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RETHINKING PATENT LAW IN THE ADMINISTRATIVE STATE

ORIN S. KERR

This Article challenges the Supreme Court's recent holding that administrative law doctrines should apply to the patent system. The Article contends that the dynamics of patent law derive not from public law regulation, but rather from the private law doctrines of contract, property, and tort. Based on this insight, the Article argues that administrative law doctrines such as Chevron and the Administrative Procedure Act should not apply within patent law, and that such doctrines in fact pose a serious threat to the proper functioning of the patent system.

INTRODUCTION

The Supreme Court recently tried to solve a riddle that has puzzled patent lawyers for decades. The riddle is this: if the Patent and Trademark Office (PTO) is an administrative agency, and patents bestow monopolies, then why have the courts refused to apply administrative law standards of review to PTO patent decisions? As a 1942 Harvard Law Review article asked, why have

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1. See Craig Allen Nard, Deference, Defiance, and the Useful Arts, 56 OHIO ST. L.J., 1415, 1450-67 (1995) (arguing that the courts should treat the PTO like any other administrative agency when the courts review patent appeals); R. Carl Moy, Judicial Deferece to the PTO's Interpretations of the Patent Law, 74 J. PAT. & TRADEMARK OFF. SOC'Y 406, 438 (1992) (noting that the courts have refused to apply Chevron deference to PTO patent decisions, and discussing several justifications for this refusal); Wm. Redin Woodward, A Reconsideration of the Patent System as a Problem of Administrative Law, 55 HARV. L. REV. 950 (1942).
the courts failed to treat the patent system "as a problem of administrative law?"\(^2\) After all, courts routinely apply deferential administrative law standards of review such as *Chevron*\(^3\) and Section 10(e) of the Administrative Procedure Act (APA)\(^4\) to agency decisions involving licenses and permits. The same courts have rejected these administrative law standards in patent cases in favor of more rigorous standards of review.\(^5\) Why the different standards for patents?

In *Dickinson v. Zurko*,\(^6\) the Supreme Court offered an answer to this riddle by suggesting that past failures to apply administrative law standards to the PTO had been a mistake. *Zurko* raised a question with more symbolic than practical importance: When courts review PTO findings of fact in a patent appeal, should they


4. *See 5 U.S.C. § 706 (1994)* (stating that a court exercising review under the Administrative Procedure Act shall set aside agency action found to be "arbitrary, capricious, an abuse of discretion, or ... unsupported by substantial evidence").

5. For cases rejecting the application of Section 10(e) of the APA when courts review PTO findings of fact, see *In re Zurko*, 142 F.3d 1447, 1449 (Fed. Cir. 1998) (en banc), rev'd, 527 U.S. 150 (1999); *In re Leuders*, 111 F.3d 1569, 1574-75 (Fed. Cir. 1997); *In re Napier*, 55 F.3d 610, 614 (Fed. Cir. 1995); *In re Brana*, 51 F.3d 1560, 1568-69 (Fed. Cir. 1995). For cases rejecting the application of *Chevron* to PTO interpretations of law, see *Merck & Co. v. Kessler*, 80 F.3d 1543, 1549 (Fed. Cir. 1996) (rejecting PTO's view that its determination that Hatch-Waxman Act did not entitle patent holder to extension of patent term was entitled to *Chevron* deference); *Hoechst Aktiengesellschaft v. Quigg*, 917 F.2d 522, 526 (Fed. Cir. 1990); *Glaxo Operations UK Ltd. v. Quigg*, 894 F.2d 392, 398 (Fed. Cir. 1990) (rejecting PTO's view that its determination that 35 U.S.C. § 156(a) did not entitle patent holder to extension of patent term was entitled to *Chevron* deference). For a case rejecting a gestalt claim to PTO deference, see *In re McCarthy*, 763 F.2d 411, 412 (Fed. Cir. 1985).

A standard of review is deferential when it subjects the agency's decision to only light scrutiny. In such cases, the reviewing court's deference permits a range of agency action before the reviewing court will upset the agency's judgment. *Chevron* provides a good example: *Chevron* is deferential in that the reviewing court will uphold any "reasonable" agency interpretation. In contrast, a rigorous standard of review subjects the agency's judgment to careful scrutiny. For example, de novo review empowers the reviewing court to decide questions afresh without any deference to the agency's prior judgment.

apply the traditional "clearly erroneous" standard of review from outside of administrative law, or should they switch to the APA's marginally more deferential administrative law "substantial evidence" standard? Reversing the Federal Circuit, the Court held that the APA's administrative law standard should apply to review of the patent system. The Court reasoned that there was no particular reason to treat PTO patent rulings differently than other administrative agency decisions, and that "the importance of maintaining a uniform approach to judicial review of administrative action" counseled strongly in favor of applying the administrative law standard to patent rulings. With Zurko, it seems, patent law's longstanding exclusion from the world of administrative law has come to an end.

This Article argues that the Supreme Court in Zurko chose the wrong answer to the riddle. I argue that the Zurko Court and the PTO overlooked a fundamental distinction that explains the patent system's unusual treatment: The patent system operates not through regulation, but rather through the private law mechanisms of contract, property, and tort. Unlike licensing regimes, the

7. See, e.g., FED. R. CIV. P. 52(a). A finding is clearly erroneous "when although there is evidence to support it, the reviewing court on the entire evidence is left with the definite and firm conviction that a mistake has been committed." United States v. United States Gypsum Co., 333 U.S. 364, 394 (1950).

8. See 5 U.S.C. § 706; Zurko, 527 U.S. at 152. An appellate court applying the "substantial evidence" standard will uphold the agency's finding unless it is arbitrary, capricious, or unsupported by substantial evidence. Notably, even the Zurko Court recognized that the difference between the "clearly erroneous" and "unsupported by substantial evidence" standards has little practical importance. See Zurko, 527 U.S. at 162-63 (stating that the difference between the two standards "is a subtle one—so fine that (apart from the present case) we have failed to uncover a single instance in which a reviewing court conceded that use of one standard rather than the other would in fact have produced a different outcome").

9. Zurko, 527 U.S. at 154; see also id. at 165 ("Neither the [Federal] Circuit nor its supporting amici . . . have explained convincingly why direct review of the PTO's patent denials demands a stricter fact-related review standard than is applicable to other agencies.").

10. In this Article, I use the phrase "private law" to refer to the body of state-created laws that define the legal rights of private parties versus other private parties (such as contract, property, and tort law). In contrast, I will use "public law" to refer to the body of state-created laws that define the legal rights of private parties versus the State. Constitutional law and administrative law provide examples of areas of public law. See generally L. Harold Levinson, The Public Law/Private Law Distinction in the Courts, 57 GEO. WASH. L. REV. 1579 (1989) (discussing the dichotomy between public law and private law). Although the distinction
patent laws express a unilateral contract offer. The government offers to grant a patent to any inventor who discovers a useful new invention and files a meritorious patent application with the PTO. The PTO's role is not to "regulate" the patent system, but merely to represent the government offeror by reviewing inventors' claims that they have accepted the offer. If an application satisfies the Patent Act, then the offer has been accepted; a binding contract exists, and the PTO must issue the property right of a patent as consideration. Conversely, if the application does not satisfy the Patent Act, the PTO must reject the inventor's claim to a patent because no contract exists. In short, the patent system is different from other areas of regulatory law: It is a private law patent system, rooted in contractual mechanisms that stand apart from the regulatory dynamic of administrative law.

The private law theory of the patent system that I present in this Article has important implications for both administrative law and patent law. Within administrative law, the private law basis of the patent system reemphasizes largely forgotten limits on the scope of administrative law doctrines. Today's administrative law scholars generally have adopted an expansive view of the scope of administrative law, with its characteristic deference to the executive branch. Echoing the Supreme Court's opinion in Zurko, many scholars have endorsed the ahistorical notion that deferential administrative law doctrines apply as a matter of course when the courts review decisions from executive agencies, including non-regulatory agencies such as the PTO. They reason that deference between public and private law can blur, see generally Morris R. Cohen, Property and Sovereignty, 14 CORNELL L.Q. 8 (1927), it is useful for the purposes of this Article.

11. See, e.g., KENNETH CULP DAVIS & RICHARD J. PIERCE, JR., 1 ADMINISTRATIVE LAW TREATISE § 1.1 (3d ed. 1994) (contending that "[a]dministrative law includes the entire range of action by government with respect to the citizen or by the citizen with respect to the government," with the exception of providing a neutral forum for private litigants involved with civil litigation (quoting Henry J. Friendly, New Trends in Administrative Law, 6 MD. BAR J., No. 3 at 9 (1974))); PETER L. STRAUSS, AN INTRODUCTION TO ADMINISTRATIVE JUSTICE IN THE UNITED STATES 103 (1989) (suggesting that administrative law encompasses the workings of "virtually every administrative unit exercising public authority").

to the executive empowers better decision making because agencies generally possess specialized expertise.\textsuperscript{13}

The private law basis of the patent system provides a perfect vehicle for recognizing the flaw in this argument. It confirms that Congress can direct the executive branch to act in two fundamentally different ways. First, Congress can direct agencies to exercise discretion within a zone of delegated authority, such as when it directs the FCC to evaluate applications for broadcast licenses.\textsuperscript{14} Second, Congress can direct agencies to make ministerial decisions as its agent, such as when it directs the PTO to rule on patent applications.\textsuperscript{15} Deferential administrative law doctrines were designed to apply only in the former case, regardless of agency expertise. Indeed, deference and delegation are two sides of the same coin. Judicial deference creates agency discretion, and agency discretion effectuates lawmaking power within a zone of delegated authority. Accordingly, Congressional delegations of power define the limits of administrative law doctrines. When Congress designs a legal regime, such as the patent system, that is based on private law mechanisms rather than a delegation of power, the deferential standards of administrative law should not apply.

An understanding of the private law nature of the patent system also has importance within patent law itself. First, it offers a new unified theory for understanding the purpose and design of patent law.\textsuperscript{16} Scholars of patent law have noted that the field lacks a so-called "holy grail," a single "unifying theory that describes the overall patent system and the outcome of individual cases."\textsuperscript{17} An understanding of the private law mechanisms driving the patent system may offer such a theory, or at least provide key insights that help lead to one.

\textsuperscript{335, 341-42} (1996).

\textsuperscript{13} See sources cited infra notes 18 and 19. A comprehensive discussion of this argument appears in LOUIS L. JAFFE, JUDICIAL CONTROL OF ADMINISTRATIVE ACTION 576-85 (1965).


\textsuperscript{16} While some scholars have argued that patent rights are property rights, see infra note 27, and many courts have noted that the process of granting a patent resembles a contract, see infra note 30, my effort to explain the entire patent system through a single private law lens appears to be novel.

More narrowly, the private law theory of the patent system offers a new perspective on whether deferential review of patent decisions can improve the patent system. Until now, the scholarly debate on this question has focused exclusively on the relative expertise of the PTO and its reviewing court, the United States Court of Appeals for the Federal Circuit. Those who believe that the PTO's expertise in patent law exceeds the Federal Circuit's favor deferential administrative law standards in patent law, those who maintain that the Federal Circuit is wiser and more expert than the PTO oppose such standards. This focus makes sense from a regulatory viewpoint: the institutional competence of courts and agencies has long been a justification for deference in regulatory law. From the private law perspective, however, we can see that the significance of deference to the PTO extends far beyond incremental differences derived from expertise.

The private law perspective teaches that the value of deference in patent law must be judged chiefly by how it would change the


19. See Moy, supra note 1 (arguing that the Federal Circuit should not grant Chevron deference to the PTO because the PTO is "systematically inexpert with regard to the patent law as [sic] whole," whereas the Federal Circuit "is likely to be expert itself with regard to the patent laws"); Rayan Tai, Substantive versus Interpretive Rulemaking in the United States Patent and Trademark Office: The Federal Circuit Animal Legal Defense Fund Decision, 32 IDEA 235, 242 (1992) ("The relative expertise of the Federal Circuit on patent law relative to the PTO makes deference unnecessary."); Brian C. Whipps, Note, Substantial Evidence Supporting the Clearly Erroneous Standard of Review: The PTO Faces Off Against the Federal Circuit, 24 WM. MITCHELL L. REV. 1127, 1149-50 (1998) (contending that administrative law doctrines should not apply to the PTO because the Federal Circuit has "large expertise in patent law," while the PTO "has a significantly lesser claim to expertise than do other federal agencies").
incentives facing prospective inventors. Unlike regulatory regimes, the private law patent system works by inducing reliance on Congress's contractual offer; the goal of patent law is to encourage inventors to invest in and disclose new research in order to obtain the quid pro quo of a patent. As a result, deference will promote research and technological progress if it encourages reliance on Congress's offer, but it will harm the patent system if it discourages reliance. From this perspective, we can see that deference to the PTO would cause the same trouble that would result from judicial deference to an offeror in a breach of contract dispute. Among prospective inventors considering whether to rely on Congress's offer, the knowledge that a court would later defer to the PTO's judgments would both destabilize the terms of the offer and create incentives to obtain patents by manipulating PTO discretion. Both effects would sharply discourage the very investment in research and development that patent law seeks to induce. Accordingly, the private law perspective on the patent system suggests that courts should reject the PTO's campaign to apply deferential standards of review from administrative law when reviewing PTO appeals, and should adhere instead to the aggressive standards of review that courts traditionally have applied when reviewing direct appeals from the PTO.

I will present my argument in three sections. In Section I, I present my theory that the patent system can be understood through the private law doctrines of contract, property, and tort. Section II explores the ramifications of this theory for the field of administrative law, with particular emphasis on how it reveals often-forgotten limits on the scope of administrative law doctrines. Finally, Section III examines the importance of the private law theory within patent law, and argues that deference to the PTO poses a danger to the proper functioning of the patent system.

I. THE PRIVATE LAW THEORY OF THE PATENT SYSTEM

In *The Nature and Function of the Patent System*, Professor Edmund Kitch noted the similarities between the patent system

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20. See infra notes 22-29 and accompanying text.
21. See generally infra notes 233-78 and accompanying text (discussing the implication of the private law system on patent law).
and the legal regime governing prospecting for mineral claims in the American West during the last half of the nineteenth century. The mineral claims system encouraged private firms to discover and develop valuable natural resources by permitting those who ventured onto public land and discovered mineral deposits to file a claim for exclusive property rights in their discoveries. Kitch argued that the patent system shares this "prospecting" function, because it encourages inventors to discover and develop new inventions by permitting them to file a claim for exclusive property rights in their discoveries under certain conditions. Although mineral rights are tangible and patent rights are intangible, both legal regimes encourage the efficient development of undiscovered resources with an offer to the public: in exchange for discovering resources and agreeing to take certain steps to develop them, the discoverer receives an exclusive property right from the government.

Professor Kitch's analogy between intangible patent rights and tangible mineral rights helps reveal that the operating principles of patent law derive not from regulation, but from the common law. As Kitch's account suggests, the patent system promotes the efficient development of practical knowledge by offering inventors the prospect of valuable property rights, encouraging private individuals to devote their resources to the exploration and acquisition of new terrain that they might not otherwise attempt to discover. When an inventor discovers a useful new invention and files a complete patent application before the PTO, she acquires a contractual right to the property she has discovered. In short, the patent laws create an offer, and the filing of a meritorious patent application constitutes an acceptance. The government's quid pro quo is an intangible property right called a patent, which grants the owner the full range of traditional property rights over the use of the discovered invention, albeit for a limited period of time.

23. See id. at 271-75.
24. See id. at 271.
25. See id. at 274.
During the patent term, the ready transferability of the patent creates economic incentives for the property’s efficient use, helping the terrain mapped out by the patent to be developed quickly and productively. Once the patent term expires, the property enters the public domain so that its benefits can be shared freely by all. The end result is a doctrinal regime that expands human knowledge of useful inventions by channeling private conduct through private law mechanisms of property and contract, without resorting to public regulation.

This section presents a comprehensive argument for such a private law understanding of the patent system. I have three goals. First, I hope to show that the essential dynamics of the patent application and review process harness the contract law concepts of offer and acceptance. My second goal is to show how the private law principles that govern the patent grant differ from the regulatory principles that govern the issuance of permits and licenses. Third, I intend to show that standards of review of law and fact within patent law have their analogs in private contract law, and that the traditional, rigorous standards of review of the PTO in patent law mirror their private law cousins.

A. Offer and Acceptance

The cornerstone of Congress’s scheme to encourage the discovery, development, and dissemination of practical knowledge is the


29. See Joseph Story, Commentaries on the Constitution of the United States 402-03 (R. Rotunda & J. Nowak eds. 1987) (stating that patent law is beneficial “to the public, as it will promote the progress of science and the useful arts, and admit the people at large, after a short interval, to the full possession and enjoyment of all writings and inventions without restraint”).

unilateral contract offer codified by the Patent Act.30 The Patent Act's statutory terms list the requirements that inventors must satisfy to accept the offer and earn the quid pro quo of a patent. The terms of the offer present a formidable hurdle to inventors seeking patent rights. To become contractually “entitled to a patent”:\footnote{31}

1) the subject of the application must be a “new and useful process, machine, manufacture, or composition of matter or any useful improvement,”\footnote{32}

2) “the differences between the subject matter sought to be patented and the prior art [must not be] such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains,”\footnote{33}

3) the invention must not have been known or used by others before the application was filed, or have been on sale more than a year before the application was filed, or have been abandoned by the applicant,\footnote{34}

4) the application must contain a written description “of the manner and process of making and using [the invention], in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth

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\footnote{30}{See Krupp A.G. v. Midvale Steel Co., 191 F. 588, 594 (3d Cir. 1911) ("Tersely stated, an American patent is a written contract between an inventor and the government. This contract consists of mutual, interrelated considerations moving from each party to the other for such contract."). The Federal Circuit reiterated this point recently in \textit{Markman} v. \textit{Westview Instruments, Inc.}, 52 F.3d 967, 984-85 (Fed. Cir. 1995), \textit{aff'd}, 517 U.S. 370 (1996). According to the court in \textit{Markman}:

[the analogy of a patent to a contract may appear to some extent to be an appropriate way of describing the circumstances surrounding the issuance of a patent. The inventor is required to make full disclosure of his invention to the [PTO] and to the public in his patent specification, which he is otherwise not obligated to do. In return, the law allows the government to confer a property right to exclude anyone else from making, using, or selling the invention covered by the claims for seventeen years, which it is otherwise not obligated to do.

