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Fundamental Issues in the Appellate Standard of Review of Patent Claim Construction and why the Issues is Moot in Practice

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FUNDAMENTAL ISSUES IN THE APPELLATE STANDARD OF REVIEW OF PATENT CLAIM CONSTRUCTION AND WHY THE ISSUE IS MOOT IN PRACTICE

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This article addresses the appellate standard of review of patent claim constructions. Specifically, this article argues that the U.S. Supreme Court should end the Federal Circuit's de novo review of claim constructions, but that any new standard should have little, if any, effect on Federal Circuit practice. First, the article provides a background on patent claim construction and discusses why it is a critical step in patent litigations. Section two provides an introduction to the Supreme Court's *Markman* decision – the foremost judicial authority on claim construction – as well as the Federal Circuit's application of *Markman* in determining the appellate standard of review in its *Cybor* decision. Section three puts forth several arguments opposing the Federal Circuit's use of de novo review. Section four provides a rebuttal to section three, but ultimately concludes that the Supreme Court should reverse *Cybor* as it improperly conflicts with Fed. R. Civ. P. 52(a). And the final section suggests that even if *Cybor* was an erroneous decision, it was a harmless one because the "informal deference" that the Federal Circuit currently applies during de novo review of the factual issues in question here is substantially similar to the standard required by Rule 52 - essentially rendering this a purely academic question. In conclusion, the U.S. Supreme Court should reverse *Cybor* because it fails to comport with Fed. R. Civ. P. 52; but going forward, the Federal Circuit should not risk developing a complex new standard and should merely try and turn its current practice of informal deference into one of formal deference.

I. Introduction to Patent Claim Construction

The drafters of the U.S. Constitution expressly provided a system for Congress to promote innovation by giving inventors a limited monopoly on their respective inventions.[1] Congress used this power to issue "U.S. Letters Patent" to qualifying inventors.[2] Today, Congress delegates this power to United States Patent and Trademark Office (USPTO), who may grant patent protection to a qualifying inventor who "invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof."[3] In exchange for a detailed disclosure of the invention to the public, the inventor is granted "the right to exclude others from making, using, offering for sale, selling, or importing the patented invention" for a certain term of years.[4]

The patent system is, at its root, an attempt to balance two competing interests: to "secure to [the patentee] all to which he is entitled, [and] to apprise the public of what is still open to them."[5] In other words, the patent system seeks to provide an incentive to innovate, in exchange for the subsequent disclosure of the invention to the public. The interests of incentive and public notice are promoted through the patent's claims and specifications, respectively. The invention is disclosed to the public through the specifications, which act as a blueprint of the invention. The specifications are written in a manner, which would enable a person of ordinary skill in the art to reproduce the invention.[6] In exchange for the disclosure of the invention in the specifications, the

[1] See U.S. Const. art. I, §8, cl. 8 (granting Congress the power to "promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries").
[2] See Ramon A. Klitzke, *History of Patents-U.S., in* THE ENCYCLOPEDIA OF PATENT PRACTICE AND INVENTION MANAGEMENT 394, 398 (Robert Calvert ed., 1964) (giving a background on the development of patent practice).
[3] 35 U.S.C. § 101.
[4] Markman v. Westview Instruments, 517 U.S. 370, 373; *see also* 35 U.S.C. § 271(a) (listing actions that would constitute direct infringement).
[5] Markman v. Westview Instruments, 517 U.S. 370, 373.
[6] See Markman at 373; *See also* 35 U.S.C. § 112 (specification must describe the invention "in such full, clear, concise, and exact terms as to enable any person skilled in the art…to make and use the same").

patentee is granted protection within the scope of the "claims," which "particularly point out and distinctly claim the subject matter which the applicant regards as his invention."[7]

The granting of a patent gives the patentee the right to exclude others who "infringe" on the patent.[8] An act of infringement occurs when an unauthorized party makes, uses, sells, or offers for sale a product that falls within the scope of the patent's protections, i.e., within the claims.[9] In addition to excluding products that fall within the literal language of the claims, patent protection extends to a gray area of sorts, excluding products that are deemed to be "equivalent."[10] Under both theories of infringement, the process of defining claim terms is crucial, as they necessarily determine the scope of the patentee's rights.

A patentee who believes that his patent is being infringed will often bring litigation against the accused infringer because he may obtain an injunction and/or damages against the accused. The patentee will ultimately be successful if he can successfully show that a patented claim "covers the alleged infringer's product or process, which in turn necessitates a determination of what the words in the claim means."[11] First, the court interprets the claims to determine the scope of the patentee's protection through a process known as claim construction.[12] Second, the jury, or judge sitting as fact-finder, determines whether the accused infringer's actions constitute infringement, given the judge's findings during claim construction.[13]

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[7] 35 U.S.C. § 112.
[8] Id.
[9] See 35 U.S.C. § 271(a).
[10] See Markman at 373 (patent protection extends to "products that go to the heart of an invention but avoi[d] the literal language of the claim by making a noncritical change").
[11] Markman at 373; note that for the sake of clarity in this article, I will assume that all patents are valid, and that the only issue is that of infringement.
[12] See Id.
[13] See Id.

Patent claim construction is often viewed as the most critical step in patent litigations because it often determines whether or not the accused infringer was actually infringing.[14] In fact, in many cases, a judge's claim construction will result in either settlement or summary judgment.[15] Furthermore, the importance of claim construction extends past the instant litigation, because it puts the public on notice of what information can be freely used, and what information is subject to a patentee's exclusive monopoly.[16]

Although there is no statutory framework for a judge to follow while conducting claim construction, the process is generally the same in all courts. The uniformity in claim constructions is largely due to the framework set forth by the Court of Appeals for the Federal Circuit in *Phillips v. AWH Corp*.[17] As a basic principal for interpreting a patent claim term, the judge should maintain the "ordinary and customary" meaning of the terms whenever possible.[18] Unlike similar instances of judicial interpretation (e.x., contract interpretation), the proper interpretation is not the "ordinary and customary" meaning that and ordinary person would attribute to the term. On the contrary, the proper interpretation is the meaning that would be attributed to the term by a *person of ordinary skill in the art at the time of the invention*.[19] This standard applies because patents are written for their foreseeable readers - a person of skill in the respective art, not the average person.[20]

