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Technical Advisors: Welcome Scientific Education, But at What Cost to a Patent's Notice Function?

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A patent “[p]romote[s] the Progress of Science and useful Arts”¹ both by rewarding the patentee for his inventive behavior through a limited monopoly and stimulating innovation through the public disclosure of the patented invention. Patent claim construction, the process by which courts define the reach of the patent monopoly, thus serves two ends: it cedes to the patentee that which is properly claimed as his invention and unambiguously demarcates what remains in the public domain for future innovation. But claim construction is an *ex post facto* process; it typically takes place well after the patent has usually issued, in

the context of litigation. For patents to serve their public policy function, patentees and future innovators require an *a priori* understanding of the reach of the patent monopoly that is consistent with how it may later be demarcated by a court. Thus, claim construction must at once effectively resolve the technological issues presented by the patent and do so through predetermined and consistently applied rules. In short, it must be reasoned and predictable.

To render a scientifically reasoned claim construction, a trial judge must educate him or herself about the relevant art. Until most recently, that process largely was left unregulated, with the Court of Appeals for the Federal Circuit opting for general pronouncements to the effect that a “district court has the discretion to consider factual or appropriate extrinsic evidence, such as expert testimony, for purposes of a tutorial or for background information in the technical area at issue.”² Left to their own devices, trial courts have sought innovative approaches to alleviating the difficulties created by their status as lay persons in the realm of patent interpretation.³ One such approach is the use of technical advisors,

“special law clerks” who, on an ad hoc basis, provide a trial court with assistance on technical issues.

While the technical advisor is a welcome addition to the claim construction process in that “a well-informed claim construction is more likely to be the right one,”⁴ he or she comes at the cost of predictability in claim construction. Whether and how a trial judge will use a technical advisor, who will be used as a technical advisor, and how much impact that advisor will have on the ultimate claim construction, is anyone’s guess.

Claim Construction: Policy Considerations

Since the US patent laws were amended in 1870 to require an inventor to “particularly point out and distinctly claim the part, improvement, or combination which he claims as his invention or discovery,”⁵ courts consistently have stressed the importance of the patent claim’s notice function. As Justice Bradley put it in *White v. Dunbar*:

Some persons seem to suppose that a claim in a patent is like a nose of wax, which may be turned and twisted in any direction, by merely referring to the specification, so as to make it include something more than, or something different from, what its words express . . . The claim is a statutory requirement, prescribed for the very purpose of making the patentee define precisely what his invention is; and it is unjust to the public, as well as an evasion of the law, to construe it in a manner different from the plain import of its terms.⁶

But the “plain import” of claim language has inherent limitations. “An invention exists most importantly as a tangible structure or a series of drawings. A verbal portrayal is usually an afterthought written to satisfy the requirements of patent law. This conversion of machine to words allows for unintended idea gaps which cannot be satisfactorily filled.”⁷ Thus, defining the reach of a patent in the vacuum of claim language alone ultimately degenerates into an exercise of form over substance and undermines the very purpose of patents: “To promote the Progress of Science.”⁸ Hence the role of intrinsic and extrinsic evidence in claim construction.

Intrinsic evidence is information within the four corners of a patent and its prosecution history, namely, the “public record.” Because these documents are publicly available, such evidence is the tool of first resort to stake the metes and bounds of a patent:

it is only fair (and statutorily required) that competitors be able to ascertain to a reasonable degree the scope of the patentee’s right to exclude. They may understand what is the scope of the patent owner’s rights by obtaining the patent and prosecution history—“the undis-

puted public record”—and applying established rules of construction to the language of the patent claim in the context of the patent.⁹

Evidence outside the public record (*i.e.*, “extrinsic evidence”) is disfavored in claim construction, precisely for the same reason that intrinsic evidence is favored:

[C]ompetitors are entitled to review the public record [of a patent], apply the established rules of claim construction, ascertain the scope of the patentee’s claimed invention and, thus, design around the claimed invention. Allowing the public record to be altered or changed by extrinsic evidence introduced at trial, such as expert testimony, would make this right meaningless.¹⁰

But extrinsic evidence cannot altogether be eliminated, for two reasons. First, when “claim language remains genuinely ambiguous after consideration of the intrinsic evidence” extrinsic evidence may be called upon to construe a claim but only to the extent that such reliance does not “contradict the claim construction unambiguously apparent from the intrinsic evidence.”¹¹ Second, and more germane to the subject of this article, extrinsic evidence is essential to scientifically reasoned claim construction.

While the Supreme Court in *Markman v. Westview*, aimed to make claim construction more predictable by insulating the process from the vagaries presented by the jury system, trial judges are for the most part not scientists. As one commentator put it, “the notion that trial judges are uniquely qualified to divine and declare as a matter of law the true meaning of a patent claim . . . is nothing more than myth.”¹² The fact is that without technical background, a trial judge’s claim construction will not be scientifically coherent. And while a patent and its prosecution history may provide some of that background, much of it must come from outside the public record. Neither a patent nor its prosecution history is intended to serve as a science textbook. Quite to the contrary, the law presumes that a patent is read by a person “skilled in the art to which it pertains, or with which it is most nearly connected.”¹³ Thus, only through extrinsic evidence can a trial judge, as he or she is duty bound to do, construe a patent from the perspective of one skilled in the art.