\textit{Id.} (footnote omitted). A unilateral contract is a contract that is accepted by performance of the terms of the offer. \textit{See} \textit{E. ALLAN FARNSWORTH, CONTRACTS} 115 (2d ed. 1990).

\footnote{31}{35 U.S.C. § 102 (1994).}
\footnote{32}{\textit{Id.} § 101.}
\footnote{33}{\textit{Id.} § 103.}
\footnote{34}{\textit{See id.} § 102(a)-(c).}
the best mode contemplated by the inventor of carrying out his invention,"35
5) and the inventor must comply fully with the PTO's pro-
cedures for filing the application.36

A review of these terms reveals how they serve Congress's goal
of inducing the discovery, development, and dissemination of
practical knowledge through reliance on Congress's offer.37 The
core requirement—that the new invention must be nonobvious to
a person reasonably skilled in the art—channels research efforts
towards the discovery of fundamental new ideas and inventions.38
By reserving the quid pro quo of patent rights for inventions that
represent considerable expansions of practical knowledge, the
nonobviousness requirement encourages inventors to explore
challenging new terrain rather than pursue trivial improvements
of already existing inventions.39 Other terms of the government's
offer focus less on inducing applicants to discover valuable new
inventions than on fostering the dissemination of new inventions to
the public once discovered. After an inventor ventures into un-
charted territory and discovers a new, useful, and nonobvious
invention (#1 and #2 above), the inventor must file the application
quickly (#3 above), and must disclose her best ideas concerning how
the invention can be carried out (#4 above).40 Her application must
describe the invention in "in such full, clear, concise, and exact
terms" that any person skilled in the art could make and use the
invention.41 These elements of Congress's offer help ensure that the
public benefits promptly from expansions of practical knowledge.

35. Id. § 112.
36. See id. § 111.
inducement ... to bring forth new knowledge").
38. See generally Robert P. Merges, Uncertainty and the Standard of Patentability, 7
Perspectives on Innovation, 76 CAL. L. REV. 803, 812 (1988) ("This requirement asks whether
an invention is a big enough technical advance; ... an invention ... will not merit a patent
if it represents merely a trivial step forward in the art.").
Scope, 90 COLUM. L. REV. 839, 852 (1990) (describing the requirements of disclosure and
enablement).
41. 35 U.S.C. § 112.
In response to Congress's offer, millions of inventors research and develop new machines and processes, and together submit over two hundred thousand patent applications per year to the PTO. The applications cover a remarkable sweep of inventions, ranging from attempts to build a better mousetrap to attempts to genetically engineer a better mouse. Each application attempts to prove that the applicant has accepted Congress's offer by describing an invention or process that satisfies the statutory requirements of novelty, utility, nonobviousness, and enablement. By satisfying the terms of Congress's offer, the applicants argue, they have earned a contractual right to the property described in their applications. In effect, each application says to the PTO: "This document shows that I have satisfied the substantive requirements of the law. Now that I have accepted the government's offer, you must grant me title to the property that you promised."

B. The Role of the PTO in the Private Law Patent System

Although Congress generates the offer that the patent laws represent, it cannot itself review the hundreds of thousands of applications filed every year in response to the offer. Instead, Congress created the PTO to serve as its agent. The PTO analyzes the submitted claims on Congress's behalf and determines which applicants have accepted Congress's offer.

The PTO and its over three thousand patent examiners serve a narrowly circumscribed role in the private law patent system. The PTO has a ministerial task: to apply a legal standard determined by Congress and the courts to the facts presented to it by the patent applicant. If a patent applicant puts forward facts that meet the

42. See 1997 PAT. & TRADEMARK OFF. REV. at 8.
43. See, e.g., U.S. Patent No. 4,438,584 (issued March 27, 1984).
44. See, e.g., U.S. Patent No. 4,736,866 (issued April 12, 1988).
46. See, e.g., Mannington Mills, Inc. v. Congoleum Corp. 595 F.2d 1287, 1294 (3d Cir. 1979) ("The granting of the patents per se [is] in substance [a] ministerial activity."); Brenner v. Ebbert, 387 F.2d 762, 764 (D.C. Cir. 1968) ("[T]he issuance of a patent . . . is a relatively ministerial act"); Nobelpharma AB v. Implant Innovations, Inc., 930 F. Supp. 1241, 1253 (N.D. Ill. 1996) (noting that a patent examiner is a "ministerial official whose function is to apply policy set by others . . . to specific facts in ex parte proceedings").
legal standard established by Congress in Title 35 of the U.S. Code, the PTO must issue the patent. If the applicant cannot put forward facts that meet the congressional standard, the PTO has no choice but to deny the application. Neither the patent examiners who first inspect new applications, nor the PTO's Board of Patent Appeals and Interferences (BPAI), which reviews adverse decisions, has any substantive power to interpret the offer's terms or discretion to decide whether an applicant is entitled to a patent. Patent examiners and the BPAI must evaluate patent applications.


48. See Grant v. Raymond, 31 U.S. 218, 240 (1832) (Marshall, C.J.) ("If the prerequisites of the law be complied with, [the patent examiner] can exercise no judgment on the question whether the patent shall be issued."); George E. Frost, Judge Rich and the 1952 Patent Code—A Retrospective, 76 J. PAT. & TRADEMARK OFF. SOC'Y 343, 350-51 (1994) (noting that the job of patent examiners is "to examine patent applications—not generate the law or make new law").

49. See FTC v. Ruberoid Co., 343 U.S. 470, 490-91 (1952) (Jackson, J., dissenting) ("The court, in review of a case under the... patent law, follows the same mental operation as the executive officer. On the facts, there results... a right to a patent. The court can deduce these legal rights or obligations from the statute in the same manner as the executive officer."); Animal Legal Defense Fund v. Quigg, 932 F.2d 920, 929-930 (Fed. Cir. 1991) ("[W]hether patents are allowable... is not a matter of discretion but of law... Either the subject matter falls within section 101 or it does not, and that question does not turn on any discretion residing in examiners."); MARTIN SHAPIRO, THE SUPREME COURT AND ADMINISTRATIVE AGENCIES 145 (1968) (noting that in reviewing the PTO's work, courts ask "precisely the questions" that the Patent Office asks when considering whether to issue the patent). Animal Legal Defense Fund illustrates the dissonance that can result from misunderstandings of the PTO's limited role. The case arose from the PTO's efforts to clarify its interpretation of the Supreme Court's 1980 decision in Diamond v. Chakrabarty, 447 U.S. 303 (1980), which held that man-made living microorganisms fell within the definition of patentable subject matter. Facing widespread uncertainty of Chakrabarty's scope, the PTO released a 1987 notice stating its conclusion that Chakrabarty extended to multicellular living organisms. See Animal Legal Defense Fund, 932 F.2d at 923. One year later, several public interest organizations representing animal rights groups challenged the notice on the ground that it violated the procedural dictates of the APA. See id. at 923-24. The assumption underlying the plaintiffs' complaint was that the PTO is a regulatory agency, and that the 1987 notice was a substantive rule promulgated under the rulemaking powers afforded to regulatory agencies. In other words, the plaintiffs assumed that the 1987 notice announced the PTO's independent interpretation of the Patent Act, rather than the PTO's understanding of the Supreme Court's interpretation of the Patent Act. The Federal Circuit rejected the plaintiffs' arguments on the merits because the PTO lacked the power to issue a substantive rule interpreting the statutory standards of patentability. See id. at 923-30.
and reach decisions based on the courts' interpretation of Congress's offer, rather than their own.\footnote{50. A.F. Stoddard & Co. v. Dann, 564 F.2d 556 (D.C. Cir. 1977), provides a revealing example of how the patent system requires the PTO to adhere strictly to even hypertechnical readings of Congress's offer. In Stoddard, the PTO rejected a patent during a reissue proceeding because the applicant failed to follow a technical rule that required the actual inventor of the claimed invention to sign the patent application. See id. at 558-59. On appeal to the D.C. Circuit, Chief Judge Markey, sitting by designation, fashioned an exception to the technical rule concerning the signing of patent applications, and upheld the patent. See id. at 566. Chief Judge Markey was careful to note, however, that the PTO was absolutely justified in rejecting the application based on the preexisting technical rule. See id. The PTO, he wrote, has the obligation to carry out [its] duties under [its] authorizing statutes, and if [it] would avoid an exercise of the powers of another Branch, must in almost every case, follow the strict provisions of the applicable statute. Finding no express statutory authorization for the correction here sought, the PTO cannot be expected to have stepped beyond the bounds of the statutes by which it is governed. Id.}

The private law basis of the patent system explains this ministerial function. As an agent hired by Congress, the PTO acts as an offeror who must determine whether an offeree has triggered a legal obligation by accepting his offer. To illustrate this, it helps to consider a well-known hypothetical from contract law that accurately mirrors the dynamics of patent law. Imagine that A says to B, "I will give you $100 if you walk across the Brooklyn Bridge." After B walks across the bridge and demands payment from A, A must decide whether he owes B $100. This decision is ministerial in the sense that A's legal obligation exists independently of A's subjective wishes. Having made the offer and kept it open until B accepted it, A has no power to restructure the legal relationship between A and B after the fact. A has no discretion to decide whether he is obligated to pay B the $100 he has promised.

The patent system operates in much the same way. In the patent system, the PTO plays the role of A, and the applicant plays the role of B. Instead of making a promise to pay $100 in exchange for crossing the Brooklyn Bridge, the patent system creates a promise to confer a patent in exchange for satisfying the statutory requirements of patentability. The task of the offeror is the same, whether the offeror is A or the PTO. When an offeree claims to have accepted\footnote{51. The original form of this popular hypothetical appears in I. Maurice Wormser, The True Conception of Unilateral Contracts, 26 YALE L.J. 136, 136-37 (1916).}
the offer, the offeror must evaluate that claim. The offeror's evaluation must be guided not by his own discretion, but instead by his best judgment as to how a neutral court would construe the legal rights of the parties. The offeror cannot pick and choose who will receive the consideration.

C. Patents and Licenses Compared

At this point, it may prove helpful to explore the differences between patents and licenses. Licenses are regulatory permits, administered by the executive branch, that regulate who can participate in an activity.\textsuperscript{52} Licensing laws generally forbid individuals or companies from participating in the regulated activity unless they first obtain a license from the government.\textsuperscript{53} For example, individuals cannot drive a car unless they first obtain a driver's license from the state,\textsuperscript{54} and broadcasting companies cannot broadcast over the airwaves unless they first obtain a license from the Federal Communications Commission (FCC).\textsuperscript{55}

In general, legislatures create licensing regimes by delegating authority to administer the regime to an administrative agency in the executive branch. The legislature may indicate a few principles that should govern how the agency determines who receives a license, but the agency itself typically enjoys substantial discretion to determine most of the criteria, and to apply them as it sees fit.\textsuperscript{56} The agency itself takes on the role of determining who should receive a license, and therefore who should be allowed to participate in the regulated activity. In a few cases, agencies may choose to issue only one license, bestowing a monopoly on the lucky

\textsuperscript{52} See People ex rel. Lieberman v. Van de Carr, 199 U.S. 552, 558 (1905).
\textsuperscript{53} See id.
\textsuperscript{54} See, e.g., N.Y. VEH. & TRAF. LAW Ch. 71, Tit. 5 § 501.1 Art 19 (McKinney 1992) ("The commissioner shall issue classified drivers' licenses as provided in this article.") & § 503.1(a) ("A driver's license shall be valid from the date of issuance until a date of expiration determined by the commissioner.").
\textsuperscript{56} See, e.g., Barsky v. Board of Regents, 347 U.S. 442, 469 (1954) (Frankfurter, J., dissenting) ("The granting of licensed ... and the curtailment or revocation of such licenses may naturally be entrusted to the sound discretion of an administrative agency."); FCC v. Pottsville Broad. Co., 309 U.S. 134, 138 (1940) (Frankfurter, J.) (noting that the Communications Act of 1934 leaves the question of when the FCC may grant or revoke a broadcasting license "to the Commission's own devising").
recipient. In most cases, however, the agency will attempt to grant licenses to applicants who convince the agency that they can use the license in the public interest (for example, by passing a driver’s test to obtain a driver’s license), and to deny licenses to applicants who cannot make such a showing.

Licenses are notable for the restrictions that ordinarily attach to their use. For example, most licenses are nontransferable: license holders cannot give or sell to others the rights bestowed by the license. Licenses are also subject to revocation. If changing circumstances indicate that the licensee will no longer use the license in the public interest, administrative authorities can revoke it. Such limitations follow necessarily from the regulatory purpose of licensing schemes. An agency tasked with deciding who can engage in a regulated activity must be able to do more than decide who can engage in the activity at one particular time. The agency must have the authority to rethink its decision in the future, and to blocklicensees from transferring the license to another party that the agency does not want engaging in the regulated activity.

Patent rights are altogether different from licensing rights. Whereas licenses are discretionary, nontransferable, and revocable, patents are nondiscretionary, transferable, and irrevocable. Licenses are narrow administrative rights acquired through an exercise of administrative discretion; patents are property rights

57. For example, the New York State Race and Wagering Board, which is charged with regulating horse races within the State of New York, has issued its only license to hold races to the New York Racing Association (NYRA). Thus, NYRA acquired a monopoly on horse races in the State of New York. See Saumell v. New York Racing Ass'n, 447 N.E.2d 706, 711 n.3 (N.Y. 1983).

58. See, e.g., 47 U.S.C. § 307(a) (stating that the FCC shall issue a broadcast license to an applicant if “public convenience, interest, or necessity will be served thereby”).

59. See, e.g., id. § 310 (noting broadcast license restrictions).

60. See, e.g., id. § 310(d) (“No . . . station license, or any rights thereunder, shall be transferred, assigned, or disposed of in any manner . . . to any person except upon application to the Commission . . . ”).

61. See, e.g., id. § 312(a)(2) (stating that the FCC can revoke a broadcast license “because of conditions coming to the attention of the commission which would warrant it in refusing to grant a license or permit on an original application”).

62. For example, a state department of motor vehicles might want to issue licenses to good drivers and deny licenses to bad drivers. It cannot achieve this goal if licenses are irrevocable or transferable. The state must have the power to revoke drivers’ licenses because good drivers can become bad drivers (e.g., good drivers can acquire alcohol problems and then drive while intoxicated). If licenses are transferable, bad drivers will simply buy licenses from good drivers.
acquired by contract. An applicant gains a contractual right to a patent by satisfying the government's offer, and retains that right regardless of the applicant's future conduct. The PTO has no discretion to set the standards of patentability, and no discretion to apply them in a particular case to determine whether a given applicant should receive a patent. Unlike a licensing agency, the PTO cannot grant patents to applicants it believes will use their patent rights well, or deny patents to applicants it believes will not use them well. Further, the PTO cannot block a patent owner from selling or leasing the patent right, and cannot revoke the patent once it has been granted unless it is later shown that the applicant did not actually satisfy the offer (and thus has no contractual right to the patent in the first place). Unlike licensing rights, patent rights may be transferred freely, much like any other property right.

D. Patent Litigation as a Private Law Action

Patent disputes can reach the federal courts in one of two ways. First, an unsuccessful patent applicant whose application has been rejected by the PTO may file a direct appeal against the PTO in federal court. Second, a patent owner may file an infringement action against another party for interfering with the owner's patent rights. Unsurprisingly, both forms of patent litigation mirror traditional private law actions.

