The Integrated Patent Instrument

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Abstract

Inventors who apply for a patent at the U.S. Patent and Trademark Office (PTO) routinely negotiate with the PTO over the patent’s scope. The written record of that negotiation is called the prosecution history. For the past three decades, courts have held and many scholars have assumed that this written record is intrinsic evidence to a patent. The U.S. Court of Appeals for the Federal Circuit reviews de novo a trial court’s findings based on that written history when construing the scope of a patent—as if such findings were pure determinations of law—because it considers that history intrinsic evidence. In doing so, the Federal Circuit encourages appeals, discourages settlement, and prolongs expensive litigation when trial courts determine the outcome of a case based on a prosecution history. In short, de novo review of that history foments litigation and taxes innovators.

This Article argues that treating prosecution history as intrinsic evidence is incorrect in concept and inconsistent with a patent as an integrated legal instrument. Instead of the prevailing view, this Article suggests that contract principles provide a coherent paradigm through which courts and scholars can understand a patent and its history. Those principles frame patents as integrated instruments, prosecution histories as extrinsic evidence, and findings based on those histories as determinations of fact, not law. This paradigm suggests a sea change in how courts should review patent constructions—namely, the Federal Circuit should review findings based on prosecution histories for clear error only, like other factual questions, not de novo, like pure questions of law. By reviewing such findings for clear error, the Federal Circuit can discourage appeals and thereby reduce costs in cases where factual inquiries based on the prosecution history drive the final construction of a patent.

Introduction

Patent litigation is far too expensive. Parties spend an average of $2 million to litigate a patent-infringement suit (from start to finish) when only $1-10 million is at stake.¹ That average increases to over $3 million when $10-25 million is at stake.² Such costs can deter firms from introducing innovative products to market, inhibit patent holders from enforcing their rights, and penalize defendants who do not infringe a valid patent.³

But parties push through the end of trial in part because the U.S. Court of Appeals for the Federal Circuit gives them a second bite at the apple. The appellate court typically reviews a trial court’s construction of a patent claim de novo, that is, it essentially ignores the trial court’s decision and determines the scope of a patent claim anew on appeal. A patent claim is a one-sentence summary at the end of a patent that defines the boundaries of the inventor’s monopoly. As many scholars have

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² See id.
shown, the Federal Circuit has embraced this unfettered review by reversing between 24% and 44% of trial court’s claim constructions.\(^4\) While the Federal Circuit’s reversal rate has decreased in recent years, it still far exceeds corresponding reversal rates of non-patent cases in regional circuits.\(^5\) Scholars have argued that the Federal Circuit reverses constructions at such a high rate—not only because it applies *de novo* review—but also because claim language cannot accurately define the boundaries of an intellectual property right.\(^6\) These inexact boundaries make for unpredictable appeals, so the argument goes. More recently, other scholars have argued that different normative approaches to claim construction among Federal Circuit judges make appeals uncertain, not inexact claim language.\(^7\)

This Article suggests that another, overlooked factor contributes to the high reversal rate and the incentives to push beyond trial. That is, the Federal Circuit treats not just the patent, but the historical record of a patent as intrinsic evidence and reviews findings based on that history *de novo*—as if they were pure determinations of law. This record is called the prosecution history and it chronicles the inventor’s negotiation with U.S. Patent and Trademark Office (PTO) over the scope of a patent. Under current law, the Federal Circuit may disregard a trial court’s determinations based on a prosecution history because that history is considered intrinsic evidence. But if the prosecution history were considered extrinsic evidence, the Federal Circuit would need to grant more deference to a trial court’s determinations based on that history as findings of fact.

The different standards of review attached to intrinsic and extrinsic evidence stem from a recent Supreme Court case, *Teva Pharmaceuticals USA, Inc. v. Sandoz, Inc.*, where the Court for the first time adopted the Federal Circuit’s approach to prosecution history.\(^8\) In *Teva*, the Court held that a district court’s construction of claims based on intrinsic evidence—which it said included the prosecution history—is a legal determination reviewed *de novo*.\(^9\) By contrast, the Court held that a district court’s findings based on extrinsic evidence, such as expert testimony, are fact findings reviewed for clear

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\(^8\) 135 S. Ct. 831 (2015).

\(^9\) *Id.* at 841.
error—that is, an appellate court must defer to those findings unless they are clearly wrong.\textsuperscript{10} In support of this latter holding, the Court reasoned that, much like “construing other written instruments, such as deeds, contracts, or tariffs,” a judge may need to rely on extrinsic evidence to determine as a matter of fact the meaning of “technical words or phrases not commonly understood.”\textsuperscript{11} That was true in \textit{Teva}, where the parties disputed the meaning of a single, ambiguous term—“molecular weight”—which the trial court defined based on expert testimony.\textsuperscript{12}

While \textit{Teva} correctly required the Federal Circuit to defer to some fact findings, it perpetuated an inconsistency that allows the Federal Circuit to review \textit{de novo} findings based on a prosecution history as conclusions of law, not findings of fact. On the one hand, the Federal Circuit says a “patent is a fully integrated written instrument,”\textsuperscript{13} but on the other, the court (like \textit{Teva}) says that the prosecution history is intrinsic evidence—as if it were part of a patent for purposes of claim construction. But a patent cannot both fully integrate all terms agreed upon by the inventor and PTO and envelope the record of their negotiations.

\textit{Teva}'s comparison of patents to contracts, however, points to a better model for patent law. Contract theory provides a coherent paradigm to understand a patent as a legal instrument, consider a prosecution history like a drafting history, as well as reduce and make more certain appeals. In contract law, courts consider the final expression of the parties’ agreement as an integrated instrument. They primarily look outside such an instrument to the drafting history to find facts, not law, that an appellate court reviews for clear error.\textsuperscript{14} The same should be true in patent law.

Like a contract, a patent represents the final agreement between the applicant and the PTO (representing the United States) on claim scope. By statute, a patent includes claims and other descriptions of the invention, but not the prosecution history. This Article argues that just like findings based on a drafting history, findings based on a prosecution history are factual because they serve two primary functions. First, courts consider a drafting or prosecution history to determine a term’s linguistic meaning—through the eyes of either the contracting parties or a scientist skilled in the field of the patent. Courts may look to those histories, for example, when a contract or patent term is vague or ambiguous. This Article will refer to this process of determining a term’s meaning as \textit{interpretation}. Second, courts consider these same histories to determine the reason parties included certain words in a contract or patent or the reason they agreed to the finalized instrument. Courts may look to these histories, for example, to determine why the parties amended the terms or to determine whether a party committed fraud. This Article will describe this second process in terms of \textit{causation}, that is, the process of determining what caused the parties to include certain words or to agree on the finalized instrument.

\begin{flushright}
\textsuperscript{10} \textit{Id.}  \\
\textsuperscript{11} \textit{Id.} at 837-38 (internal quotation marks omitted).  \\
\textsuperscript{12} \textit{See id.} at 835.  \\
\textsuperscript{13} \textit{Markman v. Westview Instruments, Inc.}, 52 F.3d 967, 978 (Fed. Cir. 1995) (en banc), \textit{aff'd}, 517 U.S. 370 (1996).  \\
\textsuperscript{14} \textit{See} cases cited \textit{infra} notes 138 and 265.\end{flushright}
After examining a drafting or prosecution history, a court may determine the legal effect of a contract or patent based on what it finds in those histories. In determining that effect, a court may, for example, hold the instrument is unenforceable, estop a party from enforcing the instrument, or simply give the instrument a legal effect that tracks linguistic meaning. This Article will refer to this latter process of determining an instrument’s legal effect as construction. As explained in the Parts below, the distinctions among interpretation and causation (which are both factual findings) and construction (which is a legal finding) matter because they control whether the Federal Circuit defers to the trial court or makes its own conclusions without deference.

Tun-Jen Chiang and Lawrence Solum recently argued that the distinction between interpretation and construction shows that Federal Circuit judges primarily disagree over normative approaches to construction, not the linguistic meaning of patent terms. This Article argues that the same distinction—together with the concept of causation—shows that courts find facts, not law, when examining a prosecution history.

If courts primarily rely on a prosecution history to find facts—as they do with a contract’s drafting history—the contract paradigm suggests a dramatic change in how courts construe claims, estop patent holders, and review findings based on that history. First, courts that recognize a patent as an integrated instrument and the prosecution history as extrinsic evidence will more carefully consider when to rely on a prosecution history to interpret a term’s meaning and provide more predictable results on appeal. Indeed, recent empirical research suggests that the Federal Circuit’s recent drop in reversal rates correlates with relying less on the prosecution history. Second, contrary to Teva’s holding, but consistent with its logic, the inferences a district court draws from the prosecution history are fact findings that should be reviewed for clear error under Federal Rule of Civil Procedure 52(a)(6). And third, clear-error review would provide the Federal Circuit with a consistent standard of review for all inquiries into prosecution history—including the findings underlying claim construction, estoppel, and holding patent unenforceable. Ultimately, deferential review of findings from a prosecution history would cause the kind of sea change that some predicted Teva would produce but failed to deliver. That is, clear-error review will deter appeals and reduce costs in cases where findings based on the prosecution history drive the final construction of the patent.

In Part I of this Article, I provide some background on patents and how federal courts rely on prosecution histories to construe claims, estop accusations of infringement, and hold patents unenforceable. In Part II, I argue that contract principles provide a better paradigm for courts and scholars to understand a patent and how courts consider prosecution histories to determine a patent’s legal effect. In Part III, I describe the payoffs of an integrated patent theory and how contract principles support clear-error review of inferences a trial court draws from prosecution history. And in Part IV, I refute the primary arguments against applying these contract principles to patents.

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15 See Chiang & Solum, supra note 7, at 562-71.
16 Anderson & Menell, supra note 4, at 6, 44-45 (finding that the Federal Circuit’s reversal rate of claim term constructions dropped from 38.6% to 25.6% after July 2005 and that the court changed from considering the prosecution history when construing 46.9% of terms to 37.1% of terms).
I. Patent Law Basics and the Evolution of Prosecution Histories

In this Part, I provide some background on patents, prosecution histories, and how courts use both to construe the scope of a patent. In particular, this Part details how courts have increasingly relied on prosecution history to determine the outcome of patent disputes.

Modern patents are official government documents issued by the PTO. By statute, a patent must include drawings, a specification, and at least one claim.7 The specification must describe the invention in enough detail to teach a person of ordinary skill in the art (or scientific field) how “to make and use” the invention.8 The specification must also conclude with “claims particularly pointing out and distinctly claiming . . . the invention.”9 These claims define the patent monopoly. They are thus similar to “the metes and bounds” of a property deed.10

Take Thomas Edison’s 1878 patent on the phonograph, for example.11 Edison’s patent bears the hallmarks of a modern patent. It includes drawings of his phonograph, a two-page specification of the machine, and four claims.12 Edison’s specification describes a point or stylus that etches indentations into a cylinder covered by “metallic foil.” Those indentations correspond to audible sound waves spoken into a diaphragm. With the indentations recorded, a user can rotate the cylinder to reproduce the recorded sound.13 At the end of the specification come the claims. The second claim, for example, covers (a) “a diaphragm exposed to sound-vibrations” and (b) “a moving surface of yielding material—such as metallic foil—upon which marks are made corresponding to the sound-vibrations.”14 Both (a) and (b) are discrete parts of the claim, which practitioners often call claim “elements.”15

To get a patent, an inventor like Edison must file an application with the PTO that includes drawings, a specification, and claims, among other things. The PTO reviews the application to see if it satisfies statutory requirements of patentability, such as whether the application claims a new invention that is not obvious or that the law recognizes as patentable.16 The PTO commonly rejects the inventor’s initial claims as repeating or making obvious adjustments to technology other people have disclosed in “prior art.” Prior art includes anything known or done before the invention, such as prior patents or other publicly available documents.17 When the PTO rejects proposed claims, the inventor and PTO

17 See 35 U.S.C. § 154(a)(1) (directing that “[e]very patent shall contain” a grant of exclusivity “referring to the specification”); id. § 154(a)(4) (“[T]he specification and drawing shall be annexed to the patent and be part of such patent.”).
18 Id. § 112(a).
19 Id. § 112(b).
22 See id.
23 See id.
24 Id.
negotiate the scope of the claims until they agree (or disagree) that they cover a new, patentable invention. Courts typically refer to the record of this negotiation—comprising the PTO’s office actions, the applicant’s responses, and prior art—as the “prosecution history.” Although the prosecution history precedes a patent in time, it is not physically part of the patent. It “represents an ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation” and “often lacks the clarity of the specification.” At the end of that negotiation, the PTO may issue a patent that grants the inventor or her assignee the right to exclude anyone in the United States from making, using, offering to sell, or selling her invention, or importing the same into the country.

That right to exclude is at the center of every patent-infringement suit—all five to six thousand filed annually in district courts. In each case that progresses toward trial, the district court must determine the scope of the patent by construing the claims. Claim construction is often the “single most important event in the course of a patent litigation” because it “defines the scope of the property right being enforced.” Courts often define that right based on the language of the claims and the specification. But they have increasingly defined a patent’s scope based on the prosecution history. Subpart I.A below summarizes how the prosecution history has increasingly played a determinative role in many patent suits.

A. The Prosecution History’s Impact on Patent Scope

Over the past four decades, the Supreme Court and Federal Circuit have expanded the use and force a prosecution history may have on patent scope. Those changes have come in four principle ways. First, the Supreme Court has held that certain claim amendments during prosecution presupptively surrender claim scope. Second, the Federal Circuit has held that an argument during prosecution can also surrender claim scope or even override a claim’s plain meaning. Third, courts have long held that an inventor’s misrepresentations or other inequitable conduct during prosecution may render a patent unenforceable, but the Federal Circuit has held patents unenforceable when a patent holder deliberately withholds material prior art during prosecution. And fourth, both the Supreme Court and Federal Circuit have shifted from treating prosecution history as extrinsic evidence to intrinsic evidence for purposes of claim construction. With the exception of inequitable conduct, the Federal Circuit has held findings based on prosecution histories are determinations of law subject to de novo review. In doing so, the Federal Circuit has maximized its power to determine the outcome of a patent suit anew on appeal based on historical events outside of the patent.

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31 See LEX MACHINA, 2013 PATENT LITIGATION YEAR IN REVIEW 1 (2014) (reporting 6,092 new patent cases filed in 2013 and 5,418 new cases filed in 2012).
34 See Phillips, 415 F.3d at 1314-15.
1. Amendment-Based Prosecution History Estoppel

When an inventor amends her claims during prosecution, that amendment can change both the literal scope of the patent and affect whether the claim covers an equivalent of the invention. To appreciate how an amendment can have both effects, the reader must understand that courts recognize two different types of patent infringement—literal infringement and infringement under the doctrine of equivalents. A product infringes a claim when it incorporates each literal element of a claim.\(^35\) But a product may also infringe a claim if it is an equivalent of the claimed invention. Specifically, when the elements of the accused product are equivalent to the elements of asserted patent claim, the product still infringes—even though it does not literally incorporate each element.\(^36\) This latter type of infringement is known as the doctrine of equivalents. To prove that a product is equivalent, the patent holder may show the accused product performs substantially the same function, in substantially the same way, and achieves substantially the same result as an element of the asserted patent claim.\(^37\)

Take one of Edison’s claim elements, for example. A phonograph that contains (a) “a diaphragm exposed to sound-vibrations” and (b) metallic foil where “marks are made corresponding to the sound-vibrations” would literally infringe Edison’s patent.\(^38\) But Edison might also argue that a flat disc that records indentations corresponding to sound waves is equivalent to the “metallic foil” claimed in his patent.\(^39\) The disc arguably performs the same function (recording sound waves), in substantially the same way (by physical indentations), and achieves the same result (recorded audio for playback). A flat vinyl record may therefore infringe Edison’s patent under the doctrine of equivalents.