In short, notwithstanding the threat it poses to the patent’s notice function, extrinsic evidence is needed to assure scientifically coherent reasoning. To reconcile these competing interests, the Federal Circuit has adopted two rationales. First, it has drawn a distinction between the disfavored use of extrinsic evidence for the purpose of shaping a claim and the favored use of such evidence for the purpose of education.¹⁴ With respect to the latter, the Federal Circuit has deemed it “entirely appropriate, perhaps even preferable, for a court to consult trustworthy extrinsic evidence to ensure that the claim construction it is tending to from the patent file is not inconsistent with

clearly expressed, plainly apposite, and widely held understandings in the pertinent technical field.”¹⁵ Second, the Federal Circuit has accorded some forms of extrinsic evidence such as dictionaries special treatment.¹⁶

But these rationales are imperfect. The use of extrinsic evidence to learn the relevant art is bound to shape the claim. Indeed, if not to help shape the claim, of what use is the education? As for dictionaries, what of competing dictionary definitions? At what point does a “factual” dictionary definition metamorphose into an opinion? Indeed, as technology grows more complex, the line between opinion and fact blurs, so as to increase the risk that “selection of the expert” amounts to the “selection of an outcome.”¹⁷ Yet it is precisely under these circumstances that the need for technological assistance is particularly acute.

In the final analysis, our system of patent adjudication demands educational forays by trial judges that invariably compromise the notice function of patents. That reality, along with its troubling implications, is underscored by the role of technical experts in the patent claim construction process.

Technical Advisors: The Law, Their Role, and Their Implications

Technical advisors are “specialized law clerks,” who, very broadly speaking, help “the jurist to educate himself in the jargon and theory disclosed by the testimony and to think through the critical technical problems” presented by a case.¹⁸ The role of a technical advisor escapes easy definition. It is a function of a court’s individual need and preference, and can range from investigation of the facts and auditing of accounts to examination of witnesses and computation of damages. Depending upon the particular issues involved in a case, the technical advisor might be selected from diverse occupations such as accountants, engineers, and actuaries.¹⁹ From the standpoint of educating the jurist about technical issues:

[t]he role of the technical may be viewed as fulfilling five separate functions. First, the technical advisor translates and interprets for the court the technical language used in the case. Second, the technical advisor offers an exposition and delineation of the technical disagreement between the parties. Third, the technical advisor relates this disagreement to the broader principles of the science or technical art involved. Fourth, the technical advisor presents his or her own opinion on the technical facts and related matters at issue. Finally, the technical advisor may conduct pertinent experiments, either on his or her own or in cooperation with others.²⁰

Courts enjoy marked discretion in the appointment and use of technical advisors. As articulated by Justice Brandeis:

Courts 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. This power includes authority to appoint persons unconnected with the court to aid judges in the performance of specific judicial duties, as they may arise in the progress of a cause.²¹

A measure of the freedom enjoyed by courts in their use of technical advisors are the substantial strictures that govern their cousin, court-appointed experts. Unlike technical advisors, court-appointed experts often contribute to the evidence, usually through direct testimony and cross-examination. Federal Rule of Evidence 706 dictates both the circumstances under which an expert witness can be appointed and sets forth procedural safeguards for their use. In particular, Rule 706 requires that the court describe the expert witness’ duties in writing and that the witness advise the parties of his or her findings.²² Rule 706 also permits the parties to depose the expert witness, to call the expert witness to testify at trial, and to cross-examine the expert witness.²³

Technical advisors are not governed by Rule 706.²⁴ Moreover, in contrast to the conspicuous role of an expert witness, the technical advisor frequently operates outside the view and control of the parties, communicating with the judge on an *ex parte* basis and typically off the record. While such freedom no doubt enhances the effectiveness of the advisor, it does conflict with the adversarial tradition of the American court system, which leaves to the adversaries the task of educating the fact-finder through the presentation of evidence. Hence, the caution that “appointments [of technical advisors] should be the exception and not the rule, and should be reserved for truly extraordinary cases where the introduction of outside skills and expertise, not possessed by the judge, will hasten the just adjudication of a dispute without dislodging the delicate balance of the juristic role.”²⁵ The use of technical advisors also carries troublesome implications from the standpoint of appellate review and accountability. Although Justice Breyer did not touch on these issues when he advocated the appointment of special masters and specially trained law clerks to assist courts in handling complicated or otherwise technical evidence,²⁶ others have. “It is fundamental that no judgment be maintained under circumstances that suggest that the fact finder may have relied on covert, personal knowledge rather than on the evidence produced in open court and subject to review by the parties, the public, and the appellate court.”²⁷

These concerns notwithstanding, technical advisors have been well received in the context of patent cases. As one court put it: “[C]omplex claim construction

presents an ideal case for a court-selected technical advisor.²⁸ In defending the use of technical advisors on an *ex parte* basis, one court observed that:

[I]tigators should understand that in securing the relative certainty of judicial claim construction as to the scope of a patent monopoly, they have surrendered to judges the autonomy to shape these issues themselves. In this sense, *Markman* represents a drift toward the European civil justice system of adjudication. This Court accordingly prefers the assistance of its own technical advisor to the clash of adversary presentations.²⁹

