 507 U.S. 258, 268 (1993) (noting that primary jurisdiction “is a doctrine specifically applicable to claims properly cognizable in court that contain some issue within the special competence of an administrative agency”).

101. *Western Pacific*, 352 U.S. at 64. See also Louis L. Jaffe, *Primary Jurisdiction*, 77 HARV. L. REV. 1037, 1037 (1964) (“The so-called doctrine of primary jurisdiction cannot be stated in the form of a rule in terms either of its analytic structure or of its incidence.”).

102. See, e.g., *Civil Aeronautics Bd. v. Modern Air Transp., Inc.*, 179 F.2d 622, 625 (2d Cir. 1950) (“[T]he outstanding feature of the doctrine is properly said to be its flexibility permitting the courts to make a workable allocation of business between themselves and the agencies.”) (citations omitted); LOUIS L. JAFFE, JUDICIAL CONTROL OF ADMINISTRATIVE ACTION 121 (1965) (same).

103. *Reiter v. Cooper*, 507 U.S. 258, 268 (1993).

104. *Id.* at 268-69 (noting that the court “has discretion either to retain jurisdiction or, if the parties would not be disadvantaged, to dismiss the case with prejudice”).

105. *Id.* at 268.

106. *American Auto. Mfrs. Ass’n v. Massachusetts Dep’t of Env’tl. Protection*, 163 F.3d 74, 81-82, 86-87 (1st Cir. 1998) (imposing limit on time that the court will wait for agency action).

107. *Western Pacific*, 352 U.S. 59 (1956).

famous primary jurisdiction cases, has obvious parallels to a typical patent infringement action. *Western Pacific* involved a dispute over railroad rate tariffs that, like patent claims, are specialized legal texts ordinarily drafted by private parties but filed with, and subject to approval by, an administrative agency. As with patent claims, “[e]very question of the construction of a tariff is deemed a question of law.”¹⁰⁸ In *Western Pacific*, the United States shipped napalm bombs without their fuses and burster charges, and the Western Pacific Railroad charged the rate for “incendiary bombs” listed in the railroad’s tariffs.¹⁰⁹ The government refused to pay the full amount charged, however, because it believed that the railroad’s lower rate for “gasoline in steel drums” applied to the defused napalm shipment.¹¹⁰

In the suit brought by the railroad in the Court of Claims, a central issue was whether the defused napalm bombs constituted “incendiary bombs” or merely “gasoline in steel drums” within the meaning of the tariffs filed by the railroad with the Interstate Commerce Commission (ICC).¹¹¹ Without seeking any administrative assistance, a divided Court of Claims construed the railroad’s tariffs against the government,¹¹² but the Supreme Court reversed, holding that “the interests of a uniform and expert administration of the regulatory scheme” required the courts to afford the ICC an opportunity to pass on the proper construction of the tariff.¹¹³ In particular, the Court stressed that railroad tariffs are “[c]omplex and technical” and that properly construing them requires a “familiarity . . . possessed not by

108. *Great N. Ry. Co. v. Merchants Elevator Co.*, 259 U.S. 285, 290 (1922).

109. *Western Pacific*, 352 U.S. at 60.

110. *Id.* at 61. Though its argument was rejected by the Court of Claims, and ultimately by the ICC too, see *United States v. Western Pac. R.R. Co.*, 309 ICC 249 (1959), the government had reasonable grounds for contending that its shipment should not be classified as incendiary bombs. Napalm is merely gasoline thickened by the addition of aluminum soap powder; like gasoline it is inflammable but not self-igniting. See 352 U.S. at 60. Without burster charges and fuses, a shipment of napalm inside steel bomb casings does not seem to present risks different than gasoline in steel drums. See *id.* at 61 n.3.

111. 309 ICC at 250-51.

112. *Western Pac. R.R. Co. v. United States*, 131 F. Supp. 919 (Ct. Cl. 1955). Two of the five judges on the Court of Claims dissented as to the proper construction of the railroad’s tariff, but none of the judges considered referring the tariff construction issue to the ICC. *Id.* at 920-21.

113. *Western Pacific*, 352 U.S. at 65.

the courts but by the agency which had the exclusive power to pass on the [tariff] in the first instance.”¹¹⁴

The *Western Pacific* Court made clear, however, that tariff construction was not invariably a matter on which a court must first seek an administrative opinion.¹¹⁵ In an earlier case, *Great Northern Railway Co. v. Merchants Elevator Co.*, the Court held that the construction of a tariff need not be referred to the ICC where the words of the tariff “were used in their ordinary sense” and no extrinsic evidence was offered to prove a “peculiar meaning,” to define “technical words or phrases not commonly understood,” or “to establish a usage of trade or locality.”¹¹⁶ While *Western Pacific* reaffirmed the result in *Great Northern*, it also stressed that a judicial decision to invoke the primary jurisdiction doctrine must be “based on the particular facts of each case.”¹¹⁷ “In every case,” the Court reasoned, “the question is whether the reasons for the existence of the doctrine are present and whether the purposes it serves will be aided by its application in the particular litigation.”¹¹⁸ The reasons identified by the Court for the doctrine were the need for achieving a “desirable uniformity” and the practical utility of calling upon “the expert and specialized knowledge of the agencies.”¹¹⁹ Thus, even where an administrative opinion may serve merely “as a premise for

114. *Id.* at 66-67.

115. *Id.* at 69 (“By no means do we imply that matters of tariff construction are never cognizable in the courts.”).

116. 259 U.S. 285, 294, 291-92 (1922). A referral to the ICC would not have been justified in *Great Northern* because the issue in the case was not difficult. Under the relevant tariff, a special charge was due if a shipper diverted railroad cars to a new destination, unless the diversion was incident to an inspection of the shipment. *See id.* at 288-89. The shipper in *Great Northern* supplied new destination orders immediately after its railroad cars of grain were inspected, but nevertheless the railroad assessed the diversion charge. *Id.* at 288. All of the judges in lower courts agreed that the shipper’s actions fell within the inspection exception and that the railroad’s assessment was not consistent with the tariff. *See Merchants’ Elevator Co. v. Great N. Ry. Co.*, 180 N.W. 105, 106 (1920) (unanimously affirming trial court decision in favor of the shipper).

117. 352 U.S. at 69.

118. *Id.* at 64. Because primary jurisdiction requires a fact-intensive inquiry, the *Western Pacific* Court remanded a companion case so that the court below could determine “what kinds of factors are involved” in the disputed issue of tariff construction and whether those factors required a preliminary resort to the expertise of the agency. *See United States v. Chesapeake & Ohio Ry. Co.*, 352 U.S. 77, 80-81 (1956).

119. *Western Pacific*, 352 U.S. at 64.

legal consequences to be judicially defined,” as in matters of tariff or claim construction, “uniformity and consistency” are better secured “by preliminary resort for ascertaining and interpreting the circumstances underlying legal issues to agencies that are better equipped than courts by specialization, by insight gained through experience, and by more flexible procedure.”¹²⁰

Western Pacific, Great Northern, and other cases applying primary jurisdiction to issues of tariff construction do not, of course, dictate that the primary jurisdiction doctrine must apply to patent claim construction. Tariff construction and claim construction could be distinguished on many grounds, not the least of which is that the ICC, the relevant administrative agency in the Supreme Court cases on tariff construction, possessed broader discretionary powers within its regulatory jurisdiction than the PTO has under its statutory mandate. But such distinctions are insufficient to prove the doctrine inapplicable, because the very flexibility of the primary jurisdiction doctrine makes it adaptable to a wide range of circumstances. A recent decision of the First Circuit proves the point.

In *American Automobile Manufacturers Association v. Massachusetts Department of Environmental Protection* (AAMA), the First Circuit applied the doctrine of primary jurisdiction to the issue of whether a provision of the federal Clean Air Act preempts a Massachusetts statute requiring automakers to manufacture a certain number of electric vehicles.¹²¹ The case involved a suit by auto manufacturers to enjoin the State from enforcing its statute. The district court granted an injunction, but on appeal, the First Circuit stayed proceedings for 180 days to give the Environmental Protection Agency, the agency with jurisdiction over the Clean Air Act, an opportunity to opine on the preemptive effect of the federal statute.¹²²

Even where a disputed “issue is primarily one of statutory interpretation,” the court reasoned, “referral of that matter to the

120. *Id.* at 64-65 (quoting *Far East Conference v. United States*, 342 U.S. 570, 574-75 (1952)). For another case in which the Court held that an issue of tariff construction fell within the primary jurisdiction of the ICC, see *Texas and Pacific Ry. Co. v. American Tie & Timber Co.*, 234 U.S. 138 (1914) (holding that the ICC must decide whether a railroad tariff for “lumber” applied to a shipment of oak railroad ties).