In Festo Corp. v. Shoketsu Kinzoku Kabushiki Co., the Supreme Court imposed limitations on the doctrine of equivalents by strengthening the effect of an amendment in prosecution had on claim scope.\(^40\) It held that if a patent holder narrows a claim by amendment to satisfy the Patent Act during prosecution—say to distinguish prior art—courts shall presume that the patent holder intended to surrender the territory between the original claims and the amended claims.\(^41\) In other words, prosecution history estoppel would shrink the range of equivalents available to a patent holder when it has amended a claim to get a patent. Had Edison amended his claim with the phrase “yielding material—such as metallic foil” during prosecution—say to distinguish his invention from a phonograph with flat discs—Festo would presumptively estop Edison from asserting phonographs with flat discs infringe his patent.\(^42\)

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\(^{36}\) Warner-Jenkinson, 520 U.S. at 21.

\(^{37}\) Id. at 40.

\(^{38}\) Id.

\(^{39}\) See 521 patent.


\(^{41}\) 535 U.S. at 741.

\(^{42}\) This hypothetical example is anachronistic because flat-disc phonographs came after Edison’s tinfoil phonograph.
To allow some room for equivalents, Festo held that a patent holder may rebut the presumption of surrender in three ways—by showing that the patent holder could not reasonably describe the accused equivalent at the time of the amendment, that its purpose in making the amendment was tangential to the alleged equivalent, or that it could not foresee the equivalent at the time of the amendment.43

While patent holders sometimes rebut the presumption of surrender, Festo changed the landscape of prosecution history estoppel. Scholars have argued that Festo contributed to the demise—or rather reduced findings—of infringement under the doctrine of equivalents.44 Other scholars have argued that Festo represented a pre-existing trend of reduced equivalents findings.45 Either way, courts now rely on the prosecution history as the primary way to defeat a claim of infringement under the doctrine of equivalents.46 Festo thus strengthened the force an amendment in prosecution could have on the scope of a patent. But the Federal Circuit has ensured it has nearly unfettered discretion when reviewing a finding of prosecution history estoppel. It reviews de novo all aspects of prosecution history estoppel, except for foreseeability.47

2. Argument-Based Prosecution History Estoppel and Prosecution Disclaimer

In addition to amendments in prosecution, an inventor’s arguments during prosecution can also limit the scope of a patent. One year after its formation—in Hughes Aircraft Co. v. United States—the Federal Circuit held an applicant’s comments or arguments in prosecution could trigger prosecution history estoppel.48 But the Federal Circuit would go further. The court expanded argument-based estoppel beyond precluding assertions against equivalents to holding that a “clear and unmistakable” statement in prosecution could override the “plain and ordinary meaning[]” of the claim language.49 This latter doctrine is called prosecution disclaimer.

A hypothetical example from Edison illustrates how prosecution disclaimer works. If Edison’s attorney argued during prosecution that the phrase “yielding material—such as metallic foil” referred to tin foil to distinguish some prior phonograph with a yielding material, a court may hold that Edison

43 Id. at 740-41.
45 John R. Allison & Mark A. Lemley, The (Unnoticed) Demise of the Doctrine of Equivalents, 59 Stan. L. Rev. 955, 957-58 (2007) (presenting empirical findings and arguing that the growth of claim-construction hearings and focus on claims “killed the doctrine of equivalents” and that Festo represented a pre-existing trend).
48 717 F.2d 1351, 1363 (Fed. Cir. 1983) (internal citations omitted).
49 Golden Bridge Tech., Inc. v. Apple Inc., 758 F.3d 1362, 1365-66 (Fed. Cir. 2014); see also Omega Eng’g, Inc v. Raytek Corp., 334 F.3d 1314, 1326 (Fed. Cir. 2003).
disclaimed metallic foils other than tin foil. Contrary to the claim language, the court may limit his claim to cover only phonographs with cylinders wrapped in tin foil.

Prosecution disclaimer does precisely what the Supreme Court has long said prosecution history cannot do—“diminish[] or vary the language of a patent.” The doctrine has proved controversial because it pits the claim language against statements in prosecution. Indeed, the Federal Circuit regularly disagrees over whether particular statements clearly and unmistakably disavow claim scope. Panel after panel have split over what the prosecution history clearly or clearly does not disavow in terms of claim meaning.

Prosecution disclaimer and argument-based estoppel also run counter to decades of case law. Before the Federal Circuit formed, the majority of circuits held that an inventor’s argument could not trigger prosecution history estoppel. Learned Hand, for example, adamantly opposed broadening the doctrine to permit courts to construe patent claims based on a patent holder’s arguments in prosecution. He considered the prosecution history estoppel “anomalous at best” because it required “looking at preliminary negotiations in the interpretation of a formal document intended to be the final memorial of the parties’ intentions.” Hand thought it critical to preserve a patent as a kind of finalized “agreement” or “contract.” He wrote, “If the doctrine of the ‘integration’ of a written instrument has any basis at all, surely it should apply to such a document.” Otherwise, he opined, “a labyrinth results” when a “patent can be construed only by threading one’s way through all the verbal ingenuities which

50 Goodyear, 102 U.S. at 227.
52 See cases cited infra notes 53 and 58.
53 Auto Pneumatic Action Co. v. Kindler & Collins, 247 F. 323, 328 (2d Cir. 1917) (L. Hand, J.) (rejecting that “arguments made in the Patent Office by the applicant to the examiner are to be taken as a measure of his patent”); see also Catalin Corp. v. Catalazuli Mfg. Co., 79 F.2d 593, 594 (2d Cir. 1935) (L. Hand, J.) (similar); A.G. Spalding & Bros. v. Wanamaker, 256 F. 530, 533-34 (2d Cir. 1919) (similar); Lyon v. Boh, 1 F.2d 48, 50-51 (S.D.N.Y. 1924) (L. Hand, J.), rev’d on other grounds, 10 F.2d 30 (2d Cir. 1926) (similar).
54 A.G. Spalding & Bros. v. Wanamaker, 256 F. 530, 534 (2d Cir. 1919). Prosecution history estoppel was known as file wrapper estoppel during Hand’s time.
55 Lyon, 1 F.2d at 50-51.
56 Catalin, 79 F.2d at 594.
casuistical [patent] solicitors develop to circumvent the objections of examiners.” At least five Courts of Appeals followed Hand’s opinions by rejecting argument-based estoppel.

Today, statements in prosecution can trump claim language. By adopting prosecution disclaimer, the Federal Circuit has strengthened the impact a prosecution history can have on the scope of a patent. But by frequently disagreeing over what constitutes a disclaimer, the court has also made appeals less predictable. Despite panel’s frequent disagreement over proper inferences, the court reviews de novo all aspects of prosecution disclaimer on appeal.

3. Inequitable Conduct

While arguments and amendments can limit the scope of a patent, a court may hold a patent unenforceable all together based on an inventor’s false representations during prosecution or other inequitable conduct. In a trio of cases in the 1930s and 1940s, the Supreme Court dismissed patent-infringement suits where (a) a patent holder paid a third party to submit a false affidavit to the PTO; (b) a patent holder’s attorneys paid an expert to publish an article praising the invention and submitted the same to the PTO; and (c) another patent holder conspired with a competing inventor to conceal a perjured statement submitted to the Patent Office. In each of these cases, the Court found that the patent holder’s unclean hands required dismissing the infringement suits.

The Courts of Appeals have strengthened the punishment for such deceit—for what is now called “inequitable conduct”—by holding that fraudulently procured patents are unenforceable against any party. The Federal Circuit would also expand the doctrine beyond affirmative acts of deception to include “the mere nondisclosure of information to the PTO,” such as highly relevant prior art. But the court would also establish a high bar for proving inequitable conduct. To prove inequitable conduct, an

57 Id.
58 See Williams Bit & Tool Co. v. Christensen Diamond Prods. Co., 399 F.2d 628, 632 (5th Cir. 1968) (following Catalin); Bassick Co. v. Faultless Caster Corp., 105 F.2d 228, 231 (7th Cir. 1939) (following Spalding); Denominational Envelope Co. v. Duplex Envelope Co., 80 F.2d 186, 192-193 (4th Cir. 1935) (following Auto Pneumatic); John W. Gottschalk Mfg. v. Springfield Wired & Tinsel Co., 74 F.2d 583, 587 (1st Cir. 1935) (following Spalding); Byers Mach. Co. v. Keystone Driller Co., 44 F.2d 283, 285 (6th Cir. 1930) (following Auto Pneumatic and Spalding); Fullerton Walnut Growers’ Ass’n v. Anderson-Barngrover Mfg. Co., 166 F. 443, 451 (9th Cir. 1908) (adopting the same rule before Hand); cf. Keystone Driller Co. v. Northwest Engineering Corp., 294 U.S. 42, 48 (1935) (suggesting that the Court did not apply “estoppel to what was said by the claimant in seeking to avoid the prior art cited against his broad claims”). But see Wiegang v. W. Bingham Co., 106 F.2d 546, 548 (6th Cir. 1939) (rejecting the view that courts could not rely on “preliminary negotiations” in the “file wrapper history to ascertain the meaning of claims”).
64 Id.
65 Id.
accused infringer must generally show by clear and convincing evidence that the patent holder specifically intended to deceive the PTO and that this deception was the but-for cause of the PTO issuing the patent.\textsuperscript{66} The latter finding is typically called “but-for materiality.”\textsuperscript{67} If Edison had deliberately withheld from the PTO a publication describing a prior phonograph that used a stylus, tin foil wrapped cylinder, and diaphragm, a court may well find he did so with specific intent and that his failed disclosure caused the PTO to issue the patent and hold it unenforceable. In contrast to prosecution history estoppel and prosecution disclaimer, however, the Federal Circuit reviews such “finding[s] of materiality and intent for clear error” and “ultimate finding of inequitable conduct based on those underlying facts for abuse of discretion.”\textsuperscript{68}

4. Prosecution History Becomes Intrinsic Evidence

Finally, both the Federal Circuit and Supreme Court have elevated prosecution history from extrinsic evidence to intrinsic evidence for purposes of claim construction. By treating prosecution history as intrinsic evidence, those courts have justified reviewing without deference a trial court’s findings based on a historical record—as though such findings were based on the patent itself. But the change from extrinsic to intrinsic evidence has come only recently and with little explanation.

Before the Federal Circuit, the Courts of Appeals and commentators consistently described prosecution histories as extrinsic evidence.\textsuperscript{69} The Federal Circuit adopted that view up until the mid-1990s. While some Federal Circuit panels referred to anything outside of the claims as extrinsic evidence, others considered anything outside the patent, including the prosecution history, as extrinsic

\textsuperscript{66} Id. at 1290-91.
\textsuperscript{67} Id. at 1291.
\textsuperscript{69} See Thomson-Houston Elec. Co. v. Hoosick Ry. Co., 82 F. 461, 462 (2d Cir. 1897) (opining that a court may rely on “extrinsic evidence to ascertain the meaning and the true construction of” a patent, but that in the present case the “patents are unambiguous” and “even the file wrappers . . . are of little value as extrinsic evidence”); see also Consol. Fastener Co. v. Hays, 100 F. 984, 980 (2d Cir. 1900) (same); Thomson-Houston Elec. Co. v. W. Elec. Co., 158 F. 813, 815 (2d Cir. 1907) (same); Societe Anonyme du Filtre Chamberland Systeme Pasteur v. Allen, 84 F. 812, 816 (C.C.N.D. Ohio 1897) (denying a petition for a preliminary injunction based in part on the “evidence extrinsic to the letters patent” in the “file wrapper”), aff’d, 90 F. 815 (6th Cir. 1898); WILLIAM C. ROBINSON, THE LAW OF PATENTS FOR USEFUL INVENTIONS § 1019, at 248 (Boston, Little, Brown & Co. 1890) (explaining that “[i]n its interpretation of a patent,” a court may consider expert testimony and “papers in the Patent Office which are connected with the patent,” but a patent’s scope “can neither be limited nor extended by extraneous evidence” when the patent is “fairly apparent”). Robinson’s footnote on “extraneous evidence” discusses the inadmissibility of the “file wrapper” to “limit the construction of a patent” or “vary or enlarge the Claims.” Id. § 1019, at 248 n.4.
As Donald Chisum put it in the early 1990s, the “prevailing view” at the Federal Circuit was that prosecution history was “extrinsic evidence” that courts may consider in construing claims.\(^7\)

That view changed in 1995 in *Markman v. Westview Instruments, Inc.*\(^2\) There, the Federal Circuit held that claim construction was a matter of law exclusively for the court and that the Seventh Amendment did not require juries to construe disputed claim terms when “‘extrinsic evidence is needed to explain the meaning.’”\(^3\) The Supreme Court affirmed, holding that plaintiffs had no Seventh Amendment right to a jury construing a patent and that the construction of patent claims is “exclusively within the province of the court.”\(^4\) But the Supreme Court did not adopt some of the Federal Circuit’s reasoning that created an important divide between intrinsic and extrinsic evidence. To justify its holding that courts should construe patents, the Federal Circuit reasoned that a “patent is a fully integrated written instrument” and that instruments had long been construed by courts, not juries.\(^5\) But the court contradicted itself by creating a category of intrinsic evidence that included the patent’s historical record. It contrasted the claims, specification, and prosecution history with “[e]xtrinsic evidence,” which it said comprised “all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.”\(^6\) This division between the claims, specification, and prosecution history, on the one hand, and extrinsic evidence, on the other, spawned today’s distinction between intrinsic and extrinsic evidence. Since *Markman*, the Federal Circuit has consistently treated the prosecution history exclusively as “intrinsic evidence.”\(^7\)

Two years later, in *Cybor Corp. v. FAS Technologies, Inc.*, the Federal Circuit held that it would “review claim construction de novo on appeal including any allegedly fact-based questions relating to claim construction.”\(^8\) Despite agreeing that prosecution history was now intrinsic evidence—and that it

\(^7\) Compare Tillotson, Ltd. v. Walbro Corp., 831 F.2d 1033, 1037 (Fed. Cir. 1987) (opining that “extrinsic evidence, include[es] the specification, the prosecution history, and other claims”); Howes v. Medical Components, Inc., 814 F.2d 638, 643 (Fed. Cir. 1987) (same); Moeller v. Ionetics, Inc., 794 F.2d 653, 656 (Fed. Cir. 1986) (similar), with ZMI Corp. v. Cardiac Resuscitator Corp., 844 F.2d 1576, 1580 (Fed. Cir. 1988) (“Resort to extrinsic evidence, such as the prosecution history, is necessary to interpret disputed claims.”).