Direct appeals from the PTO mirror breach of contract actions. In a direct appeal, an unsuccessful patent applicant sues the PTO for failure to issue a patent when the applicant believes that her application satisfied the requirements of the Patent Act. In contractual terms, the applicant sues the PTO for breach of contract arising from the PTO's failure to issue the quid pro quo of a patent after the applicant accepted the government's offer. If the court agrees that the PTO's failure to award the patent constitutes a breach of the agreement, the court orders the contractual remedy

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64. *See* 35 U.S.C. § 141-44.
65. *See*, e.g., Laitram Corp. v. NEC Corp., 163 F.3d 1342 (Fed. Cir. 1998) (reviewing infringement action brought by owner of a patent for an electro-optical printer).
of specific performance by instructing the PTO to issue the patent.\footnote{66} Infringement actions, in contrast, are tortious trespass suits.\footnote{67} As in a traditional trespass-to-real-property suit, the property owner in an infringement action brings suit against an alleged trespasser claiming that the trespasser has violated the owner’s right to exclude others from using the property.\footnote{68} The PTO is not a party to a patent infringement suit, and standards of review in infringement suits have received little attention in the debate over whether administrative law standards of review should apply to the PTO. However, a defendant in an infringement action can force the court to review the PTO’s conduct at least indirectly by raising the affirmative defense of invalidity.\footnote{69} This defense permits a defendant to question the owner’s right to the patent by challenging the PTO’s conclusion that the original patent applicant (who may or may not be the present owner) was entitled to the patent. In effect, this defense permits a trespasser to challenge the property owner’s title to the property by challenging the underlying contract through which the owner acquired the property right.\footnote{70} If the trespassing infringer can demonstrate that the patent owner lacks a right to claim ownership over the property described by the patent, then the

\footnote{66. Notably, specific performance would be the appropriate remedy in an analogous private law breach of contract action, both because patent rights are unique and because the value of the patent is nearly impossible to estimate at the time it must be issued. See Farnsworth, supra note 30, § 12.6, at 859-60.}

\footnote{67. See Computing Scale Co. v. Toledo Computing Scale Co., 279 F. 648, 671 (7th Cir. 1921) (analogizing patent infringement action to trespass action to real property); Thomson-Houston Elec. Co. v. Ohio Brass Co., 80 F. 712, 721 (6th Cir. 1897) (“An infringement of a patent is a tort analogous to trespass or trespass on the case.”); Strait v. National Harrow Co., 51 F. 819, 820 (N.D.N.Y. 1892) (same); Phillip E. Areeda & Herbert Hovenkamp, 3 Antitrust Law § 704a, at 151 (1996) (“The patent infringement action is nothing more than a variation on the common law trespass action.”).}

\footnote{68. See King Instruments Corp. v. Perego, 65 F.3d 941, 947 (Fed. Cir. 1995) (“An act of infringement... trespasses on [the patent] right to exclude.”) (citation omitted).}

\footnote{69. See, e.g., Amgen, Inc. v. Chugai Pharm. Co., 927 F.2d 1200 (Fed. Cir. 1991) (reviewing infringement action in which defendant raised affirmative defense of invalidity).}

\footnote{70. One early court described this process in the following way:

[No absolute right of property is conferred by the grant of a patent. The patentee is merely put in a position to assert his prima facie right against infringers who may, in their defense, raise the question of the validity of the patent, and have the same finally adjudicated in the light of a full presentation and consideration of all the evidence attainable in respect of anticipation, prior knowledge, use, and the like.

In re Thomson, 26 App. D.C. 419, 425 (D.C. Cir. 1908) (citation omitted).]
owner enjoys no right to exclude the infringer, and the infringement action must fail.

E. The Private Law Significance of Standards of Review of "Fact" and "Law"

With the private law structure of the patent system exposed, we can now focus on the significance of standards of review in patent law. In particular, I will attempt to deconstruct standards of review within patent law in light of the contractual mechanisms that govern patent law. In other words, what private law concepts are at issue when courts apply standards of review to a PTO patent adjudication?

To answer this question, it helps first to review the differences between different types of standards of review. Standards of review generally divide into two discrete matters: the standard of review that applies to "questions of fact," and the standard of review that applies to "questions of law." Questions of fact describe the state of affairs in the world, such as the time of day when an event occurred or the temperature at a particular time in a particular place. In contrast, questions of law set the threshold that the facts must meet to trigger a legal outcome. When courts "apply the law to the facts" to determine a legal outcome, they consider whether the determined facts are sufficient to satisfy the legal threshold and lead to a specific legal result.  

71. See, e.g., Richardson-Vicks, Inc. v. Upjohn Co., 122 F.3d 1476, 1479 (Fed. Cir. 1997) (discussing review of the PTO in terms of "questions of law" and "questions of fact").

72. The difference between questions of law and questions of fact can also be explained by an analogy to a runner jumping over a hurdle. When asking whether a runner successfully leaped over a hurdle, we need to know two pieces of information: the height of the hurdle and the height of the runner's jump. We can answer whether the runner cleared the hurdle by comparing the two heights to see whether the height of the jump exceeded the height of the hurdle. In law, we ask an analogous question when we consider whether a set of facts was sufficient to meet a legal standard. Questions of law are akin to the height of the hurdle: they are the threshold that any set of facts must meet to create a legal outcome. The height of the runner's particular jump is akin to a question of fact: it requires findings about a particular set of circumstances, regardless of the standard that must be met.

Of course, the reality that most queries can be divided into questions of law and questions of fact does not preclude the existence of mixed questions of law and fact. Mixed questions of law and fact, however, are simply questions of fact and questions of law melded into one. For example, whether certain conduct should lead to a legal result is always a mixed question of law and fact: it requires both a knowledge of the facts (the state of affairs in the
The following example illustrates how these principles operate in the context of patent law. Imagine that the PTO denies an application because in its view the applicant failed to satisfy the nonobviousness requirement. The PTO's rejection of an application on nonobviousness grounds implies both findings of fact and interpretations of law. The PTO's factual findings include (1) the scope and content of the prior art; (2) the level of ordinary skill in the art; and (3) the differences between the claimed invention and the prior art. These findings describe the state of affairs in the world that are relevant to the legal standard of obviousness. Whether the difference between the claimed invention and the prior art is sufficient to overcome the obviousness hurdle is then a question of law, based on an interpretation of just how apparent a new invention must be for it to be "obvious" according to the Patent Act.

Armed with these concepts, we can now deconstruct the standards of review of PTO interpretations of law and findings of fact in light of the private law nature of the patent system. The result is this: Standards of review consider whether the reviewing court should defer to the PTO's judgment concerning whether an applicant satisfied Congress's offer. In contractual terms, the standards of review ask whether a court should defer to an offeror's judgment regarding whether an offeree's conduct satisfied the terms of the offer. The focus of "review of law" is slightly different, however, from the focus of "review of fact." The standard of review of law determines whether the court should defer to the offeror's

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73. The nonobviousness requirement states that the PTO may not issue a patent if "the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." 35 U.S.C. § 103 (1994).


75. See id.
interpretation of his own offer. The standard of review of fact determines whether the court should defer to the offeror's assessment of the offeree's efforts in attempting to accept the offer.

We can understand these concepts most easily by returning to the hypothetical in which A offers B $100 to walk across the Brooklyn Bridge. Imagine that B hurries across the bridge, but that when B demands payment from A, A refuses to pay. When B requests an explanation, A says that he need not pay B because he believes that B jogged, rather than walked, across the bridge. A offered to pay B to "walk" across the bridge, he reminds B, and therefore he does not believe that he must pay B $100. Upset by A's refusal to pay, B sues A for breach of contract, asking the court to revisit A's conclusion that A has no obligation to pay B. In particular, B makes two arguments. First, B insists that he never broke into a jog as he crossed the bridge. Second, B claims that even if he did jog across the bridge, the word "walk" in A's offer should be construed broadly enough to encompass jogging. The court faces a dual task: first, it must decide exactly what B did when he crossed the bridge, and, second, it must determine whether the word "walk" in A's offer is broad enough to include B's conduct. If the answer to the latter question is "yes," the court will hold that A breached the contract and must pay B $100. Otherwise, the court will rule that B did not accept the offer and will enter judgment in favor of A.

This hypothetical matches the dynamic of a direct appeal from the PTO following the agency's rejection of a patent application. In patent law, the PTO plays the role of offeror A, and the patent applicant plays the role of B. A promise to confer a patent in exchange for satisfying the statutory requirements of patentability substitutes for the promise to pay $100 for crossing the Brooklyn Bridge. In the place of B's suit for breach of contract following A's refusal to pay, we have a direct appeal against the PTO following the PTO's denial of the application. From the standpoint of challenging the PTO's denial of the patent application, the applicant's options are much the same as B's: he can challenge either the offeror's construction of the offer or the offeror's factual assessment of the attempted acceptance. Just as B could challenge A's view that B jogged across the bridge, an applicant can challenge the PTO's findings of fact; just as B could challenge A's narrow interpretation of "walk" in A's offer, the applicant could challenge
the PTO's interpretation of the legal requirements of patentability.

To summarize, a court reviewing a PTO patent adjudication occupies the same position as a court reviewing a unilateral contract dispute. Deferring to the PTO is analogous to deferring to the offeror's refusal to confer the sought-after consideration. In particular, deferring to the PTO's interpretations of law is equivalent to deferring to the offeror's interpretation of his own offer, and deferring to PTO findings of fact is equivalent to deferring to the offeror's view of the offeree's efforts to accept the offer.


A comparison between the standards of review that the courts apply in patent law and those that courts apply in analogous private law actions provides a useful validation of the private law basis of the patent system. Without foreclosing the possibility that unique aspects of the patent system might create variances between private law and patent law standards of review, we would expect that the shared mechanics of the patent system and private law doctrines would result in roughly similar standards of review in analogous circumstances. For example, if judicial review of PTO legal interpretations of the Patent Act is really analogous to the review of an offeror's construction of his own offer in contract law, then we might expect that the standards of review in the former would match the standards of review in the latter. A comparison between patent law and the private law doctrines of contract, property, and tort confirms that for the most part this has been true.

1. The Historical Match Between Standards of Review in Direct Appeals from the PTO and in Analogous Breach of Contract Actions

The patent system and contract law offer identical de novo standards of review of law in direct appeals from the PTO and
analogous breach of contract actions. Just as the courts review the PTO's interpretations of law without deferring to the PTO's view of the statutory requirements of patentability, courts deciding contract law disputes do not defer to an offeror's construction of his own offer. In contract law, this is known as the objective theory of contract interpretation. According to this theory, courts construe offers by considering what a reasonable person would infer from the offeror's words, regardless of what the offeror actually meant. The offeror's construction of the offer is entitled to no special weight, resulting in de novo review of the offeror's interpretation of the offer. In both patent law and contract law, the courts undertake an independent review of the offer when adjudicating the legal rights of the two parties to the contract.

Patent law and contract law also traditionally offer matching de novo standards of review to findings of fact. Until recently, successful patent applicants were entitled to bring plenary actions against the patent office in United States District Court. Such

76. For a discussion of de novo review, see supra note 5.
77. See In re McCarthy, 763 F.2d 411, 412 (Fed. Cir. 1985) ("It is our responsibility, as for all appellate courts, to apply the law correctly, without deference to Board determinations, which may be in error . . . .").
78. See, e.g., Farnsworth, supra note 30, § 3.6, at 119 (describing the objective theory of contract interpretation).
79. See Skycom Corp. v. Telstar Corp., 813 F.2d 810, 814-15 (7th Cir. 1987) (Easterbrook, J.) (noting that divining intent in contract law "does not invite a tour through [the offeror's] cranium, with [the offeror] as the guide"); Hotchkiss v. National City Bank, 200 F. 287, 293 (S.D.N.Y. 1911) (L. Hand, J.) ("A contract has . . . nothing to do with the personal, or individual, intent of the parties.").
80. Two recent decisions have disrupted the longstanding correspondence between standards of review of PTO factfinding on direct appeal and analogous breach of contract actions by introducing deferential standards of review. First, the Federal Circuit's 1985 decision in Fregeau v. Mossinghoff, 776 F.2d 1034 (Fed. Cir. 1985), overruled the historical practice of de novo review of facts in district court Section 145 actions, and instituted a "clearly erroneous" standard. Second, the Supreme Court held in Dickinson v. Zurko, 527 U.S. 150 (1999), that the APA's "arbitrary and capricious" or "unsupported by substantial evidence" standards of review of facts applied to direct appeals when applicants waive their right to Section 145 district court actions and instead file their appeal directly before the Federal Circuit. Although I will argue in Section II of this article that both cases were wrongly decided, it is sufficient here to note that neither court appreciated how its overruling of longstanding precedent disrupted the harmonization of the patent system and its analogous private law doctrines.
suits were styled “bills in equity” during the nineteenth century, much like analogous breach of contract suits seeking specific performance from offerors. Congress later codified the right to a de novo trial at 35 U.S.C. § 145. Section 145 permits “dissatisfied” applicants to bring a civil action against the Commissioner of the PTO in the United States District Court for the District of Columbia, and authorizes the court to “adjudge that such applicant is entitled to receive a patent for his invention.” Although applicants can waive their rights to review under Section 145 by bringing a Section 141 suit directly before the Federal Circuit, Section 145 historically permitted applicants to sue the PTO in district court in a de novo action that proceeds afresh without any deference to the PTO’s findings of fact or interpretations of law.

The courts’ de novo review of the PTO’s factual findings are mirrored by the de novo review that courts give to offerors’ factual claims in breach of contract disputes. Consider the Brooklyn Bridge dispute between A and B. A claimed that B jogged across the bridge, and B insisted that he walked. The reviewing court would not defer to A’s view, accepting A’s belief that B jogged unless it was “clearly erroneous” or “unsupported by substantial evidence.” Instead, the court would make independent factual findings and then resolve the dispute based on its own view of the facts.

2. Similar Standards of Review in Infringement Actions and in Private Law Trespass Suits

The debate over administrative law doctrines in patent law has paid little attention to infringement actions. However, infringement

933-37 (1940).
82. See Federico, supra note 81, at 933-37.
83. 35 U.S.C. § 145 (outlining the procedure by which “[a]n applicant dissatisfied with the [PTO’s decision relating to the applicant’s application] . . . may . . . have remedy by civil action against the Commissioner in the United States District Court for the District of Columbia . . . [, and stating that the] court may adjudge that such applicant is entitled to receive a patent for his invention”).
84. See 35 U.S.C. § 141; see also infra notes 233-76 and accompanying text (discussing the difference between § 141 and § 145 suits).
85. See Fregeau, 776 F.2d at 1040-42 (Newman, J., concurring); Lemelson v. Mossinghoff, 225 U.S.P.Q. (BNA) 1063, 1065 (D.D.C. 1985). The right to de novo factfinding has never been limitless. For example, in order to encourage full disclosure during ex parte PTO proceedings, applicants are barred from introducing matters that they failed to raise before the PTO. See Holloway v. Quigg, 9 U.S.P.Q.2d (BNA) 1751, 1752 (D.D.C. 1988).
actions permit "judicial review" of PTO action whenever defendants raise patent invalidity as an affirmative defense. Once again, patent law and the common law offer similar standards of review. In both infringement actions and analogous private law trespass suits, the courts apply deferential standards of review to the contract underlying the property owner's right to exclude. In patent law, this deference is known as the presumption of validity; in private law trespass suits, it is known as the common law rule that mere trespassers cannot challenge an owner's title to property.

The presumption of validity doctrine states that patents, once issued, are presumed valid, and that defendants raising invalidity defenses in infringement suits must prove that the PTO wrongly issued the patent by convincing evidence. Although the doctrine probably exists mostly to compensate for poor factfinding in infringement suits, it imposes a deferential standard of review

87. See 35 U.S.C. § 282 ("A patent shall be presumed valid.").
89. A careful examination of the presumption of validity doctrine suggests that the doctrine results largely from the widespread belief that poor factfinding in infringement litigation requires a corrective "thumb on the scale" in favor of validity when defendants raise invalidity defenses. According to the common wisdom, judges and juries tend to be so flummoxed by complex and technical validity questions that patent "factfinding" is little more than "factguessing." See, e.g., Gregory D. Leibold, Comment, In Juries We Do Not Trust: Appellate Review of Patent-Infringement Litigation, 7 U. Colo. L. Rev. 623 (1996) (discussing perceptions of jury inadequacy in patent litigation). Because judges and juries may be asked to rule on several theories of invalidity, and a negative ruling on any one theory invalidates the patent, "factguessing" will lead courts to invalidate patents unusually often. In fact, before the Federal Circuit breathed life into the presumption of invalidity doctrine in the 1980s, seven out of ten challenged patents were deemed invalid. See Edmund J. Fish, Note, Examining the Federal Circuit's Position on the Presumption of Validity During Patent Reexamination, 32 Wayne L. Rev. 1405, 1411 n.30 (1986) (noting that previous studies found that 60-70% of patents were found invalid). This is roughly what you would expect if juries simply retired to the jury room and flipped a coin for each theory of invalidity the defendant raised.

A strong presumption of validity corrects this defect by placing a "thumb on the scale" in favor of validity. The presumption helps lift the overall rate at which the courts uphold patents closer to the rate the PTO is believed to issue patents properly. By emphasizing to jurors and judges that they should not invalidate patents unless they are confident that the patent was issued improperly, the presumption of validity tempts the tendency to invalidate patents produced by layperson "factguessing."

The unusual contour of the presumption of validity doctrine offers additional support for the "thumb on the scale" explanation of its origin. The Federal Circuit has treated the
that infringers must overcome to have a patent declared invalid. To upset the PTO’s decision that the original applicant accepted Congress’s offer and earned a contractual right to a patent, the infringer must prove by clear and convincing evidence that the PTO erred.

The common law also imposes a deferential standard of review in analogous private law trespass actions. In the common law context, however, the deference is absolute: private law courts defer entirely to the contractual transaction underlying a property owner’s claimed right to exclude. When a title owner of real property brings a civil suit against a trespasser, the trespasser can only challenge the owner’s property right by establishing a superior claim to possession of the property through either superior title or adverse possession. While this standard arguably reveals a presumption like a sliding scale. The strength of the presumption in a given case depends on the variance between the prior art considered by the PTO and that presented before the district court at trial. The presumption is “most formidable” when the court is shown the same evidence of invalidity that the PTO examiners considered, see Central Soya Co. v. Geo. A. Hormel & Co., 723 F.2d 1573 (Fed Cir. 1983), and is “especially weak” when the court reviews evidence of invalidity that the PTO examiner did not see. See HARMON, supra note 86, at 24. The Federal Circuit has also held that the presumption does not apply at all when the PTO itself reexamines or reissues a patent, see In re Etter, 756 F.2d 852, 858 (Fed. Cir. 1985); In re Sneed, 710 F.2d 1544 (Fed. Cir. 1983), but that following reissue or reexamination, the presumption applies with special rigor. See also HARMON, supra note 86, at 31 n.194 (citing cases demonstrating the strength of the presumption upon reexamination or reissue).