121. 163 F.3d 74, 80-81 (1st Cir. 1998).

122. *Id.* at 86-87.

agency with primary jurisdiction may also be generally advisable in precisely those circumstances in which a court would defer to the agency's interpretation pursuant to [the *Chevron* doctrine]."¹²³ A referral has its costs, the court noted, because the referral for an administrative ruling has "the potential for delay."¹²⁴ The flexibility of the doctrine, however, allows a court to minimize the costs of delay. The court can, as the First Circuit did, impose a deadline, after which time the court will decide the issue without administrative assistance if the agency has not acted.¹²⁵

The First Circuit's decision in *AAMA* shows that the primary jurisdiction doctrine can be applied even where an administrative ruling is not a prerequisite to judicial action, and even where the relevant issue involves statutory interpretation or some other legal question for which the courts have traditionally held greater responsibility than agencies. While the *AAMA* court held that it would grant *Chevron* deference to the agency's views, deference is not an absolute necessity to trigger the doctrine. In its weakest form, the primary jurisdiction doctrine simply reminds courts that they can, through a variety of formal and informal techniques, seek the views of an executive branch agency when those views might be helpful. This weak version of the doctrine can be seen as analogous to the Supreme Court's practice of inviting the Solicitor General to file amicus briefs in cases presenting significant issues of federal law. In such cases, the Court does not defer to the Solicitor General's views,

123. *Id.* at 81 (citations omitted).

124. *Id.*

125. 163 F.3d at 81-82. *See also id.* at 86-87 (providing that "if no agency ruling is forthcoming within 180 days . . . [the court] will then decide the issues before [it] without the EPA's guidance"). The agency responded to the court by letter on September 15, 1999. *See Association of Int'l Auto. Mfrs., Inc. v. Commissioner*, 196 F.3d 302 (1st Cir. 1999). The First Circuit has continued its stay pending an appeal by the automobile manufacturers that was filed in the D.C. Circuit. *Id.* at 306. The First Circuit was concerned that a conflict between it and the D.C. Circuit could arise if the later entertained the appeal by the manufacturers, even though the possibility of such a conflict seems remote. *Id.* at 305. Obvious inefficiency and delay would result if the D.C. Circuit heard appeals from all agency rulings issued in response to referrals from courts under the primary jurisdiction doctrine. Moreover, the judicial review provisions of the Administrative Procedure Act confer a right of action only where "there is no other adequate remedy in a court," 5 U.S.C. § 704 (1994), and review by the court referring the matter to the agency (e.g., by the First Circuit in *AAMA*) would seem to be a remedy "adequate" enough to deprive the litigants of a cause of action in any other court.

but it asks for them nonetheless because the Solicitor General's expertise in interpreting federal law may provide assistance to the Court.¹²⁶

Nor is judicial power to seek expert assistance limited to inviting amicus briefs. As the Supreme Court noted early in the twentieth century, "[c]ourts have (at least in the absence of legislation to the contrary) inherent power to provide themselves with appropriate instruments required for the performance of their duties," and that power includes authority to obtain assistance from specialists "to aid judges in the performance of specific judicial duties, as they may arise in the progress of a cause."¹²⁷ Courts continue to use this power to appoint nonwitness experts in appropriate cases.¹²⁸ In its weaker forms, the doctrine of primary jurisdiction merely affords courts slightly greater latitude in seeking assistance from expert administrative agencies in the Executive Branch than from nongovernmental expert assistants.¹²⁹

126. See ROBERT L. STERN ET AL., SUPREME COURT PRACTICE 397 (6th ed. 1986) (noting that the Court's practice is to request the Solicitor General's views where they "are felt to be relevant to the Court's consideration of the case").

127. *Ex parte* Peterson, 253 U.S. 300, 312-14 (1920) (approving court appointment of an auditor); see also *id.* at 314 (noting that the "inherent power of a federal court to invoke such aid is the same whether the court sits in equity or at law").

128. See, e.g., *Reilly v. United States*, 863 F.2d 149, 154-56 (1st Cir. 1988) (approving a district court's use of an economist as a "technical advisor" to assist the court in calculating damages and holding that, if such technical advisors do not provide any evidence in the case, they are not subject to Federal Rule of Evidence 706, which affords rights to depose and cross-examine court appointed witnesses); *MediaCom Corp. v. Rates Technology, Inc.*, 4 F. Supp. 2d 17, 29-30 (D. Mass. 1998) (relying on *Reilly* to appoint an expert to assist in claim construction); *Biogen Inc. v. Amgen, Inc.*, CA No. 95-10496-RGS, Memorandum and Order, (D. Mass. Dec. 10, 1996) (Stearns, J.), reprinted in *MediaCom Corp.*, 4 F. Supp. 2d at 35-37 (Appendix A) (also appointing an expert to assist in claim construction). In his 1998 address to the American Association for the Advancement of Science, Justice Breyer praised Judge Stearns's decision to appoint an expert in the *Biogen* litigation. See Stephen Breyer, *The Interdependence of Science and Law*, 82 JUDICATURE 24, 27 (1998) (reprinting Justice Breyer's address). Compared to judicial appointment of private experts, primary jurisdiction has the advantage that it eliminates the difficulties in selecting the expert. See *id.* (noting the problems associated with a judicial search for, and selection of, a neutral expert).

129. Though district courts have not yet invoked the primary jurisdiction doctrine, they have frequently resorted to appointing technical experts or special masters to assist in claim constructions. See, e.g., *MediaCom Corp.*, 4 F. Supp. 2d at 29-30 (collecting rulings appointing an expert); *Rodime PLC v. Seagate Tech., Inc.*, 174 F.3d 1294, 1300 (Fed. Cir. 1999) (noting the district court's reliance on special master); *Alpex Computer Corp. v. Nintendo Co. Ltd.*, 102 F.3d 1214, 1216 (Fed. Cir. 1996) (noting the district court's use of a special master for claim construction). The appointment of special masters is, however, limited to "exceptional"

With this background on primary jurisdiction, we can now consider the application of the doctrine to patent claim interpretation. *Exxon Chemical Patents, Inc. v. Lubrizol Corp.*¹³⁰ presents a fine example where the primary jurisdiction doctrine could have been useful. The case involved an Exxon patent on a lubricating oil and, as in many patent cases, claim interpretation was a crucial issue in the litigation.¹³¹ The interpretive issue was deceptively simple: The patent claimed an oil “comprising” five substances, and the dispute was whether the five substances listed in the claims referred to the ingredients as they existed *before* they were mixed together or as they existed within the patented oil *after* they were mixed together.¹³² The issue was important because one of the five ingredients, described in the claims as an “ashless” (i.e., non-metallic) dispersant, formed a weak chemical bond with other metal-containing ingredients to an extent that it could no longer be considered “ashless” within the lubricating oil.¹³³

Lubrizol, which used all five of the ingredients listed in the patent to make its lubricant, argued that the patent claims described the

circumstances where the parties do not consent to the appointment. Fed. R. Civ. Proc. 53(b). See also *United States v. Microsoft Corp.*, 147 F.3d 935, 955 n.22 (D.C. Cir. 1998) (criticizing the district court’s nonconsensual appointment of a special master as a “deputization of a vice-judge” and granting mandamus to prevent use of the master). The limitations on court power to appoint technical experts outside the constraints of Federal Rule of Evidence 706 have not yet been tested. But some limits are likely to be found, for the practice raises fundamental concerns of undermining the adversarial processes and of transforming Article III judges into investigators akin to the inquisitorial magistrates of Continental systems. See *MediaCom Corp.*, 4 F. Supp. 2d at 30 n.11 (noting, in the course of appointing a technical assistant, that the *Markman* hearing process “represents a drift toward the European civil justice system of adjudication”); Margaret G. Farrell, *Coping With Scientific Evidence: The Use of Special Masters*, 43 EMORY L.J. 927, 930 (1994) (noting that the use of special masters to evaluate scientific information “represents a significant departure from the tenets of our traditional civil justice system” and moves our system toward “the Continental model”). District courts are not similarly constrained in invoking the primary jurisdiction doctrine.

130. 64 F.3d 1553 (Fed. Cir. 1995).

131. *Id.* at 1555.

132. *Id.* Claim one in the patent, which was representative of all other claims at issue in the case, began with the text “[a] lubricating oil composition suitable as a crankcase lubricant in internal combustion engines comprising” and then listed the five substances. *Id.* at 1556 (brackets in original).

