

THE PROCEDURE OF PATENT ELIGIBILITY

Paul R. Gugliuzza*

A decade ago, the patent-eligible subject matter requirement was defunct. Several recent Supreme Court decisions, however, have made eligibility the most important issue in many patent cases. To date, debates over the resurgent doctrine have focused mainly on its substance. Critics contend that the Supreme Court’s case law makes patents too easy to invalidate and discourages innovation. Supporters emphasize that the Court’s decisions help eradicate the overly broad patents often asserted by so-called patent trolls.

Yet one important consequence of eligibility’s revival has been procedural. Because district courts often view eligibility to present a pure question of law, they are—for the first time ever—invalidating patents on motions to dismiss, ending infringement cases before costly discovery begins. The test for eligibility adopted by the Supreme Court, however, compares the claimed invention to the technology that pre-dated the patent. That comparison, this article argues, often involves disputes of fact, not questions of law, which means that courts should be more cautious about deciding eligibility on the pleadings than they currently are.

In two noteworthy decisions issued earlier this year, the Federal Circuit held that the legal question of patent eligibility does indeed have factual underpinnings, brushing aside precedent that seemed to treat eligibility as a purely legal matter. But these new decisions may go too far. By making it extremely easy for plaintiffs to create a factual dispute that prevents pre-trial adjudication, they threaten to nullify what this article identifies as a key policy function of the eligibility requirement: providing a means for courts to quickly and cheaply dismiss infringement claims so plainly lacking merit that discovery is unwarranted.

In addition to examining the legal-versus-factual nature of eligibility doctrine, the article analyzes several other important questions about procedure in eligibility cases that the lower federal courts—including judges and panels of the Federal

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Circuit—have answered in wildly divergent ways. Those questions range from the role of claim construction in the eligibility analysis, to the relevance of the statutory presumption of patent validity, to whether courts should decide eligibility when a case can be terminated on another ground. By engaging these vexing issues, the article sketches a procedural framework for resolving eligibility that would allow courts to quickly invalidate “bad” patents while reducing the danger they will erroneously invalidate a “good” patent on an inadequately developed record.

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INTRODUCTION

For most of the past forty years, the patent-eligible subject matter requirement was a dead letter.¹ In 1980, the Supreme Court suggested that “anything under the sun that is made by man” is eligible for patenting.² The Patent Office and the Federal Circuit took the Court up on its suggestion, issuing and upholding many thousands of patents on business methods and computer software,³ as well as patents on human gene sequences and other building blocks of the biotechnology industry.⁴ This broad conception of patentability triggered numerous complaints. Critics argued that software and business method patents were too broad, too vague, and facilitated patent assertions, often by so-called patent trolls, against too many unsuspecting businesses working with information technology.⁵ In the realm of biotechnology, scholars suggested that patents on early stage research were hindering the development of diagnostic tests and therapeutic tools.⁶

In the past decade, the Supreme Court has responded to these critiques by making it harder for patentees to enforce patents and easier for accused infringers to invalidate them.⁷ The Court has eliminated the presumption that a patentee who proves infringement is entitled to an injunction,⁸ which reduces patentees’ bargaining power in settlement negotiations. The Court has made it easier for accused infringers to prove that a patent is invalid as obvious.⁹ Most controversially, the Court, in a string of four decisions, has reinvigorated the patent-eligible subject matter requirement, holding that inventions directed to laws of nature, natural phenomena, or abstract ideas are not eligible for patenting unless they also contain an “inventive concept.”¹⁰ Applying that test, the Court has struck

¹ Mark A. Lemley et al., *Life After Bilski*, 63 STAN. L. REV. 1315, 1318 (2011).

² *Diamond v. Chakrabarty*, 447 U.S. 303, 310 (1980) (internal quotation marks omitted) (quoting S. REP. NO. 1979, at 5 (1952); H.R. REP. NO. 1923, at 6 (1952)). For criticism of how the Court characterized the relevant legislative history, see *Bilski v. Kappos*, 561 U.S. 593, 642 (2010) (Stevens, J., concurring in the judgment).

³ JAMES BESSEN & MICHAEL J. MEURER, *PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK* 150-51 (2008).

⁴ Arti Kaur Rai, *Regulating Scientific Research: Intellectual Property Rights and the Norms of Science*, 94 NW. U. L. REV. 77, 119 (1999).

⁵ See, e.g., DAN L. BURK & MARK A. LEMLEY, *THE PATENT CRISIS AND HOW THE COURTS CAN SOLVE IT* 27 (2009).

⁶ See, e.g., Michael A. Heller & Rebecca S. Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, 280 SCIENCE 698, 699 (1998).

⁷ For empirical evidence of the “anti-patent” trend of recent Supreme Court decisions, see Gregory N. Mandel, *Institutional Fracture in Intellectual Property Law: The Supreme Court Versus Congress*, 102 MINN. L. REV. 803, 812 (2017).

⁸ *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 393-94 (2006).

⁹ *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 420-22 (2007).

¹⁰ *Alice Corp. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2355 (2014).

down patents on financial risk management techniques,¹¹ computer software designed to carry out business strategies,¹² naturally occurring DNA,¹³ and methods of medical diagnosis and treatment.¹⁴

The Supreme Court's decisions on eligibility have transformed patent litigation. Eligibility was rarely litigated less than a decade ago, but it is now the central concern in many cases.¹⁵ This change has been bad for patentees. Since 2014, they have lost over sixty percent of eligibility decisions in the federal district courts.¹⁶ As Mark Lemley and I showed in a recent study, patentees' loss-rate grows to over ninety percent in cases that are appealed to the Federal Circuit.¹⁷

The Supreme Court has sparked tremendous controversy by reinvigorating the eligibility requirement. Detractors condemn the Court's case law as confusing and lower courts' decisions as unpredictable.¹⁸ They assert that restricting patent eligibility improperly weakens innovation incentives.¹⁹ And they contend that the eligibility requirement, which stems from the Court's interpretation of § 101 of the

¹¹ *Bilski v. Kappos*, 561 U.S. 593, 609 (2010).

¹² *Alice*, 134 S. Ct. at 2357.

¹³ *Ass'n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 591 (2013).

¹⁴ *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 79-80 (2012).

¹⁵ See ROBERT PATRICK MERGES & JOHN FITZGERALD DUFFY, *PATENT LAW AND POLICY: CASES AND MATERIALS 101-02* (7th ed. 2017) (providing statistics on the growing number of cases raising eligibility issues).

¹⁶ See Jeffrey A. Lefstin, Peter S. Menell & David O. Taylor, *Final Report of the Berkeley Center for Law & Technology Section 101 Workshop: Addressing Patent Eligibility Challenges*, 32 *BERKELEY TECH. L.J.* (forthcoming 2018) (manuscript at 22), <https://ssrn.com/abstract=3050093>. By comparison, patentees lose only about forty percent of validity challenges overall (that is, taking into account *all* possible grounds on which a patent's validity might be challenged, including eligibility). See John R. Allison, Mark A. Lemley & David L. Schwartz, *Understanding the Realities of Modern Patent Litigation*, 92 *TEX. L. REV.* 1769, 1787 (2014).

¹⁷ See Paul R. Gugliuzza & Mark A. Lemley, *Can a Court Change the Law By Saying Nothing?*, 71 *VAND. L. REV.* (forthcoming 2018) (manuscript at 28), <https://ssrn.com/abstract=3015459>.

¹⁸ See, e.g., David O. Taylor, *Confusing Patent Eligibility*, 84 *TENN. L. REV.* 157, 158-59 (2016).

¹⁹ See, e.g., Kevin Madigan & Adam Mossoff, *Turning Gold Into Lead: How Patent Eligibility Doctrine Is Undermining U.S. Leadership in Innovation*, 24 *GEO. MASON L. REV.* 939, 941 (2017).

Patent Act,²⁰ is legally redundant because other sections of the statute already require patents to be inventive²¹ and not too broadly or abstractly described.²²

That said, the loosened standards of patentability mentioned above have, in at least some cases, allowed patentees to assert patents of questionable social value and to use the high cost of discovery and attorneys' fees—which the defendant must usually bear itself, even if it wins the case—to extract what appear to be unwarranted settlement payments.²³ The eligibility requirement, despite its potential *substantive* flaws, does provide a useful *procedural* mechanism to end those weak cases quickly and cheaply. When district courts strike down patents on eligibility grounds, they frequently do so on a motion to dismiss.²⁴ Those motions are decided based on the pleadings alone, without any evidentiary hearing, usually before discovery begins. Courts justify resolving eligibility at such an early stage

²⁰ Section 101 reads, in full: “Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.” 35 U.S.C. § 101; *see also* *Bilski v. Kappos*, 561 U.S. 593, 601-02 (2010) (“The Court’s precedents provide three specific exceptions to § 101’s broad patent-eligibility principles: ‘laws of nature, physical phenomena, and abstract ideas.’ While these exceptions are not required by the statutory text, they are consistent with the notion that a patentable process must be ‘new and useful.’”) (citation omitted).

²¹ Specifically, the novelty requirement of § 102 mandates that a patent be “new” as compared to preexisting technology (the “prior art,” in the parlance of patent lawyers), and the nonobviousness requirement of § 103 forbids patents on inventions that “would have been obvious . . . to a person having ordinary skill in the art to which the claimed invention pertains.” 35 U.S.C. §§ 102-03.

²² In particular, § 112(a) requires a patent to “contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art . . . to make and use the same.” And § 112(b) contains a definiteness requirement, which ensures that a patent “inform[s], with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2124 (2014). For a discussion of the eligibility requirement’s potential superfluity in light of other requirements of the Patent Act, *see* John M. Golden, *Redundancy: When Law Repeats Itself*, 94 TEX. L. REV. 629, 701-03 (2016) (defending “the Supreme Court’s move to revive subject-matter eligibility doctrine and to do so in a way that involves doctrinal overlaps,” but citing critical commentary).

²³ *See* Mark A. Lemley & A. Douglas Melamed, *Missing the Forest for the Trolls*, 113 COLUM. L. REV. 2117, 2173 (2013). For a discussion of how litigation costs can incentivize patentees to bring weak claims, *see* Greg Reilly, *Linking Patent Reform and Civil Litigation Reform*, 47 LOY. U. CHI. L.J. 179, 199-203 (2015) (noting also that high costs are “not a patent problem but instead a civil litigation problem common to so-called ‘mega cases’—complex, high stakes, and contentious cases”). Though the Supreme Court has recently made it easier for prevailing defendants to recover their attorneys’ fees in patent litigation, *see* *Octane Fitness, LLC v. ICON Health & Fitness, Inc.*, 134 S. Ct. 1749, 1756 (2014), fee awards are still reserved—by statute—for “exceptional cases,” 35 U.S.C. § 285; *see also* Paul R. Gugliuzza, *Patent Litigation Reform: The Courts, Congress, and the Federal Rules of Civil Procedure*, 95 B.U. L. REV. 279, 292 (2015) (discussing changes to Civil Rule 26 that could encourage courts to more frequently shift the costs of discovery).

²⁴ *See* Lefstin, Menell & Taylor, *supra* note 16, at 23.

by reasoning that it presents a question of law devoid of factual considerations.²⁵ This cost-saving procedural shortcut of pleading-stage dismissal is, as I have pointed out in prior work, simply not available for other validity doctrines such as novelty and nonobviousness, which are widely recognized to turn on questions of fact and therefore cannot be resolved until summary judgment at the earliest and often must wait until trial.²⁶

Yet there are several reasons to pause before praising this trend toward quick invalidations as an unalloyed good. To begin with, patents invalidated as ineligible frequently cover complex technology such as tests for genetic mutations,²⁷ computer systems for processing financial transactions,²⁸ and blood assays for particular diseases.²⁹ That technology can be difficult for courts to understand on a motion to dismiss, which a court decides based on the pleadings alone and without any evidentiary submissions from the parties. Moreover, under the terms of the federal patent statute, all patents are presumed valid.³⁰ Pleading-stage eligibility decisions, however, often ignore that presumption on the ground that, because eligibility presents a question of law, evidentiary presumptions do not apply.³¹ Finally, the test for eligibility adopted by the Supreme Court asks, as noted, whether the patent contains an “inventive concept” as compared to previously existing technology.³² That comparison of the patent to the state of the art can be difficult for a court to perform without looking beyond the pleadings.³³

²⁵ See, e.g., *In re TLI Commc’ns LLC Patent Litig.*, 87 F. Supp. 3d 773, 798 (E.D. Va. 2015), *aff’d*, 823 F.3d 607 (Fed. Cir. 2016).

²⁶ Paul R. Gugliuzza, *Quick Decisions in Patent Cases*, 106 GEO. L.J. 619, 651 (2018).

²⁷ E.g., *Genetic Techs. Ltd. v. Bristol-Myers Squibb Co.*, 72 F. Supp. 3d 521, 527 (D. Del. 2014), *aff’d sub nom.*, *Genetic Techs. Ltd. v. Merial L.L.C.*, 818 F.3d 1369 (Fed. Cir. 2016).

²⁸ E.g., *Smart Sys. Innovations, LLC v. Chi. Transit Auth.*, No. 14C08053, 2015 WL 4184486, at *1 (N.D. Ill. July 10, 2015), *aff’d*, 873 F.3d 1364 (Fed. Cir. 2017).

²⁹ E.g., *Cleveland Clinic Found. v. True Health Diagnostics, LLC*, No. 1:15CV2331, 2016 WL 705244, at *7 (N.D. Ohio Feb. 23, 2016), *aff’d*, 859 F.3d 1352 (Fed. Cir. 2017).

³⁰ 35 U.S.C. § 282(a) (“A patent shall be presumed valid. . . . The burden of establishing invalidity of a patent . . . shall rest on the party asserting such invalidity.”).

³¹ See, e.g., *Wireless Media Innovations, LLC v. Maher Terminals, LLC*, 100 F. Supp. 3d 405, 411 (D.N.J. 2015), *aff’d*, 636 F. App’x 1014 (Fed. Cir. 2016); see also *infra* Part II.E.1 (discussing additional cases).

³² See, e.g., *Alice Corp. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2357 (2014).

³³ For an analysis questioning whether eligibility can be accurately resolved on the minimal factual record available at the pleading stage, see Andres Sawicki, *The Central Claiming Renaissance*, 103 CORNELL L. REV. (forthcoming 2018) (manuscript at 4), <https://ssrn.com/abstract=2968650> (“[I]t may turn out that at least some of the same expensive fact development is required to answer eligibility questions as is required to answer novelty and nonobviousness ones.”).

The Supreme Court’s resurgent interest in patent eligibility has spawned a voluminous scholarly literature,³⁴ but lower courts’ procedural innovations in implementing the Court’s decisions have mostly eluded analysis. Similarly, although the Federal Circuit has decided well over one hundred patent-eligible subject matter cases in the past four years,³⁵ the court has said little about process. The court’s ambivalence toward eligibility procedure is well-captured in its recent statement that “[c]ourts may . . . dispose of patent-infringement claims” on eligibility grounds “whenever procedurally appropriate.”³⁶

As I was finishing the initial draft of this article, the Federal Circuit finally engaged some key procedural issues that frequently arise in eligibility disputes. In two opinions issued earlier this year (both authored by the same judge), the court overturned district court rulings that had invalidated patents as ineligible on pre-trial motions.³⁷ The Federal Circuit asserted that a key portion of the eligibility analysis, specifically, determining whether a patent covers “well-understood, routine and conventional” activity (and therefore lacks the required inventive concept), is a question of fact that, in some circumstances, is inappropriate for early-stage resolution by the judge.³⁸

These new decisions appear to offer some clarity on the law/fact distinction in eligibility law. But, in fact, they are in tension with prior Federal Circuit precedent that had seemingly embraced the notion—expounded by many district courts—that patent eligibility is a *pure* question of law.³⁹ As I show throughout this article, on the rare occasions the Federal Circuit has actually addressed procedural issues

³⁴ For a collection of recent articles, see Gugliuzza & Lemley, *supra* note 17, at 32 n.97.

³⁵ See *id.* at 28.

³⁶ *Bascom Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1347 (Fed. Cir. 2016).

³⁷ *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1370 (Fed. Cir. 2018) (Moore, J.) (vacating grant of summary judgment); *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121, 1130 (Fed. Cir. 2018) (Moore, J.) (vacating grant of motion to dismiss).

³⁸ *Berkheimer*, 881 F.3d at 1368; see also *Exergen Corp. v. Kaz USA, Inc.*, No. 2016-2315, 2018 WL 1193529, at *4 (Fed. Cir. Mar. 8, 2018) (nonprecedential opinion, also by Judge Moore, affirming a district court decision denying the defendant’s post-trial motion for judgment of ineligibility, noting that “the district court’s conclusion that [the patent’s] claim elements were not well-understood, routine, and conventional is a question of fact to which we must give clear error deference”).

³⁹ See, e.g., *Amdocs (Isr.) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1293 (Fed. Cir. 2016) (“We review the district court’s determination of patent eligibility under § 101 without deference, as a question of law.”); see also *Aatrix*, 882 F.3d at 1130 (Reyna, J., concurring in part and dissenting in part) (“I respectfully disagree with the majority’s broad statements on the role of factual evidence in a § 101 inquiry. Our precedent is clear that the § 101 inquiry is a legal question.”); *infra* notes 192, 212 (citing district court decisions explicitly treating eligibility as a “pure” question of law).

relevant to patent eligibility, this type of inconsistency is not unusual.⁴⁰ The Federal Circuit’s lack of coherent guidance has caused deep disagreements among district courts on procedural issues in eligibility disputes—another theme that frequently recurs in this article.⁴¹ The Federal Circuit’s tolerance of this confusion is, it should be noted, a remarkable dereliction of duty by a court created for the specific purpose of achieving uniformity in patent law.⁴²

Despite what the Federal Circuit’s precedent (or lack thereof) might suggest, procedural considerations are key to evaluating the consequences of eligibility doctrine’s resurgence. If courts are deciding the issue too early in litigation and without sufficient factual development, they may be erroneously invalidating patents that actually do satisfy the requirements of the Patent Act. In the long run, a pattern of erroneous invalidations will dampen the innovation incentives patents are supposed to provide.⁴³ But if courts wait too long to invalidate patents, accused infringers must bear the costs of unjustified litigation. That could lead potential infringers to simply ignore the existence of patents because they know they will be sued anyway,⁴⁴ or, worse, to stop engaging in the innovative activity that embroiled them in litigation.⁴⁵

This article is the first to analyze in detail the evolving procedures through which courts decide the crucial question of patent eligibility. Along the way, it makes both descriptive and prescriptive contributions to the emergent literature on the procedural design of the patent system.⁴⁶ Descriptively, the article identifies

⁴⁰ See, e.g., *infra* Part II.A.1 (discussing conflicting Federal Circuit opinions on whether courts must address patent eligibility “at the threshold,” that is, before considering other requirements of patentability or issues of infringement).

⁴¹ See *infra* Part II.

⁴² See generally Paul R. Gugliuzza, *Rethinking Federal Circuit Jurisdiction*, 100 GEO. L.J. 1437, 1453–64 (2012) (summarizing the Federal Circuit’s history and purpose); Raymond A. Mercado, *Resolving Patent Eligibility and Indefiniteness in Proper Context: Applying Alice and Aristocrat*, 20 VA. J.L. & TECH. 240, 326 (2016) (noting the “need [for] guidance from the Federal Circuit” on the “procedures leading up to . . . an eligibility determination”).

⁴³ See generally Louis Kaplow, *The Value of Accuracy in Adjudication: An Economic Analysis*, 23 J. LEGAL STUD. 307, 380 (1994) (“When adjudication both creates incentives for ex ante behavior and affects future conduct, accuracy tends to be more valuable.”).

⁴⁴ See Mark A. Lemley, *Ignoring Patents*, 2008 MICH. ST. L. REV. 19, 21, 31 (2008) (exploring the costs (and benefits) of widespread ignorance of patents, particularly in the information technology industry).

⁴⁵ See generally Keith N. Hylton, *When Should a Case Be Dismissed? The Economics of Pleading and Summary Judgment Standards*, 16 SUP. CT. ECON. REV. 39, 47 (2008) (“[B]y permitting substantial litigation costs to be imposed on . . . defendants [who did not act unlawfully], failures to dismiss low merit claims weaken incentives to comply with the law and to take socially desirable actions.”).

⁴⁶ For an introduction to that literature, see, in addition to the works cited throughout this article, the sources cited in Ryan Vacca, *The Federal Circuit as an Institution*, in RESEARCH HANDBOOK

numerous difficult procedural questions courts have confronted (or, sometimes, ignored) in the wake of the Supreme Court’s revival of the eligibility requirement, and it chronicles the conflicting answers courts have provided. Those questions include: Is patent eligibility a “threshold” question that a court *must* resolve before deciding other issues, or can the court ignore eligibility and decide the case on other grounds, such as anticipation (that is, lack of novelty), obviousness, or noninfringement?⁴⁷ Can a court determine eligibility without conducting a *Markman* hearing in which the court construes the patent’s claims?⁴⁸ Does the statutory presumption of validity apply when a court analyzes patent eligibility?⁴⁹ And, perhaps most fundamentally, the question that has recently captured the Federal Circuit’s attention: Is patent eligibility a pure question of law, or does it have factual aspects?⁵⁰

In the course of answering those questions, the article makes several prescriptive recommendations that would allow courts to better balance speed and accuracy in the adjudication of patent eligibility. To start, the article critiques the Federal Circuit’s periodic efforts to characterize eligibility as a jurisdiction-like issue that *must* be resolved at the outset of the case,⁵¹ arguing instead that courts should retain their well-established discretion over when, exactly, to decide potentially dispositive issues such as patent eligibility.⁵²

Turning to the legal-versus-factual nature of the eligibility question itself, the article argues that the Federal Circuit is on the right track by recognizing that eligibility can involve factual inquiries even though, like all other requirements of patentability, it is ultimately a question of law.⁵³ The Federal Circuit’s recent

ON THE ECONOMICS OF INTELLECTUAL PROPERTY LAW (Peter S. Menell, David L. Schwartz & Ben Depoorter, eds., forthcoming 2018) (manuscript at 50-54), <https://ssrn.com/abstract=2706849>.

⁴⁷ See *infra* Part II.A.

⁴⁸ See *infra* Part II.D; see also *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 372 (1996) (holding that the judge, not a jury, must determine the meaning of a patent’s claims). The claim construction ruling is the most important ruling in many patent cases because it is often dispositive of infringement and is important to determining validity. See *generally* *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 989 (Fed. Cir. 1995) (en banc) (Mayer, J., concurring in the judgment) (“[T]o decide what the claims mean is nearly always to decide the case.”), *aff’d*, 517 U.S. 370.

⁴⁹ See *infra* Part II.E.

⁵⁰ See *infra* Part II.B.

⁵¹ See, e.g., *Dealertrack, Inc. v. Huber*, 674 F.3d 1315, 1330 n.3 (Fed. Cir. 2012).

⁵² See *infra* Part II.A.2.

⁵³ See *Microsoft Corp. v. i4i Ltd. P’ship*, 564 U.S. 91, 96-97 (2011) (“‘While the ultimate question of patent validity is one of law,’ the same factual questions underlying the PTO’s original examination of a patent application will also bear on an invalidity defense in an infringement action.”) (quoting *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966)) (citations omitted). *But see infra* notes 188-190 and accompanying text (discussing Federal Circuit case law treating some issues of patent validity as *entirely* factual).

decisions on the law/fact distinction may yet be reconsidered by the full court sitting en banc.⁵⁴ But binding, settled appellate precedent acknowledging the potential relevance of facts would clarify the procedure of patent eligibility in several ways: It would ensure that courts resolve eligibility on the pleadings only when the reasons for invalidation are found in the patent itself or are matters about which the court may take judicial notice. It would ensure that courts deciding eligibility at the pleading stage resolve factual doubts in favor of the patentee, rather than simply rendering a yes-or-no decision on validity, as they sometimes seem to do. And it would allow courts to apply the statutory presumption of validity, reconciling the eligibility analysis with the plain language of the patent statute, which unequivocally states that patents “shall be presumed valid.”⁵⁵

That said, the Federal Circuit’s recent decisions injecting factual considerations into the eligibility analysis have some serious flaws. Most alarmingly, they appear to allow a patentee to defeat a motion to dismiss or a motion for summary judgment by offering nothing more than its own, self-serving statements about the patent’s inventiveness as compared to preexisting technology.⁵⁶ By allowing cases to proceed to discovery or even to trial on evidence of such limited probative value, the decisions threaten to defeat what I suggested above is a key policy justification for the very existence of the eligibility requirement: providing a means to quickly and cheaply dispose of infringement claims that obviously lack merit.

Though this article focuses mainly on the intersection of procedural law and eligibility doctrine, its analysis has implications for patent law and the patent system more broadly. For instance, the article shows how courts resolving eligibility disputes frequently (though implicitly) treat the question of claim construction as factual,⁵⁷ casting doubt on the Federal Circuit’s insistence that claim construction usually presents a question of law subject to de novo appellate review.⁵⁸ If the Federal Circuit were to recognize that claim construction is often factual, as numerous eligibility cases illustrate, the court would be forced to defer more frequently to district courts’ rulings about the scope of patent claims,

⁵⁴ Petitions are currently pending before the court in both cases. See Appellee HP Inc.’s Petition for Rehearing En Banc, *Berkheimer v. HP Inc.*, 881 F.3d 1360 (Fed. Cir. 2018) (No. 2017-1437) (filed Mar. 12, 2018); Appellee Green Shades Software, Inc.’s Petition for Rehearing En Banc, *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121 (Fed. Cir. 2018) (No. 2017-1452) (filed Mar. 19, 2018).

⁵⁵ 35 U.S.C. § 282(a).

⁵⁶ See *Berkheimer*, 881 F.3d at 1370 (holding that statements about the patent’s inventiveness in the patent itself created a genuine issue of material fact for trial); *Aatrix*, 882 F.3d at 1128 (holding that allegations in the complaint about the patent’s inventiveness precluded the district court from granting a motion to dismiss); see also *infra* Part II.B-C (discussing the *Berkheimer* and *Aatrix* cases in more detail).

⁵⁷ See *infra* Part II.C-D.

⁵⁸ See *infra* notes 332-334 and accompanying text.

decreasing the cost and increasing the predictability of patent litigation more generally. In addition, the article shows how the Federal Circuit’s difficulties in distinguishing between law and fact in the eligibility analysis mirror questionable doctrines the court has often embraced—and the Supreme Court has often overturned—on other transsubstantive issues in patent cases, such as matters of jurisdiction and procedure.⁵⁹ The court’s missteps in eligibility procedure provide another reason to think that the Federal Circuit “experiment” in judicial specialization may be failing.⁶⁰

The remainder of this article consists of three parts. Part I provides background on the doctrine of patent-eligible subject matter and explains how recent changes to the substance of that doctrine have translated into procedural reform. Part II, the heart of the article, thoroughly examines the procedures courts have used to resolve the newly important question of patent eligibility, and it makes a detailed case for the law-reform recommendations described above. Finally, Part III explores the broader implications of the article’s analysis of eligibility procedure for matters such as the right to a jury trial on patent validity and the centralization of appeals in the Federal Circuit.