The court has a point. Patent cases test, if not strain, the limits of this country's adversarial system of justice, which not only relies on adversaries to develop facts but forces them to do so through often unwieldy rules of evidence. Such limitations recently compelled the Federal Circuit to remind counsel in a patent case before it "that they are not only advocates for their clients; they also are officers of the court and are expected to assist the court in the administration of justice, particularly in difficult cases involving complex issues of law and technology."³⁰ Indeed, the complex nature of patent claim construction was a substantial policy consideration behind the US Supreme Court's decision to leave claim construction to judges rather than juries. As the Supreme Court stated in *Markman v. Westview Instruments, Inc.*:

Patent construction in particular "is a special occupation, requiring, like all others, special training and practice. The judge, from his or her training and discipline, is more likely to give a proper interpretation to such instruments than a jury; and is, therefore, more likely to be right, in performing such a duty, than a jury can be expected to be." *Parker v. Hulme*, 18 F. Cas., at 1140. Such was the understanding nearly a century and a half ago, and there is no reason to weigh the respective strengths of judge and jury differently in relation to the modern claim; quite the contrary, for "the claims of patents have become highly technical in many respects as the result of special doctrines relating to the proper form and scope of claims that have been developed by the courts and the Patent Office." Woodward, *Definiteness and Particularity in Patent Claims*, 46 Mich. L. Rev. 755, 765 (1948).³¹

But the Supreme Court in *Markman* did not address, from the perspective of policy or practice, what makes a trial judge better suited than a juror to understand the technology underlying the patent. In reasoning that leaving claim construction to judges would promote "uniformity in the treatment of a given patent," the Supreme Court as well left that question untreated:

As we noted in *General Elec. Co. v. Wabash Appliance Corp.*, 304 U.S. 364, 369, 58 S. Ct. 899, 902, 82 L. Ed. 1402 (1938), "[t]he limits of a patent must be known for the protection of the patentee, the encouragement of the inventive genius of others and the assurance that the subject of the patent will be dedicated ultimately to the public." Otherwise, a "zone of uncertainty which enterprise and experimentation may enter only at the risk of infringement [sic] claims would discourage invention only a little less than unequivocal foreclosure of the field," . . . and "[t]he public [would] be deprived of rights supposed to belong to it, without being clearly told what it is that limits these rights." . . . Uniformity, would, however, be ill served by submitting issues of document construction to juries. . . . [T]reating interpretative issues as purely legal will promote (though it will not guarantee) intra-jurisdictional certainty through the application of stare decisis on those questions not yet subject to interjurisdictional uniformity under the authority of the single appeals court.³²

The reality, however, is that in patent cases the "interpretative issues" are usually less about arcane canons of document construction than they are about science. The construction of patent claim is inexorably intertwined with the science that underlies, indeed shapes, them. Indeed, "[t]he added responsibility of instructing a jury on the construction of an allegedly infringed patent deepens the need for judges to be fully conversant with the science or technology at issue."³³ Meeting this need through technical advisors can threaten "uniformity in the treatment of a given patent."

There are no rules governing the selection of technical advisors. The circumstances calling for the appointment of a technical advisor, the choice of the technical advisor, and the topics on which technical advisors will provide advice are all questions that are left to the discretion of individual judges. Whether communications with technical advisors are on or off the record, whether they are held in the presence of parties, and whether and how a technical advisor's input is recorded as well are matters that are left to the discretion of the trial judge. For these reasons, the Intellectual Property Law Section of the American Bar Association last year approved a resolution that called for, *inter alia*, "the adoption of procedural guidelines that . . . promote uniformity and consistency in the trial courts' . . . use of materials or advisors to understand the relevant art."³⁴ This year, in *TechSearch L.L.C. v. Intel Corporation*,³⁵ the Federal Circuit spoke out for the first time on the use technical advisors. While the opinion is noteworthy in that it marks a welcome shift from the Federal Circuit's prior laissez-faire approach to this issue, the decision leaves a number of issues unsettled.

Technical Advisors: Federal Circuit's Perspective

In *TechSearch L.L.C. v. Intel Corporation*³⁶ the Federal Circuit addressed an appeal from a district court's summary judgment of non-infringement, which followed a decision on the construction of the patent claims in issue. Appellant TechSearch L.L.C. appealed not only the district court's claim construction but also the district court's use of a technical advisor. Specifically, TechSearch complained that the district court "abrogated its authority by allowing" a technical advisor "to resolve disputed issues of fact," that the technical advisor had violated the trial court's own rules on the use of the advisor, and that the trial court failed to institute appropriate procedural measures associated with that use.³⁷

According to the Federal Circuit, after the trial court undertook its Markman hearing in August of 1999 (and apparently after the court decided the claim construction issues), it advised the parties through a Memorandum Decision and Order of its decision to appoint a technical advisor:

The court recognized that such appointments should be reserved for the exceptional case, but deemed it appropriate in this particular case because infringement would be "a highly technical [issue] far beyond the boundaries of the normal questions of fact and law with which judges routinely grapple." . . . The district court further explained that "[a] judge may not appoint a technical advisor to brief him on legal issues, or to find facts outside the record of the case; the advisor's role is to acquaint the judge with the jargon and theory disclosed by the testimony and to help think through certain of the critical problems." . . .