133. *Id.* at 1559-60. A sufficient amount of the formerly ashless dispersant formed a bond with a metallic component of the mixture that Exxon was unable to prove at trial that the amount of ashless dispersant left in mixture fell within the percentage weight range specified in the claims for that component.

ingredients after they were mixed together; Exxon took the other position.¹³⁴ At trial the district judge agreed with Exxon's interpretation and so charged the jury, which found willful infringement.¹³⁵ In reversing, a divided panel of the Federal Circuit adopted an interpretation of the claims not argued by either of the parties. The Federal Circuit held that the claim language referred to the ingredients after they were mixed together but not necessarily, as Lubrizol had argued, as they existed in the final lubricant.¹³⁶ Because Exxon had not proven that any of Lubrizol's mixtures, final product or otherwise, contained the five claimed ingredients after mixture, the Federal Circuit granted judgment as a matter of law to Lubrizol on literal infringement.¹³⁷ Nevertheless, the case went back to district court for a new trial on a doctrine of equivalents theory.¹³⁸

Exxon Chemical Patents is an interesting case for a variety of reasons. First, and most obviously, it shows the potentially high costs of reversing a claim interpretation employed in a district court—an extensive, complex trial must be held again. Second, although it has been cited as an example of why the Federal Circuit should defer to the claim interpretations of trial judges, *Exxon Chemical Patents* also highlights an important drawback of that course, for the trial judge candidly confessed on the record his “considerable difficulty in understanding the chemistry and law involved in the case.”¹³⁹

Third, the case shows how difficult the task of claim construction can be, or at least, how difficult the task can be for an institution restricted to the rather limited set of procedures employed in an appellate forum. A single paragraph contains the entirety of the panel majority's reasoning in support of its conclusion that the claims refer to the ingredients after, not before, mixture.¹⁴⁰ Although one of the two judges in the majority stated in a concurrence that the panel's

134. 64 F.3d at 1555.

135. *Id.*

136. *Id.* at 1558.

137. *Id.* at 1561.

138. See *Exxon Chem. Patents, Inc. v. Lubrizol Corp.*, 137 F.3d 1475, 1483 (Fed. Cir. 1998) (holding that the appellate mandate in the prior appeal did not preclude a new trial on a doctrine of equivalents theory).

139. *Exxon Chemical Patents*, 64 F.3d at 1555.

140. *Id.* at 1557 (last full paragraph on page).

interpretation was “unquestionably” correct,¹⁴¹ the dissenter found it “nothing short of double speak.”¹⁴² On petition for rehearing in banc, one of the court’s two judges holding a Ph.D. in chemistry condemned the majority’s claim interpretation as “gravely incorrect . . . as a matter of law, as a matter of chemistry, and as a matter of patent practice.”¹⁴³

Yet the most striking point in any of the opinions is the assertion in the dissent to in banc rehearing that Exxon’s claim form, defining a composition as “comprising” a list of ingredients, is ubiquitous. It is employed by “[m]any thousands of chemical patents” and the PTO continues to issue similarly drafted patents in a rate of approximately one hundred per week.¹⁴⁴ Those empirical observations, backed as they were with a fair amount of evidence, lead to the obvious question: What rights does the PTO think that it is granting when it issues claims in this format? The answer to this question seems highly relevant to proper claim interpretation, and it is precisely the type of information that the primary jurisdiction doctrine allows courts to obtain from the agency.

Thus, in a case like *Exxon Chemical Patents*, even the weakest version of the primary jurisdiction doctrine would have value. It would provide an expedient way for a district judge unfamiliar with the complexities of patent claim drafting to obtain an expert opinion from the executive branch agency that, pursuant to its statutory duty, must pass upon and, therefore, interpret the claims in every United States patent.¹⁴⁵ Even if the PTO received no judicial deference for its

141. *Id.* at 1563 (Plager, J., concurring).

142. *Id.* (Nies, J., dissenting).

143. *Exxon Chemical Patents, Inc. v. Lubrizol Corp.*, 77 F.3d 450, 451 (Fed. Cir. 1996) (Newman, J., dissenting from denial of rehearing in banc). Judge Newman holds a Ph.D. in chemistry from Yale University. See <<http://www.fedcir.gov/judgbios.html>> (providing biographical data). Judge Lourie, the other judge on the Federal Circuit with a Ph.D. in chemistry (his from the University of Pennsylvania, *id.*), did not write or join any opinion in *Exxon Chemical Patents*.

144. 77 F.3d at 452, 454 (Newman, J., dissenting).

145. Though judicial proceedings are traditionally stayed after a referral to an agency under the primary jurisdiction doctrine, no stay would be necessary if the referral occurred prior to trial and the district court set a time limit for agency action consistent with the anticipated start of trial. See *AAMA*, 163 F.3d at 86-87 (establishing 180 day deadline for agency action). Since trial courts typically have scheduled hearings to resolve disputes over claim interpretation (or “*Markman* hearings”) prior to trial, referral to the agency need not require any significant

claim interpretations, the agency's opinions could still reduce the number of wasted infringement trials, provided that district courts are better able to predict the Federal Circuit's ultimate claim interpretations with the agency's opinions than without.¹⁴⁶

Exxon Chemical Patents shows, however, that the real value of the primary jurisdiction doctrine would be realized under stronger, more traditional versions of the primary jurisdiction doctrine, where the agency's interpretation of the legal text receives some judicial deference. Such deference would obviously produce greater uniformity in interpretations at the trial level. It may even lead to greater uniformity at the appellate level since, though the Federal Circuit is in theory a unified institution, different panels may not share the same interpretive philosophy. More fundamentally, a case such as *Exxon Chemical Patents* demonstrates that a difference between judicial and administrative claim interpretations can implicate the statutory presumption of validity afforded to all patent claims issued by the PTO.¹⁴⁷ For if in granting Exxon's patent, the PTO interpreted claims as the dissent did, then the court's interpretation has substantially nullified, perhaps completely nullified, the patent claims as they were understood by the agency.

Applying a traditional version of the primary jurisdiction doctrine would not require a wholesale transfer of authority from the courts to the agency. Like the tariff interpretation issues in *Great Northern*, many issues of patent claim interpretation may require no specialized technical knowledge or may not be difficult enough to justify the referral to the agency.¹⁴⁸ An example might be found in *Markman*,

change in the timing of infringement trials. See *Cybor*, 138 F.3d at 1475 (Rader, J., dissenting) (noting the timing of *Markman* hearings). Moreover, the flexibility of administrative processes should permit the agency to respond to the referral within a reasonable amount of time and certainly no longer than it would take an appellate court to answer a certified question on claim construction. Cf. *Cybor*, 138 F.3d at 1479 (Newman, J.) (noting that district courts had tried to certify disputed questions of claim construction for interlocutory appellate review).

146. See *Markman*, 52 F.3d at 983 (in banc) (noting that a district court has discretion to "find guidance" in an expert opinion on claim construction) (citation omitted). Cf. *Cyber Corp.*, 138 F.3d at 1462 (Plager, J., concurring) (noting that the court of appeals may give weight to a district court opinion interpreting claims because "four minds may often be better than three when a complex claim construction is at issue").

147. 35 U.S.C. § 282 (1994) (providing that "[e]ach claim of a patent . . . shall be presumed valid independently of the validity of the other claims").

148. See *supra* notes 72-76 describing traditional role of administrative agencies in

which presented an interpretive issue that was both relatively straightforward (none of the judges who interpreted the claims disagreed with the result) and, unlike the issue in *Exxon Chemical Patents*, likely to be unique to the case. Where claim construction presents more technical questions, courts should refer the issue to the agency, but the agency's claim construction, like all agency action, would still be subject to judicial review pursuant to the APA.¹⁴⁹

Successful application of the primary jurisdiction doctrine would, of course, require that the PTO be amenable to interpreting claims upon referral from the courts. This is, however, no different than the ordinary case of primary jurisdiction. As the Supreme Court has noted, most statutes contain no mechanism whereby a court can demand a determination from an agency.¹⁵⁰ Even in situations where the agency has no duty to respond to the court's request for assistance (as in *AAMA*), administrative cooperation has been the norm.¹⁵¹ There is no reason to suspect that the PTO would be less willing to cooperate than other agencies.¹⁵² The agency could insure claim interpretations of high quality by assigning the task to panels of examiners-in-chief or administrative patent judges from the Board of Patent Appeals and Interferences.¹⁵³ Indeed, such a process might have important collateral benefits for the agency and for the patent

interpreting specialized legal texts).

149. See 5 U.S.C. §§ 701-706 (1994).

150. See *Reiter v. Cooper*, 507 U.S. 258, 268 n.3 (1993).

151. *Association of Int'l Auto. Mfrs., Inc. v. Commissioner*, 196 F.3d 302, 303-04 (1st Cir. 1999) (noting the EPA's response to the court's referral).