I. THE LAW, POLICY, AND PRACTICE OF PATENT ELIGIBILITY

In less than a decade, the eligibility requirement has revolutionized the practice of patent litigation in the United States. This part of the article begins by discussing how the Supreme Court reinvigorated eligibility doctrine and by synthesizing the Federal Circuit’s subsequent decisions into rough guidelines about the boundaries of patent eligibility. It concludes by highlighting how the recent changes to the *substance* of eligibility doctrine have dramatically altered the *procedures* through which courts resolve infringement disputes.

⁵⁹ See Paul R. Gugliuzza & Megan M. La Belle, *The Patently Unexceptional Venue Statute*, 66 AM. U. L. REV. 1027, 1028-29 (2017) (collecting case examples); see also Peter Lee, *The Supreme Assimilation of Patent Law*, 114 MICH. L. REV. 1413, 1451 (2016) (noting the Supreme Court’s “focus [in recent patent decisions] on transcendent areas of law that touch upon patent doctrine as well as other doctrinal areas, such as appellate review of district courts and agencies, jurisdiction, and remedies”).

⁶⁰ See generally Rochelle Cooper Dreyfuss, *The Federal Circuit: A Case Study in Specialized Courts*, 64 N.Y.U. L. REV. 1, 3 (1989) (characterizing the Federal Circuit as “a sustained experiment in specialization”); Craig Allen Nard & John F. Duffy, *Rethinking Patent Law’s Uniformity Principle*, 101 NW. U. L. REV. 1619, 1620 (2007) (“[C]ommentators have increasingly turned to evaluating the Federal Circuit’s precedents on the merits. . . . The answers thus far have not been encouraging.”).

A. The Supreme Court’s Revival of the Eligibility Requirement

Section 101 of the Patent Act permits patents on “any new and useful process, machine, manufacture, or composition of matter.”⁶¹ Despite that broad language, courts have held that § 101 contains an “implicit exception” that prohibits patenting laws of nature, natural phenomena, and abstract ideas.⁶² All inventions, the thinking goes, involve those basic principles, so the eligibility requirement limits patent protection to specific *applications* of those principles, ensuring that patents do not encompass the “building blocks of human ingenuity.”⁶³ Thus, in its twentieth-century cases sketching out the eligibility requirement, the Supreme Court struck down patents on a composition of naturally occurring bacteria⁶⁴ and a mathematical formula for converting decimal numerals into binary numbers.⁶⁵ Conversely, the Court upheld patents on a genetically modified bacterium because it did not occur in nature⁶⁶ and on a process for molding rubber that merely *used* a mathematical formula.⁶⁷

By many accounts, in the 1990s and early 2000s, the Federal Circuit and the Patent Office significantly relaxed the eligibility requirement. They regularly approved patents on computer software⁶⁸ and methods of doing business⁶⁹ despite the frequently abstract nature of those inventions. They also approved patents on isolated DNA sequences even though those sequences appear in nature.⁷⁰ Commentators blamed generous standards of patentability for many emerging problems in the patent system. Broad and overlapping patents in the information technology industry created patent thickets⁷¹ and contributed to the emergence of

⁶¹ 35 U.S.C. § 101.

⁶² *Alice Corp. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2354 (2014).

⁶³ *Id.*

⁶⁴ *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, 131 (1948).

⁶⁵ *Gottschalk v. Benson*, 409 U.S. 63, 71-72 (1972).

⁶⁶ *Diamond v. Chakrabarty*, 447 U.S. 303, 310 (1980).

⁶⁷ *Diamond v. Diehr*, 450 U.S. 175, 187 (1981).

⁶⁸ See Julie E. Cohen & Mark A. Lemley, *Patent Scope and Innovation in the Software Industry*, 89 CALIF. L. REV. 1, 12 (2001) (providing examples).

⁶⁹ E.g., *State Street Bank v. Signature Fin. Grp.*, 149 F.3d 1368, 1375 (Fed. Cir. 1998).

⁷⁰ See *Ass’n for Molecular Pathology v. U.S. Pat. & Trademark Off.*, 689 F.3d 1303, 1343-44 (Fed. Cir. 2012) (Moore, J., concurring) (summarizing the history of patents on human genes), *aff’d in part, rev’d in part sub nom.*, *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576 (2013).

⁷¹ U.S. FED. TRADE COMM’N, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY 7 (2003), <https://www.ftc.gov/sites/default/files/documents/reports/promote-innovation-proper-balance-competition-and-patent-law-and-policy/innovationrpt.pdf>.

patent assertion entitles (PAEs, or, more controversially, patent trolls).⁷² Concerns also began to surface that disaggregated ownership of DNA patents, and the difficulty of inventing around them, was inhibiting downstream developments in biotechnology, such as gene therapies and diagnostic tools.⁷³

In 2006, the Supreme Court flirted with the patent-eligible subject matter requirement in a case it ultimately dismissed as improvidently granted.⁷⁴ A year later, the Federal Circuit—apparently taking the hint—returned some bite to the eligibility requirement in two opinions issued on the same day. The first rejected a patent on a transitory signal because it did not fall within the four categories of patent-eligible subject matter listed in § 101 (“process, machine, manufacture, or composition of matter”).⁷⁵ The second held ineligible a patent on a method of requiring and conducting arbitration because it impermissibly claimed “mental processes.”⁷⁶

Eligibility’s renaissance began in earnest in 2010, when the Supreme Court, in *Bilski v. Kappos*, held ineligible a patent on a method of hedging financial risk because it claimed an abstract idea.⁷⁷ Though the Court was unwilling to say that business methods could *never* be patented, it made clear that one could no longer obtain a patent by merely performing a longstanding business practice on a computer or over the Internet.⁷⁸

Two years later, the Supreme Court considered a patent-eligible subject matter dispute in the field of medical diagnostics, *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*⁷⁹ The patent-in-suit claimed a method of administering a particular drug to a patient, measuring the drug’s metabolite levels in the body, and comparing those levels to ranges disclosed in the patent to determine whether dosage should be increased or decreased.⁸⁰ The Supreme Court held that the patent did not satisfy the eligibility requirement because it recited the correlation between metabolite levels and drug safety and efficacy—a “law of

⁷² EXEC. OFF. OF THE PRESIDENT, PATENT ASSERTION AND U.S. INNOVATION 8 (2013), https://obamawhitehouse.archives.gov/sites/default/files/docs/patent_report.pdf.

⁷³ See Rochelle C. Dreyfuss & James P. Evans, *From Bilski Back to Benson: Preemption, Inventing Around, and the Case of Genetic Diagnostics*, 63 STAN. L. REV. 1349, 1370 (2011); Dan L. Burk & Mark A. Lemley, *Biotechnology’s Uncertainty Principle*, 54 CASE W. RES. L. REV. 691, 730 (2004).

⁷⁴ *Lab. Corp. of Am. Holdings v. Metabolite Labs., Inc.*, 548 U.S. 124, 125 (2006).

⁷⁵ *In re Nuijten*, 500 F.3d 1346, 1357 (Fed. Cir. 2007).

⁷⁶ *In re Comiskey*, 499 F.3d 1365, 1379 (Fed. Cir. 2007). The court later revised its original opinion but reached the same result. See *In re Comiskey*, 554 F.3d 967, 981 (Fed. Cir. 2009).

⁷⁷ 561 U.S. 593, 609 (2010).

⁷⁸ See *id.* at 611.

⁷⁹ 566 U.S. 66 (2012).

⁸⁰ *Id.* at 74-75.

nature,” in the Court’s view—and it contained no other “inventive concept.”⁸¹ Rather, in telling doctors to administer the drug and determine its metabolite levels, the patent simply recited “well-understood, routine, conventional activity” that doctors already engaged in.⁸²

After a 2013 decision holding that isolated DNA segments are not patent eligible because they are “product[s] of nature,”⁸³ the Court in 2014 decided its most recent eligibility case, *Alice v. CLS Bank International*.⁸⁴ *Alice* involved patents on a computer program that used an intermediary to mitigate the risk that only one party to a financial transaction would perform its obligation.⁸⁵ In its opinion invalidating the patents, the Court drew on *Mayo* to articulate a two-step test that serves as the foundation for eligibility analysis under current law. According to the Court, the first step is to determine whether the patent claim is directed to a “patent-ineligible concept[,]” namely, a law of nature, product of nature, natural phenomenon, or abstract idea.⁸⁶ If so, the court then asks whether there are “additional elements” that “transform” the claim into a patent-eligible *application* of the underlying concept.⁸⁷ Quoting *Mayo*, the Court in *Alice* explained that this second step is “a search for an ‘inventive concept’—i.e., an element or combination of elements that is ‘sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.’”⁸⁸

Applying that test to the facts of the case, the Court first determined that using intermediaries to mitigate risk was an abstract idea, in part because, like risk hedging in *Bilski*, intermediated settlement “is a ‘fundamental economic practice long prevalent in our system of commerce.’”⁸⁹ On the second step, the Court concluded that merely performing that abstract idea on a general purpose computer, as the patent instructed, did not represent the “inventive concept” required for eligibility.⁹⁰ In terms of what *would* constitute an inventive concept, the Court observed that the patents-in-suit “[did] not, for example, purport to improve the

⁸¹ *Id.* at 72-73.

⁸² *Id.* at 79-80.

⁸³ *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 591 (2013). In the same decision, the Court upheld patents on synthetically created DNA on the rationale that synthetic DNA does not occur in nature. *Id.* at 2119.

⁸⁴ 134 S. Ct. 2347, 2357 (2014).

⁸⁵ *Id.* at 2351-52.

⁸⁶ *Id.* at 2355.

⁸⁷ *Id.*

⁸⁸ *Id.* (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 72-73 (2012)).

⁸⁹ *Id.* at 2356 (quoting *Bilski v. Kappos*, 561 U.S. 593, 611 (2010)).

⁹⁰ *Id.*

functioning of the computer itself,” nor did they “effect an improvement in any other technology or technical field.”⁹¹

B. Patent Eligibility at the Federal Circuit

Since the Supreme Court issued its *Alice* opinion in 2014, the Federal Circuit has decided over one hundred cases involving the patent-eligible subject matter requirement. Like the Supreme Court’s recent rulings, the vast majority of those decisions—over ninety percent of them⁹²—have found the claimed invention not to be patent eligible. But the Federal Circuit has upheld several patents against eligibility challenges. Practically all eligibility disputes involve inventions in one of two categories, information technology and biotechnology, and it is easiest to consider the emerging doctrine separately for each category.

In the field of information technology, the Federal Circuit has built on *Bilski* and *Alice* to strike down patents that claim advances in what are sometimes called “non-technological disciplines,” such as business and law.⁹³ The court has held ineligible for patenting inventions on methods of optimizing prices,⁹⁴ guaranteeing performance of a transaction,⁹⁵ and managing a bingo game,⁹⁶ even though those inventions were implemented on computers. Conversely, the court has upheld patents on inventions that, as the Supreme Court suggested in *Alice*, improved the functioning of a computer, such as a patent on a “self-referential table for a computer database,”⁹⁷ or solved a problem unique to computers or the Internet, including a patent on blending together two different Internet web pages to create a new, integrated page.⁹⁸

In the realm of biotechnology, inventions are likely to survive eligibility challenges if the patent covers a new process or the making of a new thing, as opposed to the isolation or detection of a naturally occurring chemical. In *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, for example, the Federal Circuit invalidated a patent on methods of detecting fetal DNA that floats freely in the mother’s body.⁹⁹

⁹¹ *Id.* at 2359 (citing *Diamond v. Diehr*, 450 U.S. 175, 177-78 (1981), which upheld a patent on a process for molding rubber even though the process included a previously known mathematical equation).

⁹² Gugliuzza & Lemley, *supra* note 17, at 28.

⁹³ *Ultramercial, Inc. v. Hulu, LLC (Ultramercial III)*, 772 F.3d 709, 721 (Fed. Cir. 2014) (Mayer, J., concurring).

⁹⁴ *OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1360 (Fed. Cir. 2015).

⁹⁵ *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1351 (Fed. Cir. 2014).

⁹⁶ *Planet Bingo, LLC v. VKGS LLC*, 576 F. App’x 1005, 1006 (Fed. Cir. 2014).

⁹⁷ *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1336 (Fed. Cir. 2016)

⁹⁸ *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1257 (Fed. Cir. 2014).

⁹⁹ 788 F.3d 1371, 1376-77 (Fed. Cir. 2015).

Though the discovery of fetal DNA in the mother’s blood enabled safer and cheaper genetic testing,¹⁰⁰ the court invalidated the patent under *Mayo* because fetal DNA appears naturally in the mother’s blood and the techniques used to detect and amplify it were well known.¹⁰¹ By contrast, in *Rapid Litigation Management Ltd. v. CellzDirect, Inc.*, the Federal Circuit upheld the eligibility of a patent on a method of preserving hepatocytes, a type of liver cell.¹⁰² Even though the patent turned on the discovery that hepatocytes could survive multiple freeze-thaw cycles—a natural trait of the cells—the Court emphasized that, unlike in *Ariosa*, the patent claimed a new, physical method of preservation, not merely observation.¹⁰³

C. Patent Eligibility as Procedural Reform

The Supreme Court’s strengthening of patent eligibility doctrine has been criticized, not without some justification. The aspects of the eligibility inquiry that examine whether the patent improves on the prior art and whether it preempts use of basic research tools overlap with other patentability requirements, including novelty, nonobviousness, and the disclosure mandates of § 112 of the Patent Act.¹⁰⁴ Also, although the Federal Circuit’s eligibility decisions can be synthesized into somewhat coherent rules (as I attempted to do in the preceding section), inconsistencies among those decisions potentially make it difficult to predict the outcomes of future cases. For example, the claims in some of the information technology patents the Federal Circuit has upheld as improving the function of a computer have been rather vague, consisting mostly of generically described computer parts and processes.¹⁰⁵ Though the use of a generic computer is usually insufficient to avoid invalidation under *Alice*,¹⁰⁶ the court has sometimes relied on

¹⁰⁰ Rachel Rebouché, *Testing Sex*, 49 U. RICH. L. REV. 519, 527 (2015).

¹⁰¹ *Id.* at 1376-77; *accord* Cleveland Clinic Found. v. True Health Diagnostics LLC, 859 F.3d 1352, 1360-63 (Fed. Cir. 2017) (applying similar reasoning to invalidate patents on methods of testing for the presence of an enzyme associated with cardiovascular disease); Genetic Techs. Ltd. v. Merial L.L.C., 818 F.3d 1369, 1371 (Fed. Cir. 2016) (same, in a case involving methods of analyzing DNA sequences).

¹⁰² 827 F.3d 1042, 1045 (Fed. Cir. 2016).

¹⁰³ *Id.* at 1050-52.

¹⁰⁴ See Jeffrey A. Lefstin & Peter S. Menell, *Restoring the Legislative Framework for Patenting Applications of Scientific Discoveries* 23 (Apr. 20, 2016), <https://ssrn.com/abstract=2767904>. For a summary of those requirements, see *supra* notes 21-22.

¹⁰⁵ See, for example, Visual Memory LLC v. NVIDIA Corp., 867 F.3d 1253, 1257 (Fed. Cir. 2017), in which a panel of the court, in a split decision, upheld a patent that recited “[a] computer memory system connectable to a processor and having one or more programmable operational characteristics,” with the “system” comprising “a main memory” and “a cache,” and with the “programmable operational characteristic” “determin[ing] a type of data stored by [the] cache.” That claim, on my reading, seems to recite nothing more than a general purpose computer programed to perform some vaguely defined type of data analysis. *Accord id.* at 1263 (Hughes, J., dissenting).

¹⁰⁶ See, e.g., *Mortg. Grader, Inc. v. First Choice Loan Servs. Inc.*, 811 F.3d 1314, 1324-25 (Fed. Cir. 2016) (“[G]eneric computer components do not satisfy the inventive concept requirement.”).

details in the patent’s specification to save those patents from invalidation.¹⁰⁷ The Federal Circuit’s decisions relying on the specification to uphold validity are also in tension with the court’s precedent stating that the eligibility analysis should focus on the patent’s claims alone.¹⁰⁸ Finally, cases such as *Ariosa*, in which the court struck down a patent on a seemingly innovative method of detecting fetal abnormalities, illustrate the risk that the eligibility requirement may exclude some socially valuable inventions from patent protection.¹⁰⁹

Yet the newly revitalized eligibility requirement has redeeming qualities. Among other things, as I have discussed in prior work, eligibility provides a useful “quick look” at patent validity that allows courts to dispose of patents that are *plainly* invalid before the costly discovery process begins.¹¹⁰ Because courts frequently treat eligibility as a question of law lacking factual considerations, they often invalidate patents on eligibility grounds at the pleading stage on a motion to dismiss or for judgment on the pleadings.¹¹¹ Such early, dispositive decisions are not possible on issues such as novelty, nonobviousness, or infringement because those issues usually turn on hotly disputed questions of fact that cannot be resolved until summary judgment or trial.¹¹²

As I discussed in the introduction, much of the criticism of the eligibility requirement attacks the substance of the courts’ case law.¹¹³ But that criticism can be understood in procedural terms, too. For instance, critiques about eligibility’s

¹⁰⁷ See, e.g., *Amdocs (Isr.) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1300-01 (Fed. Cir. 2016) (relying on a passage from the specification to conclude that the claimed invention “entails an unconventional technological solution (enhancing data in a distributed fashion) to a technological problem (massive record flows which previously required massive databases)”).

¹⁰⁸ See, e.g., *Two-Way Media Ltd. v. Comcast Cable Commc’ns, LLC*, 874 F.3d 1329, 1338 (Fed. Cir. 2017) (“The main problem that [the patentee] cannot overcome is that the *claim*—as opposed to something purportedly described in the specification—is missing an inventive concept.”).

¹⁰⁹ See Rebecca S. Eisenberg, *Diagnostics Need Not Apply*, 21 B.U. J. SCI. & TECH. L. 256, 286 (2015) (discussing the unclear policy implications of excluding diagnostic tests from patent eligibility). *But see* Nicholson Price, *Grants* 49 (Jan. 2018) (unpublished manuscript) (noting that government grants can provide incentives for the development of diagnostic tests in the absence of patent protection); Colleen V. Chien & Arti K. Rai, *An Empirical Analysis of Diagnostic Patenting Post-Mayo* 3-4 (Jan. 16, 2018) (unpublished manuscript) (showing no decline in patenting of diagnostic methods or investment in them since the Supreme Court’s invigoration of the eligibility requirement).

¹¹⁰ See Gugliuzza, *supra* note 26, at 651.

¹¹¹ See Lefstin, Menell & Taylor, *supra* note 16, at 23 (reporting that, from June 2012 to February 2017, 69.4% of district court decisions on eligibility (249 of 359) were made on a motion to dismiss or for judgment on the pleadings and that 63.1% of those pleading-stage decisions (157 of 249) invalidated the patent).

¹¹² See Gugliuzza, *supra* note 26, at 651.

¹¹³ See *supra* notes 18-22 and accompanying text.

overlap with other patentability doctrines arguably reflect concern that courts are resolving questions of inventiveness and overbreadth *too early* in the case. Even if the eligibility requirement did not exist, courts would resolve similar questions under the sections of the Patent Act that require patents to be novel, nonobvious, and disclosed with some degree of detail. But those decisions would typically occur later in the case—on summary judgment or at trial—when there is a more developed record about the scope of the patent’s claims and the content of the prior art.¹¹⁴

Arguments about excluding meritorious inventions from the patent system and about the unpredictability of case outcomes can be understood in procedural terms, too. At summary judgment, when a patent’s scope has been defined through claim construction and there is a factual record addressing the extent of the patent’s improvement on pre-existing technology, it seems less likely that a court would erroneously invalidate a patent that actually does satisfy the requirements of the Patent Act. The better developed record and clearer definition of claim scope should also make it easier for the parties to predict the court’s result.

It is not beyond doubt, however, that the process of developing a more elaborate evidentiary record is necessary to ensure accurate decisions on patent validity. Some empirical evidence suggests that many patents that do not satisfy the eligibility requirement also do not satisfy at least one other patentability requirement,¹¹⁵ indicating that eligibility can reliably be used as a quick-look proxy for more fact-driven doctrines. In addition, recent experimental evidence suggests that the Supreme Court’s test for patent eligibility may not be as unpredictable as critics claim.¹¹⁶ In any case, my point here is not to argue that courts’ eligibility

¹¹⁴ Cf. PETER S. MENELL, MARK A. LEMLEY & ROBERT P. MERGES, *INTELLECTUAL PROPERTY IN THE NEW TECHNOLOGICAL AGE* 301 (2017) (“How can a court know whether the implementation of an abstract idea is inventive (i.e., well-understood, conventional or routine) without collecting evidence on what is known in the art?”).

¹¹⁵ See Dennis Crouch & Robert P. Merges, *Operating Efficiently Post-Bilski by Ordering Patent Doctrine Decision-Making*, 25 *BERKELEY TECH. L.J.* 1673, 1686 (2010) (finding, based on a sample of 117 decisions by the Patent Office’s appellate board, that 94% of patents rejected as ineligible were also rejected on another ground); Saurabh Vishnubhakat, *The Antitrust of Patentability*, 48 *SETON HALL L. REV.* 71, 103 (2017) (finding, based on a random sample of 800 patent applications, that 87% of applications rejected as ineligible were also rejected on another ground). This evidence also responds to the concern that the error costs of an incorrect decision on patent eligibility are not borne equally by the parties. If a court reaches an erroneous conclusion that an invention *is* patent eligible, the defendant can still defend the case on other grounds. But if a court erroneously concludes that an invention is *not* patent eligible, the case is immediately over and the patentee loses its patent forever. See *Blonder-Tongue Labs., Inc. v. Univ. of Illinois Found.*, 402 U.S. 313, 350 (1971). If patents invalidated as ineligible would likely be invalidated on another ground anyway, any concern about asymmetry in error costs seems much diminished.

¹¹⁶ See Jason D. Reinecke, *Is the Supreme Court’s Patentable Subject Matter Test Overly Ambiguous? An Empirical Test*, 2019 *UTAH L. REV.* (forthcoming) (manuscript at 3), available at <https://ssrn.com/abstract=3123524> (survey using a sample of eligibility cases had actually been

decisions are always perfectly accurate; rather, it is simply to highlight that any normative analysis of eligibility doctrine must acknowledge that the doctrine, whatever its substantive merits, decreases process costs by facilitating quicker and cheaper resolutions than were previously possible.¹¹⁷

Moreover, and regardless of any critiques of eligibility doctrine, the reality is that pleading-stage decisions on that issue will likely remain common for the foreseeable future,¹¹⁸ as the trend toward adjudicating patent validity on the pleadings is consistent with developments in American procedural law more generally. The “textbook” model of civil procedure, under which a case proceeds in an orderly fashion from the pleadings to discovery to summary judgment to trial and appeal, has, in many respects, disappeared, with judges increasingly resolving fact-intensive questions at preliminary stages on motions to dismiss, for class certification, or for summary judgment.¹¹⁹ Like eligibility’s resurgence in response to worries about “litigation abuse” by patent trolls,¹²⁰ these broader procedural

litigated and finding that—based on the patent claims alone—patent prosecutors were able to correctly predict how the court ruled 67.3% of the time and patent litigators correctly predicted outcomes 59.7% of the time).

¹¹⁷ For a summary of the traditional law-and-economics theory of litigation, under which the normative aim is to minimize both error costs and process costs, see generally Richard A. Posner, *An Economic Approach to Legal Procedure and Judicial Administration*, 2 J. LEGAL STUD. 399, 400 (1973). Providing a mechanism for quick and cheap decisions is not, of course, the only possible policy justification for eligibility doctrine’s existence. The doctrine could also be defended on substantive grounds as filling gaps left by other requirements of patentability. See, e.g., Kevin Emerson Collins, *Patent-Ineligibility as Counteraction*, 94 WASH. U. L. REV. 955, 1002, 1019 (2017); Golden, *supra* note 22, at 710-11; Lemley et al., *supra* note 1, at 1329-32. But eligibility’s capacity to facilitate early resolution stands independently of those substantive justifications. In other words, whether eligibility doctrine (a) usefully fills substantive gaps left by other patentability requirements or (b) is redundant of those requirements, the quicker and cheaper adjudication the doctrine makes possible still provides a social benefit by reducing process costs.

¹¹⁸ It is possible that eligibility motions (at all stages of litigation) will decrease in frequency once patents issued prior to the Supreme Court’s recent decisions are no longer being asserted, though some evidence suggests that the Patent Office is still issuing software patents, which are the target of many eligibility challenges, at a rapid clip. See Maulin Shah, *Software Patents Are Resilient in the Wake of Alice Corp. v. CLS Bank*, PATENTVUE (Sept. 9, 2015), <http://patentvue.com/2015/09/09/software-patents-are-resilient-in-the-wake-of-alice-corp-vs-cls-bank> (noting also that the Patent Office continues to issue business method patents post-*Alice*, though in smaller numbers). In addition, eligibility motions could decrease if Congress passes legislation to weaken or eliminate the eligibility requirement, but legislative action currently seems unlikely. See Dennis Crouch, *AIPLA On Board with Statutory Reform of 101*, PATENTLYO (May 16, 2017), <https://patentlyo.com/patent/2017/05/aip-la-statutory-reform.html> (summarizing legislative proposals to amend § 101).

¹¹⁹ See Alexandra D. Lahav, *Procedural Design* 42 (Aug. 7, 2017), <https://ssrn.com/abstract=3013961>.

¹²⁰ See Paul R. Gugliuzza, *Patent Trolls and Patent Litigation Reform*, in OXFORD HANDBOOKS ONLINE, at 15 (2017), <http://www.oxfordhandbooks.com>.

changes have occurred in response to concerns (some valid, some not) about the high cost and low merit of particular types of litigation.¹²¹

The recent Federal Circuit decisions mentioned in the introduction (and discussed in more detail below) appear intended to push against this trend toward expedited resolution by emphasizing fact questions embedded in the eligibility analysis.¹²² But initial indications are that early eligibility decisions will persist in one form or another.¹²³ Thus, the key objective for those interested in the procedural design of the patent system should be to determine how courts can decide early eligibility motions in a way that maximizes decisional accuracy and minimizes litigation costs.¹²⁴ The next part of this article takes a step in that direction.