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[14] See *Reconsidering the De Novo Standard of Review in Patent Claim Construction*, in AIPLA QUARTERLY JOURNAL, (Spring, 2012) (giving a background on patent claim construction).
[15] See Id. (discussing how the issue of claim construction is often determinative of a patent litigation).
[16] See Markman at 373 (addressing the public interest function of patents).
[17] 415 F.3d 1303, 1335.
[18] See Phillips at 1312 (discussing how patent claim construction is similar to contract interpretation); *see also* Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576 (Fed. Cir. 1996) (stating that claim terms "are generally given their ordinary and customary meaning").
[19] See Phillips at 1313 (discussing what a claim term's "ordinary and customary" meaning is).
[20] See Verve, LLC v. Crane Cams, Inc., 311 F.3d 1116, 1119 Fed. Cir. 2002) (patents are "a concise statement for persons in the field").

During claim construction, the court should first look to the intrinsic evidence of record, i.e., "the patent itself including the claims, the specifications and, if in evidence, the patent prosecution history."[21] After looking to contested term itself, the court should first look to the surrounding words in the same claim.[22] The Court may also find guidance in other claims of the same patent because the meaning of a term is often consistent between terms. As such, identifying the similarities and differences between two claims may be helpful.[23] For instance, it can properly be inferred that an independent claim does not have a particular limitation if there is a corresponding dependent claim that expressly adds that limitation.

Additionally, the Court will review the patent's specifications, as terms are "to be construed in the light of the specifications."[24] The specifications are particularly useful because, unlike the claims themselves, the specifications are statutorily required to describe the claimed invention in "full, clear, concise, and exact terms."[25] And the USPTO requires that the meaning of claim terms be ascertainable through those clearly written specifications.[26] Furthermore, the specifications are helpful because patent drafters often give express definitions to claim terms through the specifications. Therefore, the specifications are treated as a dictionary of sorts because they have the ability to give terms new meaning, whether it be through express definition or by implication.[27] Since the specifications are written in a manner that is necessarily clear enough to enable a person

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[21] Phillips at 1313.
[22] See Philips at 1314; *see also* ACTV, Inc. v. Walt Disney Co., 346 F.3d 1082, 1088 (Fed. Cir. 2003) ("the context of the surrounding words of the claim also must be considered in determining the ordinary and customary meaning of those terms").
[23] See Id.
[24] United States v. Adams, 86 S.Ct. 708, 15 L.Ed.2d 572 (1966).
[25] 35 U.S.C. § 112.
[26] See 37 C.F.R. § 1.75(d)(1) (requiring that patent claims must "find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference…").
[27] Phillips at 1316.

of ordinary skill in the art, they are often sufficient to develop a proper construction for a disputed term.[28]

The court may also look to the prosecution history of the patent, if it is in evidence.[29] The prosecution history of a patent may be useful during claim construction because it is a written record documenting the communication with the patent office that resulted in the patent's issuance.[30] But the prosecution history should not be given as much weight as the document itself.[31] In most situations, reliance on extrinsic evidence is unnecessary because the claims, specifications, and prosecution history will be sufficient to resolve any ambiguity in the claim terms.[32]

However, extrinsic evidence is often permissible because the intrinsic record may be insufficient to give a proper construction, and it may assist judges in understanding complex technologies.[33] Extrinsic evidence includes all evidence other than the patent itself and its prosecution history, "including expert and inventor testimony, dictionaries, and learned treatises."[34] The use of extrinsic evidence in claim interpretation is common because patent documents are written by and for persons of "ordinary skill in the art," not for judges.[35] And in many cases, the person of "ordinary skill" in the particular field is in fact quite extraordinary. For example, if one of NASA's patents was in litigation, the person of ordinary skill in the art would likely be a rocket scientist with multiple PhDs. Because the judge in that case would have to interpret a claim term as a rocket scientist would, an expert's guidance would be useful to assist

[28] Id.
[29] Id. at 980.
[30] See Id. at 1317.
[31] See Id. (noting that the prosecution history should be given less weight than the patent itself as it outlines the negotiations leading to the final product, rather than the final product itself).
[32] See Id.
[33] See Phillips at 1317 (discussing when extrinsic evidence may be introduced during claim construction).
[34] Seymour v. Osborne, 78 U.S. (11 Wall.) 516, 546, 20 L.Ed. 33 (1870).
[35] Phillips. at 1318.

that judges in thinking like a rocket scientist. As Judge Newman has noted in support of the use of extrinsic evidence during claim construction, "[j]udges not only need a larger understanding of the science or technology, but we also need help with understanding how the particular terms as used in the patent are viewed by persons in the field of the invention."[36] Therefore, extrinsic evidence is often proper, if not necessary, for a judge to develop an accurate claim construction.

One of the most common forms of extrinsic evidence is expert testimony. Expert testimony can be useful in many situations, such as to "provide background on the technology at issue, to explain how an invention works, to ensure that the court's understanding of the technical aspects of the patent is consistent with that of a person of skill in the art, or to establish that a particular term in the parent or the prior art has a particular meaning the pertinent field."[37] Although extrinsic evidence is often used to assist judges in understanding the technology in question, judges should be cautious when adopting an extrinsic source's definition of a given claim term because it may conflict with the patentee's intent. Also, there is concern of expert bias, because experts are often highly paid by their respective parties. As such, each party may only put forth the extrinsic evidence most favorable to them, even if only marginally relevant, leaving the the district judge with difficult credibility determinations as to these witnesses.[38] Although there are substantial risks associated with extrinsic evidence, it is properly used to assist the court in a variety of issues, and is often relied upon during claim constructions.

The US Supreme Court's Murky Guidance on Patent Claim Construction and The Federal Circuit's Subsequent Interpretation and Application of De Novo Review.

[36] See Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456 (Fed. Cir. 1998) (Newman, J., dissenting).
[37] Phillips at 1318.
[38] See Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579, 595, 113 S.Ct. 2786, 125 L.Ed.2d 469 (1993) (discussing how "[e]xpert evidence can be both powerful and quite misleading because of the difficulty in evaluating it").