152. Express statutory authority is generally not required to issue interpretive rulings, see 5 U.S.C. § 558(b) (1994) (requiring authorization by law only for a "substantive rule or order" issued by an agency), and in any event, the PTO has broad authority to "conduct programs . . . regarding domestic and international intellectual property law." 35 U.S.C. § 2(b)(11). Agency interpretive rulings issued without express statutory authority are entitled to at least the level of judicial deference outlined in *Skidmore v. Swift & Co.*, 323 U.S. 134, 140 (1944)—they have a "power to persuade if lacking power to control." See *Merck & Co. v. Kessler*, 80 F.3d 1543, 1550 (Fed. Cir. 1996) (affording *Skidmore* deference to a PTO interpretive ruling). The PTO could charge a fee for its interpretive rulings, as its statutory authority to recover its expenses through fees covers all "services" rendered by the agency. 35 U.S.C. § 42(a)(d) (1994).

153. The Director of the PTO has broad authority to define the duties of the agency's officers and employees. See 35 U.S.C. § 3(b)(3)(B) (2000). Although some functions of the Board of Patent Appeals and Interferences are statutorily defined, see 35 U.S.C. § 6(b), the Director is not prohibited from assigning additional functions to the Board's administrative patent judges.

system as a whole. Opining on ambiguities in claims may improve the PTO's ability to detect and eliminate such ambiguity prior to the issuance of a patent, which, in turn, would improve the certainty and reliability of patent rights generally.¹⁵⁴

Curiously, application of primary jurisdiction to patent infringement cases would be consistent with the historical origins of the doctrine. In the early part of the twentieth century, when primary jurisdiction was first being formulated in rail tariff cases, one prominent commentator—Adolf Berle, whose later fame on corporate law matters overshadowed his earlier work in administrative law—justified and explained the developing doctrine by analogy to the requirement in patent law that parties first seek administrative action in the form of an issued patent prior to suit in court.¹⁵⁵ Applying the now mature law of primary jurisdiction to patent cases brings the doctrine full circle.

B. Administrative Claim Interpretation in Other Countries

The primary jurisdiction doctrine shows that domestic administrative law contains familiar mechanisms by which courts could obtain administrative assistance in claim interpretation. Similarly, the law of other jurisdictions demonstrates that such mechanisms are not alien to the patent law. The European Patent Convention (EPC), German law, and Japanese law, among others, provide devices by which courts can obtain administrative assistance on claim interpretation. Even in England, where centralization of infringement litigation in a specialized court makes administrative assistance less necessary, the patent agency has authority not only to interpret claims but also to apply those interpretations in ruling on infringement issues.¹⁵⁶ The administrative role in claim interpretation

154. Referrals would provide the PTO with some data on the clarity of the claims that are being approved by its examiners and would thus further the statutory goal of developing quantitative measures of performance. See 35 U.S.C. § 2(B)(2)(F) (2000) (authorizing the promulgation of regulations that "provide for the development of performance-based process that includes quantitative and qualitative measures and standards for evaluating cost-effectiveness").

155. A. A. Berle, Jr., *The Expansion of American Administrative Law*, 30 HARV. L. REV. 430, 445 (1917).

156. See *infra* notes 171-77 and accompanying text.

is already expanding in Japan and is destined to increase throughout European countries if the Community Patent Convention is ratified or if the European Union adopts a similar system conferring a truly transnational patent right.

Administrative assistance concerning patents granted by the European Patent Office (EPO) is available to the courts of every EPC country pursuant article 25 of the EPC, which provides:

At the request of the competent national court trying an infringement or revocation action, the European Patent Office shall be obliged, against payment of an appropriate fee, to give a technical opinion concerning the European patent which is the subject of the action. The Examining Divisions shall be responsible for the issue of such opinions.¹⁵⁷

The procedure authorized by this provision resembles the informal procedure authorized in American primary jurisdiction cases such as *Western Pacific Railroad* and *AAMA*. For example, the parties have a right to submit briefs to the EPO only if the requesting court permits, and they can appear before the agency only at its request.¹⁵⁸ The technical opinion is not considered a “decision” of the agency, so no appeal lies.¹⁵⁹ Additionally, the EPO’s fee (about US \$3,000) is very

157. Convention on the Grant of European Patent, Oct. 5, 1973, 13 I.L.M. 271 available at <<http://www.european-patent-office.org/legal/epc/e/ma1.html>> [hereinafter EPC].

158. See European Patent Office, Guidelines for Substantive Examination in the EPO, pt. E, ch. XII, § 1.2, available at <http://www.european-patent-office.org/guidelines/english/e_xii_1.htm> [hereinafter EPO Guidelines]. Section 1.2 provides:

1.2 The Examining Division responsible for the technical opinion should give the parties an opportunity to submit arguments in writing if the court so permits. However, the parties have no right to be heard before the EPO. Nevertheless, where the Examining Division considers it necessary, it may invite the parties, via the court and provided that the court so permits, either to be heard before the Examining Division or to submit supplementary observations on specific points identified by the Examining Division. If the parties are heard, such a hearing is not considered to constitute oral proceedings within the meaning of Art. 116.

159. See EPO Guidelines, *supra* note 158, pt. E, ch. XII, § 1.3 (“The technical opinion is not a ‘decision’ of the EPO. The parties to the national proceedings therefore have no right of appeal before the EPO against an ‘unfavourable’ opinion.”). This rule precludes the sort of appeal from the agency’s decision that the parties in *AAMA* are currently trying to convince the D.C. Circuit to entertain. See *supra* note 125.

modest for an expert opinion.¹⁶⁰

Although article 25 was “intended to contribute towards the consistency in the interpretation of European patents,”¹⁶¹ its usefulness has been limited by the EPO’s implementing regulations, and the procedure has not been invoked frequently.¹⁶² The regulations require the requesting national court to formulate its request “clearly and precisely” and “where possible to separate clearly the legal aspects from the technical aspects upon which it seeks the opinion of the EPO.”¹⁶³ Moreover, the rules bar the agency from “giv[ing] any opinion on the extent of protection (article 69 and accompanying Protocol).”¹⁶⁴ Since article 69 of the EPC states that the extent of

160. The fee charged by the EPO is 3,067 EUs or 2,070 British Pounds, which is approximately \$ 3,000. See European Patent Office, available at <http://www.european-patent-office.org/epo/new/prices_7_99.pdf> (item 20, page 8) (schedule of fees effective July 1, 1999).

161. ROMUALD SINGER & MARGARETE SINGER, *THE EUROPEAN PATENT CONVENTION* 83 (Ralph Lunzer trans., 1995).

162. As of January 2000, the EPO had issued only three technical opinions pursuant to article 25—one each in 1995, 1998 and 1999. See Letter from Gabi Richter, European Patent Office, to John Duffy (Jan. 11, 2000) (on file with author).

163. EPO Guidelines, *supra* note 158, pt. E, ch. XII, § 2.3. Section 2.3 provides in full:

2.3 It is to be expected that a request from a national court will be clearly and precisely formulated, so that the Examining Division will be in no doubt as to the questions on which the court wishes to have an opinion. Since the court is responsible for deciding the issues of law involved in the questions and since most questions include a mixture of legal and technical aspects, the court is expected where possible to separate clearly the legal aspects from the technical aspects upon which it seeks the opinion of the EPO.

The tenor of that section seems to undercut the promise of helpfulness made earlier in the guidelines:

2.1 The Examining Division is obliged to give a “technical opinion” upon request. This means that the Division is bound to give an opinion only insofar as the questions put are of a technical character. However, the Examining Division should not be too restrictive in this regard but should attempt to assist the national court as much as is reasonably possible, while remembering that the actual decision on infringement or revocation is exclusively a matter for the national court.

Id. § 2.1.

164. *Id.* § 2.2. Section 2.2 provides in full:

Generally speaking, the Examining Division should attempt to give a technical opinion on any question which is similar to those normally dealt with in European substantive examination work, even when the question has a legal, as well as a technical, aspect. On the other hand, the Examining Division should decline to make any specific statement on whether a patent is valid or on whether it is infringed. It should also not

patent protection is “determined by the terms of the claims” and the accompanying Protocol supplies principles for interpreting claims,¹⁶⁵ the regulations restrict the agency’s authority under article 25 to opine on the ultimate issues of claim interpretation. The regulations do indicate that the agency may answer questions having “a legal, as well as technical, aspect.”¹⁶⁶ Thus, the EPO probably can issue opinions on subsidiary questions, such as how persons skilled in the relevant art would understand the terms used in claims, without violating the prohibition on opinions concerning extent of patent protection.