II. THE PROCEDURE OF PATENT ELIGIBILITY

Courts' newfound flexibility to resolve patent validity at the pleading stage has raised many questions of process that they have answered in dramatically different ways or, in some circumstances, completely ignored. This part of the article breaks new ground in patent law scholarship by identifying the five most important unresolved questions about the procedure of patent eligibility. It also suggests answers to those questions that would help maximize the eligibility requirement's cost-saving potential while minimizing the risk that courts invalidate meritorious patents.

¹²¹ See Lahav, *supra* note 119, at 42.

¹²² See *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121, 1129 (Fed. Cir. 2018) (vacating grant of motion to dismiss because of factual allegations in the complaint that the claimed invention was not “well understood” or “conventional”); *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1370 (Fed. Cir. 2018) (vacating grant of summary judgment because of fact questions about the patent's purported improvement over the prior art); see also *infra* Part II.B-C (discussing those decisions in more detail).

¹²³ See, e.g., *Automated Tracking Sols., LLC v. Coca-Cola Co.*, No. 2017-1494, 2018 WL 935455, at *5 (Fed. Cir. Feb. 16, 2018) (affirming judgment on the pleadings of ineligibility, two days after *Aatrix*); *Intellectual Ventures I LLC v. Symantec Corp.*, No. 2017-1814, 2018 WL 1324863, at *1 (Fed. Cir. Mar. 15, 2018) (post-*Berkheimer* decision affirming summary judgment of ineligibility); *Maxon, LLC v. Funai Corp.*, No. 2017-2139, 2018 WL 1719101, at *1 (Fed. Cir. Apr. 9, 2018) (affirming grant of motion to dismiss on eligibility grounds); *MyMail, Ltd. v. ooVoo, LLC*, No. 17-CV-4487, 2018 WL 1367385, at *13 (N.D. Cal. Mar. 16, 2018) (Koh, J.) (granting post-*Aatrix* motion for judgment on the pleadings of ineligibility); *ChargePoint, Inc. v. SemaConnect, Inc.*, 2018 WL 1471685, at *4 (D. Md. Mar. 26, 2018) (granting motion to dismiss for lack of eligibility, refusing to consider expert declarations submitted by the patentee that purported “to establish the convention of the field and the subsequent inventiveness of the claims”).

¹²⁴ See Mark A. Lemley, *The Surprising Resilience of the Patent System*, 95 TEX. L. REV. 1, 56 (2016) (arguing that, because recent changes to patent law seem to have had little effect on patent acquisition and enforcement, reformers should instead “look out for opportunities to simplify patent litigation, making it quicker and cheaper”) (emphasis added).

A. Analyzing Eligibility at the “Threshold”

The procedural question relevant to patent eligibility that the Federal Circuit has discussed most thoroughly is whether a court must analyze eligibility “at the threshold”—that is, before resolving other issues of patentability and infringement—or whether a court may avoid deciding eligibility and resolve the case on other grounds if that would be easier. The extent to which the Federal Circuit has fixated on this issue is perplexing. Federal courts generally have significant discretion over how they manage their dockets,¹²⁵ and courts usually decide only the issues the parties contest.¹²⁶ Yet a surprising amount of case law states that courts *must* decide patent eligibility before analyzing other issues, regardless of what the parties want or what the court thinks is most efficient. This puzzling insistence that patent eligibility is, like subject matter jurisdiction, a mandatory threshold issue, has spurred some judges and scholars to embrace another extreme: analogizing to principles of constitutional avoidance, they assert that courts should *never* address eligibility if a case can be resolved on other grounds.¹²⁷ This section makes the case for why neither of those inflexible approaches is optimal.

1. Conflicting Case Law on the “Threshold” Question.—To start, a review of the relevant case law will help illuminate why the debate over whether eligibility must be decided at the outset of the case is so contentious. (As with many of the procedural topics explored in this article, the relevant precedent has, to my knowledge, never before been collected in one place.)

One of the earliest judicial references to eligibility being the first issue that must be addressed in the patentability analysis is in *Parker v. Flook*, a 1978 Supreme Court decision holding that a method of updating alarm limits during catalytic conversion was not eligible for a patent because its only inventive feature was a mathematical formula.¹²⁸ In rejecting the argument that the Court’s approach to eligibility “improperly import[ed] into § 101” (the portion of the Patent Act that is the basis for the eligibility requirement) “the considerations of ‘inventiveness,’ that are the proper concerns of §§ 102 and 103” (the portions that require patents to be novel and nonobvious, respectively), the Court noted that the eligibility requirement “rests . . . on the more fundamental understanding that” certain inventions “are not the kind of ‘discoveries’ that the statute was enacted to

¹²⁵ See, e.g., *Landis v. N. Am. Co.*, 299 U.S. 248, 254 (1936) (Cardozo, J.) (recognizing the “power inherent in every court to control the disposition of the causes on its docket with economy of time and effort for itself, for counsel, and for litigants”).

¹²⁶ But see *infra* notes 160-161 and accompanying text for a discussion of scholarship questioning that norm.

¹²⁷ See *MySpace, Inc. v. GraphOn Corp.*, 672 F.3d 1250, 1260 (Fed. Cir. 2012); Crouch & Merges, *supra* note 115, at 1691; Vishnubhakat, *supra* note 115, at 103-04.

¹²⁸ 437 U.S. 584, 594-95 (1978).

protect.”¹²⁹ Accordingly, the Court continued, “[t]he obligation to determine what type of discovery is sought to be patented *must precede* the determination of whether that discovery is, in fact, new or obvious.”¹³⁰

Viewed in context, it is not clear that the Supreme Court in *Flook* intended to mandate a strict sequence of deciding the various requirements of patentability. Given that the relevant portion of the opinion was defending the very existence of the judicial exceptions to the categories of patent-eligible subject matter recited in § 101 (processes, machines, manufactures, and compositions of matter),¹³¹ the Court could be understood to have been emphasizing the fundamental *importance* of having an eligibility inquiry—not suggesting that eligibility must always be decided *before* novelty and nonobviousness. Nevertheless, a year later, the Court of Customs and Patent Appeals (one of the Federal Circuit’s predecessors) drew on *Flook* in writing that “[t]he first door which must be opened on the difficult path to patentability is § 101.”¹³² The Supreme Court referred to § 101 as a “threshold” requirement for the first time in a 1981 decision,¹³³ and the Federal Circuit repeated the notion that eligibility is the “first door” to be opened in its landmark 1998 decision in *State Street*, which held that business methods are, in fact, patent eligible.¹³⁴

None of those cases, however, presented any issue other than eligibility, so the characterization of § 101 being a threshold issue had little practical impact. At the beginning of the eligibility requirement’s recent renaissance, however, the Federal Circuit gave some teeth to the principle that eligibility is the first issue that must be decided. In the court’s 2007 decision in *Comiskey*, which held that a method of compelling and conducting arbitration was not patent eligible, the court insisted that the eligibility inquiry “*must precede* the determination of whether [the] discovery is . . . new or obvious.”¹³⁵ The court implemented that principle by refusing to review the case on the ground it was decided below (obviousness) and instead concluded that the claims were “barred at the threshold by § 101.”¹³⁶ A year later, in its en banc opinion in *Bilski*, the Federal Circuit tried to back away

¹²⁹ *Id.* at 593.

¹³⁰ *Id.* (emphasis added).

¹³¹ *See id.*

¹³² *In re Bergy*, 596 F.2d 952, 960 (C.C.P.A. 1979) (Rich, J.) (citing *Flook*, 437 U.S. at 593).

¹³³ *Diamond v. Diehr*, 450 U.S. 175, 188 (1981) (holding that the claimed process for curing rubber was “not barred at the threshold by § 101”).

¹³⁴ *State St. Bank & Trust Co. v. Signature Fin. Grp., Inc.*, 149 F.3d 1368, 1372 n.2 (Fed. Cir. 1998) (quoting *Bergy*, 596 F.2d at 960).

¹³⁵ *In re Comiskey*, 499 F.3d 1365, 1371 (Fed. Cir. 2007). The Federal Circuit later revised its opinion, but the portion relevant to this discussion remained unchanged. *See In re Comiskey*, 554 F.3d 967, 973 (Fed. Cir. 2009).

¹³⁶ *Comiskey*, 499 F.3d at 1371 (quoting *Diehr*, 450 U.S. at 188).

from that emphatic ruling, writing that “[a]lthough our decision in *Comiskey* may be misread by some as requiring in every case that the examiner conduct a § 101 analysis before assessing any other issue of patentability, we did not so hold.”¹³⁷ The Supreme Court’s opinion in *Bilski* ultimately did not tackle this question of sequencing, but the Court did refer to § 101 as a “threshold test”¹³⁸ (though, again, no other issue of patentability was present in that case).

Except for *State Street*, all of these cases characterizing § 101 as a threshold issue were appeals from examination proceedings at the Patent Office. Unlike a court, which typically resolves only the issues raised by the parties, the Patent Office must decide that an application complies with *every* patentability requirement before it grants a patent.¹³⁹ Because of the comprehensive nature of examination, there is at least a plausible ground for suggesting that the Patent Office should start with § 101—the first patentability requirement presented in the patent statute.¹⁴⁰ But the notion that eligibility must be addressed at the outset has increasingly appeared in Federal Circuit opinions in infringement litigation, too. The initial appearances were largely as boilerplate recitations of the law that introduced the eligibility analysis.¹⁴¹ More recently, however, panels and judges of the Federal Circuit have become deeply divided over the question of whether a court must first address eligibility before deciding any other issue in an infringement case.

Three distinct camps have formed. First, as the discussion thus far suggests, there remains significant support in both Federal Circuit and Supreme Court case law for the view that eligibility must be addressed at the outset regardless of

¹³⁷ *In re Bilski*, 545 F.3d 943, 950 n.1 (Fed. Cir. 2008) (en banc).

¹³⁸ *Bilski v. Kappos*, 561 U.S. 593, 602 (2010); *accord id.* at 621 (Stevens, J., concurring in the judgment) (“Section 101 imposes a threshold condition.”).

¹³⁹ See MANUAL OF PATENT EXAMINING PROCEDURE ch. 2103(I) (9th ed. Jan. 2018 rev.) (“[E]ach claim should be reviewed for compliance with every statutory requirement for patentability”); see also *Maschinenfabrik Rieter, A.G. v. Greenwood Mills*, 340 F. Supp. 1103, 1108 (D.S.C. 1972) (“[I]t is the duty of the Patent Office carefully to examine each patent application in the light of *all* statutory requirements for patentability”) (emphasis added) (citing 35 U.S.C. § 131 (“The Director shall cause an examination to be made of the application and the alleged new invention; and if on such examination it appears that the applicant is entitled to a patent under the law, the Director shall issue a patent therefor.”)).

¹⁴⁰ See 35 U.S.C. pt. II (“Patentability of Inventions and Grant of Patents”).

¹⁴¹ See, e.g., *Ultramercial, LLC v. Hulu, LLC (Ultramercial I)*, 657 F.3d 1323, 1326 (Fed. Cir. 2011) (“[A]s § 101 itself expresses, subject matter eligibility is merely a threshold check; claim patentability ultimately depends on ‘the conditions and requirements of this title,’ such as novelty, nonobviousness, and adequate disclosure.”), *cert. granted, judgment vacated sub nom.*, *WildTangent, Inc. v. Ultramercial, LLC*, 132 S. Ct. 2431 (2012); *Classen Immunotherapies, Inc. v. Biogen IDEC*, 659 F.3d 1057, 1063 (Fed. Cir. 2011) (section of opinion titled “The § 101 Threshold”).

whether the proceeding is examination at the Patent Office or litigation in court.¹⁴² Second, the Federal Circuit has sometimes stated precisely the opposite view: that courts should *avoid* analyzing eligibility if a case can be resolved on other grounds. This notion of what I will call “eligibility avoidance” first appeared in a 2012 case, *Dealertrack, Inc. v. Huber*, in which a district court had before it several different summary judgment motions.¹⁴³ The district court granted a motion to invalidate the patent for not reciting eligible subject matter, and the Federal Circuit affirmed.¹⁴⁴ But Judge Plager dissented, arguing that the court “should exercise its inherent power to control the processes of litigation and insist that litigants, and trial courts, initially address” novelty, nonobviousness, and the disclosure doctrines of § 112, “and not foray into the jurisprudential morass of § 101 unless absolutely necessary.”¹⁴⁵ The majority (Judge Linn, joined by Judge Dyk—the author of *Comiskey* and its “*must precede*” declaration) responded by referencing the case law discussed above and noting, simply (and accurately), that “the Supreme Court characterizes patent eligibility under § 101 as a ‘threshold test.’”¹⁴⁶

Undeterred, Judge Plager worked his eligibility avoidance view into a majority opinion less than two months later. In *MySpace, Inc. v. GraphOn Corp.*, the district court granted summary judgment of invalidity on the grounds of anticipation and obviousness, and the Federal Circuit affirmed.¹⁴⁷ This time, Judge Mayer dissented, insisting that “§ 101 is an ‘antecedent question’ that must be addressed before this court can consider whether particular claims are invalid as obvious or anticipated.”¹⁴⁸ In response, Judge Plager, the author of the majority opinion (joined by Judge Newman), expanded on his dissent from *Dealertrack*, writing that courts should avoid the “swamp of verbiage that is § 101” and insist that litigants first address all of the Patent Act’s other patentability requirements.¹⁴⁹ Avoiding § 101, according to Judge Plager’s opinion for the court, “would make patent litigation more efficient, conserve judicial resources, and bring a degree of certainty to the interests of both patentees and their competitors in the marketplace.”¹⁵⁰ Judge Plager’s opinion drew parallels to the principle of constitutional avoidance, noting that § 101 “can be thought of as the patent law analogy to the Bill of Rights”

¹⁴² In addition to the cases discussed above, see the cases and opinions cited *infra* notes 146, 152-153.

¹⁴³ 674 F.3d 1315, 1318 (Fed. Cir. 2012).

¹⁴⁴ *Id.* at 1334.

¹⁴⁵ *Id.* at 1335 (Plager, J., concurring in part and dissenting in part) (citation omitted).

¹⁴⁶ *Id.* at 1330 n.3 (majority opinion) (quoting *Bilski v. Kappos*, 561 U.S. 593, 602 (2010)).

¹⁴⁷ 672 F.3d 1250, 1258 (Fed. Cir. 2012).

¹⁴⁸ *Id.* at 1264 (Mayer, J., dissenting) (quoting *In re Comiskey*, 554 F.3d 967, 975 n.7 (Fed. Cir. 2009)).

¹⁴⁹ *Id.* at 1260 (majority opinion).

¹⁵⁰ *Id.*

and that, accordingly, the court should “put aside the § 101 defense” unless it is “clear and convincing beyond peradventure” that the claim is ineligible.¹⁵¹

With Judge Plager’s opinion in *MySpace* still on the books today, two irreconcilable lines of Federal Circuit authority exist, both justified by appeals to efficiency in adjudication. First, the avoidance view, enshrined in the *MySpace* opinion and supported by concerns about the difficulty of applying the Supreme Court’s test for patent eligibility. And, second, the threshold view, supported by the long line of case law discussed above and perhaps most staunchly by Judge Mayer, as evidenced by his dissent in *MySpace* and several other opinions in subsequent cases.¹⁵² The basic policy justification for the threshold view is that it can help end litigation quickly and inexpensively. As Judge Mayer has written, eligibility “can often be resolved without lengthy claim construction, and an early determination [of ineligibility] can spare both litigants and courts years of needless litigation.”¹⁵³

In contrast to the two extremes of the threshold and avoidance approaches, a third approach embraces the compromise position that courts should have discretion about when, exactly, to address the issue of eligibility. As noted above, the Federal Circuit’s *Bilski* opinion suggested that a patent examiner might have flexibility to address alternative grounds for rejection before eligibility. Judge Lourie’s concurrence in the Federal Circuit’s deeply divided en banc decision in *Alice* suggested that a more flexible approach would be permissible in litigation, too.¹⁵⁴ He wrote: “[S]ome have argued that because § 101 is a ‘threshold test,’ district courts must always consider subject-matter eligibility first among all possible bases for finding invalidity. That is not correct.”¹⁵⁵ District courts, Judge Lourie continued, “are rightly entrusted with great discretion to control their dockets and the conduct of proceedings before them, including the order of issues presented during litigation.”¹⁵⁶ According to Judge Lourie, “district courts may

¹⁵¹ *Id.* at 1260-61.

¹⁵² *See, e.g.,* *Alexsam, Inc. v. IDT Corp.*, 715 F.3d 1336, 1348 (Fed. Cir. 2013) (Mayer, J., dissenting) (“Whether claims are directed to statutory subject matter is a ‘threshold’ question, which must be addressed before this court can consider subordinate issues related to obviousness and infringement.”) (citation omitted); *accord* *Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1324 (Fed. Cir. 2016) (Mayer, J., concurring). Also see the cases cited *infra* note 153.

¹⁵³ *I/P Engine, Inc. v. AOL Inc.*, 576 F. App’x 982, 996 (Fed. Cir. 2014) (Mayer, J., concurring); *accord* *Ultramercial, Inc. v. Hulu, LLC (Ultramercial III)*, 772 F.3d 709, 718-20 (Fed. Cir. 2014) (Mayer, J., concurring) (noting that resolving eligibility at the outset “will conserve scarce judicial resources” because it can be resolved on a motion to dismiss without formal claim construction).

¹⁵⁴ *CLS Bank Int’l v. Alice Corp.*, 717 F.3d 1269, 1284 (Fed. Cir. 2013) (Lourie, J., concurring), *aff’d*, 134 S. Ct. 2347 (2014). Judges Dyk, Prost, Reyna, and Wallach joined Judge Lourie’s opinion.

¹⁵⁵ *Id.* (quoting *Bilski v. Kappos*, 561 U.S. 593, 602 (2010)).

¹⁵⁶ *Id.*

exercise their discretion to begin elsewhere when they perceive that another section of the Patent Act might provide a clearer and more expeditious path to resolving a dispute.”¹⁵⁷

2. *The Virtues of a Flexible Approach.*—Of the three approaches to the timing of eligibility decisions, the flexible approach articulated by Judge Lourie in *Alice*—for which there is actually the *least* support in Federal Circuit case law—makes the most sense and, based on my own exhaustive review of the relevant case law, best reflects the actual practice in the district courts.¹⁵⁸

The threshold approach—for which there is the *most* precedential authority—makes the least sense, particularly in litigation as compared to examination. For starters, it would be unusual in our adversarial system to force parties to litigate an issue they do not want to or to force a judge to decide an issue the parties do not contest.¹⁵⁹ Some commentators have criticized courts’ tendency to give the parties control over issue selection, particularly when their presentation might lead the court to make an inaccurate pronouncement about the law.¹⁶⁰ But a fact-specific decision on patent validity—particularly at the district court level—has almost no precedential significance.¹⁶¹ A related concern is that a defendant with a colorable ineligibility defense might not raise that defense for fear of creating precedent that will cast doubt on the validity of its own patents. While that dynamic surely exists

¹⁵⁷ *Id.*

¹⁵⁸ See, e.g., *CertusView Techs., LLC v. S&N Locating Servs., LLC*, 111 F. Supp. 3d 688, 731 (E.D. Va. 2015) (granting the defendants’ motion for judgment on the pleadings of ineligibility, denying as moot motions for summary judgment of anticipation, obviousness, and noninfringement), *aff’d*, 695 F. App’x 574 (Fed. Cir. 2017); *TNS Media Research, LLC v. TRA Glob., Inc.*, 984 F. Supp. 2d 205, 242 (S.D.N.Y. 2013) (granting the defendants’ motion for summary judgment of noninfringement, denying as moot a motion for summary judgment of invalidity on eligibility grounds (among others)), *aff’d in part, rev’d in part sub nom.*, *TNS Media Research, LLC v. TiVo Research & Analytics, Inc.*, 629 F. App’x 916 (Fed. Cir. 2015).

¹⁵⁹ See 21B KENNETH W. GRAHAM, JR., *FEDERAL PRACTICE AND PROCEDURE* § 5122 (2d ed. 2017) (“Under the American system of party initiation and party presentation, the judge does not roam about the countryside like the Lone Ranger seeking wrongs to right; one or both of the parties must bring their dispute to court . . .”). One exception is, of course, with nonwaivable issues of jurisdiction, a point I discuss immediately below. See *infra* notes 167-170 and accompanying text.

¹⁶⁰ See Amanda Frost, *The Limits of Advocacy*, 59 *DUKE L.J.* 447, 452-53 (2009); see also GARY LAWSON, *EVIDENCE OF THE LAW* ch.6 (2017) (exploring the circumstances in which the scope of adjudication is “entirely up to the parties” as well as the instances in which “the legal system [has] . . . the right, and even the obligation . . . , to tell the parties what they need to be arguing about”).

¹⁶¹ Cf. Frost, *supra* note 160, at 511-12 (noting that, because “[d]istrict courts do not set precedent, . . . issue creation is less vital” at that level, but also observing that district courts are uniquely positioned to inject new issues into a case early—when fact development is still possible and the parties’ expectations are less settled).

in some cases,¹⁶² treating eligibility as a threshold issue would do little to change it, as a defendant worried about creating bad precedent for its own patents in a similar field of technology would avoid challenging validity on *any* ground, not just eligibility.¹⁶³ Moreover, the patents most vulnerable to eligibility challenges are overwhelmingly in the information technology industry,¹⁶⁴ and the defendants most often accused of infringing those patents—large tech companies such as Amazon, Apple, and Samsung¹⁶⁵—have a reputation for not caring much about strong legal protection for patents.¹⁶⁶ Those defendants thus have a clear incentive to raise the ineligibility defense as quickly as possible because, unlike any other ground of invalidity, it can allow them to win the case before discovery begins.

Setting aside practical considerations, a doctrinal justification for the threshold approach, which Judge Mayer has embraced, is to characterize § 101 as a “jurisdictional” requirement that cannot be waived by the parties or avoided by the court.¹⁶⁷ But that argument is on shaky ground. The Supreme Court in recent years has significantly narrowed the class of legal requirements considered to be jurisdictional and therefore mandatory for a court to resolve at the outset of a case.¹⁶⁸ Instead, the Court has enhanced lower courts’ flexibility to decide cases on the easiest ground available.¹⁶⁹ Patentable subject matter, which defines the validity of a patent and is essential to deciding a claim of infringement, would

¹⁶² In the *Myriad* case, for example, Myriad’s DNA patents were challenged only when the American Civil Liberties Union and the Public Patent Foundation stepped in to represent a group of plaintiffs that included researchers, physicians, cancer patients, and non-profit organizations. *See Ass’n for Molecular Pathology v. U.S. Pat. & Trademark Off.*, 702 F. Supp. 2d 181, 186-90 (S.D.N.Y. 2010). Earlier suits by Myriad against other entities offering clinical genetic testing settled, with the defendants in each case agreeing to discontinue their allegedly infringing activity. *See Ass’n for Molecular Pathology v. U.S. Pat. & Trademark Off.*, 689 F.3d 1303, 1315 (Fed. Cir. 2012).

¹⁶³ Instead, the defendant would likely pin its defense on noninfringement, or simply settle. *See* Roger Allan Ford, *Patent Invalidity Versus Noninfringement*, 99 CORNELL L. REV. 71, 109-14 (2013) (discussing various reasons why defendants in patent infringement suits sometimes avoid challenging validity).

¹⁶⁴ Lefstin, Menell & Taylor, *supra* note 16, at 25.

¹⁶⁵ *See* Jacqueline Bell, *Patent Litigation in U.S. District Courts: A 2016 Review*, LAW360 (Mar. 1, 2017), <https://www.law360.com/articles/895435/patent-litigation-in-us-district-courts-a-2016-review>.

¹⁶⁶ *See* BURK & LEMLEY, *supra* note 5, at 4.

¹⁶⁷ *Ultramercial, Inc. v. Hulu, LLC (Ultramercial III)*, 772 F.3d 709, 718 (Fed. Cir. 2014) (Mayer, J., concurring) (noting that as a “gateway to the Patent Act,” eligibility analysis “bears some of the hallmarks of a jurisdictional inquiry”).

¹⁶⁸ *See* Howard M. Wasserman, *The Demise of “Drive-By Jurisdictional Rulings,”* 105 NW. L. REV. 947, 947-48 (2011).

¹⁶⁹ *See, e.g., Sinochem Int’l Co. v. Malaysia Int’l Shipping Corp.*, 549 U.S. 422, 425 (2007) (holding that a court may dismiss a case on forum non conveniens grounds without determining whether personal or subject matter jurisdiction exist).

almost certainly fall on the merits, not jurisdictional, side of the divide.¹⁷⁰ And yet, despite all these flaws in the threshold approach, both practical and doctrinal, district courts sometimes declare that eligibility *must* be resolved first because of the significant amount of Federal Circuit (and Supreme Court) precedent embracing that perspective.¹⁷¹

At the other extreme, some commentators have praised the virtues of eligibility avoidance. Drawing on Judge Plager’s opinion in *MySpace*, they note that avoiding eligibility can reduce “the total cost of deciding validity issues, given that § 101 is the most vague and contentious of all validity doctrines.”¹⁷² These scholars have buttressed their arguments with the empirical evidence I mentioned above, which suggests that most patent applications rejected by examiners as ineligible are also rejected on another ground, such as anticipation or obviousness. That evidence, in their view, illustrates that it is often unnecessary to consider the sometimes difficult question of eligibility.¹⁷³

The avoidance approach has possible appeal in examination. Eligibility is essentially a common law doctrine that requires the decisionmaker to analogize and distinguish judicial precedent. That is a mode of analysis familiar to lawyers and judges but not to nonlawyer patent examiners.¹⁷⁴ Also, eligibility’s inquiry into whether an activity is “well known” or “conventional” in the field could, in some circumstances, require a more difficult and time-consuming investigation into the state of the art than it takes to resolve questions of novelty and nonobviousness, which require the examiner mainly to read technical documents.¹⁷⁵ As the Federal Circuit has noted, “[t]he mere fact that something is disclosed in a piece of prior art”—which can be sufficient to invalidate a patent for lack of novelty and can provide a basis for a ruling of obviousness—“does not mean it was well-

¹⁷⁰ See Wasserman, *supra*, note 168, at 948 (distinguishing “[a]djudicative-jurisdictional rules” from, among other things, “substantive-merits rules that . . . determin[e] the validity and success of a plaintiff’s claim”); see also Scott Dodson, *Jurisdiction and Its Effects*, 105 GEO. L.J. 619, 634, 636 (2017) (“Jurisdiction[] . . . determines forum in a multiforum system. . . . Any law that does not determine forum . . . cannot be called jurisdictional.”).