Although the Supreme Court has not made a determination on the proper standard of review for claim construction on appeal, the Court gave guidance on claim construction in *Markman*, which the Federal Circuit later interpreted to conclude that claim construction is properly reviewed de novo. The *Markman* Court held that claim construction is an issue for a judge, not jury.[39] This holding was subsequently interpreted by the Federal Circuit in *Cybor*, that held that claim construction is a matter of law subject to *de novo* review – i.e., the Federal Circuit does not need to give any deference to a district judge's opinion.[40] But it has been shown that the Federal Circuit's practice of de novo review does lend deference to a district judge's findings, and that this deference has likely increased in recent years.[41] Therefore, although claim construction is technically reviewed de novo, the Federal Circuit's application of de novo review gives at least some deference to the district judge's findings.

A. The Supreme Court's Markman Decision

Although the Supreme Court's *Markman* decision did not answer the question of what standard of review applies to claim construction, the *Markman* decision is crucial to this analysis because the Court gave significant guidance on the nature of claim construction itself.[42] The question presented to the *Markman* Court was whether "the interpretation of a so-called patent claim…is a matter of law reserved entirely for the court, or subject to a Seventh Amendment guarantee that a jury will determine the meaning of any disputed term of art about which expert testimony is

[39] See Markman 570 US at 373 (holding that "[t]he construction of a patent, including terms of art within its claim, is exclusively within the province of the court").
[40] See Cybor Corporation v. FAS Technologies, Inc., 138 F.3d 1448, 1480 (Fed. Cir. 1998) (finding that the issue of patent claim construction is properly reviewed de novo on appeal).
[41] See Cybor at 1462 (Plager, J., concurring) ("common sense dictates that the trial judge's view will carry weight" given "the care…with which that view was developed, and the information on which it is based"); *See also* J. Jonas Anderson, Peter S. Menell, *Informal Deference: An Historical, Empirical, and Normative Analysis of Patent Claim Construction*, 108 NORTHWESTERN. UNIV. LAW. REV. 1, 35 (2013) (discussing the increase in the Federal Circuit's deference to District Courts after Phillips v. AWH).
[42] See Markman v. Westview Instruments 517 U.S. 370, 390 (1996).

offered."[43] After finding that claim construction was not subject to the Seventh Amendment's guarantee of a jury trial, the Court ultimately held that "[t]he construction of a patent, including terms of art within its claim, is *exclusively within the province of the court*."[44]

In *Markman*, the patent at issue was an "Inventory Control and Reporting System for Drycleaning Stores."[45] The proper construction of one claim term, "inventory" was disputed during the litigation. After hearing several days of testimony from several expert witnesses, the jury determined the proper scope of the claim term.[46] But the district judge disagreed with the jury and used a different claim construction.[47]

The losing party appealed the case to the Federal Circuit and subsequently the U.S. Supreme Court, arguing that the judge had improperly decided the issue of claim construction. Although the jury did make a determination on the proper claim construction, the Judge decided to use his own, rather than the jury's.[48] Therefore, appellants argued that the Seventh Amendment reserves some determinations – including claim construction - for a jury, and therefore the use of the judge's construction deprived appellant of the right to trial by jury.[49]

As this was a Seventh Amendment case, the Court's analysis began with an attempt to tie claim construction to a similar issue at common law.[50] But the Court found that claim construction hearings were a modern practice, and therefore, the Seventh Amendment did not apply.[51] After determining that the Seventh Amendment does not apply to claim construction, the Court found

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[43] Id. at 373.
[44] Id. at 373 (emphasis added) (note however, the holding of "exclusively within the province of the court" is not identical to the question presented, whether claim construction is a "matter of law").
[45] Markman at 370.
[46] Id.
[47] Id.
[48] See Markman v. Westview Instruments, Inc., 772 F.Supp. 1535, 1537-38 (E.D.Pa. 1991).
[49] Markman at 377.
[50] Markman at 381.
[51] Id.

that "functional considerations" would decide whether a judge or jury would be best at claim construction.[52]

The Court first noted that claim construction is a "mongrel practice," "falling somewhere between a pristine legal standard and a simple historical fact."[53] And for such mixed issues, it is best for either the judge or the jury to decide all matters, rather than divide the two.[54] Because claim construction is a complex, "mongrel practice," the training and common interpretation of written documents by judges make them better suited than a lay juror for providing an accurate claim construction.[55] Also, the Court emphasized "the importance of uniformity in the treatment of a given patent as an independent reason to allocate all issues of construction to the court."[56] Uniformity, the Court argued, is essential for the policy consideration of giving public notice.[57] Therefore, the Court ultimately held that "the construction of a patent, including terms of art within its claim, is *exclusively within the province of the court*."[58]

Thus, three considerations from *Markman* will be integral to an analysis of the proper standard of review of claim constructions: (1) the training and common practice of interpreting written documents by judges make them, not juries, best at providing an accurate claim construction; (2) because judges have similar training, the construction given by a court will be more uniform and predictable than a jury; (3) because allocating the issue to the court will promote uniformity and accuracy in claim construction, such an approach will provide notice to the public on the scope of

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[52] Id. at 390.
[53] Id. at 390.
[54] See Markman at 390 (citing Miller v. Fenton, 474 U.S. 104, 114, 106 S.Ct. (1985) (noting that "as a matter of the sound administration of justice, one judicial actor is better positioned than another to decide the issue in question").
[55] Id.
[56] Id.
[57] Id.
[58] Id. at 370 (emphasis added); although this can easily be misconstrued as meaning that the issue is purely a matter of law, the Court's holding was only that the issue is a matter for the judge - as with many issues in patent litigations, the judge may sit as both trier of fact and law.

the patentee's monopoly and, by the same token, what they are free to use without fear of infringement.