\(^8\) DONALD S. CHISUM & MICHAEL A. JACOBS, UNDERSTANDING INTELLECTUAL PROPERTY LAW § 2F[1][c], at 2-244 (1992) (“[T]he prevailing view today is that it is necessary to consider extrinsic evidence, such as the prosecution history, which may involve factual matters or expert testimony.”).
was the subject of de novo review—Federal Circuit panels continued to disagree over the role prosecution history played in claim construction.\(^{79}\)

The Supreme Court significantly changed the Federal Circuit’s carte blanche review of claim construction in *Teva Pharmaceuticals USA, Inc. v. Sandoz, Inc.*\(^{80}\) In that case, Teva asserted that Sandoz infringed a patented method for manufacturing a multiple sclerosis drug requiring the active ingredient to have “‘a molecular weight of 5 to 9 kilodaltons.’”\(^{81}\) Sandoz argued that the term “molecular weight” was fatally indefinite for failing to “‘particularly poin[t] out and distinctly clai[m]’” the invention, as the Patent Act requires, because the claims did not clarify which of three accepted methods of calculating molecular weight the invention covered.\(^{82}\) Scientists calculated that weight in three ways—by measuring the weight of the most prevalent molecule, the average weight of all molecules, or the average weight of heavier molecules.\(^{83}\) Teva’s expert witness persuaded the district court that a skilled artisan would understand the term “molecular weight” to mean the weight of the most prevalent molecule and that the term was, therefore, sufficiently definite to satisfy the Patent Act.\(^{84}\) The Federal Circuit reviewed that finding de novo and held the disputed term was indefinite and the claim invalid.\(^{85}\) But on grant of certiorari, the Supreme Court ordered that the Federal Circuit “must not . . . set aside” subsidiary factual findings underpinning claim construction unless they are “clearly erroneous” pursuant to Rule 52(a)(6).\(^{86}\)

The Court reasoned that in construing a patent claim, a judge performs “much the same task” as she would when construing other written instruments, “such as deeds, contracts, or tariffs.”\(^{87}\) In construing a patent, the Court said, a judge may need to rely on extrinsic evidence to determine as a matter of fact the meaning of “technical words or phrases not commonly understood.”\(^{88}\) But in drawing a line between intrinsic and extrinsic evidence, the Court seemed to hold—in the absence of argument to the contrary—that prosecution history is intrinsic evidence: “As all parties agree,” the Court said, “when the district court reviews only evidence intrinsic to the patent (the patent claims and specifications, along with the patent’s prosecution history), the judge’s determination will amount solely to a determination of law, and the Court of Appeals will review that construction de novo.”\(^{89}\) By contrast, when “subsidiary facts are in dispute, courts will need to make subsidiary factual findings about . . . extrinsic evidence”—such as expert testimony—that “must be reviewed for clear error on

\(^{79}\) See SA DONALD S. CHISUM, CHISUM ON PATENTS § 18.03[2][d][ii], at 18-523 (2007) (“Judicial opinions vary in the emphasis they place on prosecution history as a claim interpretation aid.”); cases cited supra note 51.

\(^{80}\) 135 S. Ct. 831 (2015).

\(^{81}\) Id. at 835 (quoting patent in appendix).

\(^{82}\) Id. at 835-36 (quoting 35 U.S.C. § 112 ¶ 2 (2006)).

\(^{83}\) Id. at 836.

\(^{84}\) Id. at 836. \(^{85}\) Id. at 836-38.

\(^{86}\) Id. at 837 (citing Goodyear, 102 U.S. at 227).

\(^{87}\) Id. at 837-38 (internal quotation marks omitted).

\(^{88}\) Id. at 841 (emphasis added).
appeal.” Without argument, the Court thus elevated what federal courts had considered extrinsic for over a century—prosecution history—to be definitively intrinsic evidence.

_Teva_ drew a vigorous dissent. The seven-justice majority and two-justice dissent disagreed on whether construing a patent was more like construing a contract, where appellate courts defer to trial courts’ factual findings, or more like a construing a statute, where appellate courts review underlying facts de novo. The majority found the Court’s traditional comparison of patents to contracts and deeds persuasive because “only private parties, experts, and administrators”—as opposed to the public—“likely consider the relevant technical facts before the award of a patent.” It also noted that the Court had never compared claim construction “in any here relevant way to statutory construction.” The dissent denied that claim construction involved any factual finding and discounted the Court’s prior comparison of patents to contracts. Assuming patent construction involved underlying facts, the dissent opined that construing a patent was more like construing a statute because, by granting a patent, the government bound the public at large, as statutes apply to the public.

B. _Teva’s_ Intrinsic Evidence Framework Foments and Makes Uncertain Appeals

_Teva_ shows that the Supreme Court has not resolved some basic questions concerning a patent as a legal instrument. While the majority and dissent debate whether a patent is more like a contract or statute, neither articulates what makes for a legal or factual inquiry when construing a patent. Nor has the Court explained whether a patent is an integrated instrument (as the Federal Circuit sometimes opines) or whether the prosecution history is effectively part of the patent for construction. To be sure, the majority holds that a patent is more like a contract for purposes of appellate review, but contradicts that analogy by saying that the Federal Circuit should review _de novo_ findings based on prosecution history.

By labeling the prosecution history as intrinsic to the patent, the Court has maintained the Federal Circuit’s power to retry on appeal any question of prosecution history when construing claims or estopping patent holders from asserting infringement. That is a power the Federal Circuit uses frequently. The court relies on the prosecution history—without deference to the district court’s findings—in over one-third of cases when construing claims. That practice also makes appeals more unpredictable. Prosecution histories are often full of ambiguities and incomplete explanations of why an inventor or examiner agreed to the final claims. Unsurprisingly, recent data suggest that the

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90 _Id._
91 See _Id._ at 840.
92 _Id._
93 _Id._
94 _Id._ at 846-48 (Thomas, J., dissenting).
95 _Id._ at 847-48.
96 Anderson & Menell, supra note 4, at 44-45 (finding the Federal Circuit considered the prosecution history when 37.1% of claim terms from July 2005 through 2011).
97 See, e.g., Grober, 686 F.3d at 1341 ([T]he prosecution history . . . often produces ambiguities created by the ongoing negotiations between the inventor and the PTO.”); Abbott Labs. v. Sandoz, Inc., 566 F.3d 1282, 1289 (Fed.
Federal Circuit has improved its reversal rate of claim constructions by relying less on the prosecution history.\textsuperscript{98} Abandoning the idea that this historical record is intrinsic evidence would make appeals more predictable.

In the Parts below, this Article challenges both the unexplained conclusions that prosecution history is intrinsic evidence and that findings based on that history are purely legal determinations. To make that challenge, I rely on the body of law to which the Supreme Court has historically and recently analogized patent construction—contracts.

II. Principles of Construing an Integrated Written Instrument

In this Part, I argue that contract principles provide a better paradigm through which courts and scholars can understand a patent as a legal instrument, its prosecution history as extrinsic evidence, and what courts are using that history to do. In making this argument, I rely on the distinction between interpretation and construction advocated by contract scholars and, more recently, by Tun-Jen Chiang and Lawrence Solum in patent law. I also discuss the concept of causation of an instrument—that is, how courts determine the reason parties agreed to certain terms in an instrument before construing both contracts and patents. As discussed below, the reason why parties insert words in a contract or the PTO issues a patent often determines the outcome of a case in a way fundamentally different than other instruments, such as statutes or constitutions.

Subpart II.A will first describe some concepts in contract law that make determining the scope of a contract a more predictable process, namely, integration, interpretation, causation, and construction. Subpart II.B will then apply these concepts to patent law to show how the Federal Circuit mistreats findings based on prosecution history as pure determinations of law reviewed without deference.

A. Common Law Contract Principles

1. Integration

Unlike patent law, contract law has adopted a clear definition of integration. A contract is integrated when it represents the final expression of the parties’ agreement.\textsuperscript{99} That integration can be either partial or complete. A contract is partially integrated when the parties intend it to be the final expression of the terms covered by the contract, but not a complete expression of all agreed-upon terms.\textsuperscript{100} By contrast, a contract is completely (or fully) integrated when the parties intend it to be both

\begin{footnotesize}
\textsuperscript{98} Anderson & Menell, supra note 4, at 6, 44-45 (finding that the Federal Circuit’s reversal rate of claim term constructions dropped from 38.6\% to 25.6\% after July 2005 and that the court changed from considering the prosecution history when construing 46.9\% of terms to 37.1\% of terms).

\textsuperscript{99} See E. ALLAN FARNSWORTH, CONTRACTS § 7.3, at 431 (3d ed. 1999); RESTATEMENT (SECOND) OF CONTRACTS § 209(1) (1981) (defining “integrated agreement” as “a final expression of one or more terms of an agreement”).

\textsuperscript{100} FARNSWORTH, supra note 99, § 7.3, at 431.
\end{footnotesize}
the final and complete expression of all terms of their agreement.\textsuperscript{101} Parties commonly indicate their contract is completely integrated by inserting a merger or integration clause.\textsuperscript{102}

An integrated contract triggers the parol evidence rule, which generally bars a court from relying on extrinsic evidence—such as prior negotiations, drafts, or agreements—to contradict or supplement a contractual term.\textsuperscript{103} Even though the word “parol” means “oral,” the rule bars both oral and written extrinsic evidence alike.\textsuperscript{104} In other words, parol or extrinsic evidence includes “anything outside of the written instrument in which the terms of a contract are embodied (‘integrated’).”\textsuperscript{105} The rule ensures that the court gives legal effect to the parties’ finalized agreement rather than prior writings without the force of law.\textsuperscript{106}

The flipside of the parol evidence rule is that courts may read separate legal documents—such as two different contracts or an attached exhibit or schedule to a contract—as one integrated whole when those documents are part of the same transaction or one document incorporates the other by reference.\textsuperscript{107} If the documents are read together, courts do not consider them as extrinsic evidence or subject to the parol evidence rule.

A napkin contract illustrates the difference between an integrated and non-integrated contract. When Lionel Messi was thirteen-years-old, the secretary of Futbol Club Barcelona wrote a contract containing the most basic terms on a napkin.\textsuperscript{108} He wrote: “I, Charly Rexach, in my capacity as technical secretary for FC Barcelona, and despite the existence of some opinions against it, commit to signing Lionel Messi as long as the conditions agreed are met.”\textsuperscript{109} The napkin contract is not integrated because it does not contain the final or complete agreement between Messi’s father and Futbol Club Barcelona. An integrated contract would contain the final expression of those “conditions agreed,” such as the £40,000 per year FC Barcelona would agree to pay to Messi’s father.\textsuperscript{110} And a more formal contract containing the amount of money, length of contract, and other critical details would need to be drawn up to reach a final agreement.

\begin{footnotesize}
\begin{enumerate}
\item Id.; \textsc{Restatement (Second) of Contracts} § 210(1) (1981) (defining “completely integrated agreement” as “a complete and exclusive statement of the terms of the agreement”).
\item See, e.g., \textit{Olympia Hotels Corp. v. Johnson Wax Dev. Corp.}, 908 F.2d 1363, 1373 (7th Cir. 1990) (Posner, J.) (enforcing an integration clause).
\item \textsc{Farnsworth, supra} note 99, § 7.2, at 427; \textsc{Restatement (Second) of Contracts} § 213(1) (1981).
\item Id. at 603.
\item Edwin W. Patterson, \textit{The Interpretation and Construction of Contracts}, 64 \textit{Colum. L. Rev.} 833, 842-43 (1964).
\item See, e.g., \textit{Gordon v. Vincent Youmans, Inc.}, 358 F.2d 261, 263 (2d Cir. 1965) (“[C]losely integrated and nearly contemporaneous documents [should] be construed together.”) (internal quotation marks omitted); 11 \textit{Richard A. Lord, \textsc{Wills} on Contracts} § 30:25, at 295-96 (4th ed. 2012) (“[W]ritings which are part of the same transaction are interpreted together” including when “parties have expressed their intention to have one document’s provision read into a separate document”).
\item Id.
\item Id.
\end{enumerate}
\end{footnotesize}
Integration helps courts recognize that they find facts, not law, when looking beyond an integrated contract to the drafting history. As described below, courts look to a contract’s drafting history for two fundamental factual inquiries, that is, interpreting disputed terms and determining the origin of those terms. In contrast to patent law, courts applying common law contract principles limit factual issues for appeal by recognizing that a drafting history is a source of factual determinations that should be reviewed with deference. The Federal Circuit prolongs patent disputes by failing to recognize that the next two concepts—interpretation and causation—are factual issues.

2. Interpretation

Interpretation is the process of determining the linguistic meaning of a text.111 As Chiang and Solum explain, linguistic meaning refers to the set of ideas and concepts that language communicates to an intended audience.112 People constantly interpret words by processing their meaning while conversing or reading. That process is obvious when a person translates a foreign language into their native tongue, but it also happens intuitively in everyday communication. When someone says, “She’s cool,” for example, the listener must decide if the speaker means she is socially attractive, calm with self-control, or has a physically low temperature. The meaning of the word “cool” is ambiguous because it has more than one meaning.113 But a listener can often deduce the correct meaning based on context. When a teenager says, “She’s cool,” the phrase probably means she is socially attractive.

Contract scholars have long recognized interpretation as a distinct concept from construction. Corbin on Contracts explains that interpretation is the process by which “a court determines what meanings the parties, when contracting, gave to the language used.”114 Williston on Contracts similarly says interpretation is “the process of . . . determin[ing] the meaning of the words” in a contract.115 More recently, constitutional scholars such as Larry Solum, Keith Whittington, and Randy Barnett have discussed the distinction between interpretation and construction to clarify debates and disagreements over construing the U.S. Constitution.116

Regardless of the legal context, interpretation is a factual inquiry, not a legal inquiry. Some contract scholars consider interpretation factual because it may require a court or jury to determine the subjective meaning of the contracting parties attached to the words.117 Scholars likewise consider

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111 See Chiang & Solum, supra note 7, at 546-47.
112 Id. at 546.
115 11 Lord, supra note 107, § 30:1, at 2-8.  
117 See, e.g., 2 E. Allan Far NSworth, FARNSWORTH ON CONTRACTS § 7.14, at 336-37 (2d ed. 2004) (“[S]ince interpretation turns on the meanings that the parties actually attached and reasonably ought to have attached to the language of their agreement, it is indisputably a matter of fact, not of law.”); 11 Lord, supra note 107, § 30:1, at 10-11 (“[S]ince [interpretation] seeks to ascertain what the parties intended when they used a particular word or phrase, [it] is by its nature a factual inquiry, . . . .”).
determining the objective meaning of words in a contract or other legal instrument as factual.\textsuperscript{118} Either way, determining a word’s subjective or objective meaning is factual because the speaker’s intent or audience’s understanding controls the linguistic meaning, not some legal principle.\textsuperscript{119}

\textbf{a. The Utility and Limits of Interpretation}

Interpretation can resolve the meaning of some words but not others. It can resolve the meaning of an ambiguous word like “cool” by determining which sense of the word the speaker is using (that is, whether it means socially attractive or something else). But interpretation often cannot eliminate the vagueness of a term. Ambiguity is distinct from vagueness. The word “cool” is not only ambiguous, but also vague because it has “fuzzy boundaries” or circumstances in which it is difficult to decide if something is cool or not.\textsuperscript{120} For example, the temperature is definitely cool when it is 55° F outside, but not cool when it is 100° F. But a temperature of 65° F is a borderline case. Accordingly, understanding that “cool” means a low temperature does not eliminate uncertainty about which temperatures are cool and which are not.

Interpretation can resolve the meaning of a vague term in one instance. When the speaker adopts a specialized meaning, vague terms can take on more precise meanings. For example, knowing that the word “cool” refers to temperature—rather than social attractiveness—would not typically clarify a precise temperature. But knowing that “cool” refers to U.S. pharmacopeial conventions would clarify that it refers to temperatures between 49° and 59° F.\textsuperscript{121}

Interpretation can also resolve the meaning of unfamiliar or foreign terms.\textsuperscript{122} For example, first-time readers of \textit{Harry Potter} may be confused by Rubeus Hagrid’s rebuke of Vernon Dursley when Dursley forbids Harry Potter from attending Hogwarts’ School of Witchcraft and Wizardry.\textsuperscript{123} Hagrid says to Dursley, “I’d like ter see a great Muggle like you stop him” from going to Hogwarts.\textsuperscript{124} He then adds: “A Muggle, . . . it’s what we call nonmagic folk like them,” referring to Dursley.\textsuperscript{125} That’s interpretation. No legal principle or court holding can control the meaning of “Muggle.” Rather, the meaning of that word is a matter of fact that depends on the subjective intent of J.K. Rowling or accepted understanding of her readers.