The court determined that its technical expert, Dr. Hearn, was a neutral third party, and explained its reasoning for that determination in its memorandum decision. The court reiterated that Dr. Hearn had "agreed that he will not engage in any independent investigation of the underlying litigation, provide evidence to the Court, or contact any party or witness in this action." The court further agreed to identify any material relied upon by Dr. Hearn, other than that submitted by the parties or "those upon which a person versed in the relevant field of knowledge would be reasonably expected to rely." The court stated that Dr. Hearn would execute an affidavit indicating his understanding of that order before beginning his engagement, and would file an affidavit attesting to his compliance with its terms at the conclusion of his employment.³⁸

TechSearch's specific issues with the appointment of a technical advisor were as follows: (1) the trial court "allow[ed] Dr. Hearn to resolve disputed issues of fact;" (2) Dr. Hearn "undertook independent research and possible experiments;" (3) the "district court likely used such information" and "should have allowed the parties to depose Dr. Hearn consistent with Fed. R. Evid. 706 to determine the extent this alleged evidence influenced the court;" and (4) "Dr. Hearn's failure to certify his compliance with the order."³⁹

In addressing these issues, the Federal Circuit initially turned to the question of what law to apply. Deeming these questions "procedural issues that are not themselves substantive patent law issues," or "limited to and unique to patent cases," the Court looked to "regional procedural law."⁴⁰ In so doing, the Federal Circuit looked to the law of the Ninth Circuit, which "applies an abuse of discretion standard to a district court's appointment of a technical advisor."⁴¹

Before turning to the question of whether there was an abuse of discretion, the Federal Circuit addressed the substantive legitimacy of technical advisors and observed as follows:

A technical advisor is helpful in assisting the court in understanding the scientific and technical evidence it must consider. See [*Ass'n of Mexican Am. Educators v. California* 231 F.3d] at 590; see also *Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 149, 139 L. Ed. 2d 508, 118 S. Ct. 512 (1997) (Breyer, J. concurring) (endorsing the appointment of specialists to assist district courts in understanding scientific or technical evidence); *Reilly v. United States*, 863 F.2d 149, 156 (1st Cir. 1988). Such evidence in a patent case includes expert testimony, scientific articles and texts, and patents, upon which the court must rely in understanding the technology so that it can interpret the patent claims and determine whether to grant motions for summary judgment of validity, invalidity, infringement or non-infringement, and to assist the court in articulating appropriate jury instructions.⁴²

Further, the Federal Circuit adopted the Ninth Circuit's reasoning that the district court's function as a gatekeeper of "scientific and technical evidence" defined by the Supreme Court's decision in *Kumho Tire Co. v. Carmichael*,⁴³ necessarily required the authority to appoint a technical advisor.⁴⁴ Citing the Supreme Court's decision in *Ex Parte Peterson*⁴⁵ on the subject of a trial court's inherent power "to appoint persons unconnected with the court to aid judges in the performance of specific judicial duties,"⁴⁶ the Federal Circuit noted that "[t]he law has long recognized that it may effectively use the knowledge of experts to inform and support the judicial process to settle disputes."⁴⁷ Finally, and turning to patent cases in particular, the Federal Circuit remarked that:

The trial court's inherent search for truth is the basic building block by which the judicial process maintains its credibility within the fabric of our society. In this search, it cannot be expected that trial judges will have the expertise in biotechnology, microprocessor technology, organic chemistry, or other complex scientific disciplines. Therefore, in those limited cases where the scientific complexity of the technology is such that the district court may require the assistance of a technical advisor to aid in the understanding of the complex technology underlying the patent, it has the inherent authority to appoint such an advisor.⁴⁸

Next, the Federal Circuit turned to the procedure governing a trial court's use of technical advisors. As an initial proposition, the Federal Circuit noted that the Ninth Circuit "implicitly recognize[s] that district courts should use this inherent authority sparingly and then only in exceptionally technically complicated cases,"⁴⁹ although "it has not held precisely what procedural safeguards district courts should employ."⁵⁰ On the latter question, the Federal Circuit set out to "reasonably predict" how the Ninth Circuit would decide.⁵¹

Although the majority of the Ninth Circuit in *Association of Mexican Educators v. California*⁵² expressly refused to adopt the dissent's "specific guidelines" for the use of technical advisors "because such strict compliance would unnecessarily undo [the] entire trial," the Federal Circuit nevertheless read the Ninth Circuit's opinion to "recognize[] the need for some procedural safeguards and the need for a reviewing court to have a standard against which to judge abuse of discretion."⁵³ Based on that reading, the Federal Circuit proceeded to "[c]onceptually. . . distill from the . . . opinion appropriate guidelines from which the Ninth Circuit would delineate desirable procedural mechanisms to safeguard the use of a technical advisor and generate a record for review on appeal."⁵⁴ "Distilling" those guidelines from the dissenting opinion in *Association of Mexican Educators*, the Federal Circuit concluded that:

[T]he district court in appointing a technical advisor must: use a "fair and open procedure for appointing a neutral technical advisor . . . addressing any allegations of bias, partiality or lack of qualifications" in the candidates; clearly define and limit the technical advisor's duties, presumably in a writing disclosed to all parties; guard against extra-record information; and make explicit, perhaps through a report or record, the nature and content of the technical advisor's tutelage concerning the technology.⁵⁵

With respect to the procedure for appointment of the technical advisor, the Federal Circuit added that typically a candidate's list would be compiled by the parties and supplemented by the recommendations of the district court.⁵⁶ Furthermore, in order to ensure

that the technical advisor adhered to the clearly defined and written duties, pre-appointment and post-appointment affidavits could be used in which "the technical advisor declares that he or she has complied with these safeguards, operated within the scope of his or her assignment, and confined his or her information sources to the record."⁵⁷ With respect to guarding against information not of record, the Federal Circuit clarified:

Typically this would entail making clear to the technical advisor that any advice he or she gives to the court cannot be based on any extra-record information, except that the advisor may rely on his or her own technology-specific knowledge and background in educating the district court.⁵⁸

Applying these standards to the facts at hand, the Federal Circuit concluded that "[g]iven the extent of the safeguards imposed by the district court as it exercised due care to avoid improper influence by its technical advisor, we conclude that the district court did not abuse its discretion in the appointment and use of the technical advisor."⁵⁹ Moreover, "to the extent the procedures followed by the district court fell somewhat short of those essential to avoiding such influence, we note that the district court appointed the technical advisor prior to the issuance of the Ninth Circuit's en banc opinion in *Association of Mexican American Educators*, and the district court at least followed the minimum requirements necessary at that time."⁶⁰

In a concurring opinion, Judge Dyk expressed concern that "the district court's infringement analysis may have been too heavily influenced by the technical advisor," and that as a general proposition it is "important that district judges confine technical advisors to the proper sphere—to provide advice without compromising the decisionmaking obligation of the district judge."⁶¹ On that issue, the majority acknowledged the reality that with the use of a technical advisor, the compromise of some decision-making authority is inevitable: "[a]s a practical matter, there is a risk that some of the judicial decision-making function will be delegated to the technical advisor. District court judges need to be extremely sensitive to this risk and minimize the potential for its occurrence."⁶²

Though laudable in its attention to the subject of technical advisors, the decision in *TechSearch L.L.C.* has two significant shortcomings. First, it leaves the treatment of technical advisors to the law of the regional circuit on the basis that their use is a matter of procedure not "limited to and unique to patent cases." Second, it limits the use of technical advisors to "exceptionally technically complicated cases" without justifying or defining that standard. That technical advisors are not "limited to and unique to patent cases" is not dispositive of the question of whether the Federal Circuit should apply its own law rather than that of regional circuits. The determination of

whether a particular issue “pertains to patent law” must be guided by the policies underlying the creation of the Federal Circuit, namely, to bring about uniformity in the patent law and to minimize confusion and conflicts in procedural matters.⁶³ Accordingly, the Federal Circuit has held:

[O]ur practice has been to defer to regional circuit law when the precise issue involved an interpretation of the Federal Rules of Civil Procedure or the local rules of the district court. Resolution of such issues manifestly implicates the consistency of future trial management. Similarly, with regard to substantive legal issues not within our exclusive subject matter jurisdiction, our practice has been to defer to regional circuit law when reviewing cases arising under the patent laws.

However, we have not deferred in the resolution of all procedural issues merely because that issue might separately arise in a case having nothing to do with the patent laws.⁶⁴

The use of technical advisors in patent cases implicates matters that are unique to patent law. The Federal Circuit’s holding in *Markman v. Westview Instruments, Inc.*,⁶⁵ that claim construction is a strictly question of law was rooted in the premise that claim construction is a unique aspect of patent law:

There is much wisdom to the rule that the construction of a patent should be a legal matter for a court. A patent is a government grant of rights to the patentee. By this grant, the patentee owns the rights for a limited time to exclude others from making, using, or selling the invention as claimed. Infringement of the patentee’s right to exclude carries with it the potential for serious consequences When a court construes the claims of the patent, it “is as if the construction fixed by the court had been incorporated in the specification,” and in this way the court is defining the federal legal rights created by the patent document.⁶⁶

Particularly in the context of claim construction, the role of the technical advisor is of no less import. While a technical advisor does not offer “evidence,” he or she is a resource who falls precisely within the scope of the Federal Circuit’s charge that district courts should “consult trustworthy extrinsic evidence to ensure that the claim construction it is tending to from the patent file is not inconsistent with clearly expressed, plainly apposite, and widely held understandings in the pertinent technical field.”⁶⁷ Conversely, the technical advisor also falls squarely within the Federal Circuit’s admonition that “[a]llowing the public record to be altered or changed by extrinsic evidence introduced at trial, such as expert testimony, would make this right [to design-around the claimed invention] meaningless.”⁶⁸ Accordingly, while techni-

cal advisors may not be “limited to and unique to patent cases,” the use of a technical advisor can directly implicate interests that are unique to patent law. This justifies regulation by the Federal Circuit. As the Federal Circuit has acknowledged, “[w]e have . . . applied our law beyond the limits of substantive patent law and into areas in which the disposition of non patent-law issues is affected by the special circumstances of the patent law setting in which those issues arise.”⁶⁹ Moreover, “[w]e have held that a procedural issue that is not itself a substantive patent law issue is nonetheless governed by Federal Circuit law if the issue ‘pertains to patent law’ [or] if it ‘bears an essential relationship to matters committed to our exclusive control by statute.’”⁷⁰ As Judge Giles Rich put it: “[T]he name of the game is the claim.”⁷¹ Whether and how a trial court uses a technical advisor to help it construe a patent claim necessarily “bears an essential relationship to matters committed to [the Federal Circuit’s] exclusive control by statute.”