B. Cybor and The Federal Circuit's Adoption of De Novo Review

The Federal Circuit determined that claim construction is properly reviewed de novo on appeal because claim construction requires a judge to make legal determinations and de novo review is consistent with *Markman*. Although the *Markman* court was explicit in holding that claim construction was a task solely for the court, it failed to address the proper standard of review on appeal. But the Court of Appeals for the Federal Circuit held that the proper standard of review is de novo in *Cybor Corp. v. FAS Technologies, Inc.*[59] Although this decision was questioned on multiple occasions, it has never been reversed and was most recently upheld in *Lighting Ballast Control LLC v. Philips Electronics N.A. Corp*.[60]

After *Markman,* there was no direction on the proper standard of review of claim constructions until the Federal Circuit's *Cybor* decision that held that claim construction is properly reviewed de novo on appeal.[61] This conclusion stemmed from the Federal Circuit's adoption of an interpretation of *Markman* that suggests that claim construction is purely a matter of law.[62] In other words, the Federal Circuit read *Markman*'s holding that claim construction is "exclusively within the province of the court" as meaning that the issue is "purely a matter of law." If this reasoning is accurate, and claim construction is purely a matter of law, then claim construction is properly reviewable de novo.[63]

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[59] 138 F.3d 1448, 1456 (Fed. Cir. 1998).
[60] (Fed. Cir. 2014) (En banc).
[61] See Cybor 138 F.3d 1448, 1461.
[62] Id.
[63] See Highmark Inc. v. Allcare Health Mgmt. Sys., Inc., 134 S.Ct. 1744, 1748 (2014) (holding that judicial decisions on questions of law are reviewable de novo).

After determining that claim construction is a factual determination, reviewable de novo, the *Cybor* court looked to practical considerations to determine whether it *should* review these issues de novo.[64] The Federal Circuit found that de novo review was proper because it furthered the policy considerations of accuracy and uniformity in the construction of patent claims – considerations that were explicitly endorsed by the *Markman* Court.[65] Therefore, the Federal Circuit ultimately held that it reviews "claim construction de novo on appeal *including any allegedly fact-based questions* relating to claim construction."[66]

However, many judges and academics criticized the *Cybor* decision, alleging that underlying factual determinations are improper for de novo review. For example, Judges Mayer and Newman, have stated that "[w]hile this court may persist in the delusion that claim construction is a purely legal determination, unaffected by underlying facts…a claim should be interpreted from the perspective of one of ordinary skill in the art and in view of the state of the art at the time of invention…These questions, which are critical to the correct interpretation of a claim, are inherently factual."[67]

Nevertheless, *Cybor* has remained good law since the decision and, most recently, the Federal Circuit upheld *Cybor* in its *Lighting Ballast* decision.[68] In coming to its holding, the Court noted that: (1) that the application of de novo review has proven to be workable over the past 15 years, and; (2) that there does not appear to be any functional alternative standard to de novo review.[69]

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[64] See Cybor at 1456 (discussing the considerations of uniformity and accuracy in determining the standard of review of claim constructions).
[65] See Id.
[66] Cybor at 1461 (emphasis added); note that, in terms of the analytical framework set forth in Section I, *supra*, *all* steps of claim construction, from the plain meaning of the terms to the review of expert witnesses, are to be reviewed de novo.
[67] Phillips v. AWH Corp., 415 F.3d 1301, 1330 (Mayer, dissenting) (Fed. Cir. 2005).
[68] See Lighting Ballast Control LLC v. Philips Electronics N.A. Corp. (Fed. Cir. 2014) (En banc) (Upholding Cybor's adoption of de novo review).
[69] Id.

But this opinion was accompanied by a strong dissent and its reasoning has been questioned by even the Supreme Court. Therefore, after years of confusion, the Supreme Court has decided to settle this matter in *Teva v. Sandoz*.[70]

C. How Has De Novo Review Been Applied?

The Federal Circuit's application of de novo review to claim construction may be more deferential than required because the Court is aware that a district judge is in a better position to make many critical determinations. By definition, de novo review allows for an issue to be reviewed "[a]new; afresh; a second time," making it the strictest standard of review.[71] *De novo* review is "the long-recognized appellate review standard for issues of law in the trial proceeding, regardless of whether the case was tried to a judge of a jury."[72] During de novo review, the Federal Circuit may draw its own conclusions on the issue at hand, lending no deference to the district court.[73] In theory, the Federal Circuit may decide the issue as if the district judge had never heard it.[74] Naturally then, those who have obtained an adverse decision prefer to have the matter reviewed de novo.

In practice however, the Federal Circuit may give more deference than required because completely ignoring a district judge's findings would be irrational. Imagine for a moment that you have been appointed to the Court of Appeals for the Federal Circuit. Your first case is a claim construction appeal and are presented with three sources – a transcript of both sides' expert testimony, and the district judge's opinion. Knowing that the transcripts will be hundreds of pages long, and will most likely be somewhat biased, you naturally first reach for the district judge's

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[70] See Teva v. Sandoz (U.S. 2014).
[71] APPEAL DE NOVO, BLACK'S LAW DICTIONARY (9th ed. 2009).
[72] Pall Corp v. Micron Separations 66 F.3d 1211, 1225 (Fed. Cir. 1995).
[73] See D. Gopenko, *Reconsidering the De Novo Standard of Review in Patent Claim Construction*, AIPLA QUARTERLY JOURNAL (Spring, 2012) (discussing Fed. Circuit's practice of de novo review).
[74] Id.

opinion. Even though you have been told that you don't need to follow the district court's opinion, it seems rational to give some, if not the most weight to the district judge's opinion. Regardless of whether or not the district judge's claim construction is adopted, it would simply be irrational to reject the district judge's analysis without any consideration.

In practice too, especially in claim construction, it has been shown that appellate judges do in fact lend at least some deference to the district court's opinion.[75] For example, the Federal Circuit has noted that during the course of a de novo review, "we do not start from scratch; rather we begin with and carefully consider the trial court's work."[76] Even if the court doesn't refer to its reliance specifically as "deference," appellate courts are nonetheless presented with the opinion of the district judge, whom they are aware has spent more time with the case and with the witnesses and parties.[77] Thus, the Federal Circuit has stated that:

> [T]he use of the term de novo to describe our appellate function is a misnomer. As our sister circuit noted: 'To consider a matter de novo is to determine it anew, as if it had not been heard before and no decision had been rendered.' By use of the term de novo, this court means that it does not defer to the 'lower court ruling or agency decision in question.'