But the Federal Circuit does not recognize that the meaning of a word to a particular audience is a factual inquiry, even a foreign, technical term. Indeed, before \textit{Teva}, the court held that interpretation

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\item \textsuperscript{118} \textit{See Farnsworth, supra} note 99, § 7.14; Chiang & Solm, \textit{supra} note 7, at 547 (“[L]inguistic meaning . . . is factual.”); \textit{id.} at 552 (treating interpretation as a determination of “an objectively correct linguistic meaning”).
\item \textsuperscript{119} \textit{See Restatement (Second) of Contracts} § 212 cmt. a (1981) (explaining that even when courts say “the ‘objective’ meaning of [a party’s] language or other conduct prevails over his ‘subjective’ meaning” “the operative meaning is found in the transaction and its context rather than in the law or in the usages of people other than the parties”).
\item \textsuperscript{120} Chiang and Solm, \textit{supra} note 7, at 549.
\item \textsuperscript{122} \textit{id.} at 551-52.
\item \textsuperscript{123} J.K. \textit{Rowling, Harry Potter and the Sorcerer’s Stone} 51-52 (1997).
\item \textsuperscript{124} \textit{id.} at 52.
\item \textsuperscript{125} \textit{id.} at 53.
\end{itemize}
of a patent’s terms based on any extrinsic evidence is a determination of law reviewed de novo. The court’s failure to recognize interpretation is factual—even when based on extrinsic evidence—perplexed some scholars. That failure is perplexing because patents have a unique audience—a “person skilled in the art”—whose understanding of terms may be unfamiliar or foreign to lay judges.

b. Extrinsic Evidence As a Source of Interpretation

A text does not always define the words it uses. Indeed, interpretation often requires examining material outside the text to determine the meaning of ambiguous or unfamiliar language. As Corbin on Contracts puts it, “Language in any agreement does not interpret itself” but the parties’ “meaning is typically discoverable only by resort to extrinsic and parol evidence.” While the treatise overstates the point—because contracts sometimes define terms—courts frequently rely on extrinsic evidence to interpret words.

Judge Friendly’s classic opinion in Frigaliment Importing Co. v. B.N.S. International Sales Corp., illustrates the point. In that case, BNS agreed to sell Frigaliment a quantity of eviscerated chicken—that is, “[US Fresh Frozen Chicken, Grade A, Government Inspected” that weighed a certain amount. One might not think the word “chicken” is ambiguous or foreign, but the parties in Frigaliment disputed the word’s meaning. BNS argued that “chicken” meant any bird of the species, including older chickens for “stewing.” Frigaliment argued that “chicken” meant only a “young chicken, for broiling or frying.” The word “chicken” thus could have meant at least two different things to people of the chicken trade, chicken suitable for stewing or chicken suitable for broiling or frying. Frigaliment claimed that BNS breached their contracts by shipping older, stewing chickens to Frigaliment and sought to recover the difference in value between the older and younger chickens.

Judge Friendly found that the “objective meaning of ‘chicken’” included the older, stewing chickens based on a collection of extrinsic evidence: dictionaries, definitions in government regulations, trade usage, market prices, cablegrams in German, and statements made during negotiation by Frigaliment’s representative, Mr. Stovicek. As for the latter two types of evidence, Friendly credited the testimony of BNS’s negotiator, Ernest Bauer. Bauer testified that Stovicek said that by using “chicken” in his cablegrams, he meant “Huhn,” which is a German word encompassing both broilers

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126 See, e.g., Cybor, 138 F.3d at 1456.
127 See, e.g., Moore, supra note 4, at 246 (determining “what the ordinary and customary meaning of the term would be to one of skill in the art” is “clearly a factual inquiry”).
129 5 PERILLO, supra note 114, § 24.3; cf. 11 LORD, supra note 107, § 30:1, at 10-11 (“[I]nterpretation’ may be a question of law or fact depending on whether the language of the contract is ambiguous or otherwise requires resorting to extrinsic evidence.”).
131 Id. at 117.
132 Id.
133 Id.
134 Id. at 121.
135 Id.
(Brathuhn) and stewing chicken (Suppenhuhn). Accordingly, Friendly found that “chicken” in both contracts objectively meant all birds of the species. Friendly then construed the contract to reflect the linguistic meaning of “chicken.” Note that Friendly did not hold that “chicken” included all species as a matter of law. As with any other finding based on extrinsic evidence, an appellate court would review Judge Friendly’s finding that “chicken” included the entire species for clear error.

Frigaliment stands in contrast to how courts consider the drafting history of a patent. While the cablegrams in Frigaliment would be extrinsic evidence in a contract dispute, the corollary written history of the inventor’s negotiation with the PTO would be considered intrinsic evidence in a patent suit. That makes all the difference in a patent appeal because both the Supreme Court and Federal Circuit hold that findings based on prosecution history must be reviewed de novo as a determination of law.

c. Interpretation Versus Construction

Frigaliment held that the linguistic and legal meaning of “chicken” were the same. Friendly’s opinion thus shows no gap between the interpretation and construction of the contract. But the distinction between interpretation and construction is sometimes obvious. In TransCore v. Electronic Transaction Consultants Corp., for example, the Federal Circuit construed a settlement agreement to encompass patents that fell outside the linguistic meaning of the agreement. To settle a prior law suit, TransCore covenanted not to sue a company called Mark IV for infringing patents covering automated toll collection technology. Specifically, TransCore covenanted not to sue Mark IV “for future infringement of U.S. Patent Nos. 5,805,082” and some other enumerated patents. The parties added that the covenant “shall not apply to any other patents,” including any “issued in the future.” TransCore later alleged that Mark IV’s business partner (Electronic Transaction Consultants) infringed a patent that “issued in the future,” U.S. Patent No. 6,653,946, which issued after the settlement agreement. But the business partner argued that Transcore’s covenant covered this newly issued patent because it was using Mark IV’s licensed technology.

Neither party disputed that that U.S. Patent No. 5,805,082 and the other listed patents meant the patents specifically enumerated in the contract. But the Federal Circuit held that the covenant not to sue extended beyond the plain meaning of the words to encompass the newly issued patent (the ‘946 patent) as a matter of legal estoppel. The court reasoned that because the newly issued ’946 patent “was broader than, and necessary to practice” the closely related and older ’082 patent, TransCore was

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136 Id. at 118.
137 Id.
139 563 F.3d 1271 (Fed. Cir. 2009).
140 Id. at 1273.
141 Id.
142 Id.
143 Id. at 1273.
144 Id. at 1273-74.
145 See id. at 1278-79.
estopped from asserting the additional patent.146 The court explained that when a patent holder has licensed a party to practice a certain technology, it may not obtain and assert a subsequent patent covering that same technology—otherwise the licensor could easily “derogate or detract” from the property right to practice its technology.147

Transcore thus shows that a court may construe a contract to have a legal meaning broader than the linguistic meaning of its terms. In other words, interpretation of the enumerated patents did not determine the outcome of the case, but construction based on equitable principles did.

3. Causation

Causation generally refers to the act that causes some effect or the reason something happened.148 You might say that the cause of typhoid fever is the bacteria Salmonella enterica.149 In torts, a court might say that causation is one of the necessary elements of establishing negligence—that is, a plaintiff must show that the defendant’s actions caused the plaintiff’s injury.150 But the concept of causation is not limited to showing the cause of an injury or some type of damage.

A legal document or term likewise have causes or reasons that explain why the document exists in its final form. A historian may determine the reason why Thomas Jefferson inserted certain words in the Declaration of Independence, for example, when finding that the Committee of Five amended Jefferson’s original “We hold these truths to be sacred and undeniable” to truths “self-evident.” The historian might also find that the Continental Congress approved of the declaration only after Jefferson removed references to the slave trade.151 This Article uses causation in a narrow sense to mean the cause or reason why parties agreed to a legal instrument and its terms. Legal scholars and courts do not use “causation” in this sense. But the term aptly describes a process commonly performed by courts and juries. In contract cases, for example, courts often determine how the instrument was formed or how a particular term was introduced. A court may determine whether the parties introduced a term by amendment, whether they executed the contract based on one party’s fraudulent misrepresentation, or whether they struck an agreement based on a mutual misunderstanding.152 All of these questions—amendment, fraudulent misrepresentation, and mutual misunderstanding—concern what caused the parties to agree to words in a contract.

Like interpretation, determining causation is a factual inquiry. When determining the cause of a disease or an injury, a person searches for facts, not some legal principle. The same is true of written

146 Id. at 1279.
147 Id. at 1278-79 (internal quotation marks omitted).
148 See WEBSTER’S THIRD NEW INTERNATIONAL DICTIONARY 356 (3d ed. 2002) (defining “causation” to mean “the act or process of causing” or “the act or agency by which an effect is produced”).
149 See generally Michael McClelland et al., Comparison of genome degradation in Paratyphi A and Typhi, human-restricted serovars of Salmonella enterica that cause typhoid, 36 NATURE GENETICS 1268 (2004).
151 DAVID MCCULLOUGH, JOHN ADAMS 122, 131 (2001)
152 See, e.g., RESTATEMENT (SECOND) OF CONTRACTS § 214 (explaining that a court may admit prior or contemporaneous “[a]greements and negotiations” to show a writing is integrated, or to show “illegality, fraud, duress, mistake, lack of consideration, or other invalidating cause”).
instruments. A court or jury that determines the reason why parties inserted words into a written instrument searches for historical facts that explain how the parties reached a final agreement. The causes driving the parties’ agreement are beyond the control of a court’s or jury’s normative preferences. In other words, the law cannot tell the fact finder how an instrument or its terms were formed, but only the consequences of how they were formed.

In commercial contract cases, that inquiry may depend on documentary evidence of the parties’ negotiations, including emails, memoranda, and drafts.153 But the paper record of an instrument does not always explain the reason parties agreed to certain terms. A court may need to rely on witness testimony or draw inferences from written evidence or testimony to determine those reasons.

Volker v. Connecticut Fire Insurance Co. illustrates how a court determines causation when examining an instrument’s history and how the court subsequently construes that instrument.154 In that case, Mr. Volker purchased a yacht and insured it with a policy he orally negotiated with an insurance agent, both of whom agreed that the yacht would be “laid up and kept out of commission” from October 1 until April 1 as a condition of the policy.155 Volker paid the premium, and the insurance agent sent an application to the agency’s underwriters.156 Following industry practice, the underwriters drafted up the policy with a lay-up clause running from November 1 to May 1—instead of the orally agreed lay-up term—and sent the policy back to the agent, who filed it away without mentioning the change in the lay-up clause to Volker.157 On April 9, when the written policy required the yacht to be laid up, Volker fueled up the yacht for an outing and accidently ignited the boat on fire.158 In Volker’s suit to recover the yacht’s cost from the insurance company, the court found that the underwriter’s change of the lay-up clause together with the agent’s failure to communicate that change to Volker amounted to a misrepresentation or “inequitable conduct.”159 To remedy that conduct, the court reformed the contract to reflect the lay-up period originally agreed by Volker and the agent.160

The Volker court affirmed the trial court’s determination of all the facts leading up to the agent filing the insurance policy in his desk—including the oral agreement, paid premium, and underwriter’s change. Those facts are extrinsic to the written policy and represent the cause of the final lay-up clause. As a matter of equity, the court construed the lay-up clause to cover the period originally agreed by Volker and the agent, not as finally written. This later determination is an act of construction because it defines the rights of the parties, that is, Volker’s right of insurance against the insurance company. As suggested by the Restatement of Contracts, Volker is an example of a court reforming a contract when a

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155 Id. at 885.
156 Id.
157 Id.
158 Id.
159 Id. at 887.
160 Id. at 886-87.
“party’s fraudulent misrepresentation” induced the counter party’s assent. Reformation is a specific type of construction because it defines the legal rights of contracting parties.

Volker demonstrates that causation is distinct from interpretation. The reasons or causes driving parties to agree to an instrument or its terms do not necessarily depend on a specific meaning of the terms, which may not be in dispute. In Volker, that distinction is clear—the reason for the lay-up clause depended on the underwriter’s change and insurance agent’s misrepresentation of the lay-up period, not on some dispute over the meaning of “April” or “May.”

In other cases, however, the distinction between causation and interpretation is more subtle, but can make all the difference in outcome. The Restatement’s view of Frigaliment shows that distinction. The Restatement recasts Frigaliment as a case of mutual misunderstanding. Stovicek subjectively believed that “chicken” meant young “broilers” or “fryers,” but Bauer believed it meant any bird of the species, including older “fowl” and tendered the same to fulfill the contract. Had Judge Friendly determined that Stovicek and Bauer “each acted in good faith and that neither had reason to know of the [other’s] difference in meaning,” as the Restatement suggests, then Friendly may have held the contract unenforceable because of “an entire failure of agreement.” Friendly’s determination that “chicken” meant the entire species is interpretation; the Restatement’s determination that the parties each understood “chicken” differently and had no reason to know of the other’s meaning is a determination of causation. Frigaliment thus shows that the reasons parties’ agreed to an instrument—indeed independent of interpretation—can lead to a different outcome.

The Federal Circuit takes an inconsistent approach to findings of cause behind a patent and its terms. On the one hand, the Federal Circuit recognizes that courts find facts when determining whether an inventor made a fraudulent misrepresentation to the PTO, including determinations of intent and the but-for cause of the PTO issuing a patent. That is consistent with how Volker treated the insurance agency’s misrepresentation. On the other hand, the Federal Circuit holds that determining the reason an inventor amended her claims during prosecution—for purposes of prosecution history estoppel—is almost exclusively a determination of law reviewed de novo.

4. Construction

Construction is the act of determining the legal meaning or effect of an instrument, including whether the instrument has no legal effect. The legal effect may be broader or narrower than the

161 Restatement (Second) of Contracts § 166 cmt. a, illustr. 1 & Reporter’s Note (1981) (basing illustration 1 for reformation of a contract induced by fraudulent misrepresentation on Volker).
162 See id.
163 See id.
164 Id. cmt. d & illustr. 4.
165 See Am. Calcar, 768 F.3d at 1189.
166 See Shire Dev., 746 F.3d at 1331.
167 See 5 Perillo, supra note 114, § 24.3 (explaining that “[t]hrough ‘construction’ ‘a court determines the legal operation of the contract—its effect upon the rights and duties of the parties’); 11 Lord, supra note 107, § 30:1, at 1 (explaining that construction “involves the court determining, as a matter of law, not the sense of the words or symbols but the legal meaning of the entire contract”) (footnotes omitted); Restatement (Second) of Contracts §
text’s linguistic meaning. In *TransCore*, for example, the court construed a patent license to cover not only the enumerated patents in the license, but a newly issued patent unmentioned by that license.\textsuperscript{168} Construction may also have little to do with an instrument’s linguistic meaning. In *Volker*, for example, the court construed the lay-up clause for the yacht based on the insurance agent’s supposed misrepresentation of the lay-up period to *Volker*, not on the linguistic meaning of the written clause. As another example, the *Restatement* would hold the contract in *Frigaliment* unenforceable based on mutual misunderstanding, not on the linguistic meaning of “chicken.” *Volker* and the *Restatement* show that the legal meaning of an instrument may not depend on its linguistic meaning, but on ca—that is, the reason the parties struck an agreement.

In contrast to interpretation and causation, construction is a legal inquiry. As *Corbin on Contracts* puts it, determining “the legal operation” of an instrument “is the result of applying rules of law to the facts.”\textsuperscript{169} That is an “irreducibly normative” inquiry.\textsuperscript{170} Determining what “U.S. Patent No. 5,805,082” means linguistically in *Transcore*, for example, does not resolve what that patent number *should* mean as a matter of law or whether the contract should cover a later and related patent. Nor does determining that Stovicek and Bauer understood “chicken” differently resolve whether the contract *should* have legal effect or be unenforceable. In both cases, the court decides the impact that interpretation or causation have on the instrument’s legal effect.