The theory underlying the American primary jurisdiction doctrine helps to explain the EPO’s reluctance to interpret claims. One of the central goals of the primary jurisdiction doctrine—furthering uniformity of result (here, a transnational uniformity)—is simply not an unqualified goal of the European Patent Convention. The EPC is intended to provide a unified examination process but not a unified patent right. Instead, an EPC patent is a “bundle” patent—once granted, it functions as a bundle of national patents from the signatory nations. The patent rights conferred are governed by each nation’s own domestic laws and need not be identical. Within such a legal framework, the limitations on the EPO’s article 25 power make sense: The agency can provide courts with a central source of technical assistance, including assistance that might implicate claim interpretation. However, deciding the ultimate scope of protection is left to the courts of member states, which may, consistent with the EPC, afford somewhat different levels of protection.

Similar to EPC article 25 is article 29 of the German Patent Law, which authorizes the courts to seek an opinion from the German Patent Office whenever a court has been presented with conflicting views.¹⁶⁷ Because a German patent should have a uniform interpretation throughout the German Federal Republic, there is no theoretical reason for the German Patent Office to refrain from opining on claim interpretation. In fact the agency will address

give any opinion on the extent of protection (Art. 69 and the accompanying Protocol).

165. EPC, *supra* note 157, art. 69.

166. EPO Guidelines, *supra* note 158, pt. E, ch. XII, § 2.2.

167. SINGER & SINGER, *supra* note 161, at 83.

“technical questions such as the interpretation of patent claims, their scope in the light of the prior art, whether the invention of one patent cannot be performed without infringing another, [and] common knowledge or practice in any given industry.”¹⁶⁸

German courts have shown a willingness to afford some deference to administrative claim constructions. In a recent decision denominated *Regenbecken*,¹⁶⁹ the German Federal Supreme Court (Bundesgerichtshof) ruled that, although the Federal Patent Court is not legally bound by the EPO’s construction of patent claims, it nonetheless must treat the agency’s administrative claim interpretations as “expert opinions of significant importance that must be considered in the evaluation of patentability.”¹⁷⁰ The approach in the *Regenbecken* case—respecting the expertise of the administrative agency but not viewing its opinion as legally binding—is similar to that taken under weaker forms of the primary jurisdiction doctrine, though the deference afforded the agency seems less than would be due an agency’s decision on a mixed question of law and fact under traditional principles of American administrative law.

Both Germany and the EPC have a decentralized judicial system for litigating patent infringement suits but a centralized administrative system for granting patents. Providing a mechanism for the courts to obtain the expertise of the agency has more value in those systems than in a country such as the United Kingdom, which has a specialized Patents Court that hears all appeals from decisions of the patent agency and tries infringement matters.¹⁷¹ Still, United

168. *Id.* (quoting SCHULTE, PATENTGESETZ, § 29 (5th ed. 1994)). The German Patent Office can also render a technical opinion on a European patent for which Germany is a designated country. *See id.* at 86. Thus, German courts may often be able to obtain a technical opinion from either, or both, the EPO and the German Patent Office. *Id.*

169. *Rainwater Reservoir* (*Regenbecken*), 30 IIC 678 (BGH 1999).

170. *Id.* at 682 (rejecting the EPO’s claim interpretation). The limited deference afforded in *Regenbecken* is consistent with prior commentary. *See SINGER & SINGER, supra* note 161, at 83 (quoting SCHULTE, PATENTGESETZ § 29 (5th ed. 1994)) (noting that, although the German Patent Office may issue opinions on claim interpretation and even on some infringement issues, “questions of law such as infringement, or scope of protection, remain exclusively within the province of the court”).

171. The Patents Court was established as part of the Chancery Division of the High Court pursuant to § 96 of the Patent Act of 1977. *See WILLIAM ALDOUS ET AL., TERRELL ON THE LAW OF PATENTS* § 1.18, 10 (13th ed. 1982); *see also id.* § 16-96, 563 (reproducing the text of § 96 of the Patent Act of 1977). Although § 96 of the Patent Act was repealed in 1981, its

Kingdom law does provide a mechanism whereby its Patents Court can, during the trial of an infringement case, seek an administrative claim interpretation, though the Patents Court does not appear to be very interested in invoking the procedure.¹⁷² In addition, a private party can obtain an administrative claim interpretation by seeking a declaration of noninfringement from the Comptroller General of the Patent Office.¹⁷³ If the Comptroller's decision is not overturned on judicial review,¹⁷⁴ the declaration of noninfringement has "the same effect as a declaration or declarator by the court."¹⁷⁵ This declaration is "binding against the Patentee and all successors in title."¹⁷⁶ Thus, this administrative mechanism provides an alternative to court, albeit

substance was reenacted in § 6(1) of the Supreme Court Act of 1981. *See* UK MANUAL OF PATENT PRACTICE IN THE UK PATENT OFFICE § 96.02 (1999) available at <<http://www.patent.gov.uk/dpatents/mpp/manual.html>> [hereinafter UK MANUAL OF PATENT PRACTICE]. The staff of the Patents Court includes judges who have "spent their careers at the patent bar." Justin Watts, *Recent Developments at the Patents Court*, 20 EUR. INTELL. PROP. REV. N-26, N-27 (1998). For Scotland, jurisdiction in infringement actions is centralized in the Court of Sessions, not the Patents Court. *See* Patent Act § 98(1) (United Kingdom), *reprinted in* ALDOUS, *supra*, §§ 16-98, 564.

172. *See* Patent Act § 99A(1), *reprinted in* UK MANUAL OF PATENT PRACTICE, *supra* note 171 ("Rules of court shall make provision empowering the Patents Court in any proceedings before it under this Act, on or without the application of any party, to order the Patent Office to inquire into and report on any question of fact or opinion."). The Patent Office is entitled to charge for the service, with the fee taxed as costs to the parties before the court. *See id.* § 99A(2). For actions in Scotland, the Court of Sessions has a similar power. *See id.* § 99B. The rules of court required by § 99A had not yet been made as of November of 1998, *see* UK MANUAL OF PATENT PRACTICE, *supra* note 171, § 99A.03, and the Patent Office's Korean Annual Report for 1998-99 did not show any opinions rendered under that section. *See* Patent Office Annual Report for 1998-99, 95-96 (1999) (Annex 5, table 1) (available at <<http://www.patent.gov.uk/snews/notices/anreport/>>).

173. Patent Act § 71 (U.K.). Korean law contains a slightly broader mechanism that permits a patentee or any other interested person to request an administrative trial to confirm the scope of a patent right. *See* Patent Law, art. 135(1) (S. Korea) (available at <<http://www.kipo.go.kr/ehhtml/eInfPatent.html>>). The trial is heard by the Industrial Property Tribunal, which is established under the jurisdiction of the Commissioner of the Korean Industrial Property Office. *See id.* art. 132bis. As under UK law, the administrative decision becomes binding on the parties. *See id.* art. 165 (establishing the *res judicata* effect of administrative trials). The courts are authorized to stay infringement litigation until the administrative trial decision "becomes final and conclusive." *See id.* art. 164(2).

174. With few exceptions, which are not relevant here, all decisions of the Patent Office are subject to judicial review in the Patents Court. *See* Patent Act § 97(1), *reprinted in* UK MANUAL OF PATENT PRACTICE, *supra* note 171. *See also* UK MANUAL OF PATENT PRACTICE, *supra* note 171, § 97.03 (noting the general statutory jurisdiction of the Patents Court to review almost all decisions of the Patent Office).

175. Patent Act § 71(2), *reprinted in* ALDOUS, *supra* note 171, §§ 16-71, at 540.

176. ALDOUS, *supra* note 171, § 6.128, at 202.

one that is not currently used with great frequency.¹⁷⁷

These currently available mechanisms may, however, be only the first steps in an expansion of administrative assistance available to courts. The proposed Community Patent Convention (CPC), for example, would expressly authorize the European Patent Office to render opinions on “the extent of protection conferred by the patent” and would, therefore, make available to the courts administrative opinions on every aspect of patent claim interpretation.¹⁷⁸ The extension of administrative power follows the change that the CPC would make in the rights granted by patents issued by the EPO. Unlike the patents currently issued pursuant to the EPC—each of which, as previously mentioned, is in theory a “bundle” of national patents—a patent issued under the CPC (a “Community Patent”) will have a “unitary character” with “equal effect throughout the territories” of the contracting countries.¹⁷⁹ Because the courts trying infringement actions would remain decentralized, the administrative opinion mechanism would provide a needed unifying influence similar to that provided by the American primary jurisdiction doctrine. And like the primary jurisdiction doctrine, the CPC’s opinion mechanism would leave courts to determine both the circumstances in which the mechanism should be invoked and the weight to be given the administrative interpretation.¹⁸⁰ Thus, the

177. See Patent Office Annual Report for 1998-99, *supra* note 172, at 96 (Annex 5, table 1) (noting that three requests for a declarations pursuant to § 71 were made in 1998, all of which were denied).