¹⁷¹ See, e.g., *SmartGene, Inc. v. Advanced Biological Labs.*, 852 F. Supp. 2d 42, 51 (D.D.C. 2012) (stating that “a 35 U.S.C. § 101 subject matter patentability inquiry is the threshold analysis for determining patent validity”); *Affinity Labs of Tex., LLC v. Amazon.com, Inc.*, No. 6:15-CV-29, 2015 WL 3757497, at *4 (W.D. Tex. June 12, 2015) (noting that § 101 “must be satisfied before a court can proceed to consider subordinate validity issues” and that “[t]he Federal Circuit’s declaration on this point is rooted in sound policy”) (internal quotation marks omitted).

¹⁷² Crouch & Merges, *supra* note 115, at 1691; accord Vishnubhakat, *supra* note 115, at 103-04.

¹⁷³ Crouch & Merges, *supra* note 115, at 1686; Vishnubhakat, *supra* note 115, at 94, 103-04.

¹⁷⁴ See Greg Reilly, *Decoupling Patent Law*, 97 B.U. L. REV. 551, 592 (2017).

¹⁷⁵ See Jacob S. Sherkow, *And How: Mayo v. Prometheus and the Method of Invention*, 122 YALE L.J. ONLINE 351, 356-57 (2013).

understood, routine, and conventional”¹⁷⁶—a key element of a defense of ineligibility. That said, it is not beyond doubt that avoiding eligibility in examination would result in greater efficiency. A rejection on all applicable grounds at once can ultimately streamline the examination process. And, as discussed further below, the claims and specification in the patent application itself often make plain that the claimed invention is directed to an ineligible principle with no inventive concept, mitigating concerns about examiners having to conduct expansive investigations into the state of the art.¹⁷⁷

In any case, the potential justifications for avoiding eligibility in examination do not translate to litigation. To begin with, the data indicating that many patents fail to satisfy both eligibility and at least one other requirement could actually be interpreted to *support* resolving litigation on pleading-stage eligibility motions. As I indicated above, that data suggests that, by relying on the eligibility requirement to invalidate a patent on a motion to dismiss, courts can quickly and cheaply reach the exact same result they would have reached later in the litigation at summary judgment or trial.

Moreover, even assuming early eligibility adjudications are more frequently erroneous than adjudications at later stages (which, again, empirical and experimental evidence indicates may not be the case¹⁷⁸), there remain important considerations about process to be weighed. In examination, the examiner can consider all grounds of patentability at the same time, and failure to satisfy any one of them will stop the patent from issuing. In litigation, however, eligibility is practically the only ground of patentability that can be decided before discovery begins. Consequently, in litigation, unlike in examination, a finding that a patent fails to satisfy § 101 can be made earlier in the process and at lower cost than findings of unpatentability on other grounds.¹⁷⁹

Finally, the notion that courts should avoid eligibility, and thereby treat that requirement differently from practically any other issue that might arise in a patent case, resembles the exceptionalist approach to procedural matters that the Supreme Court has repeatedly condemned in the past decade.¹⁸⁰ The best approach to resolving patent eligibility in litigation, then, would seem to be to resolve it like

¹⁷⁶ Berkheimer v. HP Inc., 881 F.3d 1360, 1369 (Fed. Cir. 2018).

¹⁷⁷ See *infra* notes 297-302 and accompanying text.

¹⁷⁸ See *supra* notes 115-116.

¹⁷⁹ See David Swetnam-Burland & Stacy O. Stitham, *Patent Law 101: The Threshold Test as Threshing Machine*, 21 TEX. INTEL. PROP. L.J. 135, 147 (2013) (“[I]n at least some cases Section 101 questions can be asked and answered early in litigation before the parties and the court have invested considerable resources . . . in discovery, claim construction, and summary judgment practice.”).

¹⁸⁰ See Lee, *supra* note 59, at 1416.

any other potentially dispositive issue—whenever the parties raise it and the court thinks it is ripe for decision.¹⁸¹

B. Eligibility as Law, Fact, or Both

Doctrinally, the reason courts are able to decide eligibility at the “threshold” via a motion to dismiss or for judgment on the pleadings is that they often view it as a question of law involving no factual considerations. Yet the test for eligibility developed by the Supreme Court seems to invite inquiry into matters that would conventionally be considered factual because they turn on the particularities of a given case,¹⁸² including whether the patent recites a “fundamental economic practice”¹⁸³ or claims “conventional activity” in a specific field of technology.¹⁸⁴ In this section, I suggest that eligibility should be understood to present a question of law based on underlying facts—just like other patentability requirements such as nonobviousness. Though the Federal Circuit has recently taken steps to recognize eligibility’s factual underpinnings, the court’s decisions may make it *too easy* for patentees to raise a factual dispute, defeating eligibility’s key function of providing a means to quickly and cheaply end infringement cases that plainly lack merit.

1. Inconsistent Case Law on the Law-Versus-Fact Question.—To start, it will again be helpful to analyze the deep conflicts in the case law about whether eligibility is a question of law, a question of fact, or a mix of both. At the broadest level, the Supreme Court has said, repeatedly, that “the ultimate question of patent validity is one of law.”¹⁸⁵ Nevertheless, the Court has recognized that the legal question of validity can have factual underpinnings.¹⁸⁶ For example the Court has explained that the nonobviousness requirement “lends itself to several basic factual inquiries” about the scope of the prior art, the differences between the prior art and the claimed invention, the level of ordinary skill in the pertinent art, and “secondary

¹⁸¹ See *id.* at 1463 (arguing that patent law exceptionalism is not appropriate “where a well-established standard exists for a discrete issue in general litigation”).

¹⁸² See Gary Lawson, *Proving the Law*, 86 NW. U. L. REV. 859, 882 n.68 (1992) (distinguishing pure questions of law, which “can meaningfully be asked in the abstract, without reference to the facts of particular cases,” from “mixed” questions that cannot be decided “without reference to specific facts”).

¹⁸³ *Alice Corp. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2356 (2014); *Bilski v. Kappos*, 561 U.S. 593, 611 (2010).

¹⁸⁴ *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 79-80 (2012).

¹⁸⁵ *E.g.*, *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). Though some nineteenth-century precedent treated patent validity as a question of fact for the jury, see, e.g., *Battin v. Taggart*, 58 U.S. (17 How.) 74, 85 (1854), the demise of that rule was apparently tied to the development of more elaborate administrative processes for reviewing validity before the patent issued. See John F. Duffy, *Jury Review of Administrative Action*, 22 WM. & MARY BILL OF RIGHTS J. 281, 296-99 (2013).

¹⁸⁶ See *Microsoft Corp. v. i4i Ltd. P’ship*, 564 U.S. 91, 96-97 (2011).

considerations,” such as commercial success and failure of others.¹⁸⁷ The Federal Circuit, contrary to the Supreme Court’s declaration that patent validity is ultimately a question of law, has treated some patentability requirements as *entirely factual*, including utility,¹⁸⁸ novelty,¹⁸⁹ and written description.¹⁹⁰

As for eligibility, the Federal Circuit has frequently stated that it is a question of law reviewed de novo on appeal—end stop.¹⁹¹ Judges on both the Federal Circuit and in the district courts have at times interpreted those statements as meaning that eligibility is a *purely* legal question that involves no factual issues.¹⁹² But a long line of often-overlooked Federal Circuit cases actually recognizes that the eligibility requirement can implicate questions of fact.

The earliest eligibility case in which the Federal Circuit discussed the salience of facts is the court’s 1992 opinion in *Arrhythmia Research Technology, Inc. v. Corazonix Corp.*¹⁹³ In that case, the court stated that analyzing eligibility “may require findings of underlying facts specific to the particular subject matter and its mode of claiming.”¹⁹⁴ Ultimately, however, the court found it unnecessary to address any factual issues to decide eligibility in that case.¹⁹⁵

¹⁸⁷ *Graham*, 383 U.S. at 17.

¹⁸⁸ *Raytheon Co. v. Roper Corp.*, 724 F.2d 951, 956 (Fed. Cir. 1983).

¹⁸⁹ *Brown v. 3M*, 265 F.3d 1349, 1351 (Fed. Cir. 2001).

¹⁹⁰ *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1355 (Fed. Cir. 2010) (en banc). For an overview of the Federal Circuit’s less-than-coherent approach to the law/fact distinction on validity issues, see MERGES & DUFFY, *supra* note 15, at 913-14.

¹⁹¹ *E.g.*, *Intellectual Ventures I LLC v. Erie Indem. Co.*, 850 F.3d 1315, 1325 (Fed. Cir. 2017) (“Patent eligibility under § 101 is an issue of law . . . we review without deference.”); *Fort Props., Inc. v. Am. Master Lease LLC*, 671 F.3d 1317, 1320 (Fed. Cir. 2012) (“Issues of patent-eligible subject matter are questions of law and are reviewed without deference.”) (quoting *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1369 (Fed. Cir. 2011)); *In re Comiskey*, 554 F.3d 967, 975 (Fed. Cir. 2009) (“It is well-established that ‘whether the asserted claims . . . are invalid for failure to claim statutory subject matter under 35 U.S.C. § 101[] is a question of law which we review without deference.’”) (first alteration in original) (quoting *AT&T Corp. v. Excel Commc’ns, Inc.*, 172 F.3d 1352, 1355 (Fed. Cir. 1999)).

¹⁹² *See, e.g.*, *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121, 1130 (Fed. Cir. 2018) (Reyna, J., concurring in part and dissenting in part) (“I respectfully disagree with the majority’s broad statements on the role of factual evidence in a § 101 inquiry. Our precedent is clear that the § 101 inquiry is a legal question.”); *CMG Fin. Servs., Inc. v. Pac. Tr. Bank*, 50 F. Supp. 3d 1306, 1314 (C.D. Cal. 2014) (“[T]he determination of whether a claim is drawn to patent-eligible subject matter is a pure question of law.”), *aff’d*, 616 F. App’x 420 (Fed. Cir. 2015); *Becton, Dickinson & Co. v. Baxter Int’l, Inc.*, 127 F. Supp. 3d 687, 691 (W.D. Tex. 2015) (same); *see also infra* note 212 (providing additional examples).

¹⁹³ 958 F.2d 1053 (Fed. Cir. 1992).

¹⁹⁴ *Id.* at 1056.

¹⁹⁵ *See id.*

In the early days of eligibility’s renaissance, the Federal Circuit again alluded to the possible relevance of facts, but those statements, too, were dicta.¹⁹⁶ The most extensive discussion of the role of facts appears in the court’s 2013 opinion in *Ultramercial, Inc. v. Hulu, LLC (Ultramercial II)*.¹⁹⁷ In contrast to the court’s prior statements that there could perhaps be factual aspects to the eligibility analysis, Chief Judge Rader’s opinion for the court declared that the analysis is “rife with underlying factual issues” including: whether there are “limitations in the claims that narrow or tie the claims to specific applications of an otherwise abstract concept,” “whether the patent embraces a scientific principle or abstract idea,” and whether the claim recites activities that were “routine, well-understood, or conventional” at the time the application was filed.¹⁹⁸ The Supreme Court, however, vacated the Federal Circuit’s opinion in *Ultramercial II* after deciding *Alice*,¹⁹⁹ and the Federal Circuit’s final opinion in the case, issued after Chief Judge Rader retired, did not discuss the role of facts in the eligibility inquiry.²⁰⁰ Other Federal Circuit cases around this time also stated that facts could be relevant to the eligibility inquiry, but all of those decisions ultimately concluded that there was no real dispute of fact in the case at hand.²⁰¹

The Federal Circuit’s failure to find an actual, factual dispute—even in the rare cases in which it acknowledged the potential relevance of facts—might be one reason why eligibility has often been viewed to present a pure question of law. Another reason might be that numerous Federal Circuit eligibility opinions have, without directly addressing the law/fact distinction, implicitly downplayed the relevance of facts. For instance, in a 2017 decision, the court held that district courts, when deciding whether a patent contains the inventive concept required by § 101, may completely ignore the testimony presented by the parties on the issues of novelty and nonobviousness, which are widely acknowledged to involve questions of fact.²⁰² Allowing courts to ignore that evidence seems questionable given that eligibility, novelty, and nonobviousness all revolve around the similar

¹⁹⁶ *E.g.*, *Comiskey*, 554 F.3d at 975 (“While there may be cases in which the legal question as to patentable subject matter may turn on subsidiary factual issues, *Comiskey* has not identified any relevant fact issues that must be resolved in order to address the patentability of the subject matter of *Comiskey*’s application.”).

¹⁹⁷ 722 F.3d 1335 (Fed. Cir. 2013).

¹⁹⁸ *Id.* at 1339.

¹⁹⁹ *WildTangent, Inc. v. Ultramercial, LLC*, 134 S. Ct. 2870 (2014).

²⁰⁰ *See Ultramercial, Inc. v. Hulu, LLC (Ultramercial III)*, 772 F.3d 709 (Fed. Cir. 2014).

²⁰¹ *See Mortg. Grader, Inc. v. First Choice Loan Servs. Inc.*, 811 F.3d 1314, 1325 (Fed. Cir. 2016); *Accenture Glob. Servs., GmbH v. Guidewire Software, Inc.*, 728 F.3d 1336, 1340-41 (Fed. Cir. 2013).

²⁰² *Two-Way Media Ltd. v. Comcast Cable Commc’ns*, 874 F.3d 1329, 1336 (Fed. Cir. 2017) (holding that the district court correctly disregarded expert and inventor testimony addressing those issues).

question of what, exactly, the inventor added to pre-existing technology.²⁰³ The Federal Circuit offered no justification for its approach besides the self-evident observation that eligibility and those other doctrines “are separate inquiries.”²⁰⁴

Additional illustrations of the Federal Circuit implicitly downplaying the relevance of facts come from a pair of opinions that, on their face, purported to do precisely the opposite—emphasizing the *importance* of factual considerations when deciding eligibility at the pleading stage. The first case, *McRO, Inc. v. Bandai Namco Games Am.*, involved a patent on a computerized process of syncing animation with sound.²⁰⁵ The Federal Circuit reversed the district court’s ruling of ineligibility on a motion for judgment on the pleadings, writing that the accused infringers “provided *no evidence* that the process previously used by animators is the same as the process required by the claims.”²⁰⁶ Yet this reference to the accused infringers’ failure to present evidence is puzzling in light of the case’s final outcome. Instead of vacating the judgment on the pleadings and remanding to allow the accused infringers to develop a factual record about prior art processes, the Federal Circuit held that the asserted claims *were* patent eligible, period.²⁰⁷ This definitive holding of eligibility seriously undercuts the court’s assertion that the accused infringers needed to present “evidence” to establish their defense.

Similarly, in another opinion reversing a pleading-stage dismissal on eligibility grounds, *Visual Memory LLC v. NVIDIA Corp.*, the Federal Circuit twice asserted that, in deciding whether the patent was directed to an abstract idea, it was drawing all “factual inferences” in favor of the patentee, citing Federal Rule of Civil Procedure 12(b)(6).²⁰⁸ Yet the opinion again concluded by definitively ruling that the claimed invention *was* patent eligible.²⁰⁹ Viewed in light of that final outcome, the references to factual inferences and the case’s procedural posture seem like nothing more than hollow argumentation offered to buttress a ruling favoring the plaintiff/patentee. When it came down to it, the court simply resolved eligibility as

²⁰³ For that reason, some courts *have* considered evidence of novelty or nonobviousness when deciding eligibility. *See, e.g.,* *YYZ, LLC v. Hewlett-Packard Co.*, 137 F. Supp. 3d 675, 686 (D. Del. 2015 (noting “how . . . the § 101 ‘inventiveness’ [analysis] involves questions of fact which intersect with those raised in the context of §§ 102 and 103”).

²⁰⁴ *Two-Way Media*, 874 F.3d at 1340.

²⁰⁵ 837 F.3d 1299, 1303 (Fed. Cir. 2016).

²⁰⁶ *Id.* at 1314 (emphasis added).

²⁰⁷ *See id.* at 1316 (“[W]e *reverse* and hold that [the asserted claims] are patentable under 35 U.S.C. § 101.”).

²⁰⁸ 867 F.3d 1253, 1261-62 (Fed. Cir. 2017).

²⁰⁹ *Id.* at 1262 (“[T]he claims of the ’740 patent are not directed to patent-ineligible subject matter under § 101. . . . Because the district court erred in dismissing Visual Memory’s complaint on the ground that the ’740 patent claimed patent-ineligible subject matter, we reverse.”).

a matter of law, foreclosing the defendant from presenting any factual evidence to establish its eligibility defense at a later stage of the case.

All of this Federal Circuit case law downplaying the role of facts—either implicitly or explicitly—makes it unsurprising that district courts, too, have frequently discounted the potential for factual considerations to enter the eligibility analysis. For instance, they usually allow the jury to decide the issues of anticipation and obviousness, but not eligibility.²¹⁰ None of the leading model patent jury instructions even mention patent-eligible subject matter.²¹¹ In fact, numerous district courts have explicitly stated that patent eligibility is a “pure” question of law.²¹² Even the Patent Office has gotten in on the act. Summarizing prevailing case law, the most recent revision to the agency’s *Manual of Patent Examining Procedure* states that the Federal Circuit “does not require ‘evidence’ that a claimed concept is [ineligible], and generally decides the legal conclusion of eligibility without resolving any factual issues.”²¹³

2. *Berkheimer and the Fact Questions Embedded in the Eligibility Analysis.*—The upshot is that, for many years and in many fora, the role of facts in the eligibility analysis was minimal if not nonexistent, even if the Federal Circuit had sometimes suggested that facts *could* be relevant. This casual disregard of fact questions ended abruptly in February 2018. In two opinions issued less than a week apart, the Federal Circuit identified a specific question of fact embedded within the eligibility analysis, overturned district court decisions resolving eligibility pre-trial, and threw the patent bar into a tizzy.²¹⁴ Most pertinent to the present discussion of

²¹⁰ See, e.g., Final Jury Instructions, *DDR Holdings, LLC v. Digital River, Inc.*, No. 2:06-cv-42 (E.D. Tex. Oct. 12, 2012); accord *ContentGuard Holdings, Inc. v. Apple Inc.*, No. 2:13-CV-1112, 2016 WL 1637280, at *6 (E.D. Tex. Apr. 25, 2016) (“Patent eligibility is a matter of law and is not properly submitted to a fact-finder such as a jury.”).

²¹¹ See AMERICAN INTELLECTUAL PROPERTY LAW ASS’N, MODEL PATENT JURY INSTRUCTIONS (2017), available at <http://www.aipla.org/learningcenter/library/books/other-pubs/Pages/default.aspx>; FEDERAL CIRCUIT BAR ASS’N, MODEL PATENT JURY INSTRUCTIONS (July 2016), available at <https://fedcirbar.org/IntegralSource/Model-Patent-Jury-Instructions>; MODEL PATENT JURY INSTRUCTIONS FOR THE NORTHERN DISTRICT OF CALIFORNIA (July 16, 2015), available at <http://www.cand.uscourts.gov/juryinstructions>.

²¹² E.g., *Lumen View Tech. LLC v. Findthebest.com, Inc.*, 984 F. Supp. 2d 189, 204 (S.D.N.Y. 2013) (“Whether a patent is valid under Section 101 is a pure question of law.”); accord *DietGoal Innovations LLC v. Bravo Media LLC*, 33 F. Supp. 3d 271, 277 (S.D.N.Y. 2014); *Big Baboon, Inc. v. Dell, Inc.*, No. CV 09-1198, 2011 WL 13124454, at *8 (C.D. Cal. Feb. 8, 2011); see also *supra* note 192 (citing additional cases).

²¹³ MANUAL OF PATENT EXAMINING PROCEDURE ch. 2106.07(a)(III) (9th ed. Jan. 2018 rev.).

²¹⁴ For a small sample of the commentary discussing the Federal Circuit’s decisions, see Meredith Addy, *Is There a Light at the End of the Alice Tunnel?*, IPWATCHDOG (Feb. 18, 2018), <http://www.ipwatchdog.com/2018/02/18/light-end-alice-tunnel/id=93883>; Dennis Crouch, *Eligibility: A Factual Dispute Requires Alleged Facts*, PATENTLYO (Feb. 22, 2018), <https://patentlyo.com/patent/2018/02/eligibility-factual-requires.html>; Ryan Davis, *Recent Patent-Eligibility Cases Leave Unanswered Questions*, LAW360 (Mar. 12, 2018),

the law/fact distinction is *Berkheimer v. HP Inc.*²¹⁵ In that opinion, the Federal Circuit vacated a district court decision granting summary judgment of ineligibility, ruling that a genuine dispute of material fact existed on the second step of the *Alice* test: whether the patent claims activity that is merely conventional in the field.²¹⁶

Because of *Berkheimer*'s importance to both the law/fact distinction and several other procedural issues discussed later in this article, a detailed review of the case will prove useful. The plaintiff, Berkheimer, had sued HP for infringing his patent, which related to “digitally processing and archiving files in a digital asset management system.”²¹⁷ The district court granted HP’s motion for summary judgment, holding that several claims of Berkheimer’s patent were ineligible under § 101.²¹⁸ The Federal Circuit, in an opinion by Judge Moore, vacated that decision. Applying the first step of the *Alice* test, the court determined that the patent was directed to the abstract idea of using a generic computer to manipulate data.²¹⁹ Turning to the second step, the court wrote that it is satisfied “when the claim limitations ‘involve more than the performance of ‘well-understood, routine, [and] conventional activities previously known to the industry.’”²²⁰ Then, directly addressing the law/fact question, the court stated:

The question of whether a claim element or combination of elements is well-understood, routine and conventional to a skilled artisan in a relevant field is a question of fact. Any fact, such as this one, that is pertinent to the validity conclusion must be proven by clear and convincing evidence.²²¹

Though, as discussed, the Federal Circuit had previously suggested that there *might* be factual questions relevant to the eligibility analysis, this identification of a particular issue of fact—whether the claimed invention is conventional in the field—is unprecedented in Federal Circuit law.

Turning to the case at hand, the Federal Circuit—again for the first time ever in an eligibility ruling—found that a factual dispute actually existed. The patentee

<https://www.law360.com/articles/1020953/recent-patent-eligibility-cases-leave-unanswered-questions>.

²¹⁵ 881 F.3d 1360 (Fed. Cir. 2018).

²¹⁶ *Id.* at 1370.

²¹⁷ *Id.* at 1362.

²¹⁸ *Berkheimer v. Hewlett-Packard Co.*, 224 F. Supp. 3d 635, 637 (N.D. Ill. 2016).

²¹⁹ *Berkheimer*, 881 F.3d at 1366.

²²⁰ *Id.* at 1367 (quoting *Alice Corp. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2359 (2014); *Content Extraction & Transmission LLC v. Wells Fargo Bank*, 776 F.3d 1343, 1347-48 (Fed. Cir. 2014)) (alteration in original).

²²¹ *Id.* at 1368.

had argued, drawing on *Alice*, that the patent’s inventive concept was that it improved the function of a computer.²²² Assessing that argument, the Federal Circuit noted that the patent’s specification “explains that the claimed improvement increases efficiency and computer functionality over prior art systems,” and the court quoted at length from the relevant portions of the specification.²²³ Then, relying entirely on the patent’s own statements about its purported inventiveness—and without citing any other evidence from the record—the Federal Circuit concluded that “[t]he improvements in the specification . . . create a factual dispute regarding whether the invention describes well-understood, routine, and conventional activities.”²²⁴ Summary judgment was, therefore, inappropriate.²²⁵

The Federal Circuit offered only minimal justification for its assertion that the inquiry into “conventionality” is a question of fact. The court relied primarily on the Supreme Court’s decision in *Mayo*, which suggested that the § 101 inquiry “‘might sometimes overlap’” with what the Federal Circuit characterized as “other fact-intensive inquiries” such as novelty under § 102.²²⁶ Still, an inquiry into whether the claimed technology is well-known in a particular field does seem intuitively like the sort of determination the law would usually consider to be factual, as it requires the court to determine conditions that exist (or have existed) in the world outside the courtroom.²²⁷

Indeed, despite the large amount of pre-*Berkheimer* case law treating eligibility as a purely legal question, the Supreme Court has never so held. On the contrary, the Court has frequently based its eligibility rulings on “undisputed” propositions that look like facts and on evidence extrinsic to the patent itself—including on the *first* step of the *Alice* analysis, which asks if the patent is directed to an ineligible principle. For instance, in *Myriad*, in which the Court invalidated patents on DNA

²²² *Id.* at 1369; *see also Alice*, 134 S. Ct. at 2359 (invalidating the patents-in-suit because they “[did] not, for example, purport to improve the functioning of the computer itself”).

²²³ Including a long block quote stating, in part:

“By eliminating redundancy in the archive . . . , system operating efficiency will be improved, storage costs will be reduced and a one-to-many editing process can be implemented wherein a singular linked object, common to many documents or files, can be edited once and have the consequence of the editing process propagate through all of the linked documents and files.”

Berkheimer, 881 F.3d at 1369 (quoting U.S. Patent No. 7, 447,713 at 16:52-60).

²²⁴ *Id.*

²²⁵ *Id.*

²²⁶ *Id.* at 1368 (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 90 (2012)).

²²⁷ *See* Stephen A. Weiner, *The Civil Nonjury Trial and the Law-Fact Distinction*, 55 CALIF. L. REV. 1020, 1020 (1967) (“A question of reconstructing . . . conditions which have actually existed[] can . . . be defined as a question of fact . . .”).

sequences for claiming a “product of nature,” the Court wrote: “It is *undisputed* that Myriad did not create or alter any of the genetic information encoded in the [claimed] genes,”²²⁸ the implication being that a future case could raise a factual *dispute* about whether a claimed invention occurs in nature. Similarly, in both *Alice* and *Bilski*, the Court cited extrinsic evidence including textbooks, treatises, and academic journal articles, to support the conclusion that the patents claimed the abstract ideas of intermediated settlement and risk hedging, respectively.²²⁹ To be sure, none of the Supreme Court’s recent cases were themselves resolved at the pleading stage.²³⁰ But the Court’s reliance on extrinsic evidence and “undisputed” propositions suggest that the Court would embrace the notion that the eligibility inquiry can involve questions of fact.²³¹

To that end, *Berkheimer* may not be the revolutionary decision it has been portrayed to be.²³² In contrast to the district courts that had treated eligibility as a pure question of law, other pre-*Berkheimer* district court decisions reflected the potentially fact-driven nature of the eligibility inquiry. Many courts had denied pleading-stage eligibility motions specifically because of factual disputes they perceived to exist on one or both steps of the *Alice* analysis.²³³ Other district courts

²²⁸ Ass’n for Molecular Pathology v. Myriad Genetics, Inc., 569 U.S. 576, 590 (2013) (emphasis added).