The “thumb on the scale” theory of the presumption of validity doctrine largely reconciles these decisions. Layperson “factguessing” will greatly underestimate patent validity rates when circumstances suggest that the PTO was particularly likely to have issued a patent properly, such as when the patent examiner based her decision on all of the relevant evidence, or when the challenged patent already survived the reissue or reexamination process. Accordingly, the “thumb on the scale” provided by the presumption of validity applies fully. Conversely, when circumstances suggest the probability of PTO error—such as when the PTO patent examiner failed to find and apply all of the pertinent evidence—factguessing may not overestimate the invalidity rate, and the “thumb” becomes particularly light. Finally, when proceedings do not require layperson factfinding at all (e.g., reexamination and reissue proceedings before the PTO), no thumb is needed and the presumption does not apply.

90. See, e.g., Nations v. Garnett, 345 S.W.2d 368, 370 (Ark. 1961) (declining to question the property owner’s right to exclude); Hoelmer v. Heiskell, 221 S.W.2d 142, 144-45 (Mo. 1949) (same); Schroeder v. Ziegelman, 443 S.W.2d 16, 18 (Mo. Ct. App. 1969) (“The law has long been settled . . . that, as against a mere tort-feasor, actual possession of land is alone sufficient to maintain trespass, although such possession is altogether unsupported by evidence of title, and even though it affirmatively appears that plaintiff is without title.”).

91. See Hoelmer, 221 S.W.2d at 144-45.
greater deference to the underlying contract than its patent law cousin (although not without reason).\textsuperscript{92} It reflects the same resistance to attacks against an underlying property right in civil suits that the presumption of validity reveals in patent law. As the private law theory of patent law predicts, the traditional standards of review in patent law litigation largely match the standards that courts apply in analogous common law actions for breach of contract and trespass.

II. IMPLICATIONS OF THE PRIVATE LAW PATENT SYSTEM FOR ADMINISTRATIVE LAW

Administrative law is generally defined as the procedural law that governs administrative agencies.\textsuperscript{93} As taught in law schools, administrative law consists largely of a series of doctrines that courts apply when reviewing agency decisions for error. The shared characteristic among these doctrines is an unusual degree of deference to the executive branch. Whereas appellate courts apply careful scrutiny to the decisions of lower courts, the doctrines of administrative law generally direct appellate courts to apply more forgiving standards to the executive branch.\textsuperscript{94} Among administrative law scholars, the primary explanation for this deference is agency expertise.\textsuperscript{95} Because executive agencies tend to develop

\textsuperscript{92}. There are several possible explanations for this difference. Whereas contracting parties have an economic incentive to deny an offeree's claim of having satisfied an offer, the PTO has no such incentive. In fact, the PTO encourages its examiners to issue patents when the merits of an application are unclear. As a result, a greater need exists for external review of the PTO's decisions to issue a patent than to review a private party's decision to give away a valuable property right. Also, losing title to tangible property generally involves greater social disruption than losing title to intangible property such as a patent. Finally, the distinction between actual possession and legal title that exists for real property does not exist in the case of intellectual property. \textit{Cf. Schroeder}, 443 S.W.2d at 18. All three reasons counsel in favor of permitting a trespasser onto intangible patent-property to challenge the patent owner's claim to the property.

\textsuperscript{93}. \textit{See}, e.g., \textsc{Peter L. Strauss et al., Gellhorn & Byse's Administrative Law} at III (9th ed. 1995) ("Administrative Law"... refers to the body of largely procedural requirements resting upon administrative agencies which affect private interests through making rules, adjudicating cases, investigating, threatening, prosecuting, publicizing, disbursing benefits, and advising.").

\textsuperscript{94}. \textit{See} \textsc{Charles H. Koch, Jr., 3 Administrative Law and Practice} § 9.2 (2d ed. 1997).

\textsuperscript{95}. \textit{See id.} §§ 1.2(g), 9.2(4) (explaining that "judicial restraint results from a finding that in any particular context the specially designed administrative process offers a superior
specialized expertise in their narrow field, the argument runs, deferring to agencies leads to more expert decision making. Therefore, administrative law doctrines generally should apply whenever the courts review the decisions of executive agencies.

In this section, I argue that the private law patent system reveals a critical flaw in this common understanding. The private law mechanisms of patent law reveal that Congress can direct the executive branch to act in two fundamentally different ways, and that deferential administrative law doctrines should apply only when agencies act in one of the two ways. Congress can either direct agencies to regulate and exercise discretion within a zone of delegated authority (in which case administrative law doctrines should apply), or else direct agencies to make ministerial, nonregulatory decisions as Congress's common law agent (in which case administrative law doctrines should not apply). The patent system offers a clear example of the latter. Because the patent system uses a nonregulatory private law mechanism, the deferential standards of administrative law should not apply to review of the patent system. As a result, the courts' historical refusal to apply administrative law doctrines to patents while applying such doctrines to licenses is entirely proper. Licensing regimes are regulatory; the patent system is not.

Admittedly, my theory that administrative law doctrines should not apply to nonregulatory agency decisions such as patent adjudications is not entirely new. Early writings on administrative law reflect an awareness that administrative law doctrines should apply only when agencies act in a regulatory capacity. In the early part of the twentieth century, it was widely recognized that deferential administrative law doctrines concerned themselves only with regulatory agencies, rather than the workings of the entire executive branch. In recent decades, however, the proliferation of regulatory agencies has made the line between regulatory and

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96. See supra note 46 and accompanying text.
98. See, e.g., Elihu Root, Public Service by the Bar, 41 A.B.A. REP. 355, 368 (1916) (“We are entering upon the creation of a body of administrative law quite different in its machinery, its remedies, and its necessary safeguards from the old methods of regulation by specific statutes enforced by the courts.”).
nonregulatory agencies appear less and less obvious. Today's scholars have forgotten yesterday's distinctions, and have begun to view all agency decisions under the same regulatory lens. It is my hope that an understanding of the private law nature of the patent system can help restore the earlier vision, which recognized the limits on the scope of administrative law doctrines. Such a vision will lead to a more coherent and accurate understanding of the purpose of administrative law.

This section contains two parts. In the first part, I offer a historical and functional explanation for the existence of administrative law doctrines, with special emphasis on their proper scope. I show that deferential administrative law doctrines were created to apply when courts review regulatory decisions by regulatory agencies, and not to apply when the courts review nonregulatory agency decisions such as patent adjudications. In the second section, I examine the scope of modern administrative law doctrines and show that they should not apply to review of the nonregulatory, private-law-based patent system. In particular, I argue that the Federal Circuit has properly concluded that Chevron should not apply to PTO interpretations of law, and that the Supreme Court's decision in Zurko (as well as the Federal Circuit's prior decision in Fregeau v. Mossinghoff) erred by applying deferential administrative law standards of review to PTO findings of fact.

A. A History of Standards of Review of the Executive Branch and the Scope of Administrative Law

1. Standards of Review of the Executive Branch Before the Creation of Regulatory Agencies

Until Congress created the Interstate Commerce Commission (ICC) in 1887, the federal government's role in the national economy generally was limited by institutional restraints put in place by the Framers' strict conception of the separation of powers. Although

99. See, e.g., DAVIS & PIERCE, supra note 11, § 1.1.
100. 776 F.2d 1034 (Fed. Cir. 1985).
the Constitution allowed Congress to pass laws that regulated interstate commerce,\(^{102}\) Congress tended to enact laws that adhered to fixed notions of a tripartite system of government.\(^{103}\) The executive agencies that Congress created to facilitate the domestic economy mostly served limited roles, "executing" the law according to Congress's wishes.\(^{104}\) For example, the Patent Office that Congress created in 1836 merely reviewed patent applications submitted by inventors,\(^{105}\) issuing patents when inventors complied with Congress's requirements.\(^{106}\) The legislative branch retained substantive control over the economy, and could only enact laws according to the requirements of Article I, Section 7 of the Constitution.\(^{107}\) As a result, federal law addressing the domestic economy generally left much of the economic sphere to the common law doctrines of property, contract, and tort.\(^{108}\)

Following Chief Justice Marshall's famous declaration in *Marbury v. Madison*\(^ {109}\) that "[i]t is emphatically the province and duty of the judicial department to say what the law is,"\(^ {110}\) courts reviewing executive action before the birth of the regulatory state generally applied de novo standards of review.\(^ {111}\) For example, in *Marbury* itself, the Court did not defer to Secretary of State James

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\(^{102}\) *See* U.S. Const., art I, § 8.

\(^{103}\) *See* Lee, *supra* note 101, at 297.

\(^{104}\) *See* Rabin, *supra* note 101, at 1196. Of course, it is easy to overstate the extent to which the government actually attained the ideal of a strict separation of powers. Even in the early days of the Republic, Congress occasionally delegated certain legislative decisions to the executive branch. *See*, e.g., *The Brig Aurora v. United States*, 11 U.S. (7 Cranch) 382 (1813); Ann Woolhandler, *Judicial Deference to Administrative Action—A Revisionist History*, 43 Admin. L. Rev. 197, 197-98 (1991). For our purposes, however, the existence of minor variations between theory and practice is unimportant.

\(^{105}\) *See* Act of July 4, 1836, ch. 357, 5 Stat. 117 (1836). The first patent act was enacted in 1790; from 1790 to 1836, however, the patent statutes were administered by the Secretary of State. *See generally* Pasquale J. Federico, *Evolution of Patent Office Appeals (Part I)*, 22 J. Pat. Off. Soc'y 838, 838 (1940).


\(^{107}\) *See* U.S. Const., art. I, § 7.

\(^{108}\) *See* Rabin, *supra* note 101, at 1192 (noting that before the passage of the Interstate Commerce Act, "a weaker model of government intervention based on common law tort and property principles was the prevalent form of 'regulation'").

\(^{109}\) 5 U.S. (1 Cranch) 137 (1803).

\(^{110}\) *Id.* at 177.

\(^{111}\) *See* Lee, *supra* note 101, at 298-99; Woolhandler, *supra* note 104, at 206 (stating that de novo review "was the predominant form of judicial review of executive action in the early Republic").
Madison's refusal to deliver William Marbury's commission, but rather reviewed Madison's decision de novo. 112 Similarly, courts applied de novo review when an unsuccessful patent applicant filed a bill of equity against the Patent Office demanding that the office award him a patent, 113 and when courts reviewed the executive's interpretation of the law in criminal appeals. 114 This style of review matched the limited role served by nonregulatory executive agencies. Because such agencies simply executed the law, adhering closely to the dictates of Congress and the courts, the judiciary reserved its full authority to interpret the law when reviewing the executive branch. 115

2. The Birth of the Administrative State

The limited tripartite scheme of the federal government began facing enormous pressure to change when the industrial revolution transformed the economic realities of late-nineteenth-century America. 116 Many Americans began to believe that modern economies demanded more dynamic forms of government; widespread perceptions of abuse in new industries such as railroads and oil spurred demand for government that could act quickly, forcefully, and imaginatively. 117 Many believed that the formal rules of laissez-faire capitalism had proved their inadequacy in the industrial age, and that the best countermeasure was government

112. See Marbury, 5 U.S. (1 Cranch) at 158. On this point, Chief Justice Marshall commented:

This is not a proceeding which may be varied, if the judgment of the executive shall suggest one more eligible; but is a precise course accurately marked out by law, and is to be strictly pursued. . . . He acts, in this respect, . . . under the authority of law, and not by the instructions of the President. It is a ministerial act which the law enjoins on a particular officer for a particular purpose.

Id.

113. See Federico, supra note 105, at 933-41; Lee, supra note 101, at 298.

114. See Woolhandler, supra note 104, at 203-04.

115. See Marbury, 5 U.S. (1 Cranch) at 177.


117. See BERNARD SCHWARTZ, ADMINISTRATIVE LAW § 3, at 6 (1976) ("Administrative law has grown out of the need of our modern complex society for administrative agencies endowed with both legislative and judicial functions. The traditional separation of powers had to give way in face of the need for effective economic regulation.") (footnote omitted); Felix Frankfurter, The Task of Administrative Law, 75 U. PA. L. Rev. 614, 617-18 (1927).
that could eschew formal rules in favor of substantive justice.\textsuperscript{118} Public demands that the federal government achieve these goals by actively managing and regulating the new industries led Congress to create a new species of government: administrative agencies vested with substantive regulatory powers.\textsuperscript{119}

As James Landis noted in his seminal work \textit{The Administrative Process}, the defining aspect of the new regulatory agencies was that they possessed the "full ambit of authority . . . normally exercisable by government as a whole."\textsuperscript{120} The new agencies jettisoned the "previously existing rules"\textsuperscript{121} that confined the exercise of government power in the past, replacing formal rules with administrative discretion that enabled the agencies to solve the full panoply of industrial problems. Whereas past forms of government could do no more than wind up the clock of the economy and let it run, the new regulatory agencies had the discretion to monitor the clock continuously and correct it when it slipped off time.\textsuperscript{122} For example, if railroad companies charged excessive rates, the ICC could set "reasonable" rates itself and require companies to adopt them or else pay the difference.\textsuperscript{123} If radio broadcasters acted selfishly, the FCC could compel them to act in the public interest or

\begin{itemize}
  \item \textsuperscript{118} See, e.g., Morris R. Cohen, \textit{Law and the Social Order: Essays in Legal Philosophy} 81-82 (1933); Cass R. Sunstein, \textit{After the Rights Revolution: Reconceiving the Regulatory State} 18-31 (1990).
  \item \textsuperscript{119} See James M. Landis, \textit{The Administrative Process} 610 (1938); Theodore J. Lowi, \textit{The End of Liberalism: The Second Republic of the United States} 22-24 (2d ed. 1979); see also Humphrey's Executor v. United States, 295 U.S. 602, 628 (1935). The Court in \textit{Humphrey's Executor} described the regulatory agencies as agencies invested with "quasi-legislative" and "quasi-judicial" powers, reflecting the reality that the substantive power delegated to regulatory agencies included both legislative and adjudicative powers. See \textit{id.}
  Judge Friendly later referred to regulatory agencies as "policy making" agencies, as opposed to nonregulatory "entirely . . . umpiring" agencies. See Pittston Stevedoring Corp. v. Dellaventura, 544 F.2d 35, 49 (2d Cir. 1976).
  \item \textsuperscript{120} Landis, \textit{supra} note 119, at 15.
  \item \textsuperscript{121} Kenneth Culp Davis, \textit{Discretionary Justice: A Preliminary Inquiry} 92 (1969) ("The very identifying badge of the American administrative agency is power, without previously existing rules, to determine the legal rights of individual parties.").
  \item \textsuperscript{122} Cf. Roscoe Pound, \textit{Administrative Law: Its Growth, Procedure, and Significance} 6 (1942) ("Administration seeks to achieve the ends of social control by guidance and prevention. It is governed more directly by the immediate ends, whereas in judicial justice a balance of ends is sought by insistence upon means.").
  \item \textsuperscript{123} See, e.g., News Syndicate Co. v. New York Cent. Ry. Co., 275 U.S. 179, 186-87 (1927) (discussing the power of the ICC to adjudicate reasonable rates and force a carrier to pay damages to the customer that was charged unreasonable rates).
\end{itemize}
else shut them down.¹²⁴ Unlike previous agencies that merely followed the laws set by Congress and the courts, the new regulatory agencies were empowered to create and enforce the law to achieve the substantive goals sought by Congress. The substantive lawmaking power was transferred (or “delegated”) from the legislature to the executive branch.

Proponents reasoned that Congressional “delegation” of legislative power to an unelected branch of government was justified by the expertise that agencies would bring to bear on complicated industrial problems.¹²⁵ They believed that the procedural limits and shortsightedness of legislatures left them unprepared to address modern economic problems.¹²⁶ In contrast, expert agencies freed from existing rules would use their administrative discretion to devise “broad and imaginative”¹²⁷ solutions that would cure sick industries and “provide for the efficient functioning of the economic processes of the state.”¹²⁸ At least initially, expertise served as a legislative explanation for why creating regulatory agencies served the public interest, rather than a justification for judicial deference.

3. The Origins of Deferential Review of Regulatory Agencies, and the Creation of a Bifurcated Approach to the Review of the Executive Branch

When Article III courts began reviewing the decisions of regulatory agencies in the late nineteenth century, the conflict

¹²⁴. See, e.g., National Broad. Co. v. United States, 319 U.S. 190 (1943) (raising constitutional challenge to statute granting FCC the authority to deny licenses to broadcasters when the agency believes that the public interest would be served thereby); R.H. Coase, The Federal Communications Commission, 2 J.L. & ECON. 1 passim (1959) (exploring the reasoning of this mode of regulation).

Although the enforcement power of agencies is often noted, agencies’ capacity to compel conduct among industrial players through the threat of regulatory action is no less important. If businesses were engaging in behavior that regulators viewed as undesirable, agencies could threaten them with expensive and prolonged inquiries unless they reformed their ways. See generally Lars Noah, Administrative Arm-Twisting in the Shadow of Congressional Delegations of Authority, 1997 Wis. L. Rev. 873, 876-98.

¹²⁵. A representative judicial opinion expressing confidence in this enterprise is FCC v. RCA Communications, 346 U.S. 86, 91 (1953), in which Justice Frankfurter contended that the FCC’s mandate to act in the “public interest” could be applied objectively by officials who brought “the disciplined feel of the expert” to bear on applications for licenses.


¹²⁷. LANDIS, supra note 119, at 13.

¹²⁸. Id. at 16.
between de novo review and the new forms of government became readily apparent. While reviewing agency action de novo worked perfectly well when the courts reviewed nonregulatory decisions, the same approach threatened to strip regulatory agencies of the very power that Congress intended them to exercise. It is not hard to see why. Standards of review distribute power between an executive agency and a reviewing court. De novo review reserves the decision-making authority for the reviewing court, whereas deferential review carves out a sphere of delegated agency power in which the agency may regulate free from judicial interference. The scope of delegated power depends on the strictness of the judicial review: the more deferential the review, the larger the scope of delegated authority. Accordingly, courts that adhere to de novo review of regulatory action effectively deprive regulatory agencies of the zone of discretion that deferential review would carve out from judicial oversight.