As such, appellate judges give, if not deference, at least some consideration to the district judge's opinion, especially if the opinion contains sound reasoning.[78]

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[75] See J. Jonas Anderson, Peter S. Menell, *Informal Deference: A Historical, Empirical, and Normative Analysis of Patent Claim Construction*, 108 Nw. U. L. REV. 1, 4 (2013) (asserting that the Federal Circuit gives "informal deference" to district judges, making the threat of de novo review much lower than many believe).

[76] Key Pharms. V. Hercon Labs. Corp. 161 F.3d 709, 713 (Fed. Cir. 1998).

[77] See Cybor at 1462-63 (discussing the Federal Circuit's practice of de novo review):

> Though we review the record de novo, meaning without applying a formal deferential standard of review, common sense dictates that the trial judge's view [on an issue of law such as claim interpretation] will carry weight. That weight may vary depending on the care, as shown in the record, with which that view was developed, and the information on which it is based.

Id. at 1462 (Plager, J., concurring); s*ee also*, Id. at 1463 (Bryson, J., concurring) ("[R]eviewing courts often acknowledge that as to particular legal issues lower tribunals have special competence and their judgments on those legal issues should be accorded significant weight").

[78] Litton Sys., Inc. v. Honeywell, Inc., 87 F.3d 1559, 1556 n.1, 39 U.S.P.Q.2d 13: 1324 n. I (Fed. Cir. 1996) (quoting Yepes-Prado v. INS, 10 F.3d 1363, 1367 n.5 (9th 1993)).

Furthermore, it is likely that the amount of deference being attributed to district courts is greater than any of the above suggests. As seen in the preceding paragraphs, a district judge will always be given at least some deference, while the most deference will be given when the district court's opinion was well reasoned. But as mentioned above, a detailed framework for claim construction analysis was not available for district judges to follow until 2005.[79] As such, the Federal Circuit was giving deference to district courts even at a time when each court was essentially making up its own methods for claim construction. And as statistical methods have shown, in the years following *Phillips*, district judges adopted the same analytical framework, which has resulted in a dramatic reduction of reversals on appeal.[80]

To summarize the process then, the Federal Circuit's practice of de novo review of claim construction involves first an in-depth review of a district judge's opinion, whereupon they are free to keep or reject the opinion as they see fit. Although de novo review is, from a purely academic standpoint, devoid of any deference to the district court's findings, the Federal Circuit has historically stated that it does not adhere strictly to the standard. And since the adoption of the *Phillips* framework, the number of reversals of claim constructions on appeal has dropped drastically, suggesting a further increase in deference. And therefore, the Federal Circuit's application of de novo review is largely deferential to a district court's well reasoned opinion.

III. Arguments in Favor of Rejecting De Novo Review

De novo review may be improper for some findings during claim construction because those findings may invoke Federal Rule 52. Rule 52 requires that a district judge's factual

[79] See Phillips v. AWH Corp., 415 F.3d 1303 (Fed. Cir. 2005); Section I, *supra* at 4-7 (discussing the Phillips framework for patent claim construction).
[80] See J. Jonas Anderson, Peter S. Menell, *Informal Deference: A Historical, Empirical, and Normative Analysis of Patent Claim Construction*, 108 Nw. U. L. REV. 1, 4 (2013) (finding that there has been a reduction in reversals of claim construction on appeal, largely due to the adoption of the Phillips framework by district courts).

determinations be reversed only for clear error.[81] And because de novo review, by nature, discards a district court's opinion, an issue that invokes Rule 52 cannot properly be reviewed de novo. As explained above, claim construction often requires extrinsic evidence that yields subsidiary factual determinations, such as credibility of expert witnesses. Therefore, such subsidiary determinations likely invoke Rule 52, rendering de novo review improper. This reasoning is compelling, and most likely requires that subsidiary factual determinations be reviewed in accordance with Fed. R. Civ. P. 52. Therefore, the Supreme Court should require that such subsidiary factual issues be reversed only where clearly erroneous. However, it is not clear that the Federal Circuit's actual practice of *de novo* review is much different than FRCP 52's "clearly erroneous" standard.

District Judges' Findings of Fact May Only be Reversed Where Clearly Erroneous.

Appellate courts are required to give deference to a district judge's factual determinations because the district courts are in the best position to make such findings. Rule 52 applies to issues that are tried to the bench, such as claim construction.[82] Under Rule 52, a district judge's findings of fact "are not to be set aside unless clearly erroneous."[83] The Supreme Court has found that a finding is clearly erroneous, as per Rule 52 when "although there is evidence to support it, the reviewing court on the entire evidence is left with the definite and firm conviction that a mistake has been committed."[84] Furthermore, "[i]f the district court's account of the evidence is plausible in light of the record viewed in its entirety, the court of appeals may not reverse it even though

[81] Fed. R. Civ. P. 52(a)(6) reads: "Findings of fact, whether based on oral or other evidence, must not be set aside unless clearly erroneous, and the reviewing court must give due regard to the trial court's opportunity to judge the witnesses' credibility."
[82] See Fed. R. Civ. P. 52(a); *see also,* Markman at 373 (giving the issue of claim construction exclusively to the court).
[83] Fed. R. Civ. P. 52(a)(6).
[84] Anderson v. City of Bessemer City, 470 U.S. 564, 573-74 (1985).

convinced that had it been sitting as the trier of fact, it would have weighed the evidence differently."[85]

The Court has also noted that the "clearly erroneous" standard of Rule 52(a) is particularly relevant to district court findings based upon the credibility of witnesses.[86] Fed. R. Civ. P. 52 exists because district courts, not appellate courts are best prepared to make factual determinations.[87] The Federal Circuit has stated that "[t]he trial court is in the best position to weigh evidence that involves credibility determinations, and that such determinations should be accorded substantial deference on appellate review."[88] This is because the trier of fact – who is present for witness testimony – is able to evaluate the demeanor of witnesses.[89]

This makes good sense because we would prefer that deference be given to the judge that was physically present for testimony over the judge who is merely given a transcript. In viewing expert testimony from a district judge's perspective, the district judge is physically present to hear and analyze the credibility of the testimony as well as the witnesses him or herself.[90] In contrast, an appellate judge may only be provided with a transcript of the witness's testimony.[91] This puts the appellate judge at a great disadvantage when making a credibility determination on witnesses and their testimony.