²²⁹ See *Alice Corp. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2356 (2014) (citing JOHN C. HULL, RISK MANAGEMENT AND FINANCIAL INSTITUTIONS 103-04 (3d ed. 2012); Henry Crosby Emery, *Speculation on the Stock and Produce Exchanges of the United States*, in 7 STUDIES IN HISTORY, ECONOMICS AND PUBLIC LAW 283, 346-56 (1896); Yesha Yadav, *The Problematic Case of Clearinghouses in Complex Markets*, 101 GEO. L.J. 387, 406-12 (2013)); *Bilski v. Kappos*, 561 U.S. 593, 611 (2010) (citing DMITRIS N. CHORAFAS, INTRODUCTION TO DERIVATIVE FINANCIAL INSTRUMENTS 75-94 (2008); CLYDE P. STICKNEY ET AL., FINANCIAL ACCOUNTING: AN INTRODUCTION TO CONCEPTS, METHODS, AND USES 581-82 (13th ed. 2010); STEPHEN ROSS ET AL., FUNDAMENTALS OF CORPORATE FINANCE 743-44 (8th ed. 2008)).

²³⁰ *Alice*, *Mayo*, and *Myriad* were appeals from summary judgment. *Bilski* was an appeal from the Patent Office’s rejection of a patent application.

²³¹ More precisely, questions of *adjudicative* fact. See *Adjudicative Fact*, BLACK’S LAW DICTIONARY (10th ed. 2014) (“A controlling or operative fact . . . ; a fact that is particularly related to the parties to a proceeding and that helps the tribunal determine how the law applies to those parties.”); cf. *Legislative Fact*, BLACK’S LAW DICTIONARY, *supra* (“A fact that . . . that helps a court . . . determine the law’s meaning and application. Legislative facts are not ordinarily specific to the parties in a proceeding.”).

²³² See, e.g., @marklemley, TWITTER (Feb. 8, 2018, 4:33 PM), <https://twitter.com/marklemley/status/961714734335606784> (“Blockbuster Fed Cir opinion -- patentable subject matter is now frequently going to be a question of fact that goes to trial.”).

²³³ For examples, see *Bristol-Myers Squibb Co. v. Merck & Co.*, No. CV 15-560, 2016 WL 1072841, at *1 (D. Del. Mar. 17, 2016) (finding a factual dispute about whether the patent contained an “inventive step”); *Cave Consulting Grp., Inc. v. Truven Health Analytics Inc.*, No. 15-CV-2177, 2016 WL 283478, at *3 (N.D. Cal. Jan. 25, 2016) (denying motion for judgment on the pleadings “without prejudice to renewal after claim construction and on a fuller factual record”); *Card Verification Sols., LLC v. Citigroup Inc.*, No. 13C6339, 2014 WL 4922524, at *4 (N.D. Ill. Sept. 29, 2014) (“The question whether a pseudorandom number and character generator can be devised

engaged in what clearly appeared to be factfinding—for instance, relying on expert testimony about the patent’s inventiveness—in resolving eligibility, either before trial²³⁴ or after trial.²³⁵ One district court had even allowed the jury to resolve the ultimate question of patent eligibility.²³⁶ Though that court was an outlier, many district judges reconsidered pre-trial eligibility rulings after hearing the evidence and testimony at trial,²³⁷ or simply deferred deciding eligibility until after trial.²³⁸ All of these cases suggest that, in *Berkheimer*, the Federal Circuit merely confirmed what many district courts knew all along: facts can be relevant to the eligibility determination, even if the Federal Circuit’s case law could be interpreted to indicate otherwise.

Thus, the Federal Circuit’s assertion in *Berkheimer* that the legal question of eligibility “may contain disputes over underlying facts”²³⁹ appears to be on solid ground.²⁴⁰ But the court’s discussion of the *types* of evidence that can create a factual dispute could introduce serious inefficiencies into litigation over patent eligibility. The court, recall, ruled that summary judgment was inappropriate solely

that relies on an algorithm that can be performed by a human with nothing more than pen and paper poses a factual question inappropriate at the motion to dismiss stage.”).

²³⁴ See, e.g., *Prism Techs., LLC v. T-Mobile USA, Inc.*, No. 12CV124, 2015 WL 6161790, at *3 (D. Neb. Sept. 22, 2015) (granting the patentee’s motion for summary judgment of eligibility). The Federal Circuit reversed the decision in that case, but it relied entirely on the patent itself in finding the claimed invention ineligible; it did not discuss the extrinsic evidence the district court had relied on. See *Prism Techs. LLC v. T-Mobile USA, Inc.*, No. 2016-2031, 2017 WL 2705338, at *3 (Fed. Cir. June 23, 2017).

²³⁵ See *Veracode, Inc. v. Appthority, Inc.*, 137 F. Supp. 3d 17, 54 (D. Mass. 2015) (denying a post-trial motion to invalidate a patent on eligibility grounds, relying on testimony by both the inventor and multiple experts to find an inventive concept).

²³⁶ *VS Techs., LLC v. Twitter, Inc.*, No. 2:11CV43, 2012 WL 1481508, at *4 (E.D. Va. Apr. 27, 2012) (upholding verdict of ineligibility).

²³⁷ As one might expect, many of these post-trial decisions reached the same result as the pre-trial ruling. See, e.g., *Comcast Cable Commc’ns, LLC v. Sprint Commc’ns Co.*, No. CV 12-859, 2017 WL 3508706, at *16 (E.D. Pa. Aug. 16, 2017) (denying a renewed motion for judgment as a matter of law of ineligibility after having previously denied a motion for summary judgment on that ground); *Exergen Corp. v. Kaz USA, Inc.*, 172 F. Supp. 3d 366, 367 (D. Mass. 2016) (similar), *aff’d*, No. 2016-2315, 2018 WL 1193529 (Fed. Cir. Mar. 8, 2018). But, possible anchoring effects aside, the courts’ mere willingness to reengage the issue illustrates the view that factual considerations can be relevant to the eligibility analysis.

²³⁸ See, e.g., *Intellectual Ventures I LLC v. Symantec Corp.*, 100 F. Supp. 3d 371, 375 (D. Del. 2015), *aff’d in part, rev’d in part*, 838 F.3d 1307 (Fed. Cir. 2016).

²³⁹ *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1368 (Fed. Cir. 2018).

²⁴⁰ For a pre-*Berkheimer* scholarly critique of eligibility doctrine lamenting courts’ inattention to factual considerations, see Timothy R. Holbrook & Mark D. Janis, *Patent-Eligible Processes: An Audience Perspective*, 17 VAND. J. ENT. & TECH. L. 349, 382 (2015) (noting that the test for patent eligibility “entitles a court to kick the hypothetical person of ordinary skill in the art to the curb in favor of a discretionary analysis that need not be constrained by the need to establish qualifying prior art evidence”).

because of improvements described in the patent’s specification. Yet, as a matter of existing doctrine on patent claim construction and on summary judgment procedure more generally, it is not clear how the specification—the patentee’s own description of the invention—can raise a genuine issue of material fact.

In terms of claim construction doctrine, the Supreme Court, in its 2015 decision in *Teva Pharmaceuticals USA, Inc. v. Sandoz, Inc.*, ruled that “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” reviewed *de novo* on appeal.²⁴¹ As applied to the eligibility analysis, *Teva* strongly suggests that a dispute of fact that can preclude summary judgment must involve *extrinsic* evidence, such as witness testimony about the state of the art or documentary evidence about the prior art.²⁴² It seems wrong as a matter of doctrine—and wasteful as a matter of judicial economy—to take a case to trial, possibly in front of a jury,²⁴³ when, as in *Berkheimer*, the only evidence of inventiveness comes from the patent itself, which is normally interpreted by the judge alone and which the judge is quite capable of doing on summary judgment. Indeed, in a nonprecedential decision issued the week after *Berkheimer*, *Automated Tracking Solutions, LLC v. Coca-Cola Co.*, a Federal Circuit panel consisting of two of the three judges who decided *Berkheimer* affirmed a district court decision holding a patent ineligible on a motion for judgment on the pleadings, even though the specification claimed that the “technology employed by the present invention [was] a rapidly developing technology.”²⁴⁴ The Federal Circuit discounted that statement about the patent’s inventiveness because other portions of the specification, on the court’s reading, “more pointedly indicate[d] that the recited components of the claimed . . . system were conventional.”²⁴⁵

The Federal Circuit’s decisions in *Berkheimer* and *Automated Tracking* provide little guidance on how courts are supposed to weigh competing statements about inventiveness versus conventionality in the patent specification. Yet that is an issue likely to be present in many future eligibility disputes.²⁴⁶ After all, patents are

²⁴¹ 135 S. Ct. 831, 841 (2015) (emphasis added).

²⁴² As the Court noted in *Teva*, when the court “look[s] beyond the patent’s intrinsic evidence and . . . consult[s] extrinsic evidence in order to understand, for example, the background science,” that inquiry can entail “subsidiary factual findings” that will be reviewed for clear error. *Id.*

²⁴³ More to come on whether the Seventh Amendment provides a right to a jury trial on the issue of eligibility. See *infra* notes 385-394 and accompanying text.

²⁴⁴ No. 2017-1494, 2018 WL 935455, at *1 (Fed. Cir. Feb. 16, 2018).

²⁴⁵ *Id.* at *5.

²⁴⁶ For one recent example, see *IPA Techs., Inc. v. Amazon.com, Inc.*, 2018 WL 1583051, at *10 (D. Del. Mar. 31, 2018) (“I find that the specification’s statement that the claims are directed to solving a technological problem cannot overcome the specification’s recitation of conventional technology to implement the invention . . .”).

required by law to disclose how they improve on prior technology,²⁴⁷ and the Supreme Court’s recent decisions on eligibility create a clear incentive for applicants to emphasize to the examiner how inventive and unconventional their patent is and to include those statements in the specification itself. But the computer-related patents most commonly challenged under § 101 will almost always involve at least some generic hardware or functionality—including the patent upheld in *Berkheimer* itself.²⁴⁸ The end result in *Automated Tracking* could be justified by noting that the case for inventiveness—a statement in the patent that it employed “rapidly developing technology”—was so weak that it did not justify moving beyond the pleading stage.²⁴⁹ By contrast, the specification in *Berkheimer* was more detailed about how the patent improved on the prior art.²⁵⁰ But the Federal Circuit did not explicitly make this comparison, instead seeming to simply weigh various statements from the specification without reference to any particular standard of proof.

And even if *Berkheimer* and *Automated Tracking* can be reconciled, the Federal Circuit’s decision in *Berkheimer* to find a genuine dispute of material fact based entirely on the patentee’s own statements about its patent’s inventiveness is in tension with a long line of summary judgment cases decided by both the Supreme Court and other courts of appeals. Those cases hold that statements by a party or its own witnesses that are conclusory or uncorroborated by other evidence cannot raise a genuine issue of material fact to defeat summary judgment.²⁵¹ The Federal Circuit in *Berkheimer* arguably ignored that principle by allowing the patentee to

²⁴⁷ See 37 C.F.R. § 1.71(b) (“The specification must set forth the precise invention for which a patent is solicited, in such manner as to distinguish it from other inventions and from what is old.”).

²⁴⁸ See *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1362 (Fed. Cir. 2018) (upholding eligibility even though the patent involved some “conventional computer components”); see also *Automated Tracking*, 2018 WL 935455, at *5 (invalidating as ineligible a patent on a system using “conventional” radio frequency identification (RFID) tags to locate objects).

²⁴⁹ See *infra* Part II.C.2 (discussing the requirement—which the Federal Circuit has not explicitly applied in its eligibility cases—that factual allegations must *plausibly* create an entitlement to relief to survive a motion to dismiss or for judgment on the pleadings).

²⁵⁰ See *supra* note 223.

²⁵¹ See, e.g., *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 426 (2007) (noting that “a conclusory affidavit addressing the question of obviousness” cannot forestall summary judgment); *Jeffreys v. City of New York*, 426 F.3d 549, 554 (2d Cir. 2005) (upholding summary judgment in favor of the defendant where the plaintiff’s only evidence was his own affidavit and deposition testimony). As the Second Circuit noted in *Jeffreys*:

[N]onmoving parties “must do more than simply show that there is some metaphysical doubt as to the material facts,” and they “may not rely on conclusory allegations or unsubstantiated speculation.” At the summary judgment stage, a nonmoving party “must offer some hard evidence showing that its version of the events is not wholly fanciful.”

Jeffreys, 426 F.3d at 554 (quoting, among other cases, *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 586 (1986)) (citations omitted).

avoid summary judgment without offering any evidence to substantiate its patent’s assertions about inventiveness.

In addition to being in tension with case law outside the Federal Circuit—and providing yet another example of Federal Circuit “exceptionalism” on procedural matters²⁵²—*Berkheimer* exacerbates the intracircuit split mentioned above on whether the specification can inform the eligibility analysis or whether the analysis should focus on the claims alone.²⁵³ *Berkheimer*, plainly, gives the specification significant weight in resolving the eligibility inquiry,²⁵⁴ but that mode of analysis is hard to square with the Federal Circuit’s statements in other cases that “detail[s] in the specification” cannot “transform a claim reciting only an abstract concept into a patent-eligible system or method.”²⁵⁵

Despite these flaws in the *Berkheimer* opinion—which almost certainly justify rehearing the case en banc—the Federal Circuit made a laudable decision to hold that eligibility is not a “pure” question of law, as prior precedent suggested it was. As I explain next, that holding is relevant not just for courts deciding eligibility on summary judgment (the procedural posture of the *Berkheimer* case itself), but also for courts deciding eligibility at the pleading stage on a motion to dismiss—the most popular mechanism for resolving eligibility.²⁵⁶ The Federal Circuit has recently considered the role of facts in deciding eligibility at that earlier stage, too. But, just like in *Berkheimer*, the court has arguably made it too easy for patentees to prevail by allowing them to avoid dismissal by simply offering their own statements about their patent’s inventiveness.

C. Deciding Eligibility on the Pleadings

If the eligibility analysis involves factual considerations, as I argued above and as the Federal Circuit held in *Berkheimer*, then, at the pleading stage, eligibility is not the yes-or-no question it would be in a court that viewed eligibility to present a pure question of law. Rather, any factual issues should be resolved by reference to the Supreme Court’s decisions in *Twombly* and *Iqbal*, which read Civil Rule 8(a)(2) to mandate that the complaint contain factual allegations sufficient to justify a

²⁵² See *supra* note 59.

²⁵³ See *supra* notes 107-108 and accompanying text.

²⁵⁴ *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1370 (Fed. Cir. 2018) (“[T]here is at least a genuine issue of material fact *in light of the specification* regarding whether [the patent claims in suit] archive documents in an inventive manner”) (emphasis added).

²⁵⁵ *Accenture Glob. Servs., GmbH v. Guidewire Software, Inc.*, 728 F.3d 1336, 1345 (Fed. Cir. 2013); *accord* *Two-Way Media Ltd. v. Comcast Cable Commc’ns, LLC*, 874 F.3d 1329, 1338 (Fed. Cir. 2017).

²⁵⁶ See Lefstin, Menell & Taylor, *supra* note 16, at 23.

plausible inference of liability.²⁵⁷ Less than a week after deciding *Berkheimer*, the Federal Circuit issued another eligibility opinion, *Aatrix Software, Inc. v. Green Shades Software, Inc.*,²⁵⁸ again chastising a district court for giving insufficient weight to factual considerations, this time in a case that had been dismissed at the pleading stage. Though the Federal Circuit’s continued emphasis on the relevance of facts to the eligibility inquiry is a welcome development, this section argues that, like *Berkheimer*, the court’s decision in *Aatrix* may go too far: by ignoring the requirement from *Twombly* and *Iqbal* that factual allegations in the complaint must be *plausible*, *Aatrix* threatens to make it extraordinarily difficult for an accused infringer to obtain a pre-discovery dismissal on eligibility grounds.

1. Pleading-Stage Motions and Patent Validity Disputes.—To explain that argument, it will be helpful to first discuss the basic legal principles that govern pleading-stage motions and to examine how those motions have historically been used in patent cases. A defendant can base a motion to dismiss under Rule 12(b)(6) (or for judgment on the pleadings under Rule 12(c)²⁵⁹) on one of two grounds.²⁶⁰ First, the defendant can argue that, assuming the facts alleged in the complaint are true, *the law does not recognize the plaintiff’s claim*. Or, second, the defendant can argue that *there are not enough facts alleged* in the complaint to “show[.]” that the plaintiff is entitled to relief, as Rule 8(a)(2) requires.²⁶¹

Courts and commentators often say that, on a motion to dismiss, “the complaint is construed in the light most favorable to the plaintiff.”²⁶² But it is important to

²⁵⁷ *Ashcroft v. Iqbal*, 556 U.S. 662, 678 (2009); *Bell Atl. Corp. v. Twombly*, 550 U.S. 544, 557, (2007). Part of the reason those decisions have been so controversial is that Rule 8(a)(2) states merely that a complaint must contain “a short and plain statement of the claim showing that the pleader is entitled to relief.” FED. R. CIV. P. 8(a)(2).

²⁵⁸ 882 F.3d 1121 (Fed. Cir. 2018).

²⁵⁹ The only difference between the two motions is that a defendant can file a motion to dismiss in lieu of an answer, while a motion for judgment on the pleadings is filed after the answer. See A. BENJAMIN SPENCER, CIVIL PROCEDURE: A CONTEMPORARY APPROACH 494-95 (rev. 4th ed. 2015).

²⁶⁰ See *id.* at 491-92 (describing these two varieties of motions to dismiss).

²⁶¹ At a later stage of the case, a summary judgment motion can, similarly, take one of two forms, arguing either (1) that “a particular interpretation or application of the governing law . . . to undisputed or largely undisputed facts . . . entitles the movant to judgment” or (2) “that there are no material facts in dispute, so that the movant is entitled to judgment under the law.” Jonathan Remy Nash, *Unearthing Summary Judgment’s Concealed Standard of Review*, 50 U.C. DAVIS. L. REV. 87, 96-97 (2016).

²⁶² 5B CHARLES ALAN WRIGHT ET AL., FEDERAL PRACTICE AND PROCEDURE § 1357 (3d ed. 2017); see also *In re Bill of Lading Transmission & Processing Sys. Patent Litig.*, 681 F.3d 1323, 1331 (Fed. Cir. 2012) (“[W]e generally construe the complaint in the light most favorable to the plaintiff, accept its allegations as true, and draw all reasonable inferences in favor of the plaintiff . . .”).

note that that axiom applies only to matters of fact,²⁶³ not to matters of law.²⁶⁴ Thus, on a motion to dismiss based on the first ground listed above (that the complaint recites facts that are simply not unlawful), the plaintiff’s legal claim of liability will receive no deference from the court. Also, the requirement of *Twombly* and *Iqbal* that the complaint contain enough “factual allegations . . . [to] plausibly give rise to an entitlement to relief”²⁶⁵ is irrelevant because the motion, by definition, does not challenge the sufficiency of factual allegations. A motion to dismiss based on the second ground listed above, however, directly raises the issue of whether the factual allegations in the complaint, if proven, would allow a court to infer liability. In that circumstance, the relevant factual allegations are assumed to be true, and the plausibility standard of *Twombly* and *Iqbal* is crucial to the analysis.

Before the recent reemergence of the eligibility requirement, pleading-stage motions to invalidate patents were basically unheard of. On the rare occasions parties filed them, they were almost always denied.²⁶⁶ After *Bilski*, however, some district courts began to resolve eligibility on the pleadings. One of the first to do so was the district court in the *Ultramercial* litigation mentioned above. In that case, the court rejected the patentee’s argument that eligibility could not be decided on a motion to dismiss and before the court had formally construed the patent’s claims, noting that “[t]he patent terms are clear” and that the patentee “has not brought to the Court’s attention any reasonable construction that would bring the patent within patentable subject matter.”²⁶⁷ Though some courts followed suit and

²⁶³ See 5B WRIGHT ET AL., *supra* note 262, § 1357 (“[F]ederal courts have said that they accept the truth of a pleading’s ‘facts,’ ‘factual allegations,’ ‘material facts,’ ‘material allegations,’ ‘well-pleaded facts,’ ‘well-pleaded factual allegations,’ and ‘well-pleaded allegations.’”) (footnotes omitted).

²⁶⁴ See *Ashcroft v. Iqbal*, 556 U.S. 662, 678 (2009) (“[T]he tenet that a court must accept as true all of the allegations contained in a complaint is inapplicable to *legal conclusions*.”) (emphasis added); *Bill of Lading*, 681 F.3d at 1331 (“[W]e are not required to accept as true legal conclusions”) (internal quotation marks omitted); see also 5B WRIGHT ET AL., *supra* note 262, § 1357 & n.22 (citing numerous cases holding that “a pleading’s ‘legal conclusions’” “need not be accepted as true on a Rule 12(b)(6) motion”).

²⁶⁵ *Iqbal*, 556 U.S. at 679.

²⁶⁶ For pre-*Bilski* examples of unsuccessful pleading-stage invalidity motions, see *Digital-Vending Servs. Int’l, LLC v. Univ. of Phoenix Inc.*, No. 2:09CV555, 2010 WL 11450783, at *1 (E.D. Va. Aug. 12, 2010) (denying motion for judgment on the pleadings of indefiniteness); *Ariad Pharms., Inc. v. Eli Lilly & Co.*, No. CIV.A. 02-11280, 2003 WL 21087115, at *1 (D. Mass. May 12, 2003) (denying motion to dismiss on the grounds of anticipation and enablement). Besides eligibility, the ground most likely to result in a pleading-stage invalidation (though it was and remains rare) is indefiniteness, see, e.g., *In re TLI Commc’ns LLC Patent Litig.*, 87 F. Supp. 3d 773, 804 (E.D. Va. 2015); *Lexington Luminance LLC v. Amazon.com, Inc.*, 6 F. Supp. 3d 179, 195 (D. Mass. 2014), *vacated and remanded*, 601 F. App’x 963 (Fed. Cir. 2015), probably because indefiniteness is a matter of claim construction that can be decided by the judge. *But see infra* note 399 (discussing case law allowing juries to decide indefiniteness).

²⁶⁷ *Ultramercial, LLC v. Hulu, LLC*, No. CV 09-6918, 2010 WL 3360098, at *6 (C.D. Cal. Aug. 13, 2010).

invalidated patents on the pleadings,²⁶⁸ others were more cautious. A district judge in Ohio, for instance, refused to entertain an ineligibility defense on a motion to dismiss, criticizing the court in *Ultramercial* for, among other things, ignoring “the presumption of validity and a patent challenger’s burden to prove invalidity by clear and convincing evidence.”²⁶⁹

Other courts expressed reluctance to adjudicate eligibility without conducting claim construction.²⁷⁰ Because the judge’s claim construction delineates the patent’s exclusionary scope,²⁷¹ it is potentially quite relevant to inquiries in the eligibility analysis, such as whether a patent claim is “directed to” a natural phenomenon or abstract idea.²⁷² On the other hand, as the district court illustrated in *Ultramercial*, a judge could resolve eligibility without formally construing the patent’s claims by simply reading the claims in the manner most favorable to the patentee.

In the first *Ultramercial* appeal (*Ultramercial I*), the Federal Circuit sent mixed signals about whether it is proper to resolve eligibility on the pleadings and before claim construction. On one hand, the court noted that it “has never set forth a bright line rule requiring district courts to construe claims before determining subject matter eligibility.”²⁷³ On the other hand, the court wrote that “[o]n many occasions, . . . a definition of the invention via claim construction can clarify the basic character of the subject matter of the invention.”²⁷⁴ The court ultimately approved the district court’s procedural decision to resolve eligibility on a motion to dismiss without construing the claims (although the Federal Circuit reversed on the merits).²⁷⁵

The Supreme Court vacated the Federal Circuit’s opinion in *Ultramercial I* after *Mayo*,²⁷⁶ and it soon became increasingly common for district courts to decide

²⁶⁸ *E.g.*, *Glory Licensing LLC v. Toys R Us, Inc.*, No. CIV. 09-4252, 2011 WL 1870591, at *4 (D.N.J. May 16, 2011).

²⁶⁹ *Progressive Cas. Ins. Co. v. Safeco Ins. Co.*, No. 1:10CV1370, 2010 WL 4698576, at *4 (N.D. Ohio Nov. 12, 2010); *accord Investpic, LLC v. FactSet Research Sys., Inc.*, No. CIV. 10-1028, 2011 WL 4591078, at *1 (D. Del. Sept. 30, 2011) (“[c]hoos[ing] not to follow” *Ultramercial* and *Glory Licensing*). More to follow on the presumption of validity and the standard of proof in eligibility disputes. *See infra* Part II.E.

²⁷⁰ *See, e.g.*, *Edge Capture, L.L.C. v. Barclays Bank PLC*, No. 09 C 1521, 2011 WL 494573, at *1 (N.D. Ill. Jan. 31, 2011).

²⁷¹ *See supra* note 48.

²⁷² *Alice Corp. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2355 (2014).

²⁷³ *Ultramercial, LLC v. Hulu, LLC (Ultramercial I)*, 657 F.3d 1323, 1325 (Fed. Cir. 2011).

²⁷⁴ *Id.*

²⁷⁵ *Id.* at 1325, 1330.

²⁷⁶ *WildTangent, Inc. v. Ultramercial, LLC*, 132 S. Ct. 2431 (2012).

patent eligibility on the pleadings.²⁷⁷ In *Ultramercial II*, however, the Federal Circuit again questioned that practice, writing that “it will be rare that a patent infringement suit can be dismissed at the pleading stage for lack of patentable subject matter.”²⁷⁸ For dismissal under Rule 12(b)(6) to be proper, the court wrote, “the only plausible reading of the patent must be that there is clear and convincing evidence of ineligibility.”²⁷⁹

Yet the Supreme Court also vacated *Ultramercial II*, this time in light of *Alice*.²⁸⁰ And several subsequent Federal Circuit decisions affirmed pleading-stage dismissals under § 101.²⁸¹ By 2015, a magistrate judge in Delaware could confidently declare that “[i]t is now well-settled that it can be proper to address a Section 101 motion in a patent infringement action at the Rule 12(b)(6) stage.”²⁸² Shortly thereafter, the Federal Circuit backed away from any suggestion that patent eligibility could not be resolved on the pleadings, instead recognizing that it had “repeatedly affirmed § 101 rejections at the motion to dismiss stage, before claim construction or significant discovery has commenced.”²⁸³

In February 2018, however, less than a week after deciding *Berkheimer*, the Federal Circuit issued its opinion in *Aatrix*—another bombshell decision on the procedure of patent eligibility—ruling that a district court was wrong to grant a motion to dismiss on eligibility grounds because the patentee’s complaint contained factual allegations about the inventiveness of its asserted patent.²⁸⁴

2. *Aatrix and the Propriety of Deciding Eligibility on the Pleadings.*— Because of *Aatrix*’s importance to the question of when, if ever, patent eligibility may be resolved on the pleadings, it is worthwhile to review the case in some detail.