At first, the antiregulatory Supreme Court of the late nineteenth century used de novo review to try to control the new regulatory agencies. The Court issued several landmark opinions in the late nineteenth and early twentieth centuries applying de novo review to regulatory agencies such as the ICC and the Federal Trade

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129. See Rabin, supra note 101, at 1211-15 (describing how the Supreme Court reviewing the ICC in the late nineteenth century stripped the Commission of its regulatory authority by applying de novo standards of review).

130. See Pottsville Broad. Co., 309 U.S. at 144 (Frankfurter, J.). Justice Frankfurter clearly understood the relationship between regulatory power and standards of review. According to Justice Frankfurter, to assimilate the relation of these administrative bodies and the courts to the relationship between lower and upper courts [by maintaining strict standards of review] is to disregard the origin and purposes of the movement for administrative regulation . . . . Unless these vital differentiations between the functions of judicial and administrative tribunals are observed, courts will stray outside their province and read the laws of Congress through the distorting lenses of inapplicable legal doctrine.

Id.

131. See Henry P. Monaghan, Marbury and the Administrative State, 83 COLUM. L. REV. 1, 31 (1983) ("[T]he judicial task is to confine the agency within the zone of authority committed to it."); Judith Resnik, Tiers, 57 S. CAL. L. REV. 837, 850 (1984) ("[W]hen a second set of decisionmakers has the authority to make decisions afresh, or 'de novo,' power is reallocated from the first decisionmakers to the second . . . . ").

132. See Monaghan, supra note 131, at 6 (noting that when a court applies de novo review, "it interprets the statute to exclude delegated administrative lawmaking power").

133. See, e.g., Chicago, Milwaukee & St. Paul Ry. v. Minnesota, 134 U.S. 418, 458 (1890) (holding that the reasonableness of a rate set according to the Interstate Commerce Act was
Commission (FTC).\textsuperscript{134} In time, however, the Court increasingly accepted regulatory power and began adopting deferential standards of review when it reviewed regulatory decisions.\textsuperscript{135}

To accommodate the power that regulatory agencies wielded by Congressional design, the courts eventually adopted what Justice Jackson aptly described in Federal Trade Commission v. Ruberoid Co.\textsuperscript{136} as a bifurcated approach to judicial review that set the level of deference based upon whether the agency under review acted in a regulatory capacity.\textsuperscript{137} When reviewing the decisions of non-regulatory agencies, courts continued to apply de novo standards of review, asking, based on both the facts and the law, whether the executive decision was correct.\textsuperscript{138} Justice Jackson used the patent office as an example:

The court, in review of a case under the . . . patent law, . . . follows the same mental operation as the executive officer. On the facts, there results . . . a right to a patent. The court can deduce these legal rights or obligations from the statute in the same manner as the executive officer. Hence, review of such executive decisions proceeds with no more deference to the administrative judgment than to a decision of a lower court.\textsuperscript{139}

When reviewing the decisions of regulatory agencies, however, the courts applied deferential standards that granted regulatory agencies substantial "immunity from judicial review."\textsuperscript{140} Justice

\textsuperscript{134} See FTC v. Gratz, 253 U.S. 421, 427-28 (1920) (applying plenary review to the FTC's interpretation of "unfair method of competition").

\textsuperscript{135} See Rabin, supra note 101, at 1234-36. According to Professor Rabin, the turning point at which the courts began to apply deferential standards to regulatory agencies was ICC v. Illinois Central Railroad, 215 U.S. 452 (1910). See Rabin, supra note 101, at 1234.

\textsuperscript{136} 343 U.S. 470 (1952).

\textsuperscript{137} See id. at 490-91 (1952) (Jackson, J., dissenting); see also Lee, supra note 101, at 305 (noting that by the beginning of the twentieth century, the courts had "arrived at the rudiments of the legal principles that still govern . . . the relationship of the courts to administrative action," which included "seeing! to it that non-discretionary executive action was carried out in accordance with law," but provided limited review of other issues so that the court "would not wholly take over the administrative function").

\textsuperscript{138} See Ruberoid, 343 U.S. at 490-91 (Jackson, J., dissenting).

\textsuperscript{139} Id. at 491.

\textsuperscript{140} Id. at 490-91 (Jackson, J., dissenting). See, e.g., NLRB v. Erie Resistor Corp., 373 U.S.
Jackson described such deference as "an axiom of administrative law." According to his description,

a determination by an independent agency, with "quasi-legislative" discretion in its armory, has a much larger immunity from judicial review than does a determination by a purely executive agency . . . .

. . . . On review [of a regulatory agency], the Court does not decide whether the correct determination has been reached. So far as the Court is concerned, a wide range of results may be equally correct. In review of such a decision, the Court does not at all follow the same mental processes as the Commission did in making it, for the judicial function excludes (in theory, at least) the policy-making or legislative element, which rightfully influences the Commission's judgment but over which judicial power does not extend . . . . [T]he entire process escapes very penetrating [judicial] scrutiny.\[142\]

In sum, the courts' standard of review depended upon whether the agency reviewed enjoyed regulatory power. Nonregulatory agencies that predated the administrative state continued to receive de novo judicial review.\[143\] In contrast, courts applied deferential standards to regulatory agencies, upholding their decisions unless they were so obviously unjustified as to be "arbitrary and capricious,"\[144\] unsupported by "substantial evidence,"\[145\] or "an.

\[221, 236 (1963) (noting that the NLRB, which enjoys the substantive power to "effectuate national labor policy," receives only "limited judicial review") (quoting NLRB v. Truck Drivers Local Union, 353 U.S. 87, 96 (1957)).\]

\[141. \textit{Rubberoid}, 343 U.S. at 490 (Jackson, J., dissenting).\]

\[142. \textit{Id.} at 490-91 (Jackson, J., dissenting).\]

\[143. \textit{See id.} at 490 (Jackson, J., dissenting). Interestingly, commentators on administrative law tend to view deference as a dangerous threat to judicial supremacy. \textit{See}, e.g., Cynthia R. Farina, \textit{Statutory Interpretation and the Balance of Power in the Administrative State}, 89 COLUM. L. REV. 452, 467-76 (1989). Commentators who favor administrative power tend to shy away from endorsing judicial deference. Instead, they speak of the importance of "administrative discretion." \textit{See}, e.g., \textit{Davis}, \textit{supra} note 121, at 21-26. Of course, administrative discretion and deferential standards are two sides of the same coin: the former is the creation of the latter.\]

\[144. \textit{FCC} v. Sanders Bros. Radio Station, 309 U.S. 470, 472 (1940) (reviewing FCC licensing decision for "arbitrary and capricious" agency action).\]

\[145. \textit{ICC} v. Jersey City, 322 U.S. 503, 512 (1944) (reviewing ICC decision to permit street railroad to raise prices by determining whether the ICC's factual determinations underlying\]
In a broad sense, of course, the development of such a bifurcated approach to judicial review was inevitable. Because standards of review distribute power between an agency and its reviewing court, the standards of review that courts apply to an agency should reflect the balance of power that Congress chose when it created the agency. When courts review exercises of regulatory power by regulatory agencies, they should defer to that exercise. Any other approach would deprive the agency of the regulatory power it was created to exercise. In contrast, when courts review ministerial decisions by nonregulatory agencies, they must distribute power accordingly by adopting rigorous standards of review.

B. Deferential Administrative Law Doctrines and the Private Law Patent System

Having explored the historical development of standards of review of executive action, we can now consider what standards should apply to judicial review of the PTO in a direct appeal. In particular, we will consider two questions: first, the proper standard of review to apply to PTO interpretations of law; and second, the proper standard to apply to PTO findings of fact. In each case, we will find that the bifurcated approach to judicial review of executive action should continue to govern standards of review of the patent system, and that deferential standards of administrative law developed for review of regulatory agencies should not apply to the nonregulatory, private law-based patent system.

Evaluating current patent doctrine in light of these principles yields mixed results. The good news is that the Federal Circuit has properly rejected the PTO's entreaties to apply the *Chevron* doctrine instead of a de novo standard when the courts review PTO interpretations of the Patent Act on direct appeal. The bad news is that both the Supreme Court in *Zurko* and the Federal Circuit in
prior decisions have erred by applying overly deferential standards of review to PTO findings of fact.

1. To Chevron or Not to Chevron: Standards of Review of PTO Interpretations of Law in Direct Appeals from the PTO

The debate over the standard of review to apply to PTO interpretations of law boils down to whether the courts should continue to apply de novo review or begin applying the *Chevron* doctrine to PTO patent adjudications.148 Under *Chevron*, courts must defer to an agency's interpretation of an ambiguous statute so long as the agency's interpretation is "reasonable,"149 and must continue to apply this deference even if the agency changes its interpretation over time.150 Empirical studies have shown that courts applying this deferential standard accept agency legal interpretations in about 70-75% of cases.151 Further, when courts find that the statutory text in question is ambiguous, they have upheld the agency's interpretation about nine times out of ten.152

Like other deferential standards from administrative law, *Chevron* reflects the bifurcated approach to judicial review that the courts traditionally have followed when reviewing executive action. Although *Chevron* directs courts to defer to agencies' reasonable constructions of statutory text, it applies only to interpretations of text that the agency has been "entrusted to administer."153 In other words, *Chevron* applies only to executive interpretations that fall

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148. Compare Moy, supra note 1 (arguing that the Federal Circuit should not grant *Chevron* deference to the PTO) with Nard, supra note 1 (arguing that the courts should treat the PTO like any other administrative agency when the courts review patent appeals). See generally supra notes 116-47 and accompanying text (discussing judicial deference to the executive branch).


151. See Kerr, supra note 3, at 30 (finding that in 1995 and 1996, the U.S. Court of Appeals upheld agency interpretations of statutory law challenged under the *Chevron* standard 73% of the time).

152. See id. at 31.

within the scope of the regulatory authority delegated to an agency by Congress.\textsuperscript{154}

When courts review an agency's construction of a statute that falls outside of an agency's zone of delegated authority, the courts eschew \textit{Chevron} and instead apply de novo review.\textsuperscript{155} This often occurs when an agency interprets a nonregulatory statute,\textsuperscript{156} or when an agency interprets a statute within another agency's regulatory sphere.\textsuperscript{157} In either case, however, the justification and result mirror those that the courts have traditionally used when reviewing nonregulatory agency action. When an agency interprets a statute that extends beyond its regulatory authority, the courts need not carve out a zone of discretion in which the agency may regulate. Instead, the courts can and should apply de novo standards of review.

The fact that \textit{Chevron} applies only to interpretations of statutes within an agency's regulatory authority makes it plainly inapplicable to review of the PTO's interpretations of the Patent Act's substantive provisions.\textsuperscript{158} Congress has not delegated authority to the PTO to "regulate" patents in the way that it delegated authority to the FCC to regulate telecommunications\textsuperscript{159} or the Securities and Exchange Commission (SEC) to regulate interstate securities.\textsuperscript{160} Instead, Congress devised a patent system

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  \item \textsuperscript{154} \textit{See} Adams Fruit Co. v. Barrett, 494 U.S. 638, 649 (1990) ("A precondition to deference under \textit{Chevron} is a congressional delegation of administrative authority.").
  \item \textsuperscript{155} \textit{See}, e.g., Professional Reactor Operator Soc'y v. NRC, 939 F.2d 1047, 1051 (D.C. Cir. 1991) (refusing to defer to the NRC's construction of the APA because the APA is outside of the agency's sphere of delegated authority).
  \item \textsuperscript{156} \textit{See}, e.g., Adams Fruit Co., 494 U.S. at 649-50 (refusing to defer to the Labor Department's construction of enforcement provisions contained in the Migrant and Seasonal Agricultural Worker Protection Act, on the ground that Congress did not delegate interpretive authority over the statute to the Labor Department, but rather established the courts as the adjudicator of private rights of action under the statute); Scheduled Airlines Traffic Offices v. Department of Defense, 87 F.2d 1356, 1361 (D.C. Cir. 1996) (applying de novo review to a DOD contracting agency's interpretation of the Miscellaneous Receipts Act, 31 U.S.C. § 3302(b) (1994)).
  \item \textsuperscript{157} \textit{See}, e.g., Passamaquoddy Tribe v. State of Maine, 75 F.3d 784, 793 (1st Cir. 1996) (refusing to defer to the National Indian Gaming Commission's interpretation of a statute administered by the Interior Department).
  \item \textsuperscript{158} \textit{Accord} Moy, \textit{supra} note 1.
  \item \textsuperscript{159} \textit{See}, e.g., AT&T Corp. v. Iowa Util. Bd., 525 U.S. 366, 377 (1999) (explaining the FCC's authority to make regulations as provided in 47 U.S.C. § 201(b) (1994)).
  \item \textsuperscript{160} \textit{See} 15 U.S.C. § 78u(a-c) (1994).
\end{itemize}
using private law contractual principles. The PTO acts as an offeror, and the patent applicant acts as an offeree. A PTO decision rejecting a patent application does not reflect an exercise of regulatory power, but merely the judgment of an offeror that an offeree has failed to satisfy his offer. The PTO's decision reflects judgment, not will. Accordingly, the Federal Circuit has properly rejected the PTO's entreaties to begin applying *Chevron* to the PTO's interpretation of the statutory requirements of patentability, and has properly applied de novo standards of review.\(^{161}\)

Importantly, the fact that the courts should not apply *Chevron* to the PTO's interpretation of the Patent Act's substantive provisions does not mean that they should *never* defer to the PTO in patent cases. Where Congress has delegated regulatory authority to the PTO, *Chevron* is appropriate. For example, Congress delegated to the PTO a narrowly circumscribed regulatory authority to manage PTO proceedings,\(^{162}\) roughly analogous to the power that a federal district court may exercise over the management of its own cases.\(^{163}\)

Pursuant to this explicit grant of regulatory power, the PTO Commissioner has promulgated over 300 pages of regulations.\(^{164}\) The regulations address nearly every aspect of proceedings before the PTO, ranging from the proper color of the paper used for patent filings (white),\(^{165}\) to the complex fee schedule that an applicant must follow for the PTO to proceed with her application.\(^{166}\) The Federal Circuit has properly applied deferential standards of review (including *Chevron*) to such rules,\(^{167}\) much like appellate courts


162. See 35 U.S.C. § 6(a) (1994) (authorizing the Commissioner of the PTO to "establish regulations, not inconsistent with law, for the conduct of proceedings in the Patent and Trademark Office").

163. See Brooks v. United States, 64 F.3d 251, 256-57 (7th Cir. 1995) (noting that questions of district court management are reviewable by the court of appeals for abuse of discretion, and that the appellate court will intervene only if the district court judge has acted unreasonably).


165. See id. § 1.52 (a).

166. See id. §§ 1.16-1.28.

167. See, e.g., Ethicon, Inc. v. Quigg, 849 F.2d 1422, 1425 (Fed. Cir. 1988); Rennecker, *supra* note 12, at 366.
afford deferential standards of review to district court trial-management decisions. Such deference is entirely proper so long as the PTO regulations are limited to regulating the procedure of PTO's "proceedings," and do not extend to the substantive statutory standards of patentability. Again, the issue is the proper distribution of power. When Congress delegates authority to an agency and directs the agency to exercise its discretion, courts should defer when reviewing the exercise of that discretion. When Congress has not delegated authority, courts should not defer.

2. The Recent Infusion of Fact Deference in Direct Appeals from the PTO: Judicial Missteps in Fregeau v. Mossinghoff and Dickinson v. Zurko

While the courts have properly rejected the PTO's pleas to defer to its interpretations of the Patent Act, the last two decades have witnessed an unfortunate turn away from the traditional waivable de novo standards of review for PTO findings of fact. The two decisions responsible for this transformation are Fregeau v. Mossinghoff, in which the Federal Circuit overruled the historical practice of de novo review of facts in district court Section 145 actions and instituted a "clearly erroneous" standard, and Dickinson v. Zurko, in which the Supreme Court held that the APA Section 10(e) "arbitrary and capricious . . . [or] unsupported by substantial evidence" standard for review of facts applied to direct appeals when applicants waive their right to Section 145 district court

168. See, e.g., Brooks, 64 F.3d at 256-57.
169. See Merck & Co. v. Kessler, 80 F.3d 1543, 1549-50 (Fed. Cir. 1996); Animal Legal Defense Fund v. Quigg, 932 F.2d 920, 929-30 (Fed. Cir. 1991). Professor Nard argues that Section 6(a) provides the PTO with regulatory authority to interpret the substantive requirements of patentability. See Nard, supra note 1, at 1452-55. Professor Nard contends that the PTO must have regulatory authority over the Patent Act because there are no other agencies that could have this power. He asks, "If the PTO does not administer the patent statute, then who does?" Id. at 1456 n.150. Of course, this begs the question by wrongly assuming that every federal statute must be a regulatory statute "administered" by a regulatory agency. The answer to Professor Nard's rhetorical question is simply "no one."
170. See supra notes 71-75 and accompanying text (discussing the traditional standards of review).
171. 776 F.2d 1034 (Fed. Cir. 1985).
actions and instead file their appeal directly before the Federal Circuit.\textsuperscript{173} As a practical matter, neither case is likely to have a significant impact on the functioning of the patent system.\textsuperscript{174} For our purposes, however, it is worth understanding that neither decision can withstand scrutiny from the private law perspective of the patent system.