178. Convention for the European Patent for the Common Market, Dec. 15, 1975, art. 78, 1976 O.J. (L 17) 1 [hereinafter CPC]. The administrative opinion would be rendered by a Revocation Board which, despite its seemingly specialized name, would be given jurisdiction over all administrative appeals under the CPC. See CPC art. 10.1 (conferring jurisdiction on the Revocation Boards for all appeals from both the Revocation Division and the general Patent Administration Division of the EPO).

179. CPC, *supra* note 178, art. 2.2.

180. See *id.* art. 78.3 (providing that the administrative “opinion shall not bind the national court”); *id.* arts. 77.2, 78.2 (both conferring discretion in the infringement court to seek the administrative opinion). The CPC would authorize two mechanisms for obtaining an administrative opinion. First, if an administrative proceeding (such as an opposition to, a request for limitation of, or an application for the revocation of the patent) is already pending with the EPO, a national court having before it “proceedings relating to the Community patent” may stay those proceedings pending the outcome of the administrative proceedings. *Id.* art. 77.2. If a national court does choose to stay proceedings, the EPO must, at the conclusion of the administrative proceedings, express an opinion on the extent of patent protection (provided, of

opinion mechanism would provide a flexible administrative process for assisting Europe's decentralized court system, while preserving judicial authority over administrative processes.

The administrative assistance available to courts is already expanding in Japan. Article 71 of Japanese Patent Law authorizes the Japanese Patent Office (JPO) to respond to any "request for interpretation . . . with respect to the technical scope of a patented invention."¹⁸¹ The resulting administrative opinion is treated as "similar to an expert opinion,"¹⁸² and the cost is kept low—a mere 40,000 yen (less than \$400).¹⁸³ This administrative opinion procedure, known as the *hantei* system, was extended by a recent amendment to the Japanese Patent Law so that courts may invoke the procedure.¹⁸⁴ Prior to the amendment, private parties invoked *hantei* mechanism quite frequently, with the JPO rendering (on average) more than one dozen technical opinions per year on utility patents and more than two dozen opinions on utility model and design patents.¹⁸⁵ By permitting judicial requests for such opinions, Japan

course, that the administrative proceedings maintain the patent). *Id.* art. 78.1. Second, even where no administrative proceedings are pending, a national court presiding over infringement proceedings "may, of its own motion or at the request of one of the parties and after hearing the other parties," seek an opinion from the EPO. *Id.* art. 78.2. The EPO is then required to give the opinion upon payment of the appropriate fee. *See id.* art. 78.3.

181. Tokkyo Ho [Patent Law], Law No. 121 of April 13, 1959, as amended, art. 71(1), available at <<http://www.jpo-miti.go.jp/shoukaie/patent.htm#71>>. Once a request is made, the Commissioner of the Japanese Patent Office designates three trial examiners to give the interpretation. *See id.* art. 71(2). Under Japanese law, the "technical scope of a patented invention" is "determined on the basis of the statements of the patent claim(s)," so the phrase is synonymous with claim interpretation. *Id.* art. 70.

182. Toshiko Takenaka, *Recent Legislative Update in Japan*, 6 CASRIP Newsl. (1999) available at <<http://www.law.washington.edu/casrip/newsletter/newsv6i1jp2.html>> .

183. Email from Kunio Fujishiro, Deputy Director, International Affairs Division, Japanese Patent Office, to John Duffy (Jan. 6, 2000) (on file with author) (noting cost of an administrative opinion).

184. *See* Takenaka, *supra* note 182 (noting the enactment of new article 71bis of the Japanese Patent Act); Email from Kunio Fujishiro, Deputy Director, International Affairs Division, Japanese Patent Office, to John Duffy (Jan. 5, 2000) (on file with author) (noting that article 71bis of the Japanese Patent Law came into effect on January 1, 2000 and that, under the new provision, "courts are also allowed to file a request with the JPO for technical opinions"). An English translation of the new provision should become available on the JPO's website by midsummer 2000.

185. The number of technical opinions rendered by the JPO from 1989-1998 are given in the following table:

has created an expedient mechanism for its courts to obtain expert administrative assistance in a manner similar to that authorized by the American primary jurisdiction doctrine. Time will tell whether the mechanism will become popular with the courts.

III. THE SCIENCE OF INSTITUTIONAL DESIGN: QUALITATIVE AND QUANTITATIVE EVALUATIONS

The innovation proposed in this article is the use of administrative opinions to assist federal courts in claim interpretation. The proposal is designed to avoid the difficult choice, which so fractured the Federal Circuit in *Cybor*, between national uniformity and procedural expedience in claim interpretation. The doctrinal analogies for such a mechanism include the primary jurisdiction doctrine of American administrative law and the administrative opinion mechanisms that exist under the patent laws of other industrialized countries. Doctrinal analogies are, however, insufficient justification to adopt an innovation if the science of institutional design is to be held to the rigorous standards of other technologies. Quantitative proof would be better, but it does not exist. This part of the article, therefore, will provide a qualitative analysis and discuss possible methods for obtaining quantitative data on the procedural efficiency of the proposal.

Defining the scope of the rights protected is an essential part of

Year	Number of Opinions in Category:				
	Patents	Utility Models	Design Patents	Trademarks	Total
1989	11	18	14	3	46
1990	12	6	17	10	45
1991	9	9	5	6	29
1992	13	13	5	6	37
1993	9	23	15	4	51
1994	23	9	11	3	46
1995	18	8	12	2	40
1996	9	10	8	1	28
1997	8	12	10	5	35
1998	20	17	22	16	75

Source: Email from Kunio Fujishiro, Deputy Director, International Affairs Division, Japanese Patent Office, to John Duffy (Jan. 5, 2000) (on file with author). Technical opinions were requested by both intellectual property owners and potential infringers in roughly equal numbers. *See id.*

any property rights system, but it is not an easy or an inexpensive task.¹⁸⁶ Even with more tangible species of property, defining property rights with precision presents well recognized, fundamental difficulties. As one commentator on secured transactions notes, certificate of title systems for such familiar property as motor vehicles suffer from an “incapacity . . . to define what constitutes the item subject to the certificate of title”—a problem that “results from an inherent inability of thought and language to describe adequately what we know.”¹⁸⁷ If our legal machinery has difficulty defining with precision what constitutes a “truck,”¹⁸⁸ we should not be surprised if more serious difficulties arise in defining intangible, conceptual property rights in subject matter both new and nonobvious.¹⁸⁹

Absolute precision may not be possible, but greater precision is. The now standard claim format developed in the nineteenth and early twentieth centuries was itself a procedural innovation directed toward defining patent rights with greater certainty. Claims achieve that goal only to the extent that they can be interpreted and applied in a predictable manner and at reasonable cost. Currently, three governmental institutions interpret claims: the agency, the trial courts, and the Federal Circuit. Some allocations of responsibility among those institutions are likely better than others.

Standard economic analysis posits that “[t]he objective of any procedural system . . . is to minimize the sum of two types of cost”—the cost of erroneous decisions and the cost of operating the procedural system.¹⁹⁰ Applying the doctrine of primary jurisdiction to claim interpretation would shift some interpretive power from the courts to the responsible administrative agency. The principal benefit

186. See Paul Shupack, *On Boundaries and Definitions: A Commentary on Dean Baird*, 80 VA. L. REV. 2273, 2280 (1994) (noting the general agreement that “[d]efining something is a very difficult task”).

187. *Id.* (“The core failing of title recordation for vehicles—the incapacity of a certificate of title system to define what constitutes the item subject to the certificate of title—results from an inherent inability of thought and language to describe adequately what we know.”).

188. See *id.* (noting litigation over what constitutes the truck in which a security interest was given).

189. See *Autogiro Co. of Am. v. United States*, 384 F.2d 391, 396 (Ct. Cl. 1967) (comparing claim interpretation to statutory interpretation and noting that the problem caused by “[t]he inability of words to achieve precision . . . is likely more acute with claims” than with statutes).