Furthermore, the Court has urged that Fed. R. Civ. P. 52 be treated as a broad, "blanket" statute. The Supreme Court has noted that Rule 52 "does not make exceptions or purport to exclude certain categories of factual findings from the obligation of a court of appeals to accept a district court's

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[85] Id.
[86] Id. (discussing the underlying purpose of Rule 52, given its legislative history).
[87] Id.
[88] Goodyear Tire & Rubber Co v. Hercules Tire & Rubber Co., 162 F.2d 1113, 1122, 48 U.S.P.Q.2d 1767, 1772 (Fed. Cir. 1998).
[89] Id.
[90] See Id.
[91] See Id.

findings unless clearly erroneous."[92] As such, the "review of factual findings under the clearly-erroneous standard – with its deference to the trier of fact – is the rule, not the exception."[93] The rules drafters have also spoken as to the breadth of Rule 52, noting that the Rule is a "broad, blanket provision" – absent of any exceptions.[94] Between the intent of the drafters, and Supreme Court guidance, it would appear that issues of claim construction are no different than other issues and are subject to the rule if they require the judge to make factual determinations.

To summarize, Rule 52(a) requires that the appellate court affirm a district court's findings of fact, regardless of whether they would have come to a different conclusion. Only in situations where the district judge's findings are found to be "clearly erroneous" is an appellate court properly in the position to disturb a district court's factual findings. Therefore, applying de novo review to an issue that invokes Rule 52 would be improper.

B. Claim Construction May Require Underlying Factual Determinations That Invoke Fed. R. Civ. P. 52.

One question that the *Markman* Court failed to answer was whether claim construction is purely a legal issue, purely a factual issue, or is a mixed issue of law and fact. But the Court did note that claim construction is a "mongrel practice," and is "somewhere between a pristine legal standard and a simple historical fact."[95] Similarly, Federal Circuit judges have found that any "delusion that claim construction is a purely legal determination, unaffected by underlying facts…is plainly not the case."[96] Judge Mayer was ultimately of the opinion that the Federal Circuit

[92] Pullman-Standard v. Swint, 456 U.S. 273, 287 (1982).
[93] Anderson v. City of Bessemer City, 470 U.S. 564, 575 (1985).
[94] See Fed. R. Civ. P. 52 (1985 amendments); *but see,* Bose Corp. v. Consumers Union of United States, Inc. 466 U.S. 485, 498-511 (1984) (finding that there is a narrow exception to Rule 52 where the Court is asked to resolve a conflict between constitutional provisions).
[95] Markman at 1390.
[96] Phillips v. AWH Corp., 415 F.3d 1301, 1330 (Mayer, J., dissenting) (Fed. Cir. 2005).

is "obligated by Rule 52(a) to review the factual findings of the district court that underlie the determination of claim construction for clear error."[97]

As shown in the preceding sections, claim construction often requires that a judge look to extrinsic evidence, such as expert testimony in developing a proper claim construction. Although the ultimate determination is a legal one, the credibility determinations that are made during this process may properly be classified as factual determinations that invoke Rule 52. As an illustration, examine the following inference chains:

1. Chain 1:
   - Patent claims term "X";
   - Specifications define "X" as inclusive of "Y";
   - Therefore, "X" includes "Y."

2. Chain 2:
   - Patent claims term "X";
   - One expert witness testifies that "X" includes "Y";
   - A second expert testifies that "X" does not include "Y";
   - Judge finds the first expert to be more credible;
   - Therefore, "X" includes "Y"

In both cases, the judge's ultimate determination that "'X' includes 'Y'" is a question of law, subject to *de novo* review. Where the cases differ however, is how the judge reached that conclusion. In the first example, the judge is not looking outside the patent's intrinsic record and his determination was therefore a purely legal one. In contrast, the judge in the second example was unable to develop a proper claim construction through the intrinsic record and was forced to rely on extrinsic evidence – namely, expert witness testimony. Surely expert testimony was set forth by both parties, meaning that at some point the judge was required to make a determination to rely on one expert's testimony over the other. These situations, where a judge sits in a position

[97] Id.

of making credibility determinations, is when a judge makes factual determinations that may be subject to Rule 52.

As shown above, claim construction is often a mixed question of law and fact. Although the ultimate determination is a legal one, a judge will often need to make underlying factual determinations in the process. In situations like the above hypothetical, Fed. R. Civ. P. 52 will most likely apply because of the broad scope attributed to the rule. In fact, this appears to be exactly the situation that the drafters imagined – where a district judge was physically present to listen to witness testimony. Therefore, review of such subsidiary factual determinations may at times invoke Fed. R. Civ. P. 52, making de novo review improper.

IV. Arguments in Favor of Maintaining De Novo Review

Proponents of de novo review argue that claim construction is a matter properly reviewed de novo because it furthers several policy considerations that have been endorsed by the Supreme Court. Proponents of de novo review first argue that de novo review is permissible because the issue is purely legal under *Markman*. Second, it is argued that de novo review promotes uniformity – as endorsed in Markman. And even if de novo review is not proper, no adequate alternative has been presented to replace it. But as noted above, Fed. R. Civ. P. 52 is a broad "blanket" provision that probably encompasses claim construction. Therefore, the arguments in favor of maintaining review are probably not enough to overcome the breadth of Rule 52.