To appreciate the errors of Fregeau and Zurko, it helps to realize that direct appeals against the PTO following an adverse decision take one of two forms. Applicants can either file a Section 145 action in district court,\textsuperscript{175} or else waive their rights to file a Section 145 action by bringing an appeal directly before the Federal Circuit under 35 U.S.C. § 141.\textsuperscript{176} Until Fregeau, this dual route provided applicants with what frequent flyers might describe as a choice between "first-class" and "economy" review of adverse PTO decisions. Applicants who filed a Section 145 action in district court chose the "first class" option. In exchange for the time and expense of a full-blown district court trial and a possible appeal before the Federal Circuit, they received the full de novo review of the PTO's findings of fact and interpretations of law permitted by the Patent Act.\textsuperscript{177} In contrast, applicants who chose the "economy" option of Section 141 waived their right to de novo factfinding and proceeded

\textsuperscript{173} Id. at 164.

\textsuperscript{174} In the case of Zurko, the close similarity between the "unsupported by substantial evidence" standard and the "clearly erroneous" standard it replaced means that the Court's decision is not likely to affect the outcomes of many cases. \textit{See supra} notes 6-7 and accompanying text. In the case of Fregeau, the fact that very few applicants file actions in district court (as opposed to the Federal Circuit) means that the changed standard of review in such actions will apply in only a handful of cases every year.

\textsuperscript{175} \textit{See} 35 U.S.C. § 145 (1994) (outlining the procedure by which "an applicant dissatisfied with the [PTO's decision relating to the applicant's application] . . . may . . . have remedy by civil action against the Commissioner in the United States District Court for the District of Columbia . . . [and that the] court may adjudge that such applicant is entitled to receive a patent for his invention").

\textsuperscript{176} \textit{See} id. § 141 ("An applicant dissatisfied with the [PTO's decision relating to the applicant's application] . . . may appeal the decision to the United States Court of Appeals for the Federal Circuit. By filing such an appeal the applicant waives his or her right to proceed under Section 145 of this title.").

\textsuperscript{177} \textit{See}, \textit{e.g.}, Casper W. Ooms, \textit{The United States Patent Office and the Administrative Procedure Act}, 38 TRADEXMARK REP. 149, 155 (1948) (describing the predecessor of a Section 145 action as "an original action in the United States District Court against the Commissioner of Patents in which the right to the patent may be tried anew").
directly to the Federal Circuit. These applicants agreed to accept review of the PTO's factual findings under a deferential standard of review in exchange for avoiding a costly (and potentially redundant) district court trial. For a patent applicant, the decision of whether to file suit in the district court under Section 145 or in the court of appeals under Section 141 depended on whether the benefit of de novo factfinding outweighed the cost of a district court trial. In general, a rational patent applicant would sue the PTO in district court if he believed that a factual clean slate would increase the value of his patent claim more than the cost of a trial. Otherwise, the applicant would waive his right to de novo factfinding and bring a Section 141 action against the PTO in the Federal Circuit, subject to a deferential standard of review for the PTO's findings of fact.

Both Fregeau and Zurko reflect the fact that so few applicants elect to file expensive and time-consuming Section 145 actions—and so few of the Section 145 actions filed reach the Federal Circuit—that Section 141 appeals are generally considered the de facto standard for direct appeals from the PTO by both the patent bench and bar. Following this understanding, both the Federal

178. See 35 U.S.C. § 141 (1994) ("By filing such an appeal the applicant waives his or her right to proceed under Section 145 of this title.").

179. Of course, the applicant retains de novo review for questions of law. From a private law perspective, the choice between Section 141 and Section 145 vaguely resembles the choice that parties to a contract may face between litigating a contract dispute or submitting the dispute to binding arbitration. Electing arbitration saves the time and money of a trial, but requires waiving certain legal rights.

180. In 1985, the year that the Federal Circuit decided Fregeau, applicants filed 98 cases before the Federal Circuit, but only 12 before the District Court for the District of Columbia. See 1985 COMM'R OF PATENTS AND TRADEMARKS, ANN. REP. 70-71.

181. Most cases filed before the district court will settle before trial, and those that do reach trial may not be appealed to the Federal Circuit.

182. Based on the ratio of suits filed before the District Court and the Federal Circuit, and the likelihood that suits filed before the District Court will never reach the Federal Circuit, it is reasonable to estimate that only 1-3% of the appeals that the Federal Circuit reviews challenging the PTO's denial of a patent are appealed Section 145 actions, rather than direct Section 141 appeals.

Reflecting this caseload, the Federal Circuit's opinions are less likely to refer to Section 141 and Section 145 as providing equally viable routes to PTO review than they are to treat Section 141 as the "normal" route for review of the PTO and Section 145 as a rare historical curiosity. In Fregeau, for example, the court described Fregeau's decision to file a Section 145 action as a choice to bring suit "not directly under 35 U.S.C. § 141, but via the circuitous route of a civil action against the Commissioner for a patent under 35 U.S.C. § 145." Fregeau v. Mossinghoff, 776 F.2d 1034, 1036 (Fed. Cir. 1985) (emphasis added).
Circuit in Fregeau and the Supreme Court in Zurko treated the standard of review in Section 141 appeals as if it were the standard of review that applies when applicants seek review of the PTO, rather than merely a standard that applicants agree to when they waive their right to de novo factfinding provided by Section 145. This approach permitted the courts to view the PTO under a regulatory lens, rather than a private law lens. By mistakenly conceiving of PTO review as judicial review of regulatory action, rather than review of an offeror's refusal to confer consideration in a breach of contract action, the two courts were led to embrace deferential standards that are inconsistent both with precedent and the private law patent system.  

a. Fregeau v. Mossinghoff

In Fregeau, the regulatory perspective of PTO action led a divided panel of the Federal Circuit to eliminate applicants' right to de novo review of facts in Section 145 proceedings. The appellant in Fregeau was an eccentric inventor who claimed that he had discovered a method for changing the taste, density, and chemical content of beverages by passing them through magnetic fields. After the PTO rejected these implausible patent claims on three independent grounds, Fregeau filed his Section 145 action in district court and demanded a de novo trial of the PTO's factual findings. The district court refused to grant Fregeau a de novo trial and ruled against him on the same grounds as the PTO. Fregeau appealed to the Federal Circuit, which affirmed both the district court's process and result. Writing for the majority, Judge Nies concluded that district courts should review PTO findings of fact in Section 145 actions using the same "clearly erroneous"
standard then used in Section 141 actions. Judge Nies offered two justifications in support of this conclusion. First, she stressed that "the basic nature of the [Section 145] action" was "to overturn the board's decision," which she apparently considered evidence that the board's decision was a regulatory decision that deserved deference. Second, she stated that it was "not logically justifiable" for the standard of review of factual findings to depend merely on whether the applicant chose to file suit against the PTO under Section 141 or Section 145.

_Fregeau_ is plainly wrong from the viewpoint of the private law patent system. A Section 145 action is essentially a breach of contract action, with "PTO findings of fact" taking the place of an offeror's understanding of the facts justifying his refusal to confer consideration on an offeree. District courts historically applied de novo standards of review to the PTO's facts in Section 145 actions, just as private law courts undertake de novo review of offeror's claims in contract disputes. Upholding the PTO's factual holdings unless they are "clearly erroneous" makes no more sense than applying the same deferential standard to an offeror's understanding of the facts in a contract dispute. Further, Judge Nies's conclusion that it is "not logically justifiable" for the standard of review of factual findings to depend merely on "the review route chosen" reveals a fundamental misunderstanding of PTO review. As Judge Newman noted in her concurrence, Congress offered applicants two routes to review precisely because of the different standards of review. Unifying the standards of review nearly eliminated the difference between Congress's two routes to review of the PTO, and overturned over a century of precedent to the contrary that had established a right to de novo review of PTO facts on direct appeal.

189. See id. at 1038.
190. Id. at 1037.
191. Id. at 1038.
192. See supra notes 59-70 and accompanying text.
193. See, e.g.; Ooms, supra note 177, at 155 (describing the predecessor of a Section 141 action as "an original action in the United States District Court against the Commissioner of Patents in which the right to the patent may be tried anew").
194. Fregeau, 776 F.2d at 1038.
195. See id. at 1040 (Newman, J., concurring in part).
196. See id.
b. Dickinson v. Zurko

The same regulatory view of the PTO that affected the Federal Circuit in Fregeau plagued the Supreme Court in Zurko. Zurko reviewed the PTO's decision to reject a patent application filed by Mary Zurko and her co-inventors relating to new algorithms for computer security programs. After the PTO rejected Zurko's application on the grounds that the code's advances were obvious in light of the prior art, Zurko filed a Section 141 appeal and asserted that the PTO's understanding of the prior art was "clearly erroneous." A unanimous panel agreed, applying the traditional "clearly erroneous" standard to review of the PTO's factual findings in reversing the PTO's judgment. The PTO then petitioned the court to rehear the case en banc on the ground that the court should have applied the "arbitrary and capricious . . . or unsupported by substantial evidence" standard of the APA, which the PTO alleged would have led the court to uphold the PTO's conclusion.\(^{197}\) The Federal Circuit agreed to rehear the case en banc, and, in a unanimous opinion by Chief Judge Mayer, held that the APA's standard did not apply when the Federal Circuit reviews the PTO's findings of fact in direct appeals from the PTO.\(^{198}\)

The driving force behind the Federal Circuit's decision was the absence of evidence that Congress intended the APA to govern the

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197. See In Re Zurko, 142 F.3d 1447, 1449 (Fed. Cir. 1998) (en banc). This standard is drawn from 5 U.S.C. § 706(2) (1994), which codifies Section 10(e) of the Administrative Procedure Act. It states in relevant part:

   *The reviewing court shall . . . hold unlawful and set aside agency action, findings, and conclusions found to be —
   (A) arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law;
   (B) contrary to constitutional right, power, privilege, or immunity;
   (C) in excess of statutory jurisdiction, authority, or limitations, or short of statutory right;
   (D) without observance of procedure required by law;
   (E) unsupported by substantial evidence in a case subject to [either the rulemaking or adjudication provisions of the APA] or otherwise reviewed on the record of an agency hearing provided by statute; or
   (F) unwarranted by the facts to the extent that the facts are subject to trial de novo by the reviewing court.*

198. See In re Zurko, 142 F.3d at 1447.
review of substantive Patent Office decisions. From the 1940s until the mid-1990s, no one had ever even suggested that APA Section 10(e) applied to PTO review. Forced to find a textual hook for its gestalt belief that the patent courts could not have missed something so important for fifty years, the court settled on 5 U.S.C. § 559, which states that the APA's provisions do not "limit or repeal additional requirements . . . recognized by law." The court reasoned that the "clearly erroneous" standard of review must be an "additional requirement . . . recognized by law," which permitted the standard to survive the enactment of the APA. The court then devoted the majority of its attention to arguing that as of 1947, the year of the APA's passage, the "clearly erroneous" standard was sufficiently established in the judicial system that it could be "recognized by law" according to 5 U.S.C. § 559. This somewhat odd textual argument became the basis for the PTO's petition for a writ of certiorari to the Supreme Court. By the time it reached the Supreme Court in the spring of 1999, the Zurko case rested solely on the Federal Circuit's argument that, at the time of the enactment of the APA in 1947, judicial review of fact-finding by the PTO under the "clearly erroneous' standard was an 'additional requirement[] . . . recognized by law'" according to 5 U.S.C. § 559.

In an opinion by Justice Breyer, a majority of the Court rejected the Federal Circuit's argument and held that the APA applied to review of PTO findings of fact. Addressing the Federal Circuit directly, as if it were a party to the dispute, Justice Breyer criticized the lower court for believing that the PTO was somehow different from other administrative agencies in the executive

199. See id. at 1450-52.
201. See In re Zurko, 142 F.3d at 1452.
202. Id.
203. See id. at 1452-57.
204. Zurko, 527 U.S. at 170 (Rehnquist, C.J., dissenting).
205. See id. at 152. The Zurko majority consisted of Justices Breyer, Stevens, O'Connor, Scalia, Souter and Thomas. Chief Justice Rehnquist dissented, and was joined by Justices Kennedy and Ginsburg. See id.
206. Throughout the Zurko opinion, Justice Breyer referred to arguments asserted by the respondent Zurko as if they had been made by the Federal Circuit. See, e.g., id. at 154 ("[t]he Federal Circuit rests its claim for an exception on § 559."); id. at 164 ("Second, the [Federal] Circuit and its supporting amici believe that a change to APA review standards will create an anomaly."); id. at 165 ("Finally, the [Federal] Circuit reasons that its stricter court/court review will produce better agency factfinding.").
According to Justice Breyer, federal appellate courts applied two standards of review when reviewing factual findings: "court/agency" review under the APA when the courts reviewed federal administrative agencies, and "court/court" clearly erroneous review under the Federal Rules of Civil Procedure when the courts reviewed findings by district court judges. Given "the importance of maintaining a uniform approach to judicial review of administrative action," Justice Breyer reasoned, the Federal Circuit bore a heavy burden of showing that the court/court standard applied to an agency such as the PTO. Unless the Federal Circuit could show that the court/court standard was clearly established in 1947, the APA applied to review of the PTO's findings of fact just like it did to the factual findings of other agencies. Reviewing the pre-1947 cases, the Court concluded that the Federal Circuit failed to meet this high standard. Indeed, because several of the pre-1947 cases justified deference to PTO findings on the basis that the PTO was an expert agency—a traditional justification for deferential review of regulatory action—Justice Breyer concluded that the pre-1947 courts "had court/agency, not court/court, review in mind." In other words, review of the PTO fell plainly within the category of judicial review of administrative action, and so the same standards applied to the PTO that applied to other administrative agencies.

From a private law perspective, the Supreme Court's opinion in Zurko reflects an awkward attempt to push the square peg of the patent system through the round hole of the regulatory state. Although the Court believed that it was establishing "a uniform

208. See id. at 154-56.
209. Id. at 154.
210. See id. at 154-55.
211. See id. at 165.
212. Id. at 160.
213. In his brief dissent, Chief Justice Rehnquist argued that the Court should have deferred to the judgment of the en banc Federal Circuit and the patent bar (represented via various amici) that the APA standard did not apply. Given that the APA was designed to raise minimum standards of review rather than lower them, the Chief Justice would have accepted the Federal Circuit's "sensible and plausible" view that Congress intended patent adjudications to be exempt from the APA's standard of review. See id. at 170-72 (Rehnquist, C.J., dissenting).
approach to judicial review of administrative action, its failure to appreciate the private law basis of the patent system blinds the Court to the reality that it was imposing uniform standards in two entirely unrelated contexts. In the regulatory context, deferential review of facts arises whenever an individual attempts to challenge regulatory action. Deference ensures that a regulatory agency has discretion to regulate within its zone of delegated authority free from judicial interference. The broad terms of the APA promote uniformity by ensuring that all regulatory agencies receive the same deference.

Patent adjudications are not regulatory, however. A court reviews a patent decision just like it reviews an offeror's refusal to confer consideration in a breach of contract suit. Stripped of its public law gloss, the "standard of review of fact" simply asks whether the court should defer to the offeror's view of the factual circumstances that he believes justified his refusal to confer consideration. The existence of deferential standards of review owes not to regulatory principles, but rather to the fact that the Patent Act permits an unsuccessful applicant to stipulate to the PTO's view of the facts (or nearly so) in order to avoid an expensive and prolonged trial de novo. It is hard to imagine why the statute that sets the standard for review of regulatory decisions should also govern the factual stipulations that an offeree may elect when bringing a breach of contract action. Surely the APA is not so indiscriminate that it imposes deferential standards of review on every kind of factual finding made within the executive branch, regardless of the circumstances.

Doctrinally, the Supreme Court's error in *Zurko* was failing to realize that the APA preserved the bifurcated approach to stan-

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214. Id. at 154.
216. That is, until Fregeau mistakenly eliminated the right to de novo review of facts in a District Court proceeding. See supra notes 184-89 and accompanying text.
217. Such a conception of the APA would lead to many absurd results. For example, imagine that PTO administrators decided to renege on a government contract with an office supply store, entered an order directing the PTO to cease future payment on the contract, and included "findings of fact" stating that it was the supply store, not the PTO, that had breached the contract. Under the *Zurko* court's broad reading of the APA, it seems that the supply store would be forced to accept the PTO's "findings of fact" as binding unless it could prove that they were arbitrary, capricious, or unsupported by substantial evidence. See 5 U.S.C. § 706 (1994).
dards of review that the courts traditionally apply when reviewing executive agency decisions. As the structure and history of the APA makes clear, the purpose of the statute was to address agency procedures and standards of review that apply to regulatory decisions, not all decisions within the executive branch. Early drafts of the APA exempted nonregulatory agencies entirely (including the Patent Office), narrowing the scope of the APA’s reach to certain regulatory agencies. Although Congress later chose a broader approach that did not exempt specific agencies from the APA—apparently in recognition of the fact that even the prototypically nonregulatory agencies usually enjoyed some narrow types of regulatory authority—its drafters clearly did not intend for the judicial review provisions of the APA to alter the de novo review that the courts had traditionally reserved for nonregulatory agency action in general, and patent adjudications in particular.

For example, Attorney General (later Justice) Clark made clear that Section 10(e) was not intended to alter judicial review of nonregulatory proceedings, including review of the Patent Office’s patent adjudications. Casper Ooms, then Commissioner of the Patent Office, agreed. Indeed, Section 10(e) was designed merely to restate the deferential standards that pre-1946 courts had applied when reviewing regulatory decisions, such as “arbitrary and capricious,” "unsupported by substantial evidence,” and

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218. The APA passed in 1946 after a nearly decade-long effort to devise a set of procedural rules that would govern regulatory action and provide for its judicial review. For an informative history of the APA’s passage, see George B. Shepherd, Fierce Compromise: The Administrative Procedure Act Emerges from New Deal Politics, 90 Nw. U. L. Rev. 1557 (1996).