²⁷⁷ See, e.g., *OIP Techs., Inc. v. Amazon.com, Inc.*, No. C-12-1233, 2012 WL 3985118, at *5 (N.D. Cal. Sept. 11, 2012) (holding that a motion to dismiss on eligibility grounds “is not per se premature”), *aff’d*, 788 F.3d 1359 (Fed. Cir. 2015); *Vacation Exch., LLC v. Wyndham Exch. & Rentals, Inc.*, No. CV1204229, 2012 WL 12882053, at *2 (C.D. Cal. Sept. 18, 2012) (“[W]here claim construction is not required for a full understanding of the basic character of the claimed subject matter, a district court may resolve patentable subject matter eligibility on a motion to dismiss.”).

²⁷⁸ *Ultramercial, Inc. v. Hulu, LLC (Ultramercial II)*, 722 F.3d 1335, 1338 (Fed. Cir. 2013).

²⁷⁹ *Id.* at 1338.

²⁸⁰ *WildTangent, Inc. v. Ultramercial, LLC*, 134 S. Ct. 2870 (2014).

²⁸¹ See, e.g., *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1344 (Fed. Cir. 2015); *Content Extraction & Transmission LLC v. Wells Fargo Bank*, 776 F.3d 1343, 1345 (Fed. Cir. 2014); *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1352 (Fed. Cir. 2014).

²⁸² *Versata Software, Inc. v. NetBrain Techs., Inc.*, No. 13-676, 2015 WL 5768938, at *2 n.2 (D. Del. Sept. 30, 2015).

²⁸³ *Cleveland Clinic Found. v. True Health Diagnostics LLC*, 859 F.3d 1352, 1360 (Fed. Cir. 2017) (citing cases).

²⁸⁴ *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121, 1130 (Fed. Cir. 2018).

The patent in *Aatrix* covered a computerized data processing system.²⁸⁵ Most relevant to the Federal Circuit’s decision, the patent recited (1) a “data file” that could populate forms and (2) a program operating on that data file to perform calculations, allow users to view and change data, and generate reports.²⁸⁶ The district court granted the defendant’s motion to dismiss, ruling that the system claimed by the patent involved little more than “fill[ing] out forms”—an abstract idea with no inventive concept.²⁸⁷ In response to that dismissal, the patentee sought permission to file an amended complaint that contained additional allegations about how its patent improved on the prior art. The district court refused to consider the amended complaint,²⁸⁸ but the Federal Circuit, in another opinion by Judge Moore (the author of *Berkheimer*), overturned the district court’s ruling of ineligibility and its refusal to accept the amended complaint.²⁸⁹

As it did in *Berkheimer*, the Federal Circuit in *Aatrix* emphasized that the question under *Alice* of “[w]hether . . . claim elements or the claimed combination are well-understood, routine, [and] conventional is a question of fact.”²⁹⁰ Turning to the case at hand, the court wrote that eligibility could not be decided on the pleadings because the plaintiff’s proposed amended complaint contained “factual allegations . . . that, if accepted as true, established that the claimed [invention] contains inventive components and improves the workings of [a] computer.”²⁹¹ For instance, the complaint alleged that the “data file” claimed in the patent made it easier to import data from third-party software applications.²⁹² These allegations

²⁸⁵ The case actually involved several claims of two different patents. *See id.* at 1123. But because those patents had “essentially the same specification” and because the Federal Circuit treated one claim of one patent as representative of all the relevant claims, *see id.* at 1123-24, I refer in the text to “patent,” singular.

²⁸⁶ *See* U.S. Patent No. 7,171,615 (claiming “a *data file* containing data from a user application for populating [a] viewable form[] and a form viewer program operating on [a] form file and the *data file*, to perform calculations, allow the user of the data processing system to review and change the data, and create viewable forms and reports”) (emphasis added).

²⁸⁷ *Aatrix Software, Inc. v. Green Shades Software, Inc.*, No. 3:15-CV-164, 2016 WL 1375141, at *12 (M.D. Fla. Mar. 30, 2016).

²⁸⁸ *Aatrix Software, Inc. v. Green Shades Software, Inc.*, No. 3:15-CV-164, 2016 WL 7206173, at *1 (M.D. Fla. Nov. 17, 2016).

²⁸⁹ *Aatrix*, 882 F.3d at 1130.

²⁹⁰ *Id.* at 1128.

²⁹¹ *Id.* at 1125.

²⁹² Specifically, the complaint alleged:

“The inventions claimed in the *Aatrix* Patents allow data to be imported into the viewable electronic form from outside applications. Prior art forms solutions allowed data to be extracted only from widely available databases with published database schemas, not the proprietary data structures of application software. The inventions of the *Aatrix* Patents allowed data to be imported from an end user application without needing to know proprietary database schemas and without having to custom program the form files to work with each outside application.

about the inventiveness of the claimed data file, in the Federal Circuit’s view, made dismissal improper.²⁹³

Though the Federal Circuit in *Aatrix* held that the factual allegations in the patentee’s complaint prevented early dismissal, the court appeared to reaffirm its ample precedent deciding eligibility on motions to dismiss or for judgment on the pleadings.²⁹⁴ Indeed, just because the test for eligibility involves *questions* of fact, as the Federal Circuit held in *Berkheimer* and *Aatrix*, that does not mean that all eligibility cases raise *disputes* of fact—a point the Federal Circuit explicitly acknowledged in *Berkheimer*.²⁹⁵ Under the Federal Rules of Civil Procedure, as consistently applied by courts deciding patent cases, the patent is considered part of the complaint, so if eligibility can be resolved by reference to the patent alone, it is appropriate for the judge to decide the issue at the pleading stage as a matter of law.²⁹⁶ In many cases, the claims and specification of the patent itself indicate that the claimed invention involves a fundamental economic practice,²⁹⁷ an abstract idea,²⁹⁸ or a natural phenomenon.²⁹⁹ Similarly, it can be apparent from the patent

The inventions of the Aatrix Patents permit data to be retrieved from a user application and inserted into a form, eliminating the need for hand typing in the values and eliminating the risk of transcription error.”

Id. at 1127 (quoting proposed amended complaint).

²⁹³ *Id.* at 1126 (noting that the complaint’s allegations “at a minimum raise factual disputes underlying the § 101 analysis, such as whether the claim term ‘data file’ constitutes an inventive concept”); *see also id.* at 1129 (“The ‘data file’ limitation may reflect, as *Aatrix* argues, an improvement in the importation of data from third-party software applications.”).

²⁹⁴ *See id.* at 1125 (“We have held that patent eligibility can be determined at the Rule 12(b)(6) stage.”) (citing *Genetic Techs. Ltd. v. Merial L.L.C.*, 818 F.3d 1369, 1373 (Fed. Cir. 2016); *Content Extraction & Transmission LLC v. Wells Fargo Bank*, 776 F.3d 1343, 1346, 1351 (Fed. Cir. 2014)).

²⁹⁵ *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1369 (Fed. Cir. 2018) (“[N]ot every § 101 determination contains genuine disputes over the underlying facts material to the § 101 inquiry.”).

²⁹⁶ *See* FED. R. CIV. P. 10(c) (“A copy of a written instrument that is an exhibit to a pleading is a part of the pleading for all purposes.”); *see also CertusView Techs., LLC v. S&N Locating Servs., LLC*, 111 F. Supp. 3d 688, 704 (E.D. Va. 2015) (resolving the “claim-centric issue of section 101 validity” on a motion for judgment on the pleadings, citing Rule 10(c) and noting that “the Court finds that it need not rely on any factual matter other than that presented in the specifications of the patents-in-suit themselves”), *aff’d*, No. 2016-2605, 2017 WL 3443246 (Fed. Cir. Aug. 11, 2017).

²⁹⁷ *E.g.*, *Credit Acceptance Corp. v. Westlake Servs.*, 859 F.3d 1044, 1054 (Fed. Cir. 2017) (“[T]he ’807 patent specification itself demonstrates that processing an application for financing a purchase is ‘a fundamental economic practice long prevalent in our system of commerce.’”).

²⁹⁸ *E.g.*, *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1370, 1372 (Fed. Cir. 2011) (invalidating a patent on “a method for verifying the validity of a credit card transaction over the Internet,” noting: “It is clear that unpatentable mental processes are the subject matter of [the claim]. All of [the claim’s] steps can be performed in the human mind, or by a human using a pen and paper.”).

²⁹⁹ *E.g.*, *Cleveland Clinic Found. v. True Health Diagnostics LLC*, 859 F.3d 1352, 1361 (Fed. Cir. 2017) (“[T]he method starts and ends with naturally occurring phenomena with no meaningful

itself that it contains no inventive concept because it merely adds generic computer components to an abstract idea,³⁰⁰ carries out an abstract idea over the Internet,³⁰¹ or employs known scientific techniques.³⁰² Sometimes the information needed to resolve the issue of eligibility might be outside the complaint but so incontrovertible that it is subject to judicial notice.³⁰³ As the Federal Circuit observed in *Aatrix*, eligibility can be resolved on the pleadings, as a matter of law, if the decision is based on “sources properly considered on a motion to dismiss, such as the complaint, the patent, and materials subject to judicial notice.”³⁰⁴

Before turning to a critique of the *Aatrix* opinion, it is worth noting that, even if an eligibility dispute requires the court to consider evidence extrinsic to the patent, a defendant can still seek relatively quick adjudication through an early summary judgment motion. Though the Federal Circuit did not discuss that possibility in *Aatrix*, the Federal Rules of Civil Procedure permit a party to file a summary judgment motion “at any time until 30 days after the close of all discovery.”³⁰⁵ They also permit a court to convert a motion to dismiss or for judgment on the pleadings to a summary judgment motion if it involves matters outside the pleadings.³⁰⁶ An early summary judgment motion (converted or

non-routine steps in between—the presence of [myeloperoxidase] in a bodily sample is correlated to its relationship to cardiovascular disease. The claims are therefore directed to a natural law.”).

³⁰⁰ *E.g.*, *Mortg. Grader, Inc. v. First Choice Loan Servs. Inc.*, 811 F.3d 1314, 1324-25 (Fed. Cir. 2016) (“[T]he claims ‘add’ only generic computer components such as an ‘interface,’ ‘network,’ and ‘database.’ These generic computer components do not satisfy the inventive concept requirement.”).

³⁰¹ *E.g.*, *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1355 (Fed. Cir. 2014) (“The claims’ invocation of computers adds no inventive concept. . . . That a computer receives and sends the information over a network—with no further specification—is not even arguably inventive.”).

³⁰² *E.g.*, *Athena Diagnostics, Inc. v. Mayo Collaborative Servs., LLC*, No. 15-CV-40075, 2017 WL 3336275, at *1 (D. Mass. Aug. 4, 2017) (granting a renewed motion to dismiss on eligibility grounds after having initially denied a motion to dismiss because “[a]t a subsequent hearing, Plaintiffs’ counsel agreed that a statement in the patent specification” indicating that the techniques used to detect certain antibodies were “‘standard techniques in the art’” “was undisputed”).

³⁰³ *See, e.g.*, *buySAFE*, 765 F.3d at 1355 (affirming judgment on the pleadings of ineligibility, noting that “[t]he claims are squarely about creating a contractual relationship—a ‘transaction performance guaranty’—that is beyond question of ancient lineage” (citing Willis D. Morgan, *The History and Economics of Suretyship*, 12 CORNELL L.Q. 153 (1927)); *see also* *Front Row Techs., LLC v. NBA Media Ventures, LLC*, 204 F. Supp. 3d 1190, 1247 (D.N.M. 2016) (noting that courts may rely on “well-known, general historical observations” in deciding pleading-stage eligibility motions), *aff’d sub nom.*, *Front Row Techs., LLC v. MLB Advanced Media, L.P.*, 697 F. App’x 701 (Fed. Cir. 2017). The Federal Rules of Evidence allow the court to take judicial notice “at any stage of the proceedings.” FED. R. EVID. 201(d).

³⁰⁴ *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121, 1128 (Fed. Cir. 2018); *see also* 5B WRIGHT ET AL., *supra* note 262, § 1357 (noting that a “motion to dismiss under [Rule 12(b)(6)] raises only an issue of law”).

³⁰⁵ FED. R. CIV. P. 56(b) (emphasis added).

³⁰⁶ *See id.* R. 12(d).

otherwise) might be particularly useful where an expert declaration would be helpful in countering a complaint's allegations of inventiveness (or similar assertions in the patent's specification). It would also be useful in cases where common knowledge-type evidence in support of ineligibility is strong, but perhaps not sufficiently indisputable to be subject to judicial notice³⁰⁷—a situation that could present itself with some frequency in technologically complex patent cases.³⁰⁸ In short, *Aatrix*, though recognizing the factual components of the eligibility analysis, does not entirely close the door on quick, pleading-stage decisions on eligibility. In fact, *Aatrix* appears to reaffirm a large body of case law deciding eligibility on the pleadings when the decision is based entirely on the patent itself.

All that said, *Aatrix*, similar to *Berkheimer*, contains several serious flaws in the way in which the opinion *applies* its general pronouncement about the relevance of facts in the procedural posture that the case presented. One particularly troubling aspect of the *Aatrix* decision is the absolute deference the Federal Circuit gave to the patentee's allegations of inventiveness in its complaint. On my reading of the opinion, the court appeared to rule that those allegations entirely foreclosed the possibility of deciding eligibility at the pleading stage. Though the Federal Circuit ultimately disposed of the case by vacating the district court's ruling of ineligibility and remanding for further proceedings, the court also wrote that, based on the amended complaint, "the district court *could not conclude at the Rule 12(b)(6) stage* that the claimed elements were well-understood, routine, or conventional,"³⁰⁹ indicating that the case must now move into discovery, with the possibility that the defendant could re-raise the issue of eligibility at a later time—likely on summary judgment.³¹⁰

³⁰⁷ See FED. R. EVID. 201(b) ("The court may judicially notice a fact that is not subject to reasonable dispute because it: (1) is generally known within the trial court's territorial jurisdiction; or (2) can be accurately and readily determined from sources whose accuracy cannot reasonably be questioned.").

³⁰⁸ To draw an analogy, Justice Scalia in the *Myriad* case on the patent eligibility of DNA famously refused to join the "portions . . . the [majority] opinion going into fine details of molecular biology" because, he explained, "I am unable to affirm those details on my own knowledge or even my own belief." *Ass'n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 596 (2013) (Scalia, J., concurring in part and concurring in the judgment).

³⁰⁹ *Aatrix*, 882 F.3d at 1129 (emphasis added).

³¹⁰ That there will be no more pleading-stage litigation of eligibility is confirmed by the way in which the Federal Circuit addressed the issue of whether it was permissible for the district court to resolve eligibility without holding a formal claim construction proceeding. The Federal Circuit wrote that because, of its ruling that the patentee was entitled to file its amended complaint, it was "unnecessary to decide whether the district court erred by ruling on the § 101 motion prior to claim construction." *Id.* If the Federal Circuit anticipated further pleading-stage eligibility litigation, the court presumably would have left it at that, allowing the district court to decide in the first instance on remand whether claim construction was necessary to decide a motion to dismiss the newly filed amended complaint. But the Federal Circuit, in the very next sentence of its opinion, declared that

But the Federal Circuit’s analysis of the sufficiency of the amended complaint entirely ignored an important additional requirement imposed by the Supreme Court in *Twombly* and *Iqbal*. Specifically, after identifying the factual allegations in the complaint—which the Federal Circuit did—the court is supposed to ask whether those factual allegations “plausibly give rise to an entitlement to relief”³¹¹—which the Federal Circuit did not do. Had the Federal Circuit asked that second question, the outcome of the case could have been different. Recall that the key, substantive eligibility issue in *Aatrix* was whether a “data file” used to import data into a form was inventive.³¹² Importantly, the priority date for both patents was in 2002.³¹³ Given the ubiquity of computer processing and databases at the turn of the twenty-first century, it seems quite possible that a court could have found, based on the sort of common knowledge a court may appropriately consider at the pleading stage, that the complaint’s assertions about the claimed data file’s inventiveness were implausible and therefore insufficient to survive a motion to dismiss.³¹⁴ But the defendant never had the opportunity to present that argument.³¹⁵ And because the Federal Circuit ruled that the amended complaint foreclosed dismissal under Rule 12(b)(6), it likely will not have the opportunity to do so until summary judgment. Even on an early summary judgment motion like I discussed above, discovery will have commenced and the parties’ litigation costs will be

claim construction was, in fact, necessary to decide eligibility, writing that “[t]he briefing and argument on appeal demonstrate a need for claim construction, to be conducted on remand after the amended complaint is filed.” *Id.* at 1130. The only way to reconcile this declaration that claim construction is necessary with the court’s immediately preceding statement that it was not going to decide whether eligibility could be resolved prior to claim construction is to interpret the court as instructing that any additional litigation over eligibility must occur *after* claim construction is complete, likely on summary judgment or at trial.

³¹¹ *Ashcroft v. Iqbal*, 556 U.S. 662, 679 (2009).

³¹² See *Aatrix*, 882 F.3d at 1129.

³¹³ U.S. Patent Nos. 8,984,393, 7,171,615 (both claiming a priority date of March 26, 2002).

³¹⁴ For some sources that would support taking judicial notice of the conventionality of using a data file from a database to populate forms, see, for example, DAVID M. KROENKE, *DATABASE PROCESSING: FUNDAMENTALS, DESIGN, AND IMPLEMENTATION* 11 (10th ed. 2006) (listing various types of database applications and noting that “[a]ll of these . . . applications . . . may create forms and reports, or they may send their results to other programs”); C.J. DATE, *AN INTRODUCTION TO DATABASE SYSTEMS* 48 (8th ed. 2004) (noting that a database “is often built on top of some kind of file manager,” allowing a user to “perform simple retrieval . . . operations on stored records in such files”) (emphasis omitted); see also *Database*, WIKIPEDIA, <https://en.wikipedia.org/wiki/Database> (last visited Mar. 29, 2018) (listing as a primary function of a database, “Retrieval – Providing information in a form directly usable or for further processing by other applications. The retrieved data may be made available in a form basically the same as it is stored in the database or in a new form obtained by altering or combining existing data from the database.”).

³¹⁵ Judge Reyna dissented from the panel’s ruling for precisely that reason. See *Aatrix*, 882 F.3d at 1131 (Reyna, J., concurring in part and dissenting in part) (“[W]e [should not] prejudge whether the [amended complaint] survives a Rule 12(b)(6) motion to dismiss in the first instance, particularly when the defendant . . . has had no opportunity to present arguments with respect to the new pleading.”).

markedly higher than they would have been had the case been decided on a motion to dismiss.

Eliminating the “plausibility” step from the pleading-stage analysis, as the Federal Circuit did in *Aatrix*, threatens to make it too easy for a patentee to survive a motion to dismiss. All the patentee must do is write a complaint asserting that its patent is inventive, in that it does more than apply knowledge or techniques that are conventional in the field. Under *Aatrix*, those allegations will be assumed to be true and will prevent dismissal, even if they seem farfetched, and possibly even if the intrinsic record (such as the patent’s specification) indicates that the patent actually lacks the required inventive concept.³¹⁶

Another problematic aspect of *Aatrix* is that, just like *Berkheimer*, it is in tension prior Federal Circuit case law. Earlier in the article, I criticized two Federal Circuit eligibility decisions that reversed pleading-stage dismissals, *McRO* and *Visual Memory*, because, rather than remanding to allow the accused infringer to develop a factual record in support of its ineligibility defense, the Federal Circuit definitively decided eligibility in favor of the patentee as a matter of law.³¹⁷ The ruling in *Aatrix* is consistent with my criticism of *McRO* and *Visual Memory*: in *Aatrix*, unlike in those cases, the court did not definitively resolve the question of eligibility, it held only that the amended complaint precluded a ruling of ineligibility at the 12(b)(6) stage.³¹⁸ But the decision in *Aatrix* to remand for further fact development is in obvious tension with *McRO* and *Visual Memory*, which held inventions to be patent eligible as a matter of law at the pleading stage without giving the defendant an opportunity present facts in support of its defense.

A final flaw in the *Aatrix* opinion is that it contributes to on-going confusion about how to handle issues of claim construction that arise on pleading-stage eligibility motions. In its opinion, the Federal Circuit noted that, “[i]f there are claim construction disputes at the Rule 12(b)(6) stage,” a court has two options: it can either “resolve the disputes to whatever extent is needed to conduct the § 101 analysis” or it can “adopt[] the non-moving party’s constructions.”³¹⁹ For reasons I will explain shortly, the first option—construing the claims in order to conduct

³¹⁶ As Judge Reyna noted in dissent in *Aatrix*: “One effect of the majority’s approach is that a plaintiff facing a 12(b)(6) motion may simply amend its complaint to allege extrinsic facts that, once alleged, must be taken as true, regardless of its consistency with the intrinsic record.” *Id.* at 1130. *But see* *Cellspin Soft, Inc. v. Fitbit, Inc.*, No. 17-cv-05928 2018 WL 1610690, at *10 (N.D. Cal. Apr. 3, 2018) (post-*Aatrix* opinion granting a motion to dismiss despite allegations in an amended complaint regarding the patent’s “technological improvements” because the patentee “fail[ed] to cite to support in the . . . patent” or provided “citations [that did] not appear to support [the patentee’s] arguments”).

³¹⁷ *See supra* notes 205-209 and accompanying text.

³¹⁸ *See Aatrix*, 882 F.3d at 1129.

³¹⁹ *Id.* at 1125.

the eligibility analysis—can be difficult for a court to do without moving beyond the pleadings, though the Federal Circuit has done it in some cases.³²⁰

The second approach—adopting the patentee’s proposed claim construction—is a more common practice in both the Federal Circuit³²¹ and the district courts.³²² On first glance, that practice appears consistent with the general notion that the court should construe the complaint in favor of the plaintiff when deciding a motion to dismiss.³²³ And it makes sense as a policy matter, at least to the extent that we think of eligibility as a quick look test for disposing of only the most blatantly invalid patents.³²⁴

Yet, as I explain next, neither of the procedural approaches to claim construction suggested in *Aatrix* are easy to justify as a matter of the existing doctrine governing the issue of claim construction itself. To embrace either approach would require the Federal Circuit to recognize that claim construction is a much more fact-driven exercise than its current case law indicates. Such a change to claim construction law would, interestingly, have several benefits for the patent system more broadly: it would increase appellate deference to district court interpretations of patent claims, increase the predictability of litigation outcomes, and decrease litigation costs.

D. The Role of Claim Construction in the Eligibility Analysis

After quickly recapping what courts have said about the role of claim construction in deciding patent eligibility, this section shows how that case law underscores the factual nature of the claim construction task. If the Federal Circuit viewed claim construction to more frequently involve questions of fact, rather than as a pure question of law (which is the court’s usual practice), patent litigation would be changed profoundly, and probably for the better.

1. The Prevailing Approach: Give the Patentee the Benefit of the Doubt.—As discussed above, early Federal Circuit cases suggested that claim construction was,

³²⁰ See *infra* note 328.

³²¹ See, e.g., *Content Extraction & Transmission LLC v. Wells Fargo Bank*, 776 F.3d 1343, 1349 (Fed. Cir. 2014) (“[E]ven when construed in a manner most favorable to [the patentee], none of [the] claims amount to ‘significantly more’ than the abstract idea of extracting and storing data from hard copy documents using generic scanning and processing technology.”).

³²² See, e.g., *Cogent Med., Inc. v. Elsevier Inc.*, 70 F. Supp. 3d 1058, 1065 (N.D. Cal. 2014) (“[U]sing the constructions most favorable to [the patentee], the ’879 Patent claims no more than a computer automation of what ‘can be performed in the human mind, or by a human using a pen and paper.’”).

³²³ See *supra* note 262 and accompanying text.

³²⁴ See Vishnubhakat, *supra* note 115, at 72.

if not required, at least strongly recommended before resolving patent eligibility.³²⁵ However, for as long as district courts have been deciding eligibility on the pleadings, they have also claimed the flexibility not to do formal claim construction if there is no plausible reading of the patent’s claims under which the patentee could prevail.³²⁶ In *Aatrix*, consistent with prior Federal Circuit opinions, the court embraced that approach of reading the claims in the manner most favorable to the patentee.³²⁷ In another line of eligibility cases, however, the Federal Circuit has simply construed the claims itself on appeal rather than giving the patentee the benefit of the doubt.³²⁸

2. *The Factual Nature of Claim Construction.*—Under the prevailing doctrine on claim construction, it is arguably improper for courts to slant claim meaning in the patentee’s favor when resolving eligibility on the pleadings. Some background will help illuminate that argument. In the *Teva* case discussed above,³²⁹ the Supreme Court overturned Federal Circuit case law that had treated claim construction as entirely a question of law and instead held that claim construction can in some circumstances involve factual inquiries.³³⁰ Yet the Supreme Court also made clear that claim construction remains a purely legal issue if it is unnecessary to consult extrinsic evidence, such as expert testimony, dictionaries, or scientific literature, to determine claim meaning.³³¹ Perhaps not surprisingly, most Federal Circuit decisions after *Teva* continue to treat claim construction as a legal question

³²⁵ See, e.g., *Bancorp Servs., L.L.C. v. Sun Life Assur. Co.*, 687 F.3d 1266, 1273-74 (Fed. Cir. 2012) (“[C]laim construction is not an inviolable prerequisite to a validity determination under § 101. We note, however, that it will ordinarily be desirable—and often necessary—to resolve claim construction disputes prior to a § 101 analysis, for the determination of patent eligibility requires a full understanding of the basic character of the claimed subject matter.”).

³²⁶ See, e.g., *DietGoal Innovations LLC v. Bravo Media LLC*, 33 F. Supp. 3d 271, 289 (S.D.N.Y. 2014) (“Nor would claim construction shed light on any dispositive legal issue; the . . . [p]atent is invalid under § 101, under any reasonable construction.”), *aff’d*, 599 F. App’x 956 (Fed. Cir. 2015).

³²⁷ See *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121, 1125 (Fed. Cir. 2018); see also *Bascom Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1352 (Fed. Cir. 2016) (“[C]onstrued in favor of [the patentee] as they must be in this procedural posture, the claims of the ’606 patent do not preempt the use of the abstract idea of filtering content on the Internet or on generic computer components performing conventional activities.”).

³²⁸ See, e.g., *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1311 (Fed. Cir. 2016) (observing that, “in this case, claim construction is helpful to resolve the question of patentability under § 101” and adopting the claim construction urged by the patentee); *Bancorp Servs., L.L.C. v. Sun Life Assur. Co.*, 687 F.3d 1266, 1274 (Fed. Cir. 2012) (“Although the district court declined to construe the claims, that does not preclude us from making that legal determination on appeal.”).

³²⁹ See *supra* notes 241-243 and accompanying text.

³³⁰ *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015). (overruling, among other decisions, *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1455-56 (Fed. Cir. 1998) (en banc)).