A. De Novo Review is Arguably Permissible Under *Markman*

Proponents of de novo review argue that such a standard of review is permissible by *Markman*. *Markman* ultimately held that issues of claim construction are "exclusively within the province of the court."[98] Proponents of de novo review believe that the scope of *Markman*'s holding expands

[98] Markman at 373

beyond its plain meaning, and should be construed as holding that claim construction is not only a question for the judge, but is also a question of law – making it reviewable de novo.[99] And as the Supreme Court has noted, a district court's "[d]ecisions of questions of law are reviewable de novo."[100]

Even if claim construction is not purely an issue of fact, proponents of de novo review argue that *Markman* suggests that a judge's factual determinations should nonetheless be *treated* as legal. In other words, it is suggested that claim construction is a "special issue" that should fall within an exception to Rule 52 for the sake of judicial efficiency. This reasoning largely relies on the *Markman* court's reliance on *Miller v. Fenton*.[101] In *Miller* the Court held that the admisibility of a confession should be treated "as a legal inquiry requiring plenary federal review."[102] Like *Markman*, the *Miller* Court looked to functional considerations in determining that one judicial actor should decide the mixed issue at hand because of functional considerations.[103] However, the *Miller* Court extended the treatment of that particular Constitutional issue as a matter for the court, as being treated as a matter of law reviewable de novo on appeal.[104] But *Miller* appears to be limited to the issue of confession admissibility, and does not suggest that all mixed questions should be treated as purely legal. Furthermore, as stated in the previous section, there is a narrow exception to Rule 52 for certain Constitutional matters. Although the *Miller* court didn't expressly invoke the exception, it is possible that the Court implicitly relied on this narrow Constitutional exception to avoid Rule 52.

[99] See e.x., Lighting Ballast (Fed. Cir. 2014) (En banc).
[100] Highmark v. Allcare Health Management System, 134 S.Ct. at 1748.
[101] 474 U.S. 104, 114, 106 S.Ct. 445, 451, 88 L.Ed.2d 405 (1985).
[102] Id.
[103] Miller v. Fenton 106, 155 S.Ct. 445 (1985).
[104] Id.

And as shown above, the history of Rule 52 suggests that the Rule has a broad scope and that exceptions should be avoided if at all possible. And the factual determinations in Markman hearings often revolve around determinations of expert witness credibility - precisely the situation contemplated by Rule 52. As such, it is unlikely that an appellate board would be in as good a position as the district judge - which was not the case in *Miller*. Therefore, although some mixed issues may be treated as purely law or fact on appeal, those seem to fall into a small class of exceptions that are unlikely to apply to claim constructions.

De Novo Review Promotes Uniformity

Proponents of de novo review also argue that it is the proper method of review because it promotes uniformity in the claim construction of a given patent. This is a reasonable argument, as the Court's interest in promoting uniformity was expressly endorsed by the *Markman* Court.[105] In addition to Markman's endorsement of uniformity, Congress believed that promoting uniformity was important enough to create the Federal Circuit.[106] The uniformity argument suggests that we should foreclose the possibility that a patent claim term have a different construction depending on the jurisdiction.[107]

The following example is useful in illustrating this concern. Imagine company BigPharma develops an "injection" that cures cancer, which they call "ChaChing." BigPharma patents ChaChing to ensure that they are the exclusive seller of the drug. Wanting a piece of the profits, two generic companies, Gen-A and Gen-B file applications to develop generic versions of ChaChing. In turn, BigPharma sues both companies for infringement - Gen-A in the District of

[105] See Markman at 380 (discussing the importance of promoting uniformity in furthering the public notice function of the patent system).
[106] Id. at 390.
[107] See Lighting Ballast (Fed. Cir. 2014) (En banc) (upholding de novo review in part for the sake of promoting intrajurisdictional uniformity in claim construction).

New Jersey, and Gen-B in the District of California. During claim construction, the New Jersey court finds that the patent's use of the term "injection" includes all methods of injection. On the other hand, the California court finds that "injection" includes only intravenous injections. As such, Gen-B's intramuscular injection is not infringing. But Gen-A's identical method of injection would be infringing in California.

Imagine now that both cases are appealed to the Federal Circuit. The Federal Circuit determines that, had it been the district judge, it would have found "injection" to include all injections. However, it concedes that the California court did make a rational decision that other courts may have agreed with. As such, both claim constructions would be upheld under a "clearly erroneous" standard of review. In that situation, there is the concern that the court has just undermined the patent system's goal of providing notice to the public – how is the public put on notice of the scope of the information in the public domain, if it is different in each jurisdiction? By the same token, how does this affect an innovator's incentive to create new products given the uncertainty in the scope of protection provided by their patents?

This concern is arguably removed through the application of de novo review. Under de novo review, the Federal Circuit would have the ability to choose one construction over the other, even though a rational judge could have made either construction. As such, the public would know exactly what is in the public domain, and what is covered by the patentee's exclusive monopoly. Also, patentees will have confidence in that their patents will be held to the same standard in all jurisdictions, thus arguably promoting innovation.

Although uniformity is a legitimate consideration, and de novo review would appear to promote it in some circumstances, it is not clear that this is enough of a reason to maintain de novo review. First, the hypothetical above is extremely rare – in fact, when asked by the Court, the

appellants in *Teva v. Sandoz* failed to point to a single case where the outcome of an appeal would have been different under the clearly erroneous standard. Furthermore, the informal deference given to district courts during de novo review will make it even less likely that there be any difference on appeal. If the above hypothetical was commonplace in litigation, then perhaps it would warrant an exception to the rule. But absent that, de novo review does not lead to different results than the clearly erroneous standard, and therefore has little to no effect on uniformity. Because there is such a slight effect on uniformity, it is probably not sufficient to outweigh the issue that de novo review conflicts with Rule 52.

There May Not Be an Adequate Alternative to De Novo Review

Even if Fed. R. Civ. P. 52 does require that underlying findings of fact be reviewed for clear error, it is not clear that there is a practical way of separating issues of law and fact. In mixed questions of law and fact, such as claim construction, there must be a way to separate questions of law from questions of fact, if both rules are to be satisfied. However, it is argued that changing the standard of review for such a "mongrel" issue will only create a larger practical issue in deciding which findings are legal and which are factual.