Construction further differs from interpretation and causation in that a court can construe an instrument, but not extrinsic evidence.\textsuperscript{171} It would make little sense to say that a court construed a drafting history rather than a contract because a court does not pronounce the legal effect of that history. Without a final agreement, the drafting history would not ordinarily have legal effect on the parties. The same is true of other forms of extrinsic evidence in contract law. The parties’ prior relationship, the subject matter of the transaction, trade usage, and the parties’ course of dealing typically do not impose mutual legal obligations under contract law. The instrument does. Courts thus look to a drafting history not to determine legal effect, but to determine the linguistic meaning of words or the reason those words entered a contract, that is, for interpretation and causation.\textsuperscript{172}

In contrast to interpretation and causation, normative principles ultimately drive construction. To be sure, courts construe instruments *based* on facts found from extrinsic evidence. That is precisely what the courts in *Frigaliment* and *Volker* did. But the extrinsic evidence does not dictate the construction; normative legal principles do. As Chiang and Solum explain, some courts rely on textualism to adopt constructions that faithfully reflect linguistic meaning, others rely on utilitarian

\textsuperscript{200} cmt. c (contrasting interpretation with “legal effect” and explaining that “[p]roperly interpreted, an agreement may not be enforceable as a contract”).

\textsuperscript{168} 563 F.3d at 1273-74.

\textsuperscript{169} 5 PERILLO, supra note 114, § 24.30.

\textsuperscript{170} Chiang & Solum, supra note 7, at 554.

\textsuperscript{171} Cf. 5 PERILLO, supra note ___ § 24.3 (criticizing a case for describing “construction” of “extrinsic and/or parol evidence”).

\textsuperscript{172} See RESTATEMENT (SECOND) OF CONTRACTS § 212 cmt. b (1981) (listing forms of extrinsic evidence as sources for determining “plain meaning”); *Volker*, 91 A.2d at 885 (considering *Volker’s* and insurance agent’s oral negotiation and underwriter’s change to determine source of lay-up clause).
economics to adopt constructions that maximize efficiency, and yet others rely on deontology to adopt constructions that further a moral view. 173 Judge Friendly took a textualist approach by construing “chicken” to reflect the objective linguistic meaning. The court’s reformation of contract in Volker—while based on how the lay-up clause was formed—furthered the moral view that misrepresenting an agreement is wrong.

Finally, construction can solve problems or fill gaps that interpretation and causation cannot. Some terms are irreducibly vague or ambiguous such that, even with context, the court cannot resolve their meaning. For example, leases often obligate a landlord to not “unreasonably withhold” consent to the tenant subletting or assigning the property. But the phrase “unreasonably withhold” is so vague that it leaves uncertain when the landlord’s refusal is unreasonable. Accordingly, courts must construe the phrase to hold, for example, that a landlord reasonably refuses a proposed subtenant when that subtenant has a poor payment history, but a landlord unreasonably refuses a subtenant when the lessee has guaranteed payment. 174 Courts cannot simply determine the linguistic meaning of “unreasonably” to resolve such cases and often find nothing in a drafting history concerning such boilerplate language. They must instead give the contract legal effect to approve or forbid the landlord’s behavior when the term is irreducibly vague or decide the contract has no effect at all.

That is precisely what the Federal Circuit did on remand in Teva. It held that the term “molecular weight” was so indefinite that a person of skill in the art could not reasonably ascertain the term’s meaning. 175 As a result, the court held the patent claims invalid and without legal effect. 176 That is an act of construction. But the Federal Circuit remains confused on how to consider a patent’s prosecution history. The court holds determinations based on that history are determinations of law as though they were acts of construction. In Part II.B below, this Article challenges that approach by applying the contract principles of integration, interpretation, causation, and construction.

B. Applying Contract Principles to Patents

The contract principles discussed above provide a useful paradigm to understand a patent, its prosecution history, and what courts use that history to do when construing a patent. In other words, the principles of integration, interpretation, causation, and construction apply to patent disputes in the same or similar way as they apply to contract disputes. The point here is not that a patent is more like a contract than another instrument, such as a statute, but that contract principles accurately describe a patent and how courts use prosecution histories to determine facts before construing patents.

To demonstrate the paradigm, this Subpart will apply contract principles to patent cases where the court determines the outcome of the case based on the prosecution history—that is, in cases of prosecution disclaimer, inequitable conduct, and prosecution history estoppel.

173 See Chiang & Solum, supra note 7, at 554.
174 See Gary L. Hall, Annotation, Construction and Effect of Provisions in Lease that Consent to Subletting or Assignment Will Not Be Arbitrarily or Unreasonably Withheld, 54 A.L.R.3d 679 (1979) (citing cases).
176 See id. (holding claims invalid).
1. Patents Are Integrated Instruments

Like many contracts, a patent is an integrated instrument and (at times) “a fully integrated legal instrument.” That is so for two reasons. First, a patent includes only those claims that both the applicant and examiner agree cover a patentable invention in a “final memorial.” None of the rejected claims appear in a patent. Similar to other integrated instruments, a patent can be amended or superseded only by a formal post-grant process in which the patent holder and PTO again agree that amended or new claims cover a patentable invention. Take Edison’s patent on the phonograph, for example. That patent is three pages long and ends with four claims. Those three pages comprise a completely integrated legal instrument without any rejected claims, correspondence with the Patent Office, or subsequent amendments.

To be sure, an applicant can apply for and get multiple patents that cover different aspects of the same basic technology. These related patents issue as so-called continuing applications—such as patents that issue from divisional, continuation, or continuation-in-part applications from the same parent application. These related patents are sometimes called a family. But the individual patents comprising a family are nonetheless final in that they contain claims that the applicant and examiner agreed are patentable; and the entire family of patents comprise a complete and final expression of the agreed-upon claims covering patentable inventions. Like contracts that incorporate one another or that are part of the same transaction, courts construe related patents as though they were part of an integrated whole.

Second, federal statute defines the final contents of a patent. Congress has declared that a patent includes a short title of the invention, a grant to the patentee, drawings, and specification. As the statute says, the “specification and drawing shall be annexed to the patent and be a part of such

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177 Markman, 52 F.3d at 978; see also Vanderveer v. Erie Malleable Iron Co., 238 F.2d 510, 514 (3d Cir. 1956) (opining that “construing the claims” is a question “of law in the sense that, as in the case of other integrated documents, it is a question for the court and not the jury”); Catalin, 79 F.2d at 594.
178 Auto Pneumatic, 247 F. at 328 (opining that claims are “like the language of any other formal statement drawn up as the final memorial of the parties’ intentions”); see also Philips, 415 F.3d at 1317 (contrasting the prosecution history as “an ongoing negotiation between the PTO and the applicant” with the specification as “the final product of that negotiation”); 37 C.F.R. § 1.311 (requiring PTO to issue a “notice of allowance” when applicant is “entitled to a patent under the law”).
179 See, e.g., 35 U.S.C. § 251 (permitting reissue of patents to correct a mistake); id. § 307(a) (directing PTO issue reexamination “certificate cancelling” unpatentable claims, “confirming” patentable claims, and “incorporating” any “amended or new” patentable claim); id. § 318(b) (same for inter partes review certificate); id. § 328 (same for post-grant review certificate).
180 See ‘521 patent.
181 See id. § 121 (defining divisional application); Pfizer, Inc. v. Teva Pharm. USA, Inc., 518 F.3d 1353, 1359 (Fed. Cir. 2008) (describing divisional and continuation-in-part applications); Z4 Technologies, Inc. v. Microsoft Corp., 507 F.3d 1340, 1344 (Fed. Cir. 2007) (describing continuation application).
182 See, e.g., Gemalto S.A. v. HTC Corp., 754 F.3d 1364, 1371 (Fed. Cir. 2014) (opining that disputed patent term “must be construed in light of the same terms recited” in a related patent).
patent,” just as an exhibit or annex is part of an integrated contract. 184 Moreover, the specification—not the prosecution history—must contain a written description of the invention that teaches a skilled artisan “to make and use” the invention. 185 It must also conclude with “claims particularly pointing out and distinctly claiming . . . the invention.” 186 The final claims are thus integrated into the specification as part of a single instrument. As Oskar Liivak has argued, the statute prescribes that both the specification and claims describe or claim the same thing—that is, the “invention.” 187 Accordingly, one fundamental principle of patent law is that the “[c]laims must be read in view of the specification, of which they are a part.” 188

A patent’s integrated nature has significant implications. Like a contract, anything outside of a patent (or related patents) is extrinsic evidence, including the prosecution history. 189 Congress has neither directed that the prosecution history be part of the patent nor charged that it define a patent holder’s right to exclude. Unlike the specification, a patent does not issue with the prosecution history annexed. Considering the prosecution history as extrinsic evidence also comports with how courts historically considered that record and with how courts currently consider its corollaries—negotiation and legislative histories—as extrinsic to a legal instrument. 190

The doctrine of integration frames what a court is and is not doing when it considers a patent’s prosecution history to construe claims or otherwise determine the patent’s scope. Specifically, a court looks to that history primarily for two factual inquiries—interpretation and causation—not construction. The following subparts show examples of how those inquiries precede and serve as the basis of construction.

2. Interpretation of Patent Claims

Interpretation is a familiar concept underlying every construction of a patent claim. The Federal Circuit holds that “claim interpretation” requires courts to give terms their “ordinary and customary meaning” as understood by a skilled artisan “at the time of the invention.” 191 To be clear, the court does not distinguish between interpretation and construction, but conflates the two into a single question of

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184 Id. § 154(a)(4).
186 Id. § 112(b).
187 See Oskar Liivak, Rescuing the Invention from the Cult of the Claim, 42 SETON HALL L. REV. 1, 6 (2012) (“The claims are not abstract legal boundaries, but rather, they ‘particularly point[] out and distinctly claim[]’ the actual substantive invention described by the specification.”).
188 Markman, 52 F.3d at 979.
189 Cf. Patterson, supra note 105, at 842-43.
190 See supra Part I.A.4; 2A NORMAN J. SINGER & J.D. SHAMBIE SINGER, SUTHERLAND STATUTES AND STATUTORY CONSTRUCTION § 48:1, at 547 (7th ed. 2014) (describing the “legislative, executive, judicial, and nongovernmental” history of as statute as “‘extrinsic’ aids to interpretation”); Hershon v. Gibraltar Bldg. & Loan Ass’n, Inc., 864 F.2d 848, 851 (D.C. Cir. 1989) (“[T]he parol evidence rule, . . . prohibits the use of extrinsic evidence (e.g., prior negotiations) to contradict a final, written agreement, and admits of but a few narrow exceptions.”).
191 Phillips, 415 F.3d at 1313; cf. Westinghouse Elec. & Mfg. Co. v. Formica Insulation Co., 266 U.S. 342, 350-51 (1924) (holding patent scope “is to be determined in the light of the state of the art at the time of the invention”).
law. But determining the plain and ordinary meaning to a skilled artisan is unequivocally an act of interpretation, as this Article uses the term.

Similar to interpretation in contract law, determining how a skilled artisan would have understood a term at a fixed point in time is a factual inquiry. Whether a court bases its finding on contextual clues from the instrument itself (including the claims, drawings, and specification) or on extrinsic evidence (including the prosecution history, expert testimony, or dictionaries) the law does not control how “people in the art actually understand the language [of a claim term] to communicate.” It would be odd to say the law controls the linguistic meaning of “chicken” in Frugaliment and just as odd to say that the law controls the meaning of a word like “molecular weight” in Teva.

Chiang and Solum argue that Federal Circuit judges mainly disagree over the proper construction of a claim term, not its interpretation. While I agree Federal Circuit judges sometimes disagree over construction—at least when the claims and specification clarify a term’s proper interpretation—their dispute focuses on interpretation when they rely on the prosecution history to resolve the meaning of ambiguous or vague terms. These inquiries are similar to contract cases where a court or jury may interpret a disputed term based on extrinsic evidence, including the drafting history. A couple of examples illustrate the point.

a. Interpretation of an Ambiguous Term

A patent claim and the specification may be so ambiguous that a court relies on the prosecution history to decide among possible meanings of a claim term. That happened in Microsoft Corp. v. Multi-Tech Sys., Inc. Multi-Tech asserted a set of patents claiming, for example, a method for “sending the outgoing packets to a remote site over a telephone line using a modem.” While no single term was ambiguous, the claim as a whole left unclear whether the modem must transmit data over a standard telephone line only (such as lines associated with Plain Old Telephone Service) or may also transmit data over a packet-switched network (such as the Internet). During prosecution, Multi-Tech’s patent attorney explained that the patent’s specification “disclose[d] a communications system [that] operates over a standard telephone line,” which “is commonly referred to in the art as a ‘plain old telephone service’ (POTS) line and establishes a point-to-point connection between telephone equipment on each

192 Harries v. Air King Products Co., 183 F.2d 158, 164 (2d Cir. 1950) (L. Hand, C.J.) (“The question [is] of how the art understood the term, which was plainly a question of fact.”); Pall Corp. v. Micron Separations, Inc., 66 F.3d 1211, 1225 (Fed. Cir. 1995) (Mayer, J., concurring) (arguing that appellate judges “are in no position to declare the state of knowledge in the art or that scientific hypotheses are correct as a matter of law”); Moore, supra note 4, at 246 (determining “what the ordinary and customary meaning of the term would be to one of skill in the art” is “clearly a factual inquiry”).
193 Chiang & Solum, supra note 7, at 612.
194 Id. at 612-13.
195 See RESTATEMENT (SECOND) OF CONTRACTS § 214 (1981) (allowing courts to admit evidence of prior negotiations to establish, for example, “the meaning of the writing”).
196 357 F.3d at 1347.
197 Id. at 1347 (quoting U.S. Patent No. 5,764,627 col. 47 ll. 15-18). Although the court construed three similar phrases from asserted claims in Microsoft, I will focus on only one of the three phrases for simplicity.
198 See id. at 1344-46 & n.2.
end of the line.”199 The majority seized on this statement to find that Multi-Tech had clearly disclaimed a packet-switched network and that the claim language “over a telephone line” meant exclusively over a standard telephone line from “point-to-point.”200

Judge Rader dissented. He argued the prosecution history was not so limiting because the examiner said that “the claims do not recite a limitation of a POTS telephone connection” and that certain prior art that used a local area network (a packet-switched network) satisfied “the telephone connection.”201 Rader further opined that Multi-Tech could not have clearly disclaimed a packet-switched network because a skilled artisan would have understood Multi-Tech’s later addition of “modem” to the claims as “a clear indication that the inventor intended to connect the invention to packet-switched networks, such as the Internet.”202

Microsoft illustrates a dispute over interpretation based on the prosecution history, not construction. The majority and dissent disagreed over how a skilled artisan would have understood the phrase sending data “over a telephone line” in light of the prosecution history. Nevertheless, the judges in Microsoft (as in all other prosecution disclaimer cases) debated anew the prosecution history as purely “a question of law” that the court “review[s] de novo,” as if it were solely a question of construction.203

Calling prosecution disclaimer a pure matter of law obscures what the Federal Circuit is actually doing in Microsoft and other prosecution disclaimer cases—both interpretation based on the prosecution history and construction. The court determines the meaning of “over a telephone line” in the prosecution history before deciding to give the term that narrow legal meaning.