³³¹ *Id.* at 838.

subject to de novo review.³³² Also, the Federal Circuit frequently downplays factual considerations, even in cases in which the district court considered extrinsic evidence in the course of construing the claims.³³³ Indeed, in its claim construction rulings, the Federal Circuit has often denigrated the salience of extrinsic evidence as compared to the intrinsic record (that is, the patent’s claims, specification, and prosecution history).³³⁴

As discussed above, on a motion to dismiss, the plaintiff does not receive the benefit of the doubt on questions of law, only on questions of fact.³³⁵ Thus, if the Federal Circuit is correct that claim construction usually remains a pure question of law, courts deciding eligibility disputes at the pleadings stage should not construe claims in favor of the plaintiff/patentee. Rather, they should normally use the other option listed in *Aatrix*: simply performing the *legal* task of claim construction when deciding the motion to dismiss. Under general principles of pleading law, courts would slant the analysis in the patentee’s favor only when factfinding based on extrinsic evidence is necessary to understand claim meaning, which, under Federal Circuit precedent on claim construction, is a rare occurrence.

From a normative standpoint, however, it would not be ideal to have district judges rule on claim meaning based on the complaint and the patent alone. Claim construction is a complex and contentious question, and it is often the most important issue in a patent case.³³⁶ Despite the Federal Circuit’s skepticism of extrinsic evidence, the reality is that, before interpreting patent claims, district judges regularly consider expert testimony and affidavits, technology tutorials

³³² See Jason Rantanen, *Teva, Nautilus, and Change Without Change*, 18 STAN. TECH. L. REV. 538, 551-52 (2015); Sheri L. Gordon & Larry S. Nixon, *Claim Construction Post-Teva: 1st Year of Fed. Cir. Review*, LAW360 (Mar. 8, 2016), <https://www.law360.com/articles/766331/claim-construction-post-teva-1st-year-of-fed-circ-review> (both collecting examples).

³³³ See, e.g., *CardSoft, LLC v. VeriFone, Inc.*, 807 F.3d 1346, 1350 (Fed. Cir. 2015) (holding that “the district court must have actually made a factual finding in order to trigger *Teva*’s deferential review” and that the Federal Circuit may ignore “findings on [extrinsic] evidence” and review claim construction de novo as a question of law “if the intrinsic record fully determines the proper scope of the disputed claim terms”) (alteration in original) (quoting *Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d 1292, 1297 (Fed. Cir. 2015)); *Eidos Display, LLC v. AU Optronics Corp.*, 779 F.3d 1360, 1365 (Fed. Cir. 2015) (applying a de novo standard of review, noting that “[t]o the extent the district court considered extrinsic evidence in its claim construction order or summary judgment order, that evidence is ultimately immaterial to the outcome because the intrinsic record is clear”); see also *MERGES & DUFFY*, *supra* note 15, at 704 (“Not surprisingly, given its prior preference to review claim constructions *de novo*, the Federal Circuit has taken the position that district courts should not often resort to extrinsic evidence.”).

³³⁴ See *Phillips v. AWH Corp.*, 415 F.3d 1303, 1319 (Fed. Cir. 2005) (en banc) (“[E]xtrinsic evidence may be useful to the court, but it is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence.”).

³³⁵ See *supra* notes 263-264.

³³⁶ See Greg Reilly, *Patent “Trolls” and Claim Construction*, 91 NOTRE DAME L. REV. 1045, 1052-54 (2016).

presented by the parties, and even the advice of court-appointed technical advisors.³³⁷ The technologically complex and esoterically written patent document is simply too difficult for a generalist judge to understand without that extra help.

Accordingly, the courts that give the patentee the benefit of the doubt on claim meaning when deciding pleading-stage eligibility motions are, as a matter of pure policy, sensibly waiting to construe the claims until the evidentiary record is more complete. But, as noted, that practice is hard to square with the Federal Circuit's current precedent on claim construction, which downplays the salience of facts. The key point, then, is this: the procedural uncertainty about how to resolve disputes over claim construction on pleading-stage eligibility motions arguably highlights shortcomings in the law of claim construction itself. If the judge cannot (or will not) construe the claims by simply reading the patent and without considering extrinsic evidence, then it seems doubtful to say, as the Federal Circuit's case law suggests, that claim construction usually presents a pure question of law. Courts' hesitance about performing claim construction on the pleadings, in other words, highlights the often-factual nature of the claim construction exercise.³³⁸

Indeed, although the Federal Circuit's precedent in disputes over claim construction suggests that the exercise is mostly a matter of law, the court seems more inclined to acknowledge that determining claim meaning involves factual inquiries when the court is not reviewing a claim construction order as such. For example, in *Aatrix*, as discussed, the court stated that it can be appropriate at the pleading stage to read a patent's claims in the light most favorable to the plaintiff—a mode of analysis usually limited to questions of fact, not law. Likewise, in a recent case that involved the sufficiency of a complaint's allegations of infringement, the Federal Circuit criticized a district court for not drawing inferences about claim meaning in favor of the patentee—a mode of analysis that is, again, appropriate for questions of fact but not questions of law.³³⁹

To be sure, in some eligibility cases, the court might avoid construing the claims not because questions of fact exist, but because the patentee has not offered any

³³⁷ See PETER S. MENELL ET AL., PATENT CASE MANAGEMENT JUDICIAL GUIDE 5-15 to -21 (3d ed. 2016).

³³⁸ See generally Dan L. Burk & Mark A. Lemley, *Fence Posts or Sign Posts? Rethinking Patent Claim Construction*, 157 U. PA. L. REV. 1743, 1755-56 (2009) (discussing “[t]he fiction that claim construction is a question of legal interpretation for judges, not an exercise in understanding technology”).

³³⁹ See *Nalco Co. v. Chem-Mod, LLC*, 883 F.3d 1337, 1350 (Fed. Cir. 2018) (“It is not appropriate to resolve these disputes . . . without the benefit of claim construction. . . . The plausibility standard . . . ‘simply calls for enough *fact* to raise a reasonable expectation that discovery will reveal evidence’ to support the plaintiff’s allegations.”) (emphasis added) (quoting *Bell Atl. Corp. v. Twombly*, 550 U.S. 544, 556 (2007)).

proposed claim construction at all. In a case such as that, the patentee might be worried that any claim construction sufficiently narrow to satisfy the eligibility requirement will not be sufficiently broad to establish that the defendant infringes.³⁴⁰ But other courts have absolved patentees from proposing claim constructions at the pleading stage, reasoning (correctly under general principles of pleading law) that the burden is on *the defendant* to show that there is no plausible reading of the patent under which the claimed invention satisfies the eligibility requirement.³⁴¹ In any event, in many cases, the patentee *has* offered a proposed claim construction at the pleading stage, and courts have, as noted, adopted that claim construction for the purpose of deciding eligibility—a mode of analysis that is wholly inappropriate if claim construction usually presents a pure question of law.

If the suggestion in *Aatrix* that the court, in deciding eligibility at the pleading stage, should adopt a construction favorable to the patentee is hard to justify as a matter of claim construction doctrine, what about the other approach mentioned in the opinion: construing the claims to the extent needed to conduct an eligibility analysis? The Federal Circuit noted that this could be “less than a full, formal claim construction,”³⁴² perhaps suggesting that a court could issue a *tentative* construction, good for the pleading-stage eligibility motion only. A potential analogy is to preliminary injunction cases, in which the Federal Circuit has held that any claim construction on the preliminary injunction motion is not binding in subsequent proceedings.³⁴³ While a “tentative” approach to claim construction, like reading the claims in favor of the patentee, makes sense as a policy matter, it, too, is hard to square with the notion of claim construction as a mostly legal inquiry. In its preliminary injunction cases, the Federal Circuit has emphasized that “courts may engage in a rolling claim construction, in which the court revisits and alters its

³⁴⁰ For a possible example, see *Whitepages, Inc. v. Isaacs*, 196 F. Supp. 3d 1128, 1135 (N.D. Cal. 2016) (noting that the patentee “neither explained how any particular construction would alter the section 101 analysis, nor proposed any constructions that might be viewed in a favorable light given the posture of this motion”), *aff’d*, 698 F. App’x 613 (Fed. Cir. 2017). This tension between validity (for which a narrow claim construction is helpful) and infringement (for which a broad claim construction is helpful) is a fundamental feature of patent litigation. As patent jurist Giles Rich famously quipped, “The stronger a patent the weaker it is and the weaker a patent the stronger it is.” Giles S. Rich, *The Proposed Patent Legislation: Some Comments*, 35 GEO. WASH. L. REV. 641, 644 (1967).

³⁴¹ *Data Distribution Techs., LLC v. BRER Affiliates, Inc.*, No. CIV. 12-4878, 2014 WL 4162765, at *7 (D.N.J. Aug. 19, 2014) (denying motion to dismiss on eligibility grounds, noting that, although the patentee “has not provided proposed constructions,” it “has no obligation to do so at this time”); *see also* 5B WRIGHT ET AL., *supra* note 262, § 1357 & n.14 (“All federal courts are in agreement that the burden is on the moving party to prove that no legally cognizable claim for relief exists.”) (citing cases).

³⁴² *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121, 1125 (Fed. Cir. 2018).

³⁴³ *See, e.g., Jack Guttman, Inc. v. Kopykake Enters., Inc.*, 302 F.3d 1352, 1361 (Fed. Cir. 2002).

interpretation of the claim terms as its understanding of the technology evolves.”³⁴⁴ That conception of altering claim construction based on *changed understanding of technology* makes the exercise of determining claim meaning, again, sound factual, not legal.

In short, if claim meaning were treated as the fact-driven issue it often appears to be, the correct approach to resolving disputes about claim construction on pleading-stage eligibility motions would be clearer. The patentee would usually receive the benefit of the doubt, but early dismissal would remain appropriate if there is no plausible reading of the patent that would satisfy the eligibility test. Though the Federal Circuit in *Aatrix* endorsed resolving claim construction in that fashion, it stopped short of saying that resolving doubts in favor of the patentee is justified *because of* claim construction’s factual underpinnings. But explicitly recognizing the often-factual nature of claim construction would increase the deference given to district court decisions in many patent cases and remove a widely recognized source of cost and uncertainty in patent litigation more generally.³⁴⁵

E. Applying the Presumption of Validity to the Eligibility Analysis

The preceding discussion of the distinction between law and fact leads to a final question about eligibility procedure that has deeply divided the lower courts, including judges and panels of the Federal Circuit: in determining patent eligibility, does the statutory presumption of validity apply? This section outlines the various perspectives on that issue and, building on the Federal Circuit’s recent decisions in *Berkheimer* and *Aatrix*, sketches a modest role for the presumption of validity in eligibility cases.

1. The Presumption of Validity and How Courts Have Applied It (or Not) in Eligibility Decisions.—Section 282(a) of the Patent Act states, simply, that “[a] patent shall be presumed valid.”³⁴⁶ The Supreme Court confirmed in its 2011 decision in *Microsoft Corp. v. i4i Ltd. Partnership* that the presumption requires a patent challenger to prove invalidity by clear and convincing evidence.³⁴⁷ That

³⁴⁴ *Id.*

³⁴⁵ For a thorough explication of this argument in favor of increased appellate deference to district court claim construction rulings, see J. Jonas Anderson & Peter S. Menell, *Informal Deference: A Historical, Empirical, and Normative Analysis of Patent Claim Construction*, 108 NW. U. L. REV. 1, 70 (2014) (noting that de novo review of claim construction as a question of law can lead to, among other effects, “lower quality decisionmaking at both the trial and appellate levels, higher costs of litigation as a result of more appeals and retrials following reversals, greater uncertainty regarding the litigation, [and] longer case pendency and litigation costs as a result of fewer and delayed settlements”).

³⁴⁶ 35 U.S.C. § 282(a).

³⁴⁷ 564 U.S. 91, 95 (2011).

heightened standard of proof can sometimes be difficult for courts to apply because many patentability requirements have both legal and factual aspects, including nonobviousness and, as I have argued and the Federal Circuit has recently held, eligibility. As Justice Breyer noted in a concurring opinion in *i4i*, evidentiary standards of proof apply to questions of fact but not to questions of law.³⁴⁸ In the nonobviousness analysis, for example, that means the presumption should apply when the factfinder resolves specific questions about the level of ordinary skill in the art and the differences between the prior art and the claimed invention. But the presumption should not apply to the ultimate legal determination of obviousness or nonobviousness. Similarly, to the extent that eligibility analysis involves factual questions about the nature of the claimed invention and how it compares to the prior art, those factual questions should be subject to the clear-and-convincing standard of proof, but the legal determination of eligibility or ineligibility should not.

This framework of separating questions of law from questions of fact makes sense in theory. But it does not reflect how courts apply the presumption of validity in practice. On nonobviousness, for example, courts often instruct the jury that patents are presumed valid and that the challenger must therefore prove invalidity by clear and convincing evidence.³⁴⁹ But then, rather than allowing the jury to decide only subsidiary factual questions, courts will often let the jury render a general verdict on validity.³⁵⁰ That verdict is of course subject to review by the judge on a post-trial motion for judgment as a matter of law. But if the verdict being reviewed is a general one, as it often is, separating factual considerations

³⁴⁸ *Id.* at 114 (Breyer, J., concurring) (“Where the ultimate question of patent validity turns on the correct answer to legal questions—what these subsidiary legal standards mean or how they apply to the facts as given—today’s strict standard of proof has no application.”); *see also* LAWSON, *supra* note 160, at 46 (“When garden-variety questions of domestic law are at issue, the American legal system does not generally use the language and concepts that dominate discussions of fact. Almost no one . . . speaks of proof, evidence, admissibility, standards of proof, burdens of proof, or completeness of evidence sets in connection with questions of law—unless it is to dismiss such talk as inapplicable.”).

³⁴⁹ *See, e.g.*, FED. CIR. BAR ASS’N, *supra* note 211, § 4.1.

³⁵⁰ *See, e.g.*, *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1356 (Fed. Cir. 2001) (upholding a general jury verdict of obviousness); *see also* Mark A. Lemley, *Why Do Juries Decide If Patents Are Valid?*, 99 VA. L. REV. 1673, 1690 (2013) (“Today we tend to give juries responsibility for deciding ultimate questions [of validity] as long as those questions involve issues of fact.”). Many model patent jury instructions allow the jury to render the ultimate decision on obviousness. *See* AM. INTELL. PROP. L. ASS’N, *supra* note 211, §§ 4, 7 (noting only that “[c]areful consideration should be given to the Court’s and the jury’s respective roles in determining” obviousness); FED. CIR. BAR ASS’N, *supra* note 211, § 4.3c. One exception is the model patent jury instructions for the Northern District of California, which make clear that the ultimate question of obviousness should be resolved by the judge. MODEL PATENT JURY INSTRUCTIONS, *supra* note 211, § 4.3b.

from legal conclusions (and applying the presumption of validity as Justice Breyer envisions) can be nearly impossible.³⁵¹

The Federal Circuit in *Berkheimer* attempted to identify a role for the presumption of validity in the analysis of patent eligibility, stating that, because “[t]he question of whether a claim element or combination of elements is well-understood, routine and conventional to a skilled artisan” is a question of fact, it “must be proven by clear and convincing evidence.”³⁵² That statement is consistent with the general principle that the presumption applies to the factual determinations that underlie the legal question of patent validity. But it is in tension with older Federal Circuit case law that appeared to apply the presumption of validity to the *legal* question of eligibility.

For instance, I discussed above the Federal Circuit’s 1992 decision in *Arrhythmia Research*, a rare pre-*Berkheimer* opinion that recognized eligibility’s potential factual underpinnings.³⁵³ Though the court determined that, on the record before it, “there were no disputed facts material to the issue,” Judge Newman’s opinion for the court nevertheless cited § 282 and stated that the Federal Circuit would review the district court’s decision *de novo*, “with appropriate recognition of the burdens on the challenger of a duly issued United States patent.”³⁵⁴ Similarly, although the en banc Federal Circuit splintered on the merits in the *Alice* case, a majority of the court’s judges actually agreed that the presumption of validity applied to the eligibility inquiry, despite appearing to view the issue as purely legal.³⁵⁵ District court opinions, too, have sometimes indicated that the

³⁵¹ See *McGinley*, 262 F.3d at 1363 (Michel, J., dissenting) (“I am concerned that after reading the majority opinion, trial courts and our panels will hereafter consider . . . general verdicts on obviousness immune from meaningful review and that serious legal errors by juries will thus go uncorrected.”); see also *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1075 (Fed. Cir. 2016) (en banc) (Dyk, J., dissenting) (arguing that, by upholding a general verdict rejecting an obviousness challenge, “the majority turns the legal question of obviousness into a factual issue for a jury to resolve”).

³⁵² *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1368 (Fed. Cir. 2018).

³⁵³ *Arrhythmia Research Tech., Inc. v. Corazonix Corp.*, 958 F.2d 1053, 1056 (Fed. Cir. 1992); see also *supra* notes 193-195 and accompanying text.

³⁵⁴ *Arrhythmia Research*, 958 F.2d at 1056.

³⁵⁵ *CLS Bank Int’l v. Alice Corp.*, 717 F.3d 1269, 1276, 1284 (Fed. Cir. 2013) (en banc) (Lourie, J., concurring) (“[I]t bears remembering that all issued patent claims receive a statutory presumption of validity.”) (citations omitted), *aff’d*, 134 S. Ct. 2347 (2014); *id.* at 1304-05 (Rader, C.J., concurring in part and dissenting in part) (“[W]e believe the presumption of validity applies to all challenges to patentability, including those under Section 101 and the exceptions thereto . . .”). For additional examples of the Federal Circuit applying presumptions to questions of law, see Timothy R. Holbrook, *Patents, Presumptions, and Public Notice*, 86 IND. L.J. 779, 821-22 (2011) (discussing various presumptions the court has employed in determining claim construction and noting that “it seems strange to speak of . . . presumptions in an inquiry that is entirely a legal analysis”).

presumption applies to the eligibility analysis even when eligibility is considered to present a purely legal question.³⁵⁶

In contrast to these decisions embracing a broad role for the presumption of validity, other judges and panels of the Federal Circuit have taken the opposite approach—also in tension with *Berkheimer*—expressing doubt about whether the presumption of validity is relevant to the eligibility analysis at all. For instance, in a concurring opinion in *Ultramercial III* (the one Federal Circuit opinion in that litigation the Supreme Court did *not* vacate), Judge Mayer argued that the presumption was entirely irrelevant.³⁵⁷ He reached that conclusion not because eligibility is purely a question of law, but because of the policy rationale that the Patent Office “has for many years applied an insufficiently rigorous subject matter eligibility standard” and because the Supreme Court “has never mentioned—much less applied—any presumption of eligibility” in its § 101 decisions.³⁵⁸ Other Federal Circuit panels deciding eligibility issues before *Berkheimer* similarly raised the possibility that the presumption might not apply.³⁵⁹ And a handful of district court opinions, also decided before *Berkheimer*, explicitly refused to apply the presumption of validity when deciding eligibility.³⁶⁰

2. *A Modest Role for the Presumption of Validity.*—The Federal Circuit’s opinion in *Berkheimer* removes some of the ambiguity in the case law by making clear that the presumption does apply to the issue of eligibility, at least when a court engages in factfinding to determine whether a claimed invention is impermissibly “conventional.” Yet providing a more complete picture of the presumption of

³⁵⁶ See *Lumen View Tech. LLC v. Findthebest.com, Inc.*, 984 F. Supp. 2d 189, 204 (S.D.N.Y. 2013) (stating that “[w]hether a patent is valid under Section 101 is a pure question of law” but concluding that “[i]t is evident by clear and convincing evidence that the patent is invalid”); *DietGoal Innovations LLC v. Bravo Media LLC*, 33 F. Supp. 3d 271, 277 (S.D.N.Y. 2014) (“The determination of whether a claim is drawn to patent-eligible subject matter is a pure question of law. . . . The party challenging the validity of a patent bears the burden of proving invalidity by clear and convincing evidence.”) (internal quotation marks and citations omitted), *aff’d*, 599 F. App’x 956 (Fed. Cir. 2015).

³⁵⁷ *Ultramercial, Inc. v. Hulu, LLC (Ultramercial III)*, 772 F.3d 709, 720 (Fed. Cir. 2014) (Mayer, J., concurring) (“[N]o presumption of eligibility should attach when assessing whether claims meet the demands of section 101.”).

³⁵⁸ *Id.* at 720-21.

³⁵⁹ See, e.g., *Trading Techs. Int’l, Inc. v. CQG, Inc.*, 675 F. App’x 1001, 1004 n.2 (Fed. Cir. 2017) (“The parties dispute whether the district court erred in requiring proof of ineligibility under § 101 by clear and convincing evidence. Because our review is de novo, and because under either standard the legal requirements for patentability are satisfied, we need not address this dispute.”).

³⁶⁰ See, e.g., *Wireless Media Innovations, LLC v. Maher Terminals, LLC*, 100 F. Supp. 3d 405, 411 (D.N.J. 2015), *aff’d*, 636 F. App’x 1014 (Fed. Cir. 2016) (“With no authoritative law binding the Court as to an applicable standard, the Court adopts Judge Mayer’s approach [from *Ultramercial III*] and will not afford Plaintiff’s Patents the presumption of subject matter eligibility.”); *OpenTV, Inc. v. Apple, Inc.*, No. 14-CV-1622, 2015 WL 1535328, at *3 (N.D. Cal. Apr. 6, 2015) (similar).

validity’s role in eligibility analysis requires answering two difficult definitional questions.

First, what, precisely, *are* the fact questions embedded in the eligibility analysis?³⁶¹ We know from *Berkheimer* that the Federal Circuit considers the question of whether claimed activity is “well-known” or “conventional”—part of the second step of the analysis under *Alice*—to be a question of fact that must be proved by clear and convincing evidence. Though the court did not explicitly say so, presumably the judge is still empowered to make the ultimate legal decision of eligibility under *Alice*, which asks whether the patent contains an “inventive concept.”

A similar distinction between law and fact potentially exists on the first step of *Alice*, which asks whether a patent is directed to an ineligible principle, such as a natural phenomenon or abstract idea. The judge could first determine what a patent claim is “directed to,”³⁶² which seems like a matter of claim construction. Then the factfinder could determine (under the clear-and-convincing-evidence standard) whether the claimed invention is something that occurs in nature³⁶³ or is an abstract idea because it is a “fundamental” or “long prevalent” economic practice.³⁶⁴ One catch, however, is that the Federal Circuit often says that the way to determine whether a patent is directed to an abstract idea in particular is to compare the patent to the patents involved in prior decisions by the Federal Circuit and the Supreme Court—a mode of analysis that seems legal, not factual.³⁶⁵ Thus, whether the first step of the *Alice* analysis entails factual questions might depend on the precise judicial exception to eligibility at issue: determining whether a claimed invention

³⁶¹ The difficulty of distinguishing questions of fact from questions of law in the eligibility test is what that led one district court, deciding eligibility pre-*Berkheimer*, to apply the clear-and-convincing evidence standard to the entire analysis. See *Front Row Techs., LLC v. NBA Media Ventures, LLC*, 204 F. Supp. 3d 1190, 1235-36 (D.N.M. 2016) (“applying the clear-and-convincing standard to both legal and factual determinations” because “it is difficult to tease out legal and factual issues under § 101”), *aff’d sub nom.*, *Front Row Techs., LLC v. MLB Advanced Media, L.P.*, 697 F. App’x 701 (Fed. Cir. 2017).

³⁶² *Alice Corp. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2355 (2014).

³⁶³ See, e.g., *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 590-91 (2013).

³⁶⁴ See, e.g., *Bilski v. Kappos*, 561 U.S. 593, 611 (2010).

³⁶⁵ See, e.g., *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1334 (Fed. Cir. 2016) (“The Supreme Court has not established a definitive rule to determine what constitutes an ‘abstract idea’ sufficient to satisfy the first step of the *Mayo/Alice* inquiry. Rather, both this court and the Supreme Court have found it sufficient to compare claims at issue to those claims already found to be directed to an abstract idea in previous cases.”) (citation omitted); see also *MANUAL OF PATENT EXAMINING PROCEDURE* ch. 2106.04(a) (9th ed. Jan. 2018 rev.) (“[T]he courts have declined to define abstract ideas. Instead, they have often identified abstract ideas by referring to earlier precedent, e.g., by comparing a claimed concept to the concepts previously identified as abstract ideas by the courts.”).

occurs in nature might be a question of fact; determining whether a patent claims an abstract idea might be a question of law.³⁶⁶

Second, assuming that a particular question relevant to eligibility is a question of fact, which *types* of evidence relevant to that question trigger an actual, factual dispute to which the presumption would apply? In *Berkheimer*, the court held that statements in the specification alone created a factual dispute suitable for trial—an aspect of the decision I criticized above as inconsistent with Supreme Court case law and as inefficient more generally.³⁶⁷ If my argument is correct that factual disputes can arise only when the court is deciding eligibility based on *extrinsic evidence*, then the Federal Circuit was wrong to suggest in *Berkheimer* that the presumption of validity applied because that case involved only *intrinsic* evidence. When an eligibility analysis involves only evidence intrinsic to the patent, eligibility, I have argued, remains a purely legal question—just like a claim construction or a motion to dismiss decided based entirely on intrinsic evidence.³⁶⁸ Indeed, some district court opinions that pre-date *Berkheimer* appear to embrace a similar regime, indicating that the presumption of validity applies only when the court relies on extrinsic evidence to decide eligibility.³⁶⁹

³⁶⁶ A recent Supreme Court decision grappling with the appropriate standard of appellate review for mixed questions of law and fact provides a helpfully analogous framework. In *U.S. Bank v. Village at Lakeridge, LLC*, the Court ruled that the applicable standard of review turns on whether “answering [the mixed question] entails primarily legal or factual work.” 138 S. Ct. 960, 967 (2018). If “applying the law involves developing auxiliary legal principles of use in other cases,” the standard of review is *de novo* (as it would be for a pure question of law). *Id.* But if answering the mixed question “immerse[s]” the court in “case-specific factual issues,” the lower court’s decision receives deference on appeal (as would be the case for pure findings of fact). *Id.* Returning to eligibility, the determination of whether a patent is directed to an abstract idea—which entails analogizing, distinguishing, and thereby developing precedent—seems like more of a legal question; determining whether a patent is directed to something that occurs in nature seems more like the type of “case-specific” issue the Supreme Court’s case law on appellate review would treat as factual.

³⁶⁷ See *supra* Part II.B.2.

³⁶⁸ See *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015) (“[W]hen 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”); 5B WRIGHT ET AL., *supra* note 262, § 1357 (noting that a “motion to dismiss under [Rule 12(b)(6)] raises only an issue of law”); see also *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121, 1128 (Fed. Cir. 2018) (noting that the “sources properly considered on a motion to dismiss, [include] the complaint, the patent, and materials subject to judicial notice”).