190. RICHARD A. POSNER, *ECONOMIC ANALYSIS OF LAW* § 21.1, 517 (3d ed. 1986).

from the proposal can be predicted with relatively high confidence: It would reduce the cost of operating the procedural system. In large part, this is definitional. Evaluating any proposed substitution of administrative for judicial processes must assume particular conceptions of the “administrative” and “judicial” processes. Those assumed conceptions are the existing administrative and judicial processes in the American patent system. The patent agency is a centralized, expert body that acts through informal procedures, while the courts are a combination of decentralized, nonexpert tribunals and a centralized, expert appellate body, both of which operate with elaborate, formal procedures. To propose substituting administrative for judicial process within such a system is to propose reducing the formality and expense of the legal process.¹⁹¹

Other considerations also suggest that administrative processes could reduce the expense of claim interpretation. Allocating decisional authority to an administrative agency substitutes, to some extent, decisionmakers who are familiar with claim construction for district judges who, generally, are not. At a minimum, such a substitution should reduce the costs of acquainting the nonspecialist district judge with the intricacies and formalities of claim drafting.¹⁹² Furthermore, rough estimates of the cost of administrative claim interpretations are possible, and the estimates demonstrate the magnitude of possible savings on litigation expenditures. For

191. The terms “administrative” and “judicial” can, of course, cover a broad range of processes that nearly overlap. Thus, substituting administrative for judicial processes makes little difference where, for example, the administrative processes are similar in formality to those of the National Labor Relations Board or the Tax Court, and the judicial body is a centralized expert court such as the Court of International Trade. Indeed, the proper classification of such institutions for doctrinal purposes generates debate both in our legal culture and in others. *See, e.g.*, William Cook, *Judicial Review of the EPO and the Direct Effect of TRIPS in the European Community*, 19 *EURO. INTELL. PROP. REV.* 367, 373 (1997) (noting that, for purposes of determining whether judicial review of an EPO patenting decision is available, the UK Patents Court considers the EPO’s Boards of Appeals to constitute “courts” because “the Boards are independent of administrative functions, independent of the parties and independent of the decision of the [EPO] Division appealed from” and also because “the members of the Boards have tenure”).

192. *See* 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, 66 (1999) (noting that, in interpreting patent claims, district courts “seem to need and want as much technical help as they can obtain” and that “[t]he courts are correct in this desire because a well-informed claim construction is more likely to be the right one”).

example, the cost of a technical opinion from the EPO is merely three thousand dollars, and the process is so streamlined that the parties need not submit briefs or make an appearance before the agency.¹⁹³ Three thousand dollars is, perhaps, equivalent to ten hours of a patent attorney's time. If such an expenditure has even a five percent probability of eliminating the need for a retrial (i.e., if one in twenty administrative opinions prevents a divergence in claim interpretation between the Federal Circuit and the district court), then the expenditure would reduce the expense of claim interpretation provided that a retrial would require at least two hundred hours of attorney time, which is approximately equal to the work of five attorneys in one week.

The principle cost of shifting toward administrative claim interpretation is the risk that administrative interpretations might be inferior to judicial interpretations, but this risk should not be large. One point is relatively straightforward: The quality of an authoritative claim interpretation depends not on its fidelity to some abstract ideal of interpretation, but on its *predictability*. 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. Thus, if administrative and judicial claim interpretations systematically differ but each is as predictable as the other, neither should be viewed as superior to the other.

Beyond this initial point, further progress in the analysis is complicated by the absence of empirical data measuring the predictability or certainty of either judicial or administrative claim interpretations. There is, nonetheless, some reason to think that the quality or predictability of claim interpretations under the proposed system would not be significantly inferior, and may even be superior, to predictability under the current system. Shifting some interpretive responsibility from generalist district courts to the agency would increase specialization within the patent system, and the history of patent administration suggests that specialized institutions advance predictability. The most important increases in centralization of the United States patent system occurred in 1836 and 1982, with the

193. See *supra* notes 158-60 and accompanying text.

creation of, respectively, the examination system within the Patent Office and the Federal Circuit. In each case, greater specialization was prompted by a perceived need to increase the predictability of the system and, in each case, the change was believed to have achieved that goal.¹⁹⁴

The United States is not alone in creating specialized institutions for the patent system. All major industrialized countries employ a centralized patent agency to conduct substantive examinations of patent applications, not merely to register applications as had been done in the United States prior to 1836. Many have specialized administrative or judicial tribunals in which certain aspects of patent litigation are adjudicated. Indeed, the United Kingdom recently experimented with a specialized trial court having less formal, streamlined procedures (the “Patents County Court”), and the results so far “bode[] well for consistency and reliability of decision-making; and probably a decreasing need for appeals.”¹⁹⁵ In general, the trend during the last century and a half appears to be toward greater specialization to increase the procedural efficiency of the patent system.¹⁹⁶

194. See, e.g., Rochelle Cooper Dreyfuss, *The Federal Circuit: A Case Study in Specialized Courts*, 64 N.Y.U. L. REV. 1, 6-25 (1989) (identifying the absence of uniformity and predictability in patent law as a reason for creating the Federal Circuit); John F. Duffy, *The FCC and the Patent System: Progressive Ideals, Jacksonian Realism, and the Technology of Regulation*, 71 U. COLO. L. REV. 1071, 1125-29 (2000) (detailing the uncertainty in the patent system that precipitated the creation of an administrative examination system in 1836). The decision in *Cybor* may also be seen as part of the trend toward specialization because the decision centralizes claim interpretation at the Federal Circuit. But the Federal Circuit is inherently less specialized than the PTO. Indeed, the jurisdiction of the Federal Circuit was broadened to include a variety of non-patent matters to avoid the perceived dangers in creating an excessively specialized court. See S. REP. NO. 97-275, at 6, reprinted in 1982 U.S.C.C.A.N. 11, 16 (noting that the Senate committee rejected a proposal to limit the Federal Circuit’s jurisdiction to patent appeals because such an approach was “inconsistent with the imperative of avoiding undue specialization with the Federal judicial system”); Charles W. Adams, *The Court of Appeals for the Federal Circuit: More Than a National Patent Court*, 49 Mo. L. Rev. 43, 61 (1984); Dreyfuss, *supra*, at 4.

195. Richard Price, *Patent Litigation in England—Quiet Revolution*, 17 EUR. INTELL. PROP. REV. D-290 (1995). See also John N. Adams, *Choice of Forum in Patent Disputes*, 17 EUR. INTELL. PROP. REV. 497, 499-502 (1995) (evaluating the first five years of performance by the Patents County Court and concluding that the court was able to expedite legal processes without sacrificing the quality of decisionmaking).

196. This, of course, assumes that greater predictability and certainty in the patent system always has a positive social value. But the marginal social value of increasing certainty in the patent system is unknown. Professors Ayres and Klemperer recently argued that, under one set

In other areas of law, specialized tribunals appear to be the choice of parties who have good incentives to choose procedurally efficient institutions. For example, the perennial winner in the competition to attract the business of corporate chartering, Delaware, uses a specialized chancery court to hear corporate law cases. Expertise developed in those cases helps to create a predictability in decisions that private parties stress as an important reason for choosing Delaware as the state of incorporation.¹⁹⁷

While these qualitative analyses provide some insight, they are not the rigorous quantitative results demanded for other technologies. If legal institutions and processes are to be refined with precision, quantitative methods must be devised for testing and evaluating institutional and procedural variations. Market mechanisms work well in evaluating innovations, provided that the sellers and buyers internalize all the costs and benefits of the new product. However, care is required to construct such a well-functioning “market” for legal processes. The market for corporate charters may be one example of a good market for legal technology. Another may be the market for arbitration services, at least where the parties agreeing to the arbitration are sophisticated and well-informed. At the other

of assumptions, increasing the uncertainty of patent rights could actually increase the social value of the patent system. See Ian Ayres & Paul Klemperer, *Limiting Patentees' Market Power Without Reducing Innovation Incentives: The Perverse Benefits of Uncertainty and Non-Injunctive Remedies*, 97 MICH. L. REV. 985 (1999). Indeed, Ayres and Klemperer specifically note that “reallocations of authority from nonspecialist judges and juries to the specialist Federal Circuit presumptively reduce the uncertainty of patent law” and that such reallocations “run[] against the implications of our model.” *Id.* at 1023-24. The effect theorized by Ayres and Klemperer can be ignored here provided that the proposed change reduces the cost of operating the procedural system, in comparison to current law. For if the procedural change conserves resources but produces undesirable certainty in patent rights, the prior level of uncertainty can be restored by an inexpensive random process such as throwing dice. Net social welfare is then increased, provided the random process costs less to operate than the savings realized by switching to the cheaper procedural system. Although full consideration of Ayres and Klemperer’s theory is beyond the scope of this article, it is nonetheless worth noting that the political economy is likely to push the patent system toward greater certainty. Even under Ayres and Klemperer’s theory, the positive effects of uncertainty will be reaped only by a diffuse class of consumers. Businesses, however, may still favor certainty. See Christopher Tootal, *The European Patent System: Time for Review?*, 17 EURO. INTELL. PROP. REV. 415, 415 (1995) (observing that “[i]f there is one single phenomenon that businessmen dislike in any aspect of the running of their firms, . . . it is uncertainty. In the field of patents they need clear answers at the earliest possible opportunity as to whether a patent is valid and whether it is infringed.”).