The distinction between the meaning of “over a telephone line” to a skilled artisan and construction of that phrase would have been clear had Learned Hand been on the panel. Even if Hand would have agreed with the majority’s interpretation in light of the prosecuting attorney’s statements, he would have refused to construe claims based on such statements short of amendment.204 Had the Microsoft panel disagreed over whether to give “over a telephone line” meaning based on prosecution statements—with Hand on the panel—the debate would have been over construction, consistent with Chiang and Solum’s hypothesis. But the Federal Circuit no longer questions whether prosecution statements can limit the legal meaning of a claim. Instead, judges in prosecution disclaimer cases such as Microsoft primarily debate the proper interpretation of a term based on the prosecution history.

b. Interpretation of a Vague Term with a Specialized Meaning

Federal Circuit judges also frequently disagree over interpretation when they rely on prosecution history to find a patent holder has adopted a specialized meaning of a vague term. In

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199 Id. at 1349 (emphasis added).
200 See id. at 1347-48.
201 Id. at 1356 (Rader, J., dissenting).
202 Id. at 1356.
203 Id. at 1346-47.
204 See Auto Pneumatic, 247 F. at 328; cases cited supra note 52.
Verizon Services Corp. v. Vonage Holdings Corp., for example, Verizon asserted a patent describing a “localized wireless gateway system that allows wireless telephones to register with the system and make phone calls.”\(^{205}\) Verizon alleged that Vonage’s cordless telephones (with accompanying base stations) and Wi-Fi devices embodied the claimed “localized wireless gateway systems.”\(^{206}\) But the court debated the vague term “localized.” That term could encompass an area as large as an airport or shopping center, as the specification described, or as small as a few feet, as the prosecution history suggested.\(^{207}\) In other words, “localized” has borderline cases that make unclear what is local and what is not—similar to how “cool” leaves unclear which temperatures are in fact “cool.”

The prosecution history in Verizon allegedly clarified those borderline cases. During prosecution of a related patent, Verizon’s patent attorney distinguished the invention from certain prior art by saying: “Although the term ‘wireless’ is used in [the prior art references], ‘wireless’ does not mean ‘local wireless,’ as claimed by the present invention, in the sense of a cordless phone that is \textit{restricted to operate within a few feet from a base station} (i.e. wireless handsets).”\(^{208}\) The same attorney later conceded that a different prior-art reference disclosed “a local cellular or local wireless system, such as, for example, a cordless phone that is \textit{restricted to operate within a few feet from a base station}.”\(^{209}\) The majority found these statements clearly disclaimed systems “with a range greater than a ‘few feet’” and held the claimed “localized” system must likewise have a range of only a few feet.\(^{210}\)

Chief Judge Michel dissented. He found that the attorney’s statements in prosecution could not “overpower” the meaning of “localized” suggested by the specification’s embodiments with ranges far greater than a few feet, including wireless systems in an airport, shopping center, office, and factory.\(^{211}\) While neither the majority nor dissent couched their disagreement in terms of how a skilled artisan or competitor would understand “localized,” that is precisely the debate between the two. In prosecution disclaimer cases, the Federal Circuit says courts should view the prosecution history from a skilled artisan’s or competitor’s perspective.\(^{212}\)

As in Microsoft, the Verizon panel debated the linguistic meaning of a term or phrase in light of the prosecution history, that is, a debate over interpretation of “localized.” The panel did not debate whether claims could be construed based on statements in prosecution, as Learned Hand would have proscribed. Microsoft and Verizon thus illustrate a larger point. Cases where prosecution history

\(^{205}\) 503 F.3d 1295, 1299 (Fed. Cir. 2007).
\(^{206}\) \textit{id.} at 1301.
\(^{207}\) \textit{Compare id.} at 1312-13 (Michel, C.J., dissenting-in-part) (discussing specification), \textit{with id.} at 1306-07 (majority discussing prosecution history).
\(^{208}\) \textit{id.} at 1307.
\(^{209}\) \textit{id.}
\(^{210}\) \textit{id.}
\(^{211}\) \textit{id.} at 1312-13 (Michel, C.J., dissenting-in-part).
\(^{212}\) See Pharmacia & Upjohn Co. v. Mylan Pharmns., Inc., 170 F.3d 1373, 1377 n.2 (Fed. Cir. 1999) (skilled artisan’s perspective); \textit{Cybor}, 138 F.3d at 1457 (competitor’s perspective); cf. Atofina v. Great Lakes Chem. Corp., 441 F.3d 991, 996 (Fed. Cir. 2006) (explaining the court determines claim meaning based on “the prosecution history, from the perspective of one of ordinary skill in the art”).
controls the linguistic meaning of disputed terms primarily raise factual questions about a term’s meaning to a person of skill in the art, not legal questions.

3. Causation for a Patent and Claim Terms

Parties also commonly dispute the cause behind the PTO issuing a patent or the reason the inventor inserted certain claim language in patent cases. Indeed, identifying the causes behind the grant of a patent and its terms frequently determine the outcome of patent disputes.\textsuperscript{213} As described in Part I.A, courts determine whether perjured testimony, false or suppressed evidence, or deliberately withheld prior art caused the PTO to grant a patent and (if so) often hold the patent unenforceable based on that inequitable conduct.\textsuperscript{214} Courts also determine whether an applicant narrowed a claim by amendment during prosecution to satisfy the Patent Act and (if so) whether that amendment should estop the patent holder from asserting something infringes when she surrendered that something by amendment.\textsuperscript{215} Recall that a court would have estopped Edison from asserting a phonograph with flat discs infringed his patent if he had amended his claims to distinguish his invention from phonographs with flat discs.

Patent disputes are uniquely dependent on the asserted patent’s origins because the outcome—by holding of unenforceability or estoppel—may depend not on what the claim terms mean, but on whether they are the result of good-faith prosecution or amendment. That means that two hypothetical patents with identical specifications and claims could have different constructions based on their prosecution histories. The following Subparts explain why findings about causation based on prosecution history underpin inequitable conduct and prosecution history estoppel, not findings of interpretation or construction.

a. Inequitable Conduct

When a court finds an applicant committed inequitable conduct—by fraudulently misrepresenting evidence or deliberately withholding prior art—it does not determine a claim’s linguistic meaning or construe a patent. The court instead determines the “but for” cause of the PTO issuing a patent, that is, determining whether the deception induced the PTO to issue a patent.\textsuperscript{216} If the court finds the applicant committed inequitable conduct, it must then decide whether to construe the patent as unenforceable after balancing the equities.\textsuperscript{217} That courts frequently strike down a patent as unenforceable does not change that holding a patent as unenforceable is distinct from finding its inventor’s committed inequitable conduct.

\textsuperscript{213} See supra Subparts I.A.1 and I.A.3.
\textsuperscript{214} See, e.g., Therasense, 649 F.3d at 1287 (citing cases).
\textsuperscript{215} Festo, 535 U.S. at 741.
\textsuperscript{216} See Therasense, 649 F.3d at 1291 (holding that a defendant must show the PTO would not have granted a patent “but for” the misrepresentation or omission to establish inequitable conduct).
\textsuperscript{217} See id. at 1292 (holding inequitable conduct should render patent unenforceable only when “the patentee’s misconduct resulted in the unfair benefit or receiving an unwarranted claim”); Star Scientific, Inc. v. R.J. Reynolds Tobacco Co., 537 F.3d 1357, 1365 (Fed. Cir. 2008) (“[E]ven if a threshold level of both materiality and intent to deceive are proven by clear and convincing evidence, the court may still decline to render the patent unenforceable.”).
Therasense shows how the finding of inequitable conduct concerns causation and is distinct from interpretation or construction. In that case, Therasense (a subsidiary of Abbott Laboratories) asserted a patent disclosing disposable blood glucose strips that tested for diabetes. One claim required those strips to use an electrode “exposed to [a] whole blood sample without an intervening membrane.” The parties disputed whether Therasense’s representatives accurately described a prior Abbott patent during prosecution. The critical passage in that patent said, “Optionally, but preferably when being used on live blood, a protective membrane surrounds [parts of the strip], permeable to water and glucose molecules.” To distinguish Therasense’s claim from the Abbott patent, the prosecuting attorney argued—and an Abbott scientist submitted an affidavit saying—that “[o]ne skilled in the art would not read” the “optionally, but preferably” language “to teach that the use of a protective membrane with a whole blood sample is optionally or merely preferred.” That argument ultimately convinced the patent examiner to issue the Therasense patent.

But the prosecuting attorney and scientist failed to disclose some damning evidence: Abbott had made contrary representations to the European Patent Office (EPO) years earlier. When prosecuting the European counterpart of the Abbott patent, Abbott’s attorneys said in a brief to the EPO that the very same “optionally, but preferably” language was “unequivocally clear” and meant that “[t]he protective membrane is optional,” not required. The Therasense district court found that the PTO would not have granted Therasense’s patent had the examiner known of the EPO briefs because they refuted the point of novelty upon which the examiner granted the patent. The district court further found that the prosecuting attorney and scientist knew that the EPO briefs were material—that is, they knew but-for their concealment of the briefs the patent would not have issued—and that they intended to deceive the PTO by not disclosing those briefs. In short, the prosecuting attorney and scientist’s deception caused the PTO to grant the patent.

Like all modern inequitable conduct cases, the court in Therasense determined the but-for cause of the patent issuing, which is a factual inquiry. The Federal Circuit recognizes as much because it reviews a district court’s “finding of materiality and intent for clear error” and “ultimate finding of inequitable conduct based on those underlying facts for abuse of discretion.” That is true even when the district court makes findings and draws inferences based on a written record. The Therasense district court, for example, found that the EPO briefs were material and that Theresanse’s representatives knew of those briefs based purely on American and European prosecution histories. None of those findings concerned the interpretation or construction of the patent or its terms. The construction came only after the district court balanced the equities to hold the patent.

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218 649 F.3d at 1282.
219 Id.
220 Id.
221 Id.
223 Id. at 862 (emphasis added).
224 Id. at 863-64.
225 Id. at 865-66.
227 Therasense, 864 F. Supp. 2d at 868.
unenforceable.\textsuperscript{228} While the Federal Circuit recognizes that determining a patent’s origins is factual and distinct from its legal effect for purposes of inequitable conduct, it does not recognize the same for prosecution history estoppel, as explained in the next Subpart.

b. Prosecution History Estoppel

Prosecution history estoppel likewise involves an inquiry into causation. At bottom, the doctrine depends on figuring out the reason a claim term was introduced by amendment, not on determining a claim term’s meaning. Recall that prosecution history estoppel precludes a patent holder from asserting infringement under the doctrine of equivalents, such as how a court might forbid Edison asserting infringement in the hypothetical example above. An accused device may infringe under the doctrine of equivalents when it does not satisfy the literal claim language, but is an equivalent. Accordingly, neither the doctrine of equivalents nor prosecution history estoppel focuses on the literal meaning of the claim terms. As an initial step for estoppel to apply, however, a court must determine whether the applicant narrowed the literal scope of a claim by amendment, which necessarily requires the court to interpret claim language.\textsuperscript{229}

All the other inquiries focus on the reason the applicant amended the claim or failed to describe the equivalent with that amendment, which are inquiries about causation. Specifically, the court must determine whether the applicant amended the claim to satisfy the Patent Act—say to distinguish prior art—and (if so) presumes that the patent holder intended to surrender the territory between the original claims and the amended claims.\textsuperscript{230} To overcome that presumption, a patent holder may show that it could not have reasonably described the accused equivalent at the time of the amendment, that its purpose in making the amendment was tangential to the alleged equivalent, or that it could not foresee the equivalent at the time of the amendment.\textsuperscript{231} Ultimately, the rebuttal inquiry focuses on the cause behind the amendment—whether to get a patent, the patent holder intended the amendment to surrender territory between the original claims and the amended claims.

While courts presume that the patent holder intended to surrender territory, that presumption does not change that determining the reason for an amendment is a causal (and factual) inquiry. Indeed, the Federal Circuit’s opinions have masked the nature of that inquiry by holding that a narrowing amendment triggers a presumption of surrender and that determining whether that presumption arises—and whether the patent holder has rebutted that presumption—are almost exclusively “question[s] of law” reviewed without deference to the trial court.\textsuperscript{232}

But the ultimate effect of the doctrine—estopping the patent holder from asserting that the patent covers an equivalent—is an act of construction and a legal question. While U.S. courts have

\textsuperscript{228} Id. at 869.
\textsuperscript{229} See Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 344 F.3d 1359, 1366-67 (Fed. Cir. 2003) (en banc) (holding the “first question in a prosecution history estoppel inquiry is whether an amendment . . . narrowed the literal scope of a claim”).
\textsuperscript{230} See Festo, 535 U.S. at 741.
\textsuperscript{231} See id. at 740-41.
\textsuperscript{232} Festo, 344 F.3d at 1367.
applied some form of prosecution history estoppel since the 1800s, construing a patent to estop a patent holder from asserting infringement is still distinct from determining the reason for an amendment.\textsuperscript{233} That distinction is clear in Canada, where courts reject prosecution history estoppel as a basis for construing patent scope.\textsuperscript{234} If a Canadian court were to determine the reason for an amendment, it could only make that determination as a matter of fact, not law.

\textit{Festo}, which is the most well-known prosecution history estoppel case, demonstrates the point. Festo held a patent claiming a cylinder with a piston that drives a member with magnetic force.\textsuperscript{235} Think of a cylinder with an extending rod moving things on a conveyor belt. During prosecution, the PTO rejected the original claims because the examiner could not determine whether the piston worked by motor or magnetism and because one of the claims referred back to more than one claim, which the Patent Act prohibits.\textsuperscript{236} In response to the rejection and without explanation, the inventor amended his claims to require a “sleeve made of a magnetizable material” surrounding the driven member.\textsuperscript{237} Along with the amendment, the inventor submitted a couple of German patents describing pistons that drive the member with magnetism,\textsuperscript{238} one of which described a sleeve around the piston “made of non-magnetic material.”\textsuperscript{239} The cylinder (10), piston (16), driven member (18), and sleeve (30) in \textit{Festo} are shown in the figure below.

![Diagram of Festo's cylinder](image)

Festo alleged that Shoketsu’s cylinder infringed Festo’s patent under the doctrine of equivalents because the accused cylinder contained all the asserted claim elements, except that it used a non-magnetizable “sleeve” made of aluminum alloy.\textsuperscript{240} But Festo was estopped from asserting Shoketsu’s cylinder infringed. The Supreme Court held the inventor inserted the magnetizable limitation to comply with the Patent Act’s prohibition against referencing multiple claims—“if not also because of the

\begin{footnotesize}
\begin{enumerate}
\item[233] See, e.g., Shepard v. Carrigan, 116 U.S. 593 (1886).
\item[235] 493 F.3d 1368, 1371, 1373 n.3 (Fed. Cir. 2007).
\item[236] Id. at 1372 (citing 35 U.S.C. § 112).
\item[237] Id. (quoting U.S. Patent No. 4,354,125 col.6 ll.2-3).
\item[238] Id. at 1373.
\item[239] Id. at 1373.
\item[240] Id. at 1374.
\end{enumerate}
\end{footnotesize}
[German] prior art”—and that he presumably surrendered any sleeve made of non-magnetizable material.\footnote{Festo VIII, 535 U.S. at 741.} On remand, the Federal Circuit determined—based purely on the prosecution history—that the inventor did not insert the “magnetizable” limitation for some reason tangential or unrelated to the Patent Act because the history “reveals no reason for the ‘magnetizable’ amendment.”\footnote{Festo X, 344 F.3d at 1371-72.} The Federal Circuit later held that a skilled artisan could have foreseen Shoketsu’s aluminum alloy sleeve because the inventor’s original claim would have covered non-magnetizable sleeves and one of the German patents disclosed the same.\footnote{Id. at 1382-83.}

Each of these holdings, the Federal Circuit said, is a matter of law, except that foreseeability depended on underlying factual issues.\footnote{Id. at 1375.} In other words, the Federal Circuit holds the reason the inventor amended his claims and the reason the inventor did not write the claims to cover an equivalent are all questions of law. That misdescribes what the Federal Circuit is doing. The law does not control the reason behind an amendment. Just like the cause of a disease or the origin of an historical custom, the cause of an amendment (or the reason one failed to write claims capturing an equivalent) is a question of fact. The court in Volker determined the reason the underwriter changed the lay-up period as a matter of fact, just as a historian determines the reason Jefferson amended language in the Declaration of Independence. Those inquiries are no less factual when a judge makes them in a patent case.