219. See In re Zurko, 142 F.3d 1447, 1451 (Fed. Cir. 1998) (en banc); Ooms, supra note 177, at 149; Shepherd, supra note 218, at 1618; Woodward, supra note 1, at 950 n.1.

220. For example, even the Patent Office has regulatory authority to enact rules that govern its own proceedings. See 35 U.S.C. § 6(a) (1994); see also supra notes 162-69 and accompanying text.


222. See id. at 101.

223. See Ooms, supra note 177, at 162 (“I think there is no enlargement [under the APA] of the actual appeal that is available. There now is an express declaration that it is available. I think that is the net effect [of § 10] of the Act.”).

224. See CLARK, supra note 221, at 9.


226. See, e.g., ICC v. Jersey City, 322 U.S. 503, 512 (1944) (reviewing ICC decision to
"abuse of discretion." These standards were established regulatory standards that the courts applied to regulatory decisions by regulatory agencies. For the fifty years following the APA’s passage, no one suggested that these regulatory standards should apply to nonregulatory agency decisions such as PTO patent adjudications. Had the Zurko Court better appreciated that the APA did not disrupt the traditional distinction between review of regulatory and nonregulatory executive action, it would have followed the interpretive principles it announced in Wong Yang Sung v. McGrath and held that the regulatory standards of the APA should not apply to review of nonregulatory PTO patent adjudications. In Wong Yang Sung, the Court stated that because “more than a few [agencies] can advance arguments that [the APA’s provisions] should not or do not include them, . . . questions of [the APA’s] coverage may well be approached through consideration of its purposes as disclosed by its background.” As applied in Wong Yang Sung, this approach would have directed the Zurko Court to consider whether patent adjudications are regulatory decisions resembling those that the APA was enacted to address. The answer to this question is clear. As the Federal Circuit established in its en banc opinion and the private law basis of the patent system confirms, PTO patent adjudications stand apart from the regulatory concerns that prompted Congress to pass the APA. Accordingly,
the Court should have construed the APA so as to exclude review of PTO patent adjudications from its reach. Such an approach would have maintained the bifurcated approach to judicial review that courts have traditionally applied when reviewing executive action, and also would have helped preserve the rigorous standards of review that have long characterized the private law patent system.

III. IMPLICATIONS OF THE PRIVATE LAW PATENT SYSTEM FOR PATENT LAW

In Section I of this article, I presented a private law theory of the patent system. This theory posits that patent law works by inducing inventors to channel their efforts towards discovering and disclosing useful inventions by promising inventors a property right in the invention if they succeed. The governing mechanisms of this process are contract, property, and tort. In Section II, I used this theory to show that administrative law doctrines should not apply when the courts review PTO patent decisions. I argued that administrative law doctrines apply only when agencies act in a regulatory capacity, and that they should not apply to the patent system in light of the nonregulatory, private law mechanisms underlying patent law.

In this section, I switch the emphasis from administrative law to patent law, and examine the importance of the private law theory of patent law within the patent system itself. First, I will discuss briefly whether the private law theory of the patent system provides the sought-after "holy grail" of patent law. Second, I will show in some depth how the private law theory reveals the dangers

232. See Dickinson v. Zurko, 527 U.S. 150, 170-72 (1999) (Rehnquist, C.J., dissenting). Because the Zurko respondents conceded that the PTO's rejection of Zurko's patent application was "agency action" that triggered the APA, see id. at 154, the best course of reaching this result would probably have been to agree with the Federal Circuit that the pre-APA standards were standards "otherwise recognized by law" pursuant to 5 U.S.C. § 559 (1994). Alternatively, the Court could have interpreted "agency action" as being implicitly limited to regulatory forms of executive action. See id. § 551(13) (defining "agency action" as "the whole or a part of an agency rule, order, license, sanction, relief, or the equivalent or denial thereof, or failure to act."). Given that the APA's deferential standards of review are triggered by any "agency action," this approach would have reserved the APA's deferential review for regulatory action, in keeping with the bifurcated approach to standards of review and the purpose of the APA. Nonregulatory agency action such as patent adjudications would have been excluded.
that administrative law doctrines pose to the proper functioning of
the patent system. Building on insights derived from the private
law perspective, I will argue that the courts should reject the
PTO's efforts to incorporate deferential standards of review when
reviewing PTO direct appeals. To maintain optimal incentives
among inventors to rely on Congress's offer and invest in new
research, the courts should adhere as closely as possible to the
aggressive private law standards of review that the courts tra-
ditionally have applied when reviewing PTO patent adjudications.

A. The Private Law Patent System and the Search for the "Holy
Grail"

Although Congress passed the first patent laws over two
centuries ago, there is little agreement today as to how patents
serve the public good, or even whether they serve the public good.
On a theoretical level, patent law is a mess. For example, some
scholars believe that patents are monopoly rights that the
government bestows upon inventors to reward them for creating
useful inventions; 233 others believe that patents recognize Lockean
natural law property rights in inventors' creations. 234 Some believe
that the driving force behind the patent system is the desire to limit
rent dissipation, 235 while others believe that the purpose of the
patent system is to force the disclosure of new ideas into the public
domain. 236 Some theorists believe that the patent system has a
positive effect; others believe that it has little effect; still others
believe that the patent system imposes a net economic harm. 237
Most patent law treatises and casebooks do not even attempt to
reconcile these theories: they simply recite the various theories that
scholars have offered and then move on to less-murky doctrinal
matters. 238 As Professor Oddi recently noted, patent law has no

233. See, e.g., WARD S. BOWMAN, JR., PATENT AND ANTITRUST LAW: A LEGAL AND ECONOMIC
APPRAISAL 2 (1973).
234. See Oddi, supra note 17, at 273-75.
236. See Oddi, supra note 17, at 274.
237. See Steven N.S. Cheung, Property Rights and Invention, in 8 RESEARCH IN L. & ECON.
5, 5-6 (John Palmer & Richard O. Zerbe, Jr. eds., 1986).
single “holy grail,” no single theory that both explains current doctrine and offers a useful way of evaluating the net impact of future doctrinal changes.\textsuperscript{239}

Does the private law basis of the patent system provide such a holy grail? It does seem to explain a great deal about the patent system. According to this theory, patent law encourages the discovery, use, and sharing of practical knowledge by inducing reliance on a carefully constructed contractual offer made by Congress. Looking back at Section I of this article, this theory explained the contours of the statutory conditions of patentability, the ministerial role of the PTO, the forms of patent law litigation, the remedy in direct appeals from the PTO, and even the traditional standards of review that courts have applied to PTO action. On a descriptive level, then, the private law perspective does appear to offer a powerful insight into the functional role of current patent doctrine. Although these insights may not amount to a “holy grail,” they do provide a fresh perspective that illuminates previously unexplained aspects of patent doctrine.

The private law perspective on patent law also provides a simple and effective way of analyzing whether changes in patent doctrine will advance or impede the ends of patent law. Because the patent system works by inducing inventors to engage in socially beneficial behavior in reliance on the government’s offer, we can evaluate the effect of any change in patent doctrine by considering its effect ex ante upon prospective inventors who are deciding whether to engage in that behavior in the hopes of obtaining a patent. Any change to patent law will alter the terms of the offer. The question we must ask is this: In the long term, will the change in the offer encourage prospective inventors to discover, use, and disclose useful new inventions in reliance on its terms? If the answer is “yes,” then the change will bring more inventions into the public realm, furthering the goals of the patent system. If the change discourages such behavior, however, then the change will impede the effectiveness of the patent system.

It is beyond the scope of this Article to address how this insight might illuminate the wide range of long-running disputes over

\textsuperscript{239} See Oddi, supra note 17, at 271.
patent doctrine. Instead, this section will focus on one such doctrinal dispute: whether deferential administrative law doctrines should apply when the courts review patent adjudications. The private law perspective reveals that administrative law doctrines in fact pose a considerable threat to the proper operation of the patent system.

**B. Deference in Patent Law and the False Idol of "Expertise"**

Commentators who have considered whether administrative law doctrines should apply in patent law generally rest their conclusions on the relative institutional competence of the PTO and the Federal Circuit. Those who believe that the PTO's collective wisdom and ability exceeds that of the Federal Circuit favor administrative law standards; they contend that deferential review in direct appeals will aid the patent system by granting the expert PTO more power to achieve its substantive goals.\(^{240}\) In contrast, those who maintain that the Federal Circuit is wiser and more expert than the PTO have opposed deference; they claim that Federal Circuit expertise makes deference to the PTO unnecessary and potentially counterproductive.\(^{241}\) Despite their disagreement as to the relative abilities of the PTO and the Federal Circuit, members of both camps maintain that the merits of deferring to the PTO depend on whether the agency or the court has greater expertise in patent law.\(^{242}\)

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240. See sources cited supra note 18.
241. See sources cited supra note 19.
242. The late Professor Louis Jaffe noted the prevalence of this type of argument in his classic treatise *Judicial Control of Administrative Action*:

> [B]ecause expertness—accumulated and specialized experience—is so dominant an aspect of administrative decision making, some students and occasionally courts have sought to state the scope of review in terms of it. Thus it will be said that in its field of expertness the agency’s decisions are final if “reasonable”; and conversely that there is a field of general law in which the courts are, as it were, experts. In this wise, the comparative qualification of agency and court determines whether the court will make an independent decision.

JAFFE, supra note 13, at 579.

This reasoning enjoys considerable currency in the literature on patent law. For example, Professor Dreyfuss makes a similar argument in the course of contending that the Federal Circuit’s expertise should enable it to review factual findings made by district courts during infringement litigation with a standard less deferential than the “clearly erroneous” test
At first blush, the argument that deference to the PTO should hinge on relative expertise has considerable appeal. Standards of review distribute power between an executive agency and a reviewing court. De novo review reserves the decision-making authority for the reviewing court, whereas deferential review carves out a sphere of delegated agency power in which the agency may regulate free from judicial interference. To promote the goals of patent law, it makes intuitive sense to adjust standards of review so as to empower whichever body has superior expertise in the field. If, on the one hand, the PTO has greater expertise in patent law than the Federal Circuit, then we should incorporate deferential review that empowers the expert PTO. If the judges of the Federal Circuit are more expert in patent law than PTO employees, then we should maintain aggressive standards of review that empower the Federal Circuit. According to this logic, the patent system can best promote progress by granting whoever has the most expertise in patent law the power to decide who should receive a patent.

From the private law perspective, however, we can see that the institutional competence approach to standards of review badly misjudges the impact that deference would have on the patent system. Unlike regulatory regimes, the private law patent system works by inducing reliance on an offer. The ultimate question every change in patent doctrine must answer is not whether it will lead to a more “expert” patent system (whatever that means), but whether the change will encourage prospective inventors to invest more or less in the kind of research that should lead to significant advances in technology and knowledge. In short, the issue raised by deference in a private law patent system is not expertise, but incentives.

From this perspective, it becomes clear that deferential review of PTO patent adjudications would almost certainly have a harmful effect on the operation of the patent system. Among inventors considering whether to invest in efforts to obtain the quid pro quo directed by Fed. R. Civ. P. 52(a). See Rochelle Cooper Dreyfuss, The Federal Circuit: A Case Study in Specialized Courts, 64 N.Y.U. L. Rev. 1, 46-52 (1989). For an example of the same reasoning in another area of intellectual property, see Fred Anthony Rowley, Jr., Note, Dynamic Copyright Law: Its Problems and a Possible Solution, 11 HARv. J.L. & TECH. 481, 522-27 (1998) (discussing the merits of establishing a federal agency to administer misappropriation claims in terms of the relative expertise of the agency and the courts).
of a patent, deference to the PTO would discourage exactly the kind of research and development into new discoveries that the patent system exists to encourage. Deference would discourage reliance on Congress’s offer in two ways. First, by creating PTO discretion to determine who should receive a patent, deference would infuse the terms of the offer with uncertainty. Inventors would be unable to know ex ante how the PTO would interpret the statutory terms of patentability years hence, making them reluctant to research and develop new discoveries with patent protection in mind. For example, biotechnology companies would face the risk that after investing several years and millions of dollars in research, the PTO would later decide to deny the company’s patent application because it no longer believed that microorganisms should be patentable. Second, deference would harm the patent system by encouraging patent applicants to divert resources away from research into new discoveries and towards efforts to influence PTO discretion. Seeking to maximize their return on their investments in the patent system, inventors would have strong incentives to lobby the PTO for patent protection based on political favors, knowing that deferential standards would insulate the PTO’s decisions from judicial review. When we compare these harmful effects to the alleged benefits that PTO expertise could bring to patent law, it becomes clear that widespread deference to the PTO poses a considerable threat to the patent system.

C. Deference and Uncertainty in the Private Law Patent System

We can see how deference would increase uncertainty and therefore discourage investment in research by returning to the hypothetical in which A offers B $100 to walk across the Brooklyn Bridge. This time, I will modify the hypothetical to incorporate deferential standards of review of A’s offer. Imagine A offers B $100 to walk across the bridge, and then explains to B that his lawyers have added a condition to the offer. A announces:

As an expert in my offer and the goals that my offer furthers, I retain the right to determine if and when you have accepted my offer and are entitled to $100.
This new dimension to A's offer should give B reason for pause. Before A added this new term, B had a fairly clear understanding of his legal rights. If B walked across the bridge, he would receive $100, and if he did not, he would receive nothing. B could cross the bridge with the comfort of knowing that if A balked at handing over the $100, B could seek legal redress de novo from the courts. But now that A has retained the right to determine when B deserves the money, B cannot be entirely sure of what his rights are. From a practical perspective, B merely has a right to $100 whenever A feels like giving it to him. The nature of A's offer suggests that A will probably give B $100 if B succeeds in walking across the bridge. Yet B cannot be sure; his prospects of earning $100 depend entirely on how A will decide to interpret the offer and B's efforts after B has already satisfied his half of the bargain. Before attempting to cross the bridge, B must grapple with the possibility that A will later "interpret" his offer in a way that denies B his $100. B may decide to cross the bridge anyway: he may have nothing better to do, he may need to cross for another reason, or he may trust A to follow the express terms of his offer. On the other hand, he may not. If crossing the bridge is a time-consuming or expensive proposition for B, B might instead decide to put his time and money elsewhere and leave A's offer unanswered. The uncertainty of A's offer caused by the shift of interpretive power from the courts to A will discourage B from relying on A's offer and attempting to cross the bridge.

The same uncertainty would infect the patent laws and discourage investment in research if the courts embraced the deferential standards of the PTO in direct appeals. Deference would empower the PTO with the discretion to determine when an inventor has satisfied the statutory terms of patentability, and this discretion would create uncertainty among inventors as to exactly what they needed to do to become entitled to patent protection. Absent knowledge of how the PTO would exercise its discretion years hence, inventors would not know the reward structure that would await them after they had invested years of time—and thousands if not millions of dollars—researching and developing

243. See Friedrich A. Hayek, The Road to Serfdom 72 (1944) (noting that the exercise of administrative discretion can make it difficult for individuals "to foresee with fair certainty how the authority will use its coercive powers in given circumstances and to plan one's individual affairs on the basis of this knowledge").
new inventions. Just as B might decide not to cross the Brooklyn Bridge in the hope of earning $100, inventors might decide not to devote their efforts to discovering and disseminating practical knowledge in the hope of earning patent protection for their discoveries. Increased uncertainty would translate into greater risk, greater risk into higher cost, and higher cost into less research and development.244

Assuming that the PTO administered the patent system in good faith, the primary source of uncertainty posed by deference to the PTO would be deference to PTO interpretations of law. In particular, the PTO has advocated that the Federal Circuit should review the PTO's interpretations of the Patent Act using the *Chevron* doctrine.245 Because most of the key phrases in the Patent Act exude textual ambiguity,246 applying the deferential *Chevron* standards to the PTO would permit the PTO to adopt any "reasonable" interpretation of the Patent Act it chooses, at any time, and without explanation.247 Within this fairly broad zone of agency discretion, the PTO would be free to restructure the terms of the patent system's offer as it saw fit.248 For example, the PTO could change its interpretation of the word "obvious" in Section 103 to raise or lower the obviousness threshold; alter its interpretation of "manufacture" and "composition of matter" in Section 101 to expand or contract the range of patentable subject matter; and adjust its interpretation of "known or used by others" in Section 102 to strengthen or dilute the on-sale bar to patentability.


245. *See* sources cited *supra* note 18.

246. Broad statutory terms such as "process," "machine," "obvious," "used," and "abandoned" tend to start the interpretive task, not end it. *See* 36 U.S.C. §§ 101-103 (1994).

247. Because few questions of patent law could be said to have been "directly spoken to" by Congress when it enacted the Patent Act in 1952, *see* *Chevron* U.S.A. Inc. v. Natural Resources Defense Council, Inc., 467 U.S. 837, 842 (1984), *Chevron* would give the PTO broad power to interpret the Patent Act limited only by the bounds of reasonableness.