³⁶⁹ Cf. *Modern Telecom Sys. LLC v. Earthlink, Inc.*, No. CV14-347, 2015 WL 1239992, at *7 (C.D. Cal. Mar. 17, 2015) (“The Court agrees with Defendants that the clear and convincing evidence standard is not necessarily applicable in the context of determining patent-eligibility under § 101, which is a question of law. . . . Because, ordinarily, no evidence outside the pleadings is considered in resolving a motion to dismiss or a motion for judgment on the pleadings, it makes little sense to apply a ‘clear and convincing evidence’ standard—a burden of *proof*—to such motions.”); *Affinity Labs of Texas, LLC v. Amazon.com, Inc.*, No. 6:15-CV-29, 2015 WL 3757497, at *5 & n.6 (W.D. Tex. June 12, 2015) (noting that “[t]o the extent that questions of fact exist, the

In sum, the better view seems to be that the presumption of validity applies only to questions of fact embedded within the eligibility analysis and—contrary to *Berkheimer*—only when the court relies upon extrinsic evidence to decide those factual questions. To be sure, the lines between questions of law and questions of fact are not always easy to draw. In the final part of the article, I consider whether drawing those lines is worth the cost in added complexity, and I sketch ways in which courts might reduce the importance of making fine distinctions between law and fact in close cases, including by limiting jury involvement in eligibility disputes.

III. RETHINKING THE LAW/FACT BOUNDARY: IMPLICATIONS FOR ELIGIBILITY DOCTRINE AND BEYOND

This part concludes the article by exploring the consequences of abandoning the conventional understanding of eligibility as a pure question of law and instead treating the issue as at least partly factual. Drawing on literature skeptical of the conventional distinction between law and fact, it first explains—in terms of policy—how treating eligibility as a mixed question of law and fact should help ensure efficient and accurate patent adjudication. It then considers the institutional implications of the article’s analysis of eligibility procedure, arguing that confusion around the law/fact boundary may be an adverse effect of centralizing appeals in the Federal Circuit.

A. Patent Eligibility and the Myth of the Law/Fact Distinction

One of this article’s primary arguments is that determining patent eligibility can require courts to resolve disputes that the legal system would normally call disputes of fact, not law—a point the Federal Circuit embraced in *Berkheimer*. But, as skeptics of the law/fact distinction have pointed out, a fact, just like the law, is simply “something in the world” that the parties must prove in a given case.³⁷⁰ As Gary Lawson has observed in his work on “proving” the law, propositions of law and propositions of fact are “epistemologically equivalent” in that they are both “object[s] of proof” in legal proceedings.³⁷¹ Accordingly, Lawson argues, the applicable *standards* of proof should be dictated by considerations of policy, not “epistemology or [legal] metaphysics.”³⁷² Extrapolating from that argument, a comprehensive analysis of whether the law should treat patent eligibility as a legal question, a factual one, or a mix of both must consider not only how the law would

Court will apply the clear and convincing evidence standard” and concluding that “no factual issues are present” because the court decided eligibility “without considering materials outside of the pleadings”), *aff’d*, 838 F.3d 1266 (Fed. Cir. 2016).

³⁷⁰ Ronald J. Allen & Michael S. Pardo, *The Myth of the Law-Fact Distinction*, 97 NW. U. L. REV. 1789, 1802 (2003).

³⁷¹ LAWSON, *supra* note 160, at 9-10.

³⁷² *Id.*

conventionally label the eligibility issue but also gauge the *consequences* of attaching one label or another.

Drawing on the analysis in the previous part of the article, at least four consequences of labeling eligibility as partly factual are worth highlighting. First, labeling eligibility as factual should help courts resolve eligibility at the optimal time in any given case. Though I have suggested that a key policy function of eligibility doctrine is to provide courts with a mechanism to quickly invalidate patents that are plainly invalid, it is of course also important to ensure that courts do not rush to an inaccurate decision on an inadequate record. Treating eligibility as a purely legal question, as many courts did prior to *Berkheimer*, risks favoring speed over accuracy: a court that views eligibility as lacking any factual component can *always* resolve it on the pleadings, even if extrinsic evidence might shed light on the patent's scope or inventiveness as compared to the prior art.

It is possible that district courts applying *Berkheimer* will push things too far in the other direction. As we saw above in the discussion of nonobviousness, if a ground of patent validity is at least partly factual, courts tend to punt the entire issue to the jury.³⁷³ A similar approach to eligibility would nullify the doctrine's useful function of permitting quick decisions in easy cases. Patent law already contains numerous fact-driven doctrines, including novelty, nonobviousness, and various disclosure requirements, that are, like eligibility, designed to eradicate patents that are too broad and not sufficiently inventive. If, after *Berkheimer*, eligibility is frequently taken to trial, criticisms of eligibility doctrine's redundancy³⁷⁴ will hold much more weight than they currently do.

Thus, courts deciding eligibility post-*Berkheimer* should be careful to recognize that it is a *mixed* question of law and fact. That would give courts flexibility to invalidate patents on the pleadings when evidence outside the pleadings is unlikely to bolster the case for eligibility. But it would also force courts to acknowledge that aspects of the *Alice* inquiry, such as the comparison of the patent to previously existing technology, can sometimes be decided more accurately on a better developed record.³⁷⁵

³⁷³ See *supra* notes 349-351 and accompanying text.

³⁷⁴ See *supra* notes 20-22. But see *supra* note 117 (citing literature challenging redundancy arguments).

³⁷⁵ In thinking about the consequences of the law/fact label, it should be noted that the preclusive effects of a judgment on patent eligibility would not change depending on whether the doctrine is considered to present a question of law, a question of fact, or a mixed question. See generally 18 WRIGHT ET AL., *supra* note 262, § 4417 (providing the following example: "the plaintiff who failed to prove the light was red is apt to be held precluded not only as to the color of the light but also as to the 'issue' of negligence"). Thus, regardless of how the eligibility question is characterized, subsequent defendants accused of infringing a particular patent can rely on a prior judgment of ineligibility *defensively*, see *Blonder-Tongue Labs., Inc. v. Univ. of Illinois Found.*,

A second beneficial consequence of treating eligibility as a mixed question of law and fact is that it provides an appropriately limited role for the statutory presumption of patent validity. I argued above that, as a matter of doctrine, the presumption of validity should apply to eligibility analysis, but only if the court must make findings of fact based on evidence outside the patent itself. This relatively limited role for the presumption of validity also aligns with various policy considerations. The presumption of validity originated as a common law doctrine reflecting the deference courts usually give to an expert agency such as the Patent Office.³⁷⁶ Today, however, deference to the agency is arguably unwarranted given the minimal scrutiny most patent applications receive.³⁷⁷ Many studies report that patent applications receive, on average, less than twenty hours of attention from an examiner.³⁷⁸ That said, § 282(a) of the Patent Act unequivocally states that patents are presumed valid. And, of course, the presumption of validity protects the reliance interests of those who have invested in commercializing the patent.³⁷⁹ A limited role for the presumption of validity in the eligibility analysis—applying it only to findings of fact based on extrinsic evidence—strikes a balance. On one hand, it respects the unambiguous statutory language enacted by Congress and offers some protection to reliance interests. On the other hand, it also accounts for the lenient nature of examination in the modern patent system and the general principle that standards of proof apply only to factual questions, not legal ones.³⁸⁰

A third consequence worth noting is that labeling eligibility as a mixed question of law and fact will make a real difference in the outcomes of certain cases. To be sure, the change in label will not affect *every* case. As discussed, many eligibility disputes are resolved based on the patent itself, and those cases could still be resolved on the pleadings because they implicate no factual disputes.³⁸¹ However,

402 U.S. 313, 350 (1971), but a patentee may not use a prior favorable ruling of eligibility *offensively* against a different defendant in a later case. See generally Paul R. Gugliuzza, *(In)valid Patents*, 92 NOTRE DAME L. REV. 271, 279 (2016) (citing cases).

³⁷⁶ Stuart Minor Benjamin & Arti K. Rai, *Who's Afraid of the APA? What the Patent System Can Learn from Administrative Law*, 95 GEO. L.J. 269, 281-82 (2007).

³⁷⁷ See Doug Lichtman & Mark A. Lemley, *Rethinking Patent Law's Presumption of Validity*, 60 STAN. L. REV. 45, 49-51 (2007) (proposing to limit the presumption of validity to situations where patent owners have submitted to a more rigorous initial examination or where a court, the International Trade Commission, or the Patent Office has already reevaluated validity and found in the patentee's favor).

³⁷⁸ See, e.g., Michael D. Frakes & Melissa F. Wasserman, *Is the Time Allocated to Review Patent Applications Inducing Examiners to Grant Invalid Patents?*, 99 REV. ECON. & STAT. 550, 552 (2017); Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495, 1500 (2001).

³⁷⁹ See Stephen Yelderman, *Coordination-Focused Patent Policy*, 96 B.U. L. REV. 1565, 1602 (2016).

³⁸⁰ See *supra* note 348.

³⁸¹ See *supra* notes 297-302 and accompanying text.

cases that have definitively resolved eligibility *against* the accused infringer at the pleading-stage, such as the *McRO* and *Visual Memory* cases discussed above,³⁸² would come out differently. Rather than definitively resolving eligibility as a matter of law on an extremely limited record, as the Federal Circuit did in those cases, the accused infringer’s motion to dismiss would be denied, but the infringer would be allowed to subsequently develop a factual record in support of its eligibility defense and to raise that defense again on summary judgment or at trial. In a similar vein, viewing eligibility as at least partly factual casts doubt on the decisions made by some district courts making credibility determinations about witness declarations and deposition testimony on summary judgment rather than setting the issue for trial,³⁸³ as well as decisions refusing to reconsider pre-trial eligibility rulings after hearing evidence at trial.³⁸⁴

A final, *potential* consequence of labelling eligibility as a question of law, fact, or both is that the choice of label could determine who decides patent eligibility—the judge or a jury. Most courts and lawyers assume that the Seventh Amendment enshrines a right to a jury trial on fact questions relevant to patent validity.³⁸⁵ Thus, in the wake of *Berkheimer*, the prevailing wisdom seems to be that patent eligibility will now often be decided by a jury.³⁸⁶

The overall merits of having juries decide technologically complex issues of patent validity is beyond the scope of this article.³⁸⁷ For my purposes, it is sufficient

³⁸² See *supra* 317 and accompanying text.

³⁸³ See, e.g., *01 Communique Lab., Inc. v. Citrix Sys., Inc.*, 151 F. Supp. 3d 778, 787, 794 (N.D. Ohio 2015) (granting the plaintiff’s motion for summary judgment that the patent *was* eligible, relying upon the court’s interpretation of expert testimony); *Prism Techs., LLC v. T-Mobile USA, Inc.*, No. 12CV124, 2015 WL 6161790, at *3 (D. Neb. Sept. 22, 2015) (similar), *aff’d in part, rev’d in part, dismissed in part*, 696 F. App’x 1014 (Fed. Cir. 2017).

³⁸⁴ See, e.g., *ContentGuard Holdings, Inc. v. Apple Inc.*, No. 2:13-CV-1112, 2016 WL 1637280, at *6 (E.D. Tex. Apr. 25, 2016) (denying Apple’s post-trial motion for JMOL of ineligibility, noting that “[p]erhaps [Apple’s] motion is actually a motion for reconsideration” of the court’s denial of Apple’s motion for judgment on the pleadings).

³⁸⁵ See Lemley, *supra* note 350, at 1715.

³⁸⁶ See, e.g., Ryan Davis, *Getting Juries to Ax Patents Under Alice May Be Hard Sell*, LAW360 (Mar. 5, 2018), <https://www.law360.com/articles/1017998/getting-juries-to-ax-patents-under-alice-may-be-hard-sell>.

³⁸⁷ For a sample of scholarship exploring the respective abilities of juries or judges to decide patent cases accurately, see Kimberly A. Moore, *Judges, Juries, and Patent Cases—An Empirical Peek Inside the Black Box*, 99 MICH. L. REV. 365, 368, 409 (2000) (collecting critiques of the use of juries in patent cases and finding some evidence of “flaws in juror comprehension”); Peter Lee, *Patent Law and the Two Cultures*, 120 YALE L.J. 2, 17 (2010) (“While district judges possess specialized legal training, they, like most jurors, are generally laypersons in terms of technological sophistication. Ultimately, lay actors in the patent system, including district judges, experience difficulties in understanding the technologies at the heart of patent cases.”); see also David L. Schwartz, *Practice Makes Perfect? An Empirical Study of Claim Construction Reversal Rates in Patent Cases*, 107 MICH. L. REV. 223, 225-26 (2008) (finding that the Federal Circuit reverses with

to note that recognizing eligibility’s factual underpinnings will not inevitably lead to juries deciding that issue. Mark Lemley and John Duffy have both recently raised questions about whether a jury-trial right on patent validity is justified as a matter of history and doctrine.³⁸⁸ The Supreme Court’s impending decision in the *Oil States* case,³⁸⁹ which challenges the constitutionality of Patent Office procedures that allow the agency to review the validity of issued patents, may shed light on the necessity of jury involvement in patent validity disputes. Moreover, as discussed above, before *Berkheimer*, district judges regularly decided what appeared to be questions of fact when resolving eligibility disputes.³⁹⁰ And, in *Teva*, the Supreme Court approved of judges alone deciding factual questions relevant to patent claim construction.³⁹¹

The Federal Circuit, though it has recognized that the eligibility analysis can involve questions of fact, has explicitly reserved the question of whether there is a Seventh Amendment right to a jury trial on that issue.³⁹² When the court does confront the Seventh Amendment question, there may be pragmatic reasons (in addition to the historical and doctrinal arguments noted in the preceding paragraph) to limit jury involvement.³⁹³ Most notably, having a judge decide the entire issue of eligibility would alleviate some of the pressure to draw crystal clear distinctions between the legal aspects of the inquiry and its factual underpinnings. A judge could simultaneously address the parts of the analysis that look like questions of law (for instance, the claim construction-like question of whether the patent is “directed to” an ineligible principle) and those that are questions of fact (for instance, whether the patent recites “conventional activity”). Not only would this reduce the importance of distinguishing law from fact, it would eliminate the risk that judges, viewing that distinction as too difficult to draw, will punt the (legal) question of eligibility to the jury. Delineating law from fact could still be necessary to apply the presumption of validity, but if the same person—the judge—is deciding all the relevant questions, then the distinction between law and fact again seems

similar frequency the claim construction orders of district judges who have heard many patent cases and the orders of judges who have heard few patent cases).

³⁸⁸ See Lemley, *supra* note 350, at 1720; see also Duffy, *supra* note 185, at 299 (noting that the modern process of reviewing patent validity “is quite distant from the traditional role of a jury as a *de novo* fact-finding body” and that, accordingly, “jury review of patent validity . . . might . . . soon be replaced by judicial review of patent validity”).

³⁸⁹ *Oil States Energy Servs., LLC v. Greene’s Energy Grp., LLC*, 639 F. App’x 639 (Fed. Cir. 2016), *cert. granted*, 137 S. Ct. 2239 (2017).

³⁹⁰ See *supra* notes 234-235 and accompanying text.

³⁹¹ *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 838 (2015).

³⁹² See *Exergen Corp. v. Kaz USA, Inc.*, No. 2016-2315, 2018 WL 1193529, at *6 (Fed. Cir. Mar. 8, 2018).

³⁹³ See *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 388 (1996) (noting that “[w]here history and precedent provide no clear answers, functional considerations also play their part in” determining whether a jury-trial right exists).

less essential. Indeed, the judge could simply apply the presumption as a shade on the overall validity analysis—a mode of decisionmaking that seems far more efficient than applying the presumption only to the portions of the patentability analysis that can be compartmentalized as “factual.”³⁹⁴

Given that no court, to my knowledge, has yet explicitly addressed the question of whether there is a jury-trial right on the issue of patent eligibility, a comprehensive analysis of Seventh Amendment considerations is beyond this article’s scope. But the on-going uncertainty about the contours of the jury-trial right in patent cases more generally could create yet another split in the lower courts on the procedure of patent eligibility, one that would be ripe for analysis in future scholarship.

B. Law, Fact, and the Federal Circuit

To conclude the article, it is worth noting that eligibility doctrine is not the only area of patent law in which the Federal Circuit has made missteps in trying to distinguish between law and fact. As noted above, the court has allowed juries to make the ultimate decision on nonobviousness, even though nonobviousness is, under Supreme Court precedent, a question of law. The court has also refused to acknowledge the factual considerations that seem to permeate determinations of claim meaning. Other examples abound of troublesome Federal Circuit doctrine around the border between law and fact.

Take indefiniteness. Under that doctrine, which stems from § 112’s command that the patent’s claims must “particularly point[] out and distinctly claim[]” the invention,³⁹⁵ a patent is invalid if its claims, specification, and prosecution history “fail to inform, with reasonable certainty, those skilled in the art about the scope of

³⁹⁴ A fair objection to the argument that the presumption of validity could shade the overall validity analysis is that presumptions and standards of proof do not typically apply to matters of law, *see supra* note 348, and patent validity is, under Supreme Court precedent, a matter of law, *e.g.*, *Microsoft Corp. v. i4i Ltd. P’ship*, 564 U.S. 91, 96 (2011) (“[T]he ultimate question of patent validity is one of law.”) (internal quotation marks omitted). Though it is beyond the scope of this article, there is, in my view, a reasonable argument to be made that patent validity is not strictly a question of law, as the Supreme Court has said, but a mixed question of law and fact, to which a heightened standard of proof could comfortably be applied. *See Lawson, supra* note 182, at 882 n.68 (distinguishing “pure” questions of law, such as, “What is the appropriate formulation of the legal standard for negligence?” from mixed questions of law and fact, such as, “Was *X*’s conduct negligent?”). A full explication of that argument will have to wait for another article. In the meantime, for suggestions that key issues in patent doctrine that are often characterized as a questions of law actually present mixed questions of law and fact, see Craig Allen Nard, *Deference, Defiance, and the Useful Arts*, 56 OHIO ST. L.J. 1415, 1437 n.83 (1995) (“[A] nonobviousness determination is actually a mixed question of law and fact”); J. Jonas Anderson, *Specialized Standards of Review*, 18 STAN. TECH. L. REV. 151, 176 (2014) (characterizing claim construction as “the ultimate mixed question of fact and law in the . . . field of patent law”).

³⁹⁵ 35 U.S.C. § 112(b).

the invention.”³⁹⁶ The Federal Circuit has acknowledged that determining whether a patent satisfies the definiteness requirement is a task of construing the patent’s claims.³⁹⁷ So, under the Supreme Court’s landmark decision in *Markman*,³⁹⁸ it should be done exclusively by the judge. But many district courts—with the Federal Circuit’s approval—allow juries to decide indefiniteness.³⁹⁹

Another doctrine in which the Federal Circuit has drawn questionable distinctions between matters of law and fact is the written description requirement.⁴⁰⁰ To determine whether a patent complies with that requirement, the court compares the inventor’s original application with the patent’s issued claims to ensure that, at the time of filing, the inventor had actually invented what the patent ultimately claimed.⁴⁰¹ Like claim construction, this comparison of two documents—the original application and the issued patent—would seem to present a question for the judge. Yet the Federal Circuit, surprisingly, views written description to be an entirely factual question that can be given to the jury.⁴⁰²

As far as I can tell, the Federal Circuit has never attempted to justify this rule (which, to reiterate, is in tension with the Supreme Court’s repeated statement that patent validity is a question of law). If you trace the case law back far enough, the Federal Circuit’s predecessor reasoned that written description is a factual question because the original application and the issued patent must be read from the perspective of a person having ordinary skill in the art.⁴⁰³ But many patent law doctrines are applied from that perspective, most notably, claim construction⁴⁰⁴ and

³⁹⁶ *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2124 (2014).

³⁹⁷ *See Sonix Tech. Co. v. Publications Int’l, Ltd.*, 844 F.3d 1370, 1378 (Fed. Cir. 2017).

³⁹⁸ *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 372 (1996).

³⁹⁹ *See, e.g., Koninklijke Philips N.V. v. Zoll Med. Corp.*, 656 F. App’x 504, 527-28 (Fed. Cir. 2016) (vacating jury verdict of no indefiniteness because of a legally incorrect instruction and remanding for another trial); *see also* J. Jonas Anderson & Peter S. Menell, *Restoring the Fact/Law Distinction in Patent Claim Construction*, 109 NW. U. L. REV. ONLINE 187, 200 (2015) (arguing that, under *Markman* and *Teva*, indefiniteness should be decided exclusively by the judge at the same time the judge conducts claim construction).

⁴⁰⁰ Like indefiniteness, the written description requirement stems from § 112 of the Patent Act. *See* 35 U.S.C. § 112(a) (“The specification shall contain a written description of the invention . . .”).

⁴⁰¹ *Gentry Gallery, Inc. v. Berkline Corp.*, 134 F.3d 1473, 1479 (Fed. Cir. 1998).

⁴⁰² *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1355 (Fed. Cir. 2010) (en banc).

⁴⁰³ *See In re Wertheim*, 541 F.2d 257, 262 (C.C.P.A. 1976) (“The primary consideration [of the written description doctrine] is factual and depends on the nature of the invention and the amount of knowledge imparted to those skilled in the art by the disclosure.”).

⁴⁰⁴ *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc).

the ultimate determination of obviousness,⁴⁰⁵ yet those doctrines are (or are supposed to be) applied by the court as a matter of law.⁴⁰⁶

The Federal Circuit's troubles at the law/fact divide provide yet another example of the court developing questionable doctrine on transsubstantive issues—that is, issues such as jurisdiction or procedure that arise not only in patent cases. The Federal Circuit has received substantial attention for its frequent reversals by the Supreme Court in recent years,⁴⁰⁷ and many of those reversals have been on issues far from the substantive core of patent law, involving issues such as standing, venue, standards of appellate review, subject matter jurisdiction, standards of proof and more.⁴⁰⁸ And there are many of examples of questionable procedural-type doctrines developed by the Federal Circuit that have thus far eluded Supreme Court review, such as the Federal Circuit's statement in *Berkheimer* that a plaintiff's own, uncorroborated statements are sufficient to withstand summary judgment,⁴⁰⁹ the limits placed by the court on involuntary joinder of patent co-owners,⁴¹⁰ and the court's restrictions on patent challengers' standing to appeal from Patent Office rulings in post-issuance proceedings.⁴¹¹ The consistent pattern of Supreme Court reversals on similar issues, coupled with the Federal Circuit's habitual resistance to applying general principles of federal procedural law in patent cases, raises serious

⁴⁰⁵ *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 422 (2007).

⁴⁰⁶ For another example of questionable Federal Circuit doctrine involving the law/fact distinction and documentary evidence, see Timothy R. Holbrook, *Possession in Patent Law*, 59 SMU L. REV. 123, 172 n.275 (2006) (“[T]he issue of whether a piece of prior art incorporates another piece by reference is a question of law. . . . , whereas the question of whether there is a motivation to combine prior art references is one of fact. This disparity is bizarre because in both circumstances, the court is in essence doing the same thing—reading . . . documents from the perspective of the [person having ordinary skill in the art].”) (citations omitted).

⁴⁰⁷ See Timothy B. Dyk, *Thoughts on the Relationship Between the Supreme Court and the Federal Circuit*, 16 CHI.-KENT. J. INTELL. PROP. 67, 68 (2016).

⁴⁰⁸ See Paul R. Gugliuzza, *How Much Has the Supreme Court Changed Patent Law?*, 16 CHI.-KENT. J. INTELL. PROP. 330, 335 (2017) (collecting cases).

⁴⁰⁹ See *supra* note 251 and accompanying text.

⁴¹⁰ See *STC.UNM v. Intel Corp.*, 767 F.3d 1351, 1367 (Fed. Cir. 2014) (O'Malley, J., dissenting from the denial of rehearing en banc) (arguing that, by refusing to apply Rule 19 of the Federal Rules of Civil Procedure, the court has “once again simply exempt[ed] patent law from the rules that govern all federal litigation”).

⁴¹¹ See Gaia Bernstein, *The End User's Predicament: User Standing in Patent Litigation*, 96 B.U. L. REV. 1929, 1935 (2016); Rochelle Cooper Dreyfuss, *Giving the Federal Circuit a Run for Its Money: Challenging Patents in the PTAB*, 91 NOTRE DAME L. REV. 235, 295 (2015); Megan M. La Belle, *Public Enforcement of Patent Law*, 96 B.U. L. REV. 1865, 1871 (2016); see also Sapna Kumar, *Standing Against Bad Patents*, 32 BERKELEY TECH. L.J. 87, 136 (2017) (defending the Federal Circuit's limits on standing as a matter of existing doctrine but proposing a legislative change).

questions about whether the court has succeeded or failed as an “experiment” in judicial specialization.⁴¹²

CONCLUSION

This article has highlighted several ways in which the procedures through which courts decide patent eligibility could be reformed to better balance the need for quick invalidations of bad patents with the danger of erroneously invalidating meritorious patents. Looking at the law of patent-eligible subject matter through a procedural lens has also illuminated several broader problems with—and potential reforms of—patent doctrine, particularly in areas that implicate the law/fact divide, such as claim construction. Eligibility doctrine is, as I have shown, not the only area of patent law in which the Federal Circuit has arguably made mistakes in its decisions attempting to distinguish law from fact. The analytical framework developed in this article hopefully provides a useful starting point for future scholarship critically reassessing the law/fact distinction in those other areas.

That reassessment is sorely needed. As I have tried to make clear, the law/fact distinction is essentially dispositive of several important procedural issues in patent cases: it determines the stage at which a given issue can be resolved, it dictates the standard of proof, and it potentially allocates decisionmaking authority between the judge and jury. All of those procedural features affect decisions by patentees about whether or not to pursue litigation and by accused infringers about whether to settle or continue the fight. Those litigation dynamics, in turn, have consequences for innovation: if patents are too difficult or costly to enforce, they will not provide much of an incentive for invention; but patents that are too easy to enforce can discourage innovation by those who fear the threat of infringement suits. By reassessing the law/fact divide in the realm of patent eligibility, this article has tried to sketch a procedural structure that accommodates those competing objectives better than the patent system currently does.

⁴¹² See generally Rochelle Cooper Dreyfuss, *The Federal Circuit: A Continuing Experiment in Specialization*, 54 CASE W. RES. L. REV. 769, 770-72 (2004) (collecting critiques and praise of the Federal Circuit as an institution); see also Laura G. Pedraza-Fariña, *Understanding the Federal Circuit: An Expert Community Approach*, 30 BERKELEY TECH. L.J. 89, 95 (2015) (hypothesizing that “expert communities,” such as the Federal Circuit, “will be more likely to defy solutions imposed by non-expert generalists,” such as the Supreme Court, “than communities of non-experts”).