III. Payoffs of Applying Contract Principles to Patents and Prosecution Histories

The distinctions between intrinsic and extrinsic evidence, as well as law and fact, can make all the difference in patent litigation. These distinctions can drive decisions of which issues to appeal, whether to appeal at all, and whether to settle. That is because the intrinsic-extrinsic and law-fact divides determine the standard of review on appeal. As long as the Federal Circuit reviews de novo determinations based on a prosecution history as intrinsic evidence, the court gives litigants the incentive to push through trial and retry factual disputes based on that history on appeal.

In this Part, I argue that applying contract principles to patent construction has three significant payoffs for patent litigation. First, treating a patent as an integrated instrument eliminates a legal fiction the Federal Circuit developed to justify unrestricted review of the prosecution history. Second, recognizing that prosecution history is extrinsic evidence—and that courts rely on that history for interpretation and causation—suggests that the Federal Circuit should review a district court’s findings based on that history for clear error under Rule 52(a)(6). Third, such clear-error review would provide a consistent approach to all inquiries into prosecution history—including claim construction, prosecution history estoppel, and inequitable conduct.

A. A Coherent View of the Patent Instrument
The Supreme Court and Federal Circuit have established an intrinsic-extrinsic divide that misdescribes a patent as a legal instrument. It makes little sense to consider a patent as “a fully integrated written instrument,” and its prosecution history as intrinsic to that instrument when that history often includes rejected claims, prior art, and a labyrinth like record of the negotiation between the patent holder and PTO. The courts’ overly broad definition of intrinsic evidence has consequences on appeal. Judges sometimes emphasize the supremacy of a patent to reach one outcome or the prosecution history to reach another. The Federal Circuit’s frequent disagreements over prosecution disclaimer show not only that judges disagree over a word’s meaning, but also over whether to emphasize prosecution statements over the patent instrument (or vice versa) to reach a result. The majority and dissent in Verizon, for instance, respectively champion prosecution statements and the patent specification to advocate different results.

Applying the integration principle to patents would help resolve this inconsistent treatment of prosecution history and force judges to more carefully consider their reliance on that history. That is the effect integration has had in contract law, where many courts more carefully consider whether to rely on a contract’s drafting history. Courts often resist considering drafting history absent specific reasons, and often say, for example, that “[e]xtrinsic evidence of the parties’ intent may be considered only if the agreement is ambiguous.” By contrast, patent jurists sometimes write opinions as though the “file wrapper is part[] of the patent.” To be sure, the Federal Circuit says the prosecution history is “less useful” because it “lacks the clarity of the specification.” But in practice, judges hotly dispute the clarity of particular histories and sometimes construe the patent based primarily on those histories without much consideration of the instrument. Contract law’s concept of integration would offer a crisper way to think of a patent than the current jurisprudence. To paraphrase Learned Hand, if integration means anything, it applies to a patent.

To be clear, I am not advocating that the Federal Circuit abandon prosecution disclaimer or prosecution history estoppel. Those doctrines can ensure a patent holder does not assert a monopoly over something the inventor did not invent. But this Article argues that treating a prosecution history as intrinsic evidence sometimes causes judges to give short shrift to the patent. Cases such as Verizon—where the court held that a couple prosecution statements clearly disavowed “localized wireless”

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245 Markman, 52 F.3d at 978.
246 See supra cases cited note 51.
247 Compare 503 F.3d at 1306 (Dyk, J.) (emphasizing prosecution statements concerning “local”), with id. at 1313 (Michel, C.J., dissenting in part) (emphasizing specification embodiments of localized wireless system).
248 See RESTATEMENT (SECOND) OF CONTRACTS § 214 (enumerating reasons to justify admitting “negotiations prior to or contemporaneous with the adoption of a writing” to construe a contract).
250 Phillips, 415 F.3d at 1317.
251 Markman, 52 F.3d at 980 (internal quotation marks omitted).
252 See Saffran, 712 F.3d at 569-70 (O’Malley, J., concurring in part) (lamenting that in finding prosecution disclaimer, the majority “beg[an] with a discussion of the prosecution history”, elevating it to a prominence it does not deserve under Phillips” and found “disclaimer and then search[ed] the specification for disclosures consistent with their take away from the prosecution history”).
253 Catalin, 79 F.2d at 594.
systems from the specification covering signals beyond a few feet—suggest the Federal Circuit sometimes does not give enough weight to the patent as a finalized instrument. Recognizing that prosecution history is extrinsic would make it more difficult for judges to ignore the patent and focus on the prosecution history.

Courts should sometimes find that a patent holder’s statements or amendments in prosecution limit claim scope, including on appeal. For example, patent holders sometime argue their claims cover something narrow during prosecution to get a patent only to later argue the claims are broader during litigation.\textsuperscript{254} Treating prosecution history as extrinsic evidence will still permit courts to find such arguments narrow patents. But it will also recognize that courts base such findings on unique facts that happened outside of the patent and that the patent deserves weight as an integrated instrument.

B. Rule 52(a)(6) Clear-Error Review

The principles of integration, interpretation, and causation also suggest that a district court’s findings based on prosecution history should be reviewed for clear error. Such review is contrary to \textit{Teva}’s holding, but consistent with its logic. In \textit{Teva}, the Court held that findings based on extrinsic evidence, such as expert testimony, are fact findings subject to clear-error review under Rule 52(a)(6).\textsuperscript{255} That rule requires an appellate court to defer to a trial judge’s “[f]indings of fact, whether based on oral or other evidence,” unless those findings are “clearly erroneous.” Accordingly, the Federal Circuit may no longer reverse findings based on extrinsic evidence unless it is firmly convinced those findings are mistaken.\textsuperscript{256} But the Court in \textit{Teva} did not consider the argument that prosecution history is extrinsic evidence or the subject of factual findings.\textsuperscript{257} Contract principles suggest that argument best describes the nature of prosecution history and how courts use it for interpretation and causation.

Indeed, several Federal Circuit judges recently advocated that findings from prosecution history should be reviewed for clear error. Dissenting in \textit{Lighting Ballast Control LLC v. Philips Electronics North America Corp.}, four Federal Circuit judges opined that “inferences . . . drawn from the prosecution history, including whether a disclaimer of claim scope has occurred,” are factual inferences that the Federal Circuit should review for clear error.\textsuperscript{258}

\textsuperscript{254} See, e.g., Gammino v. Sprint Commc’ns Co., L.P., 577 F. App’x 982, 989 (Fed. Cir. 2014) (holding inventor’s “repeated and unqualified” statements in prosecution disclaimed patent scope and limited patent for blocking potentially fraudulent international access calls to blocking all such calls); Revolution Eyewear, Inc. v. Aspex Eyewear, Inc., 175 F. App’x 350, 355 (Fed. Cir. 2006) (holding inventor clearly disclaimed scope of patent claiming clip-on magnet glasses by arguing seventeen times in prosecution that the invention did not require clip-on support beyond magnets).

\textsuperscript{255} 135 S. Ct. at 841.

\textsuperscript{256} See \textit{Anderson}, 470 U.S. at 573-74.

\textsuperscript{257} See \textit{id.} at 841 (noting that “all parties agree” that the “prosecution history” is “intrinsic to the patent” and determinations on such intrinsic evidence are a “determination of law”).

\textsuperscript{258} 744 F.3d 1272, 1316 (Fed. Cir. 2014) (O’Malley, J., dissenting); \textit{see also} \textit{Phillips}, 415 F.3d at 1332 (Mayer, C.J., dissenting, joined by Newman, J.) (opining that “whether a construction was disallowed during prosecution” or “how one of skill in the art would understand statements during prosecution” are “inherently factual” questions that should be reviewed “in accordance with Rule 52(a)”.

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1. Courts of Appeals Review Findings Based on Documentary Evidence for Clear Error

Jurists and scholars may question whether judges find facts based on a prosecution history when that history is purely a written record. But people commonly draw factual inferences from mere documents. When a detective deduces part of a mystery based on a written clue or letter—say by deciphering written symbols—she draws inferences of fact, not law. When a historian deduces the meaning or origins of a document—say by comparing the final Declaration of Independence to Jefferson’s drafts—he likewise draws factual inferences. And when a judge relies on a written prosecution history to infer the meaning of a scientific term to a skilled artisan—or the reason a prosecuting attorney amended a claim—she no less draws inferences of fact, not law.

Jurists and scholars may also doubt that appellate courts defer to a trial court’s inferences drawn from mere paper when—as the argument goes—an appellate judge can review that paper as well as a trial judge. Indeed, “[f]or many years,” the Courts of Appeals debated whether they should defer to a district court’s “inference[s] drawn from undisputed facts or documentary evidence.” But the Supreme Court ended that debate by repeatedly holding that clear-error review applies to inferences drawn from “physical or documentary evidence” and by amending Rule 52(a)(6) to clarify that it applies to findings based on “solely documentary evidence.”

That rule applies to findings based on documents similar to prosecution histories in both patent and other litigation. Federal appellate courts review “finding[s] of equivalence” in patent suits based on mere “documents” for clear error. They likewise review findings based on a contract’s written drafting history and other written extrinsic evidence for clear error. They similarly review inferences

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259 Cf. Orvis v. Higgins, 180 F.3d 537, 539 (2d Cir. 1995) (Frank, J.) (opining that when a district judge “decides a fact issue on written evidence alone, [the appellate court is] as able as he to determine credibility, and so we may disregard his finding”), superseded by Fed. R. Civ. P. 52(a), as recognized in Zervos v. Verizon New York, Inc., 252 F.3d 163 (2d Cir. 2001).

260 See, e.g., ARTHUR CONAN DOYLE, THE RETURN OF SHERLOCK HOLMES 64-98 (1918) (drawing inferences based on papers with hieroglyphics); id. at 369-403 (drawing inferences from a letter).


263 FED. R. CIV. P. 52 advisory committee’s note, 1985 amendment.


265 See, e.g., Winforge, Inc. v. Coachmen Indus., Inc., 691 F.3d 856, 871 (7th Cir. 2012) (reviewing for clear error finding that contract lacked mutuality of assent based on contract drafts); Mid-W. Conveyor Co. v. Jervis B. Webb Co., 92 F.3d 992, 998, 1001 (10th Cir. 1996) (reviewing for clear error interpretation of ambiguous term in a license agreement based in part on other, foreign licenses executed by the patentee); GNB Battery, 65 F.3d at 624-25 (reviewing for clear error finding of parties’ intent regarding ambiguous term based on a letter exchanged during negotiations); Lundgren v. Freeman, 307 F.2d 104, 113 (9th Cir. 1962) (reviewing for clear error findings of mutual mistake of contracting parties based on “written evidence alone”).
drawn from patents as findings of fact for purposes of antitrust conspiracies and patent validity.\textsuperscript{266} And just before Congress formed the Federal Circuit, the Third Circuit reviewed findings based on a prosecution history for clear error when construing patent claims.\textsuperscript{267}

2. The Federal Circuit Should Review Findings Based on Prosecution Histories for Clear Error

Rule 52(a)(6) should likewise apply to prosecution histories in patent suits. Specifically, the Federal Circuit should review for clear error a district court’s findings based on prosecution histories for four reasons—all of which were championed by Charles Alan Wright.\textsuperscript{268} First, clear-error review preserves judicial resources whereas de novo review of factual inferences would negligibly improve the “accuracy of fact determination[s] at a huge cost in diversion of judicial resources.”\textsuperscript{269} The Federal Circuit’s frequent disagreements over prosecution disclaimer demonstrates that principle: de novo review does not necessarily improve the accuracy of the inferences a district court draws from the prosecution history, but does produce a lot of spilled ink between majority and dissent.\textsuperscript{270} If a district court incorrectly concludes that a prosecution statement clearly disavows (or fails to disavow) claim scope, the Federal Circuit can correct those errors through clear-error review. Indeed, the standard for prosecution disclaimer lends itself to clear-error review. The Federal Circuit can reverse for clear error if a patent holder has “clearly and unmistakably disclaimed” patent scope, but should think carefully before reversing when judges on the panel disagree.\textsuperscript{271}

De novo review also does little to improve accuracy in prosecution history estoppel cases because Festo’s presumption of surrender tips the scale in favor of estoppel. Lee Petherbridge has found that the Federal Circuit has increasingly affirmed district court findings of prosecution history estoppel since Festo.\textsuperscript{272} As in other contexts, “[i]t [can] be tremendously inefficient [when] litigants [are] forced to litigate factual issues not only at trial but again at the intermediate appellate level and before the Supreme Court,” when clear-error review would be sufficient.\textsuperscript{273}

Second, conventional wisdom holds that clear-error review of fact findings deters appeals whereas de novo review likely multiplies them, discourages settlement, and lengthens cases remanded

\textsuperscript{266} See Singer Mfg., 374 U.S. at 194 n.9 (holding district court’s findings based on patents, licensing agreements, and assignment of patent were clearly erroneous for antitrust conspiracy); Winner Int’l Royalty Corp. v. Wang, 202 F.3d 1340, 1350 (Fed. Cir. 2000) (finding no clear error in district court’s finding that prior-art reference taught away from and could not be combined with another reference for purposes of patent invalidity).

\textsuperscript{267} See Studiengesellschaft Kohle mbH v. Eastman Kodak Co., 616 F.2d 1315, 1334-35 (5th Cir. 1980) (holding that district court’s conclusion that inventor intended to limit patent-in-suit was not “clearly erroneous” based on inferences drawn from U.S. and foreign prosecution histories and testimony).


\textsuperscript{269} Anderson, 470 U.S. at 574-75.

\textsuperscript{270} See cases cited supra note 51.

\textsuperscript{271} Omega, 334 F.3d at 1327.


after reversal. Jurists and commentators have argued that this is true in both patent and other cases. And any experienced litigator can appreciate that a retrial of factual issues will provide the losing party an incentive to seek appellate review.

The economic incentives of patent litigation support the conventional wisdom. While patent appeals are expensive, the cost of discovery and trial “are by far the most expensive aspects of litigation.” The comparatively lower cost of appeal and de novo review often weigh in favor of trying issues again before the Federal Circuit. As an extreme example, the parties in Festo litigated the case for nearly twenty years with two trips to the Supreme Court and two en banc hearings before the Federal Circuit. To be sure, Festo resolved an important legal question: whether an absolute or rebuttable presumption of surrender applied to a narrowing amendment. But the Federal Circuit’s holding that de novo review applied to nearly every aspect of estoppel fomented multiple appeals in Festo and has likely done so in other estoppel cases.

Third, the de novo standard impairs confidence in district courts and diminishes them as the primary “finder of facts.” The Supreme Court has explained that “trial on the merits should be the main event . . . rather than a tryout on the road” and that an appellate court’s “function is not to decide factual issues de novo.” The Federal Circuit’s rigid application of de novo review of claim construction—and relatively high reversal rate—has long frustrated district courts and created the perception that their claim-construction findings are ephemeral. One judge recently lamented that a district court is a “‘speed bump on the way to the Federal Circuit.’” Another said that the Federal Circuit’s “high reversal rate [of claim construction] demoralizes many federal district court judges.”