197. ROBERTA ROMANO, *THE GENIUS OF AMERICAN CORPORATE LAW* 39-40 (1993).

extreme, practices generally known as “forum shopping” are good examples where parties seek legal processes that are better for themselves, but not necessarily more efficient because the benefits come at the expense of others.¹⁹⁸ The task is to create structures that encourage parties to choose more efficient legal processes, not merely ones that will favor an identifiable side in a controversy.

For administrative claim interpretations, one possible “market” mechanism would be for the PTO to provide administrative claim interpretations to any person willing to pay a fee that recoups the agency’s expense of preparing the opinion. If the opinion were not treated as authoritative by the courts, it would not confer benefits on the requestor at the expense of third parties. Nonauthoritative administrative opinions may not be popular, however, because such opinions can be obtained with greater confidentiality from private attorneys.

The main reason to obtain the PTO’s opinion, rather than a private attorney’s opinion, is the hope or expectation that a court would grant some measure of deference, formal or informal, to the agency’s views. If such deference were afforded, then the market mechanism—the agency’s sale of the opinion—would no longer be an accurate gauge of procedural efficiency because the opinion could create externalities. For example, if the agency’s opinions predictably favored potential infringers by systematically interpreting claims narrowly and those opinions were granted some deference by the courts, then the agency’s success in selling its opinions might reflect the opinion’s value to potential infringers as a means to shift costs to patentees.

A better test of procedural efficiency would involve the mutual

198. John N. Adams, *Choice of Forum in Patent Disputes*, 17 EUR. INTELL. PROP. REV. 497, 499-502 (1995) (noting that “where a case is problematic, a patentee may choose to bring [an action] before a tribunal where the judge is a non-specialist in the hope of getting a result in a way which would be impossible before the judges of jurisdictions which have specialist judges”). Forum shopping in patent disputes has generated a fair amount of controversy in Europe. For a particularly ingenious technique spotted by one astute commentator, see Mario Franzosi, *Worldwide Patent Litigation and the Italian Torpedo*, 19 EURO. INTELL. PROP. REV. 382 (1997) (noting that, by bringing an action for a declaration of non-infringement in a country with a slow judicial system, an accused infringer can preclude enforcement actions in the courts of other European Union Member States, which must, under article 21 of the Brussels Convention of 1968, decline jurisdiction while the first action is pending).

agreement by both sides in infringement litigation to the procedure. Thus, if both sides in a case are willing to refer an issue of claim construction to the PTO and to afford deference to the resulting agency opinion, a court should permit and respect the agreement. Such agreements, if they occurred, would provide good evidence that the administrative process is more efficient than a purely judicial process.¹⁹⁹

The converse, however, is not true: The absence of agreements to seek administrative assistance does not necessarily mean that the administrative process is less efficient. One party in litigation may have an incentive to prefer a *less* accurate procedure, where the outcome in the accurate forum would likely be adverse to that party. Or a party may prefer a more dilatory forum, where that party is likely to be held liable for damages but no prejudgment interest is available.²⁰⁰ In such circumstances, agreements between the parties to reduce the costs of litigation might be possible only where the parties believe that procedural change would not change the timing or the substance of the decision.²⁰¹ Moreover, parties to litigation do not bear the full cost of the judicial process because the process is subsidized through general government expenditures. For that reason, judges properly have an interest in nudging parties toward mechanisms that conserve judicial resources. Primary jurisdiction permits such a judicial preference because courts may “invoke the doctrine on their own motion.”²⁰²

199. This is so because the parties to the infringement litigation would internalize all, or nearly all, of the costs and benefits associated with the change in procedure. Third parties may still receive some benefits. For example, the shift to a fee-based administrative process might conserve judicial resources that are subsidized by general tax revenues. Additionally, other parties may also bear some costs. For example, if the effect theorized by Ayres and Klemperer is correct, and if administrative claim interpretations increase certainty of the patent system, then consumers would bear the costs of the increased certainty. *See supra* note 196. These second-order effects are ignored here because few market mechanisms are entirely without possible externalities. *See also id.* (noting that uncertainty, if desirable, can be reintroduced through low-cost random processes).

200. *See supra* note 198.

201. *Cf.* POSNER, *supra* note 190, § 21.8, 532 (noting that “parties to litigation often find it mutually advantageous to agree not to incur a particular litigation expense (for example, by stipulating to a fact so that it doesn’t have to be established by testimony)”).

202. *Fontan-de-Maldonado v. Lineas Aereas Costarricenses*, 936 F.2d 630, 632 (1st Cir. 1991) (Breyer, J.).

A third, better method for testing the efficiency of a procedural system would be by mutual agreement *before a dispute arises*. This is the typical method by which parties agree to arbitration; the agreement is made before any dispute arises, usually at the time of contract formation. That method is a better test of procedural efficiency because, before a dispute arises, both parties are more likely to share an interest in selecting the most efficient system for resolving disputes.²⁰³

Applying this method to the patent system may seem difficult because of the impossibility of establishing agreements between patentees and infringers before a dispute arises. This difficulty, however, can be partially overcome. Patentees and their assignees could be asked to consent to a procedural innovation at the time of patenting, with understanding that the consent will apply to *all* patent litigation in which the party is involved as either plaintiff or defendant. If those preferences are respected only when *both* sides of an infringement action have consented, then some firms—i.e., those that can foresee being plaintiff in some infringement actions and defendant in others—would have good incentives to consent only if they believed that the procedural innovation was efficient. Such a system could be used to test not only an administrative claim system but also other procedural innovations. While the system would not provide as accurate a gauge of an innovation's value as a market with price mechanisms, it would provide quantitative data useful in evaluating procedural changes and could help to advance the useful art of legal process.

203. Two reasons explain the shared interest in choosing the procedurally efficient system. First, before a dispute arises, the parties may not know what positions they will occupy in any dispute. Lacking that information, the parties tend to ignore biases of the procedural system for or against a particular side and to prefer a system that minimizes the sum of error costs and operating costs. Second, in a contractual setting, one side may be able to compensate the other for accepting a procedural system that is predictably less favorable to that side's interests. Where such compensation is possible, both sides will share an interest in finding the system that minimizes the sum of error costs and operating costs.

IV. CONCLUSION

The decisions in *Markman* and *Cybor* have begun to sketch the law governing the legal process of claim interpretation. The decisions are mere prolegomena. Questions remain to be answered; problems remain to be solved. This article has focused on one conundrum confronting the courts. National uniformity of claim interpretations is thought to be desirable. The Federal Circuit can provide such uniformity, and it is also a knowledgeable interpreter of patent claims. But centralizing claim interpretation in the Federal Circuit also has its costs. Most dramatically, the Federal Circuit's reversal of district court claim interpretations can waste an entire infringement trial. More subtly, centralization of claim interpretation in the Federal Circuit might diminish the quality of interpretations or otherwise impose costs to the extent that the appellate forum is not well suited to inquiring into facts or to providing interpretations early in a controversy.

Doctrines of deference and appellate review mediate the necessary compromises between the various procedural costs and benefits. Currently the case law has considered three doctrinal possibilities. The Federal Circuit can review claim construction *de novo* as a pure issue of law; it can grant deference to the district courts on the theory that claim construction involves predicate factual issues; or it can review *de novo* but accept interlocutory appeals. This article considers another possibility based on the doctrine of primary jurisdiction, which allows a trial court to obtain an advisory opinion from a centralized, expert administrative agency. In other areas of American administrative law, this doctrine is applied in a flexible manner, without regard to the characterization of an issue as law or fact and without rigid rules requiring courts to apply, or not to apply, the doctrine in any particular case. The patent law of other countries shows that such a technique is not an anomaly of American law but one sensible tool for allocating decisional responsibility among judicial and administrative forums.

The larger question in this inquiry, however, does not concern the resolution of any particular question of legal process. The important matter is the process by which our legal system attempts to improve the machinery of law. In that effort, the legal profession might learn

from the techniques of technological progress in other fields of human endeavor. The aspiration is to improve not only the processes of law, but the processes of formulating law as well. That aspiration, ambitious as it is, is not too daring for a youthful field of law that has already proven itself so vital to the “Progress of Science and the useful Arts.”