True enough, it appears that the trial court in *TechSearch L.L.C.* did not use a technical advisor for its claim construction. According to the record as described by the Federal Circuit, the technical advisor was appointed following the construction of the claims. But the Federal Circuit did not draw that distinction in its conclusion that “[b]ecause understanding issues of complex science and technology is not so unique as to clearly implicate the jurisdictional responsibilities of this court in a field within its exclusive jurisdiction we apply regional procedural law.”⁷²

The Federal Circuit’s treatment of the technical advisor as subject to the law of the regional circuit carries two practical consequences. First, few circuits have law on a heavily nuanced issue that carries much subjectivity. Thus, the Federal Circuit is forced to divine what a circuit would do on a question upon which the regional circuit could very well ultimately rule differently. Indeed, characterizing the Federal Circuit’s holding in *TechSearch L.L.C.* as having weak precedential underpinnings is charitable. Although the Federal Circuit stated that the Ninth Circuit’s majority opinion in *Association of Mexican American Educators* “recognized the need for some procedural safeguards and the need for a reviewing court to have a standard against which to judge abuse of discretion,”⁷³ the majority opinion did not go so far:

Judge Tashima [of the dissent] also proposes a list of procedures for district courts to follow when appointing technical advisors. Even assuming that those procedures are appropriate, the district court did not have the benefit of Judge Tashima’s dissent before this trial, and we will not fault the court for failing to foresee his recommendations. We are not willing to find an abuse of discretion and to undo this entire trial because the district court did not follow a set of guidelines that are required nowhere in the rules or relevant case law.⁷⁴

The second difficulty presented by leaving the question of technical advisors to regional circuits is inconsistency in law. Given the impact that technical advisors can have on the question of claim construction and given that “to decide what the claims mean is nearly always to decide the case,”⁷⁵ leaving this issue to regional circuits hardly seems consistent with the Federal Circuit’s *raison d’être*: “Uniformity in the treatment of a given patent.”⁷⁶ For example, the First Circuit’s treatment of technical advisors differs materially from the safeguards set out by the Federal Circuit in *TechSearch* based upon the Federal Circuit’s interpretation of Ninth Circuit law. In *Reilly v. United States*,⁷⁷ a non-patent, medical malpractice case in which the district court appointed a technical advisor to assist the court in the calculation of damages, the First Circuit proposed for future cases a set of guidelines for the appointment and use of technical advisors in general. In substantial agreement with the law of the Ninth Circuit (as created by the Federal Circuit in *TechSearch*), the First Circuit in *Reilly* proposed that the parties have a hand in the appointment of the technical advisor; that the court provide a job description for the advisor that is “of record,” and that at the conclusion of the advisor’s employment the advisor should file an affidavit attesting to compliance with the job description.⁷⁸ With respect to generating a record for appeal, however, the First Circuit suggested that the judge and the advisor must be free to communicate in a frank and open fashion. Accordingly, the First Circuit, in contrast to the Ninth Circuit, “disagreed with the suggestion that a technical advisor should be required, as a matter of course, to write a report.”⁷⁹

In upholding the trial court’s use of a technical advisor, the Federal Circuit in *TechSearch L.L.C.* also ruled the use of technical advisors should be left to “exceptionally technically complicated cases.” The closest the Federal Circuit comes to explaining what such a case is, however, is in its allusion to “those limited cases where the scientific complexity of the technology is such that the district court may require the assistance of a technical advisor to aid in the understanding of the complex technology underlying the patent.”⁸⁰ Of course, that description applies to most patent cases and invites uncertainty. Moreover, this should focus on the complexity of the case.⁸¹ While a technical case involving computer science may be “exceptionally complicated” to a federal judge who majored in psychology, it might be relatively easy to one who majored in computer science or who hap-

pens to have particular aptitude for the disciplines required to sort through the technical issues. In the final analysis, the focus should be the need of the jurist, not the complexity of the case.

Conclusion

The Federal Circuit’s relatively lax regulation of the use of extrinsic information for educational purposes in contrast to its stringent limitations on the use of such information for shaping claim language must be rooted in a belief that former is more benign to a patent’s notice function than the latter. But that is not necessarily the case.

According to the 1999 ABA Markman survey, in eighty percent of the cases where trial courts allowed extrinsic evidence, technical expert testimony was considered.⁸² However, “[n]o doubt aware that their claim construction would find a more hospitable appellate environment without reliance on extrinsic evidence, fifty-one (51) percent of the trial courts that allowed extrinsic evidence professed not to rely on it. The extent to which such extrinsic evidence *influenced* the claim construction process is, of course, a thornier question that is far more difficult, if not altogether impossible, to measure.”⁸³

In encouraging trial courts to educate themselves about the art underlying the claims that they are charged to construe, the Federal Circuit undoubtedly has it right. It has been observed that: “It’s a shame that Congress mismatched the problems in patent law with the hierarchical position of the [Federal Circuit] court it created. Since problems generally arise in finding facts in this specialized area, a special trial court might, in retrospect, have been a better idea.”⁸⁴ Maybe so, but unless and until such special trial courts are created, the scientific chasm inherent in leaving the construction of patent claims in the hands of laypersons must be bridged.

Technical advisors offer a viable, if imperfect, solution to this predicament. Although the Federal Circuit has it right in leaving the choice of whether to use a technical advisor to the sound discretion of the trial judge, that discretion should simply rest on the judge’s need for education, rather than a showing that the case itself is “exceptionally technically complicated.” Moreover the use of technical advisors moreover, should be made subject to stringent and uniform standards that are designed to prevent undue or improper influence over the decisionmaking process and allow for proper appellate review.