248. The PTO would be able to announce such changes in the BPAI's published patent adjudications, obviating the need for notice-and-comment rulemaking. *See* NLRB v. Bell Aerospace Co., 416 U.S. 267, 294-95 (1974) (granting agencies broad discretion to announce changes in interpretations of statutes in adjudications). The only limits on this power would be those that courts have imposed sporadically to recognize past judicial opinions. *See generally* Richard J. Pierce, Jr., *Reconciling Chevron and Stare Decisis*, 85 GEO. L.J. 2225 *passim* (1997) (discussing various courts' attempts at reconciling the *Chevron* doctrine with conflicting precedent).
From the perspective of potential patent applicants, the PTO's power to restructure the terms of patentability would create a significant risk that research and development efforts justified by today's interpretation of the Patent Act might be useless based on tomorrow's interpretation. For example, a biotechnology company might spend millions of dollars researching patentable microorganisms only to find that, by the time the company applies for patent protection, the PTO has decided that microorganisms are no longer patentable subject matter. Likewise, an inventor of a new computer-chip socket might apply for patent protection only to learn that the diluted interpretation of the on-sale bar that had justified his competitor's patents months earlier has since been replaced by a strict interpretation that bars his own application. A company that spent years devising a nonobvious farming clamp might find much of that time wasted by an intervening PTO decision to lower the threshold of obviousness. Of course, most inventors will not be so unlucky, and others will receive a windfall from PTO changes in the terms of patentability. Ex ante, however, inventors will have no way of knowing whether they will be lucky, unlucky, or neither. To them, PTO discretion to interpret the Patent Act will only add risk, and therefore cost, to the pursuit of seeking patent protection.

In contrast, de novo review lodges interpretive power over the Patent Act in the relatively stable forum of the federal courts. The courts do not provide a panacea for applicants seeking certainty: some patent doctrines are intrinsically murky, and the courts


252. This dynamic has been explained clearly by Judges Easterbrook and Posner in the context of contract law. As they note, contract law doctrines that grant one party unilateral rights to back out of a contract are disfavored because they discourage other parties from entering into the contract. See Skycom Corp. v. Telstar Corp., 813 F.2d 810, 814-15 (7th Cir. 1987) (Easterbrook, J.) (discussing objective contract interpretation); Morin Bldg. Prod. Co. v. Baystone Constr., Inc., 717 F.2d 413, 414-15 (7th Cir. 1983) (Posner, J.) (discussing objective satisfaction clauses).

253. See Thomas K. Landry, Certainty and Discretion in Patent Law: The On Sale Bar, the
occasionally alter aspects of patent doctrine.\textsuperscript{254} The institutional structure of the federal courts, however, is far more conducive to stability than an executive agency such as the PTO. While the PTO has thousands of employees who typically serve for short periods, the Federal Circuit is staffed by a small number of judges, each with life tenure, who may spend several decades on the bench.\textsuperscript{255} Unlike the PTO, the Federal Circuit is bound by the principle of stare decisis: no panel of the Federal Circuit can overrule the decision of a prior panel on any interpretation of any aspect of the Patent Act.\textsuperscript{256} As a result, patent doctrines evolve over time, but tend to do so slowly. The institutional constraints of the federal judiciary make the federal courts a fairly stable repository for patent doctrine,\textsuperscript{257} encouraging reliance on Congress’s contractual offer.

D. Deference and Rent-Seeking in a Private Law Patent System

PTO deference would also discourage research and development by creating strong incentives among patent applicants to manipulate PTO discretion through what economists call “rent-seeking.”\textsuperscript{258} Rent-seeking refers to private-sector efforts to obtain government benefits through political rather than market processes.\textsuperscript{259} The theory of rent-seeking assumes that market


254. The Supreme Court’s decision in \textit{Zurko} is a perfect example.

255. Presently, the court has 14 active members. See \textit{2 ALMANAC OF THE FEDERAL JUDICIARY} (2000). The longest serving member of the court was Judge Giles S. Rich, who served as an active judge on the Federal Circuit’s predecessor court and then the Federal Circuit from 1956 until his death on June 9, 1999.

256. \textit{See South Corp. v. United States}, 690 F.2d 1368, 1370 (Fed. Cir. 1982). The court may overrule a prior panel only by rehearing the case en banc. See id.

257. Cf. \textit{Southern Pac. Co. v. Jensen}, 244 U.S. 205, 221 (1917) (Holmes, J., dissenting) (“I recognize without hesitation that judges do and must legislate, but they can do so only interstitially; they are confined from molar to molecular motions. A common-law judge could not say, ‘I think the doctrine of consideration a bit of historical nonsense and shall not enforce it in my court.’”).


participants act as rational maximizers, who are willing to achieve business goals through the manipulation of the political process as well as through market transactions.\textsuperscript{260} For example, if a domestic industry can earn greater returns by lobbying the executive branch to enforce trade laws that choke off foreign competition than by making superior products, it will do so.\textsuperscript{261} From an economic perspective, the harm of rent-seeking is twofold. First, rent-seekers use up scarce resources manipulating the political process instead of using the resources for more socially useful purposes (for example, by spending assets on expensive lunches for lobbyists instead of scientific research).\textsuperscript{262} Second, successful rent-seeking creates market inefficiencies that result in fewer goods and services at higher cost for consumers.\textsuperscript{263}

The adoption of deferential standards of review of the PTO would make the PTO an attractive target for rent-seeking.\textsuperscript{264} From the perspective of applicants seeking patent protection, the combination of PTO discretion to set the standards of patentability and then adjudicate whether the applicant has satisfied those standards

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introduction to public choice theory and the concept of rent-seeking, see FARBER & FRICKEY, supra note 258, at 12-37.

Some scholars have used the phrase “rent-seeking” in a loose sense to refer to any private-sector effort to obtain government benefits—including investments in research and development with the goal of obtaining a patent. See, e.g., Dam, supra note 27, at 251 (“By rent seeking, I mean simply that firms and individuals will invest resources to obtain patents (not just in the process of obtaining a patent but also in the research and development to make the invention.”). The problem with this broader definition is that it tends to encompass both attempts to gain benefits from contractual market-based transactions and noncontractual politically based transactions. See id. at 263 (“[R]ent seeking” is to some extent another term for ‘competition.’”). Accordingly, the broad definition threatens to incorporate every kind of transaction with the government under the rubric of “rent-seeking.” I use the term here in the more narrow sense that singles out attempts to achieve economic returns from the political process. Cf. Gordon Tullock, Rent-Seeking, in 4 THE NEW PALGRAVE: A DICTIONARY OF ECONOMICS 147, 147-49 (John Eatwell et al. eds., 1998) (noting that “strictly speaking,” the term rent-seeking would not apply to efforts to discover a cure for cancer in the hope of obtaining a patent for the cure).

\textsuperscript{263} See id.
\textsuperscript{264} Cf. Nard, supra note 1, at 1502-03 (acknowledging that PTO discretion might lead to “agency capture”).
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would make even marginal influence over the PTO extremely valuable. Just as A's discretion in the bridge hypothetical might encourage B to spend less effort crossing the bridge and more effort trying to curry favor with A, individual inventors, companies, and even entire industries would often find it more cost-effective to try to influence the PTO's discretion through lobbying efforts than through hard-fought technological advances. So long as the marginal return from one dollar of lobbying exceeded the marginal return from one dollar of research, industries would forego the latter and pursue the former. Increasing PTO discretion would shift the equilibrium point in favor of less research and more lobbying; decreasing PTO discretion would shift the equilibrium point toward research and away from lobbying. The result of PTO discretion would be less investment in research aimed at new discoveries, and more investment in efforts to persuade the PTO to exercise its discretion in the applicant's favor.

The effect of PTO discretion to set the scope of patentable subject matter provides a useful example of how deference to the PTO would prompt rent-seeking. With millions of dollars in future income riding on the scope of patent protection that the PTO offers their inventions, companies and even entire industries in fields such as computer software and biotechnology would invest large sums in lobbying efforts aimed at persuading the PTO to expand the scope of patentable subject matter. These efforts could take many forms, ranging from public advertising blitzes to campaign donations and private lobbying, and would presumably pursue every avenue that could persuade the PTO to look favorably upon the industries' and companies' applications—and perhaps un-

265. See Coase, supra note 124, at 3-6.

266. While some might argue that PTO discretion would merely shift the target among rent-seekers from the courts to the PTO, as a practical matter the life tenure and set salary of federal judges makes the federal judiciary virtually impervious to rent-seeking. See William M. Landes & Richard A. Posner, The Independent Judiciary in an Interest-Group Perspective, 18 J.L. & ECON. 875 (1975).

267. I have selected these two industries as examples because the scope of patent protection for software and biotechnology has been hotly contested. See, e.g., State St. Bank & Trust Co. v. Signature Fin. Group, Inc., 149 F.3d 1368 (Fed. Cir. 1998) (concluding that computerized accounting system for managing mutual fund investment structure fell within scope of patentable subject matter); John Swinson, Copyright or Patent or Both: An Algorithmic Approach to Computer Software Protection, 5 HARV. J.L. & TECH. 145 (1991) (discussing patent protection for computer software).
favorably on their competitors’ applications. Political groups would also seek to influence PTO decisions over the scope of patentable subject matter. For example, anti-biotechnology activists and animal rights groups each have launched efforts (presently unsuccessful) to narrow the scope of patentability in the biotechnology area. If the PTO gained the power to determine the scope of patentability, these groups would have a strong incentive to reinvigorate their campaigns, focusing their efforts on influencing PTO discretion. Presidential administrations eager for the support of key industries and advocacy groups would respond to these wishes, staffing the PTO with like-minded appointees who could help turn their supporters’ wishes into reality. In sum, PTO discretion to set the scope of patentable subject matter would transform control over the PTO into a valuable political chip.

E. The Overstated Role of “Expertise” in Patent Law

Because commentators on the PTO’s campaign for greater deference focus on the relative institutional competence of the PTO and the Federal Circuit, a consideration of the effect of deference in patent law would be incomplete without evaluating the potential positive effects that PTO expertise would bring to the patent system. As I discussed earlier, commentators have argued that the

268. Experience with licensing decisions suggests that agency discretion encourages not only rent-seeking for favorable decisions among private actors, but also rent-seeking for unfavorable decisions among their competitors. See, e.g., Statesboro Tel. Co. v. Georgia Pub. Serv. Comm’n, 219 S.E.2d 127 (Ga. 1975) (rejecting suit by local telephone company that challenged state authority’s decision to license competitor); Waste Mgmt. Partners of Bozeman, Ltd. v. Montana Dept’ of Pub. Serv. Regulation, 944 P.2d 210 (Mont. 1997) (rejecting suit by waste disposal company that challenged state licensing commission’s decision to grant license to waste disposal company’s competitor); In re Alert Coach Lines, Inc., 526 N.Y.S.2d. 256 (N.Y. App. Div. 1988) (rejecting suit by bus company that challenged state agency’s decision to permit competitor bus company to provide service).


270. See supra notes 18-19 and accompanying text.
patent system can best promote the progress of science and the useful arts by giving the power to decide who should receive a patent to the experts.\textsuperscript{271} If the PTO has substantially greater expertise in patent law than the judges who review the PTO’s decisions, the argument runs, then deference should lead to a more “expert” patent system by empowering the PTO to determine who should receive a patent.

A close look at the role of expertise in patent law suggests that this argument has little force in a private law patent system. Because the fundamental purpose of patent law is to induce reliance on a contractual offer, the PTO could have expertise that might help the patent system only in two narrow ways. First, the PTO could have superior expertise in determining when a patent applicant has successfully accepted Congress’s offer and become entitled to a patent. At the margins, this expertise might help induce reliance on Congress’s offer by reducing the risk that applicants will satisfy the offer but have their claim rejected by an inexpert agency or court. Second, the PTO could have a superior understanding of what standards of patentability would best promote technological progress. In this case, empowering the PTO would enable it to restructure the terms of patentability so as to maximize reliance on Congress’s offer.

An examination of both theories of PTO expertise suggests that the PTO does not have a plausible claim to superior expertise in either area, and that deference would lead to neither a more “expert” patent system, nor more investment in research. The claim that the PTO has superior expertise in evaluating when applicants have accepted Congress’s offer fails because the PTO’s reviewing court is the specialized U.S. Court of Appeals for the Federal Circuit. Although most commentators have argued either that the PTO clearly has more expertise in evaluating patent applications than the Federal Circuit,\textsuperscript{272} or vice versa,\textsuperscript{273} it seems obvious that in a useful sense, both the PTO and the Federal Circuit can be considered “experts” at evaluating applications. The most that could be said is that the PTO and Federal Circuit have expertise in their

\textsuperscript{271} See supra notes 18-19 and accompanying text.
\textsuperscript{272} See supra note 18 and accompanying text.
\textsuperscript{273} See supra note 19 and accompanying text.
own domains: the PTO in reviewing patent applications ex parte, the Federal Circuit in reviewing the PTO in subsequent adversary proceedings. This tautological conclusion sheds little light on whether the PTO or the Federal Circuit has greater expertise in evaluating the merits of patent applications. Certainly, it provides no basis for concluding that deterrence to PTO patent decisions would encourage investment in research.

The claim that the PTO has superior knowledge as to which standards of patentability would best promote technological progress is similarly dubious. While PTO employees undoubtedly gain a "hands-on" view of the patent system by reviewing hundreds of thousands of patent applications every year, it is unclear how this experience places the PTO in a better position than anyone else to evaluate what changes in legal rules will best encourage research. Again, the Brooklyn Bridge hypothetical may be instructive. This time, assume that A explains to B exactly why he is willing to pay B $100 to walk across the bridge. A tells B that A has been hired by a famous engineer to conduct an experiment relating to bridge design, and the engineer needs to know whether people walking across the Brooklyn Bridge in a normal cadence will hit the resonant frequency of the bridge, causing it to shake dangerously, just like the Takoma Narrows Bridge that collapsed in 1940. What A seeks to gain from the deal, in short, is an opportunity to evaluate the effects on the bridge of a pedestrian crossing its span.

Now imagine what would happen if B crossed the bridge, A refused to pay B, and A asserted that his refusal should be entitled to deference because he is the "expert" in the offer to cross the bridge. A's argument would seem pretty strange. Why? The reason is that A's experience as the offeror does not provide any special insight into how the engineer's goal can best be achieved. A's experience with the offer does not translate into insight concerning what kinds of different offers would lead B and other offerees to be more likely to cross the bridge.

274. Although this is fanciful with regard to the Brooklyn Bridge and a single bridge crosser, avoiding resonant frequencies that might cause a bridge to collapse from regular use is a very serious issue in bridge design. See William E. Boyce & Richard C. DiPrima, Elementary Differential Equations and Boundary Value Problems 186 (5th ed. 1992). Of course, those perplexed by this problem of structural engineering are free to substitute an alternate rationale for A's conduct.

275. If anything, one would think that B would be the "expert" in knowing what kind of
Claims of PTO expertise in patent law resemble A’s claims in this hypothetical. In patent law, the purpose behind the offer is to induce the discovery and disclosure of new inventions, and the “engineer” responsible for the offer is Congress. Like A, the PTO has greater familiarity with the offer (that is, the terms of the Patent Act) than most. Yet there is no reason to believe that this familiarity would give the PTO unique insight into how prospective inventors would respond to changes in the offer. There is no reason to believe that experience in reviewing attempts to accept the offer ex post leads to special understanding concerning what kind of offer will encourage reliance ex ante. Filing a meritorious patent application is of course much more complicated than walking across a bridge. However, among informed commentators who work regularly with the patent system, the PTO appears to have no claim to unique insight into what patent doctrines can best induce reliance. Accordingly, there is no reason to believe that deference would lead to a more “expert” patent system, and no reason to believe that a more expert patent system would further the goals of patent law.

CONCLUSION

For most of the last century, patent law has been considered an arcane specialty. The sharp distinction between patent lawyers offer would induce him to cross the bridge.

276. Cf. JAFFE, supra note 13, at 577.

277. Professor Nard argues that the PTO has unique insight into patent law derived from a “techno-patent dynamic” modality, which he defines as an ability “to linguistically delve into the relevant patent and technological cultures, and ascribe meaning to the languages employed within these cultures [by the Patent Act].” Nard, supra note 18, at 523 (citing LUDWIG WITTGENSTEIN, PHILOSOPHICAL INVESTIGATIONS § 109 (G.E.M. Anscombe trans., 3d ed. 1958)). Stripped of its philosophical patina, Professor Nard’s argument appears to be that the PTO has special insight into patent law because it is the only “hands-on” player in the patent system. See id. at 549-51. The problem with this argument is that it is unclear why “hands-on” experience provides insight superior to other experience with the patent system (e.g., the Federal Circuit’s much broader caseload that includes both direct appeals involving the PTO and infringement actions between private parties). Professor Nard points to Wittgenstein as a justification for his conclusion, but it is hard to see how hermeneutics helps. Wittgenstein’s insight that text must be understood in the context of a language community does not answer the economic question of what kind of contractual offer best induces investment in research, and who is best situated to decide this question. This is a functional problem, not a linguistic one.

278. See generally Donald Grant Kelly, America’s Inventors Have Arrived (And we thought
and generalists has discouraged both from studying how patent law fits in to other areas of American law. Patent law's niche in the American legal system has remained largely unexplored. Today, however, the increasing importance of intellectual property to the national economy has largely dismantled the once-impregnable wall between patent practice and other areas of law. Patent law has entered the mainstream, prompting commentators and the courts to consider how the patent system fits into the regulatory state.

This Article has argued that the fundamental operating mechanisms of patent law are the familiar private law doctrines of contract, tort, and property, rather than the public law mechanisms followed by regulatory agencies that issue licenses and permits. The patent system is not a regulatory system that threatens market principles by imposing government monopolies, but rather a market-based system that uses contractual incentives and property rights to encourage private parties to expand the range of public knowledge in useful ideas. Thus, whether by drift or design, the courts' historical reluctance to apply regulatory doctrines to patent decisions has been exactly right. Future courts should recognize this answer to the riddle of PTO review, reject the simplistic reasoning of the Supreme Court in Zurko, and refuse to encumber the private law patent system with ill-fitting doctrines from administrative law.

\[\text{they were "invisible."}, 80 \text{ J. PAT. \& TRADEMARK OFF. SOC'Y 601, 605 (1998)} ("[T]he generally arcane and obscure issues of intellectual property protection have been cast into the limelight as never before.").\]