The Supreme Court has acknowledged the "vexing nature" of this issue, noting that there is no "rule or principle that will unerringly distinguish a factual finding from a legal conclusion."[108] Furthermore, the Federal Circuit noted in its *Lighting Ballast* decision that one of the main reasons for upholding *Cybor* and de novo review was that none of the parties in favor of rejecting de novo review could put forth a workable test to determine when de novo review would apply and when Rule 52 would apply.[109] In contrast, the Federal Circuit's practice of de novo review makes the

[108] Pullman-Standard v. Swint, 456 U.S. 273, 288 (1982).
[109] See Lighting Ballast (Fed. Cir. 2014) (En banc) (noting that no party suggested an alternative method for reviewing claim construction).

issue as simple as possible, requiring no complex distinction between law and fact. Furthermore, as the *Lighting Ballast* court argued, there must be a compelling reason to give up a practice that has been rooted for over fifteen years without issue. And as all parties tend to agree, changing the standard wouldn't have much of a practical effect if any. Thus arises the question, why fix something that isn't broken? While rejecting de novo review would clearly result in difficulty and confusion for the Federal Circuit in determining what is law and what is fact, it is not so clear that this concern is sufficient to uphold de novo review if it does in fact violate Rule 52.

In fact, the same issue is present in other areas of the law – including patent law – that splits fact and law with relatively little issue. Most notably, opponents of de novo review look to the appellate review of issues of obviousness in the determination of validity of a patent. During an appellate review of a district court's obviousness determination, the appellate court uses a two-step analysis, separating the questions of law and fact, and reviewing them under their respective standards. In developing this process, the Federal Circuit noted that a determination of obviousness is a conclusion of law, subject to de novo review, although that conclusion is based upon underlying factual determinations, subject to Rule 52(a) – precisely what appears to be present during claim construction.

Similarly, the Federal Circuit has found that a district judge's determination of whether a product was placed on sale under 35 U.S.C. § 102(b) is a mixed question of law and fact. In that case, "the ultimate determination…is a question of law, based on underlying facts. The Court reviews the ultimate determination de novo, but any subsidiary fact findings must be reviewed…for clear error."[110]

[110] Ferag AG v. Quipp Inc., 45 F.3d 1562, 1566, 33 U.S.P.Q.2d 1512, 1514-15 (Fed. Cir. 1995).

Accordingly, many tests have been suggested to separate legal and factual issues during claim construction. For example, it is often suggested that the test for obviousness determinations may be properly applied to claim constructions. Also, the *Lighting Ballast* dissent as well as the *Phillips* dissent put forth their own respective tests for separating law and fact. What proponents of de novo review argue, and what opponents do not deny, is that any attempt to separate law from fact would be a complication to an already complex issue. Where they differ however, is their opinion on whether the added complication is "worth the candle."[111]

In summary, proponents of de novo review correctly assert that any attempt to separate issues of law and fact in claim construction appeals will add complexity to an already complex issue. However, as the appellate review of obviousness and on-sale doctrine show, it is possible. And given the broad scope of Rule 52, it is probably necessary.

V. The Federal Circuit's Practice of De Novo Review Is In Accordance With the Reasoning That Underlies Rule 52

While there has been much debate as to the proper standard of review of claim constructions, it is very possible that the debate is ultimately an academic one that will have no effect in practice. As shown above, the proper standard of review on appeal is likely a mix of de novo and clearly erroneous standards. If the Supreme Court does agree and rejects *Cybor*, how is the Federal Circuit to approach the issue going forward? Quite simply, not much should change.

As shown in Section II, the Federal Circuit's de novo review of claim constructions is not nearly as strict as it appears to be on paper. On the contrary, many argue that there is "informal deference" being given to the district court's findings of fact, which has only become more

[111] See Teva Pharms USA, Inc., et al. v. Sandoz, Inc., et al., No. 13-854 (during oral argument, several justices questioned whether the difficulties associated with any new standard of review would be "worth the candle").

common in recent years.[112] And as the *Lighting Ballast* majority rightly asserted, this form of de novo review has been in place for over fifteen years without any serious problems.[113] In contrast, any new rule for reviewing claim construction on appeal will likely yield confusion in its application going forward.

If the Supreme Court does reject de novo review, the Federal Circuit must keep in mind that it is not because de novo review has been resulting in erroneous decisions over the past 15 years. On the contrary, any new standard of review would be put in place to substantiate the proposition that Rule 52 is a broad, "blanket" provision that should not have many exceptions. Therefore, an appellate judge should note the primary goal of Rule 52 – to give district courts deference when they are in the best position to make factual determinations, such as when they have sat through expert testimony. But as explained, the Federal Circuit already gives deference, or at least great consideration, to district judges in those situations. Given this deference, it is likely that the Federal Circuit's current practice of de novo review implicitly satisfies Rule 52, while maintaining the Court's ability to apply de novo review.

It is possible, and in fact likely, that the Supreme Court will require that issues of law and fact be separated, and this may result in a complex test. If the Federal Circuit then ignores its historical practice of informally deferring to district courts in favor of a new test, it will likely lead to confusion and erroneous decisions going forward. Therefore, the Court should think of any new test as simply formalizing its current practice. This may simply require that the Court outline its actual analytical process, i.e., giving a thorough review to district opinions, rather than simply stating that the issue is to be reviewed de novo.

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[112] See J. Jonas Anderson, Peter S. Menell, *Informal Deference: A Historical, Empirical, and Normative Analysis of Patent Claim Construction*, NORTHWESTERN UNIV. LAW. REV. (2013).
[113] See Lighting Ballast (Fed. Cir. 2014) (en banc) (looking to stare decisis to justify maintaining de novo review).

VI. Conclusion

The proper standard of review of claim construction has puzzled courts and academics for decades. For almost two decades, the Federal Circuit has used the de novo standard of review during claim construction appeals. But the Federal Circuit's current practice of de novo review is probably improper because claim construction often requires subsidiary factual determinations that invoke the "clearly erroneous" standard of Fed. R. Civ. P. 52. Thus, the Supreme Court should overrule the Federal Circuit's *Cybor* decision to comport with Rule 52. However, the Federal Circuit's application of de novo review - in practice - appears to already give significant deference that is similar to the "clearly erroneous" standard of Rule 52. As such, the Federal Circuit should treat any new standard as an attempt by the Supreme Court to formalize the Federal Circuit's practice of selectively deferring to district courts.