1. U.S. CONST. art. I, § 8, cl. 8.

2. *American Imaging Servs., Inc. v. Intergraph Corp.*, No. 99-1485, 2000 WL 772725, at *7 (Fed. Cir. June 12, 2000) (unpublished).

3. 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).

4. *Id.*

5. Patent Act of 1870, ch. 230, § 26, 16 Stat. 198 (1870).

6. *White v. Dunbar*, 119 U.S. 47, 51–52 (1886).

7. *Autogiro Co. of Am. v. United States*, 384 F.2d 391, 396–397 (Ct. Cl. 1967).

8. U.S. CONST. art. I, § 8, cl. 8.

9. *Markman v. Westview Instr., Inc.*, 52 F.3d 967, 978–979 (Fed. Cir.1995) (citations omitted).

10. *Vitronics Corp. v. Conceptiontronic, Inc.*, 90 F.3d 1576, 1583 (Fed. Cir. 1996) (citation omitted).

11. *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1309 (Fed. Cir. 1999) (quoting *Bell & Howell Document Mgmt. Prods. Co. v. Altek Sys.*, 132 F.3d 701, 706 (Fed. Cir. 1997)).

12. David W. Plant, "The Lessons of Markman's Progeny," *ADR Currents*, Dec. 1998, at 13.
13. 35 U.S.C. § 112.
14. *Compare Vitronics Corp. v. Conceptoronic, Inc.*, 90 F.3d 1576 (Fed. Cir. 1996), with *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298 (Fed. Cir. 1999).
15. *Pitney Bowes, Inc.* at 1309 (emphasis added).
16. See *Vanguard Prods. Corp. v. Parker Hannifin Corp.*, 234 F.3d 1370, 1372 (Fed. Cir. 2000) ("A dictionary is not prohibited extrinsic evidence, and is an available resource of claim construction."); *Interactive Gift Express, Inc. v. CompuServe Inc.*, 231 F.3d 859, 866 (Fed. Cir. 2000) ("Dictionaries, which are a form of extrinsic evidence, hold a special place and may sometimes be considered along with the intrinsic evidence.");
17. Michael H. Gottesman, "From *Barefoot* to *Daubert* to *Joiner*: Triple Play or Double Error?," 40 *Ariz. L. Rev.* 753, 776 (1998).
18. Si-Hung Choy, Comment, "Judicial Education After *Markman v. Westview Instruments, Inc.*:" The Use of Court-Appointed Experts," 47 *UCLA L. Rev.* 1423, 1438-1439 (2000) (footnote omitted).
19. *Reilly v. United States*, 682 F. Supp. 150, 158 (D.R.I. 1988) (reviewing the history of technical advisors).
20. *Id.* at 152.
21. In re Peterson, 253 U.S. 300, 312 (1920).
22. Fed. R. Evid. 706(a) ("A witness so appointed shall be informed of the witness' duties by the court in writing, a copy of which shall be filed with the clerk, or at a conference in which the parties shall have opportunity to participate. A witness so appointed shall advise the parties of the witness' findings, if any.");
23. Fed. R. Evid. 706(a) ("[T]he witness' deposition may be taken by any party; and the witness may be called to testify by the court or any party. The witness shall be subject to cross-examination by each party, including a party calling the witness.");
24. *Reilly v. U.S.*, 863 F.2d 149, 156 (1st Cir. 1988) ("Rule 706, while intended to circumscribe a court's right to designate expert witnesses, was not intended to subsume the judiciary's inherent power to appoint technical advisors. The Civil Rules, after all, were never meant to become the sole repository of all of a federal court's authority."); *TechSearch, L.L.C. v. Intel Corp.*, 286 F.3d 1360, 1378 (Fed. Cir. 2002) ("A district court's appointment of a technical advisor [is] outside the purview of Rule 706 of the Federal Rules of Evidence.");
25. *Reilly*, 863 F.2d at 156.
26. See *General Elec. Co. v. Joiner*, 522 U.S. 136, 149 (1997) (Breyer, J. concurring).
27. *Price Bros. Co. v. Philadelphia Gear Corp.*, 649 F.2d 416, 419 (6th Cir. 1981); See also *United States of Am. v. Green*, 544 F.2d 138, 146, n.16 (3d Cir. 1976) (Generally, however, the court should avoid *ex parte* communications with anyone associated with the trial, even its own appointed expert).
28. *MediaCom Corp. v. Rates Tech, Inc.*, 4 F. Supp. 2d 17, 30 n.11 (D. Mass. 1998); see also *TechSearch*, 286 F.3d at 1377 ("Technical advisors may be useful for the understanding of scientific evidence generally as well as the science or technology involved in patent cases.");
29. *MediaCom Corp.* 30 at n.11.
30. *Allen Eng'g Corp. v. Bartell Indus., Inc.*, No. 01-1238, 2002 WL 1765989 (Fed. Cir. Aug. 1, 2002).
31. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 388-389 (1996).
32. *Id.* at 390-391 (citations omitted).
33. Ellen E. Deason, "Court-Appointed Expert Witnesses: Scientific Positivism Meets Bias and Deference," 77 *OR. L. Rev.* 59, 85 (1998) (footnote omitted).
34. Resolution 266 (Passed 2001 AR [J]-R.601-1).
35. *TechSearch L.L.C. v. Intel Corp.*, 286 F.3d 1360 (Fed. Cir. 2002).
36. *Id.*
37. *Id.* at 1380.