That is true of both prosecution history estoppel and claim construction. The Federal Circuit has increasingly reversed findings of infringement under the doctrine of equivalents based on prosecution

274 Wright, supra note 268, at 771 (citing Pendergrass v. New York Life Ins. Co., 181 F.2d 136, 138 (8th Cir. 1950)).
275 See, e.g., Trading Techs. Int’l, Inc. v. eSpeed, Inc., 595 F.3d 1340, 1363 (Fed. Cir. 2010) (Clark, J., concurring) (opining that de novo review of claim construction may “discourag[e] settlement, encourag[e] appeals, and, in some cases, multiply[] the proceedings”); Anderson & Menell, supra note 4, at 70 (arguing the cost of de novo review is “more appeals and retrial following reversals”); Borgmann, supra note 273, at 1201 (opining that “de novo fact review would likely multiply appeals and undermine public confidence in trial courts’ decisions”).
276 Einer Elhauge & Alex Krueger, Solving the Patent Settlement Puzzle, 91 TEX. L. REV. 283, 305 (2012); see also AMERICAN INTELLECTUAL PROPERTY LAW ASSOCIATION, REPORT OF THE ECONOMIC SURVEY 34 (2013) (median cost of a patent-infringement suit is $3 million through the end of discovery and $5.5 million for the entire litigation when amount in controversy more than $25 million).
277 Festo XIII, 493 F.3d at 1371.
278 See Festo IX, 344 F.3d at 1367-68.
279 FED. R. CIV. P. 52 advisory committee’s note, 1985 amendment; see also Wright, supra note 268, at 771.
280 Anderson, 470 U.S. at 575.
282 See, e.g., Anderson & Menell, supra note 4, at 39.
history estoppel. Moreover, David Schwartz has shown that district court judges do not improve with experience in adopting claim constructions that the Federal Circuit upholds on appeal. While Schwartz’s analysis covers constructions based on the patent alone, it also encompasses constructions based on prosecution history. Indeed, prosecution history is part of the problem. The Federal Circuit has improved its reversal rate in part by relying less on the prosecution history to construe claims. Further research needs to be done to isolate how the Federal Circuit reviews claim constructions based on prosecution history and prosecution history estoppel. But Schwartz’s study is consistent with the argument that de novo review of fact findings from the prosecution history has diminished a judge’s role as fact finder because the Federal Circuit frequently reverses findings of experienced jurists.

Fourth, district judges will sometimes be better positioned to evaluate complex and voluminous prosecution histories than an appellate court. Unlike the Federal Circuit, a district court can spend more time reviewing lengthy and complex histories, questioning technical experts, and receiving tutorials or additional evidence describing the underlying technology. With more resources at her disposal, a district judge can sometimes better evaluate how a person of ordinary skill in the art would understand statements and amendments during prosecution.

These four reasons come with a caveat. More empirical research would help evaluate whether the justification for clear-error review of findings from prosecution history prove accurate in patent litigation. That research would include identifying specific rates of reversal and dissent in prosecution disclaimer and prosecution history estoppel cases.

C. Consistent Standard of Review

Finally, recognizing that findings from a prosecution history are factual and subject to clear-error review would provide a consistent approach to all inquiries into prosecution history—including for claim construction, prosecution history estoppel, and inequitable conduct. As noted above, the Federal Circuit reviews determinations of intent and materiality in an inequitable conduct analysis for clear error—even when those determinations are based on a written prosecution history. By contrast, the court

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285 See Petherbridge, supra note 272, at 1399 (opining based on empirical analysis that “the Federal Circuit has significantly increased the rate at which it reverses trial court judgments of infringement by equivalents, and that it uses legal rules to do so”); id. tbl.1 (showing increase reversal rate of infringement by equivalents based on amendment-based and argument-based prosecution history estoppel).
286 See Schwartz, supra note 4, at 223.
287 See Anderson & Menell, supra note 4, at 6, 44-45.
288 See, e.g., Wright, supra note 268, at 782.
289 Lighting Ballast, 744 F.3d at 311-12 (O’Malley, dissenting); Cybor, 138 F.3d at 1477 (Rader, J., dissenting and concurring in part).
290 See Therasense, Inc. v. Becton, Dickinson & Co., 593 F.3d 1289, 1300-08 (Fed. Cir. 2010) (reviewing findings of intent and materiality for “clear error” based primarily on foreign and domestic prosecution histories), reh’g en banc granted, opinion vacated other grounds, 374 F. App’x 35 (Fed. Cir. 2010).
reviews strictly de novo determinations of prosecution history estoppel and claim construction, including all findings based on prosecution history and of prosecution disclaimer. 291

It would make more sense to subject all findings based on prosecution history to clear error review. Consistent, straightforward clear-error review of all prosecution history inquiries is more intellectually honest where all findings based on that history are factual, whether for interpretation or causation. One of the Federal Circuit’s cardinal sins of appellate review is that it treats certain extrinsic evidence (the prosecution history) as if it were an object of construction (like an instrument). Because a court may only give legal effect to an instrument—and make finding based on the instrument’s history—a more logical approach to appellate review would be to subject findings of the same kind to the same clear-error review.

IV. Counterarguments

Practitioners and scholars may resist considering prosecution history as extrinsic evidence and findings based on that history as factual. Some of that resistance comes from stare decisis. Courts have considered prosecution histories as intrinsic evidence and determinations based on those histories as legal conclusions for decades, at least for purposes of claim construction. 292 But the intrinsic tradition is comparatively young, dating back to the Federal Circuit’s predecessor, the U.S. Court of Claims, and adopted by the Federal Circuit only in 1995. 293 As discussed below, the arguments that prosecution history is or should be intrinsic—and that finding should be reviewed de novo as legal conclusions—are flawed.

A. Prosecution History Is A Public Document Associated with a Patent

Some judges and commentators have suggested that a prosecution history is intrinsic evidence because it is part of an undisputed public record and associated with a patent for the life of the patent’s term. 294 But a document’s availability to the public and recitation of undisputed facts do not determine whether that document is intrinsic to a legal instrument. 295 Evidence is intrinsic to a patent only when it is part of the instrument itself or to a related patent. Plenty of documents that are both public and contain undisputed facts are extrinsic evidence. For example, courts may take judicial notice of learned

293 See Markman, 52 F.3d at 980; Autogiro Co. of Am. v. United States, 384 F.2d 391, 397 (Ct. Cl. 1967) (describing the “file wrapper” as one “of three parts of the patent”).
294 See Markman, 52 F.3d at 980 (“This ‘undisputed public record’ of [PTO] proceedings . . . is of primary significance in understanding the claims.”); 1 R. Moy, MOY’S WALKER ON PATENTS § 4:52, at 4-162 to -163 (4th ed. 2006) (“[P]rosecution history apparently is also considered part of the patent document because it is a public document that remains associated with the actual patent for the life of the patent term.”).
295 See T. Whitley Chandler, Prosecution History Estoppel, the Doctrine of Equivalents, and the Scope of Patents, 13 HARV. J.L. & TECH. 465, 483-84 (2000) (arguing that status as an “undisputed public record” does not turn prosecution history to intrinsic evidence when judges may take judicial notice of extrinsic evidence that is also part of such a record).
treatises, which are public and sometimes recite undisputed facts but nevertheless comprise extrinsic evidence. Nor does associating evidence with a legal instrument make it intrinsic. Courts do not consider the drafting or legislative histories of a contract or statute intrinsic to those instruments for purposes of construction. Accordingly, the argument that a prosecution history is intrinsic to a patent because it is public, undisputed, and associated with the instrument fails.

B. Findings Based on Prosecution History (Like Legislative History) Are Legal Determinations

Some jurists argue that courts should construe patents like statutes and treat findings based on a prosecution history as legal determinations—just as courts treat findings based on a legislative history as a legal conclusion. Justice Thomas’s dissent in Teva relies on this statutory analogy. A patent is more like a statute than a contract—the argument goes—because a patent “provide[s] rules that bind the public at large.” Courts consider the prosecution history to determine the objective meaning of the patent claims—the argument continues—not to determine the subjective meaning of the patent holder, as they do when construing contracts, but to determine objective meaning, as they do when construing statutes.

This comparison of patents to statutes is flawed for several reasons. Patents are not “baby statutes.” The Supreme Court has often analogized patents to contracts or deeds (rather than statutes) and often explained its reliance on prosecution history by reference to contract law. As the Teva majority opines, statutes are typically directed to the public at large (though not always) and negotiated by a legislative body with an adversarial public based on a broad set of social circumstances. By contrast, patents are typically directed to a smaller portion of the public; negotiated by “a few private parties, experts, and administrators”; and typically concern technical subject matter. In many ways, patents are more like contracts than statutes.

But arguments by analogy have limits. A patent is a unique instrument that shares some characteristics with statutes and some with contracts. The point of this Article is not that a patent is more like a contract than a statute. It is that contract theory provides a better paradigm to understand

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296 See, e.g., Brown v. Piper, 91 U.S. 37, 41-44 (1875) (taking judicial notice of an encyclopedia in patent case); Fed. R. Evid. 201 (permitting judicial notice of “fact that is not subject to reasonable dispute” when it “can be accurately and readily determined from sources whose accuracy cannot reasonably be questioned”).
297 See sources supra note 190.
298 See Markman, 52 F.3d at 987 (comparing appellate review of “legislative history” to review of “the specification and prosecution history” and opining that courts determine claim meaning from this “public record,” not “subjective meaning”).
299 See Teva, 135 S. Ct. at 845-49 (Thomas, J., dissenting).
300 Id. at 847.
301 See id. (“[A] patent holder’s actual intentions have effect only to the extent that they are expressed in the public record”); Markman, 52 F.3d at 987 (suggesting that courts consider prosecution history to determine objective meaning from “public record”).
302 Markman, 52 F.3d at 998 n.8 (Mayer, J., concurring).
303 See, e.g., Teva, 135 S. Ct. at 840 (majority opinion) (citing cases).
304 Teva, 135 S. Ct. at 840.
305 Id.
a patent as an instrument and how courts consider prosecution history and construe patents. At least two reasons show that contract law’s approach to integration, interpretation, and causation better captures certain concepts underlying patent construction than statutory construction.

First, the legislative history analogy fails to account for how the causes driving the PTO to issue a patent can determine outcomes in patent disputes. Whereas courts construe patents and contracts as unenforceable based on the reasons the parties agreed to the finalized document, that is, based on the fraud or misrepresentations that caused the parties to agree to the instrument, they do not hold statutes unenforceable when it “was procured by fraud” or by misrepresentation. In other words, inequitable conduct has no corollary in statutory construction.

Second, analogizing prosecution history to legislative history often conflates interpretation and construction, whereas analogizing prosecution history to a contract’s drafting history preserves the distinction. Courts have no difficulty in contract law recognizing that a jury that relies on draft agreements to interpret an ambiguous term’s meaning—or to determine whether a party made material misrepresentations—finds facts, not law. The same is true when a court considers a prosecution history to interpret claim terms. To be sure, courts frequently conflate or ignore the distinction between interpretation and construction, at least when considering the legal instrument itself. But to ignore or conflate the distinction makes for sloppy thinking and obscures the control a court has over deciding to construe an instrument contrary to its linguistic meaning.

Recognizing that courts find facts when interpreting words is particularly appropriate in patent law. Congress generally addresses the public, judges, or lawyers in the pages that comprise a legislative history. Inventors address scientists—“person[s] skilled in the art”—in patents and their prosecution histories. While this Article deliberately uses easy-to-understand examples of claim language, patent cases often concern disputes over highly technical terms—like “molecular weight” or “anti-CD20 antibody”—that are difficult for lay judges to understand. As Learned Hand put it, judges can be

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306 See, e.g., Therasense, 649 F.3d at 1292.
307 See 1 Norman J. Singer & J.D. Shambie Singer, Sutherland Statutes and Statutory Construction § 13:17, at 640 (7th ed. 2010) (“An act will not be declared invalid because its passage was procured by fraud and imposition practiced on the legislature.”) (collecting cases).
308 See, e.g., United States v. Keitel, 211 U.S. 370, 386 (1908) (recognizing the distinction between interpretation and construction, but noting that “in common usage, interpretation and construction are usually understood as having the same significance”); Farnsworth, supra note 99, § 7.7, at 453 (noting that courts “have often ignored [the interpretation-construction distinction] by characterizing the process of construction as that of ‘interpretation’ in order to obscure the extent of their control over private agreement”).
309 Amgen Inc. v. Hoechst Marion Rousel, Inc., 469 F.3d 1039, 1040-41 (Fed. Cir. 2006) (Michel, C.J., dissenting from denial of rehe’g en banc) (opining that the analogy of “claim construction to statutory construction” is flawed because judges ask themselves what “the disputed term mean[es] to me,” when interpreting a statute, but ask what a disputed term means to an “average artisan in the relevant field of technology” when interpreting patents and prosecution histories).
311 See, e.g., Biogen, 713 F.3d at 1095.
“altogether incompetent” to decide the meaning of a technical term.312 Because interpreting patent terms “depends upon familiarity with specific scientific problems and principles not usually contained in the general storehouse of knowledge and experience,” it only makes sense to recognize that judges find facts when looking at a prosecution history to interpret terms.313

C. District Courts Will Construe the Same Patent Differently Based on Prosecution History

Jurists and scholars may worry that by construing patents and their histories like contracts, district courts sitting in different jurisdictions may construe the same patent to have a different scope based on its prosecution history. The concern here is that different findings based on the same prosecution history will be entitled to deference at the Federal Circuit and potentially result in different outcomes in close cases.314 Indeed, patent holders sometimes assert the same patent in different jurisdictions.

This concern is more hypothetical than practical. When a patent holder asserts the same patent in different jurisdictions, district courts can avoid inconsistent factual findings by consolidating pre-trial proceedings before a single panel in multidistrict litigation, as has been done before and recently in multiple patent suits.315 Even if district courts were to construe the same patent differently based on its prosecution history, the Federal Circuit has exclusive jurisdiction over patent appeals and can hear appeals together to harmonize inconsistent factual findings, as it has done with other factual issues in other patent suits.316 In a rare case, the court might affirm inconsistent findings under clear-error review. But as the Supreme Court has explained, “[f]act-bound resolutions cannot be made uniform through appellate review, de novo or otherwise.”317

Conclusion

Teva reinforced the Federal Circuit’s power to review without deference findings based on the prosecution history. In doing so—and without explanation—the Supreme Court blessed a review regime that encourages patent litigants to push through trial and appeal to the Federal Circuit in cases where prosecution histories determine the outcome of patent disputes. That regime is based on an incoherent divide between intrinsic and extrinsic evidence for a patent. A patent cannot be both an integrated legal instrument and incorporate its history as intrinsic.

312 Harries v. Air King Products Co., 183 F.2d 158, 164 (2d Cir. 1950) (L. Hand, C.J.) (opining that a court is “altogether incompetent” to resolve “how the art understood” a disputed technical term in a patent).
313 Teva, 135 S. Ct. at 838 (quoting Graver Tank, 339 U.S. at 610).
314 See, e.g., Lighting Ballast, 744 F.3d at 1280.
316 Compare Micron Tech., Inc. v. Rambus Inc., 645 F.3d 1311, 1319-26 (Fed. Cir. 2011) (affirming finding of spoliation in patent suit based on clear-error review), with Hynix Semiconductor Inc. v. Rambus Inc., 645 F.3d 1336, 1344-47 (Fed. Cir. 2011) (vacating an inconsistent finding of no spoliation by a different district court based on the same facts as in Micron and remanding to district court to reconsider).
But the Court’s traditional comparison of contract construction to patent construction provides a better paradigm to understand a patent and how courts use its prosecution history as a predecessor to construction. The concepts of interpretation and causation—both present in contract law—demonstrate that courts look to the prosecution history to determine the meaning of disputed terms or the reason those terms are in the instrument, all of which are factual inquiries. When applied to patent law, these concepts suggest that courts’ findings based on prosecution history—whether for claim construction, estoppel, or unenforceability—are factual and distinct from construction and that such findings should be reviewed for clear error under Rule 56(a)(6). Adopting that deferential review will deter appeals, encourage settlement, and restore district courts as fact finders in a system plagued by expensive litigation.