38. *Id.* at 1368-1369 (citation omitted) (alterations in original).
39. *Id.* at 1380.
40. *Id.* at 1377.
41. *Id.* (citing *Association of Mexican Am. Educators v. California*, 231 F.3d 572, 591 (9th Cir. 2000) (*en banc*)).
42. *TechSearch* at 1377.
43. *Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999).
44. *TechSearch* at 1377.
45. *Ex Parte Peterson*, 253 U.S. 300 (1920).
46. *Id.* at 312.
47. *TechSearch* at 1377.
48. *Id.* at 1378.
49. *Id.* at 1378 (citing *Association of Mexican Am. Educators v. California*, 231 F.3d 572, 590-591 (9th Cir. 2000) (*en banc*)).
50. *TechSearch* at 1378.
51. *Id.*
52. *Mexican Am. Educators*, 231 F.3d 572.
53. *TechSearch* at 1378.
54. *Id.* at 1379.
55. *Id.* (footnotes omitted) (relying on Judge Tashima's dissenting opinion in *Mexican Am. Educators* at 611-614).
56. *TechSearch*, 286 F.3d at 1379 n.3.
57. *Id.* at 1379 n.4.
58. *Id.* at 1379 n.5.
59. *Id.* at 1381.
60. *Id.*
61. *Id.* (Dyk, J., concurring).
62. *Id.* at 1379.
63. *Biodex Corp. v. Loredan Biomedical, Inc.*, 946 F.2d 850, 857 (Fed. Cir. 1991).
64. *Id.* at 858 (footnotes omitted).
65. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967 (Fed. Cir. 1995).
66. *Id.* at 978.
67. *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1309 (Fed. Cir. 1999).
68. *Vitronics Corp. v. Conceptoronic, Inc.*, 90 F.3d 1576, 1583 (Fed. Cir. 1996) (citation omitted).
69. *Midwest Indus., Inc. v. Karavan Trailers, Inc.*, 175 F.3d 1356, 1359 (Fed. Cir. 1999) (citing *Beverly Hills Fan Co. v. Royal Sovereign Corp.*, 21 F.3d 1558, 1564 (Fed. Cir. 1994) (holding that Federal Circuit law applies to the question of personal jurisdiction in a patent suit), *Hybritech Inc. v. Abbott Lab.*, 849 F.2d 1446, 1451 n.12 (Fed. Cir. 1988) (holding that Federal Circuit law applies in the determination of whether the plaintiff has established its right to a preliminary injunction in a patent case), *Goodyear Tire & Rubber Co. v. Releasomers, Inc.*, 824 F.2d 953, 954-955 n.3 (Fed. Cir. 1987) (holding that Federal Circuit law applies to determine whether a sufficient controversy exists between the parties to permit an accused infringer to bring an action seeking declaratory judgment of noninfringement and invalidity), *Gardco Mfg., Inc. v. Herst Lighting Co.*, 820 F.2d 1209, 1212 (Fed. Cir. 1987) (holding that Federal Circuit law governs whether a patentee is entitled to have the issue of inequitable conduct tried in the jury trial that the patentee has demanded on the issue of infringement), and *Truswal Sys. Corp. v. Hydro-Air Eng'g, Inc.* 813 F.2d 1207, 1212 (Fed. Cir. 1987) (holding that Federal Circuit law governs whether particular materials are relevant for purposes of discovery in a patent case)).
70. *Midwest Indus.*, 175 F.3d at 1359 (quoting, respectively, *Panduit Corp. v. All States Plastic Mfg. Co.*, 744 F.2d 1564, 1574-1575 (Fed. Cir. 1984) and *Biodex Corp. v. Loredan Biomedical, Inc.* 946 F.2d 850, 858-859 (Fed. Cir. 1991)).
71. "The Extent of Protection and Interpretation of Claims—American Perspectives," 21 *Int'l Rev. Indus. Prop. & Copyright L.* 497, 499 (1990).
72. *TechSearch*, 286 F.3d at 1377.
73. *Id.* at 1378.
74. *Mexican Am. Educators*, 231 F.3d at 591.
75. *Markman*, 52 F.3d 967, 989 (Mayer, J., concurring).
76. *Markman*, 570 U.S. 370, 390 (1996).
77. *Reilly v. United States*, 863 F.2d 149 (1st Cir. 1988).
78. *Id.* at 159-160.
79. *Id.* at 160 n.8. (suggesting also, however, that "it would have been better practice to document the interchange between jurist and advisor in some more readily retrievable fashion.").
80. *TechSearch*, 286 F.3d at 1378.
81. *Cf. Reilly* at 156 ("We concur wholeheartedly that such appointments [of technical advisors] should be the exception and not the rule, and should be reserved for truly extraordinary cases where the introduction of outside skills and expertise, *not possessed by the judge*, will hasten the just adjudication of a dispute.") (emphasis added) ("We wish to emphasize our strongly-held view that the appointment of a technical advisor must arise out of some cognizable judicial need for specialized skills.").
82. Luke L. Dauchot & Karl M. Laskas, "1999 American Bar Association Section of Intellectual Property Law 1999 Markman Survey," 18 *A.B.A. SEC. PUB. I.P.L.* 3 (Spring 2000).
83. *Id.*
84. See Rochelle Cooper Dreyfuss, remarks at the Tenth Federal Circuit Judicial Conference (Apr. 30, 1992), in 146 *F.R.D.* 205, 240 (1992).

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