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THE PARADOX OF IP

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I. INTRODUCTION

A central assumption in the theory of intellectual property is that no government actor calibrates IP rewards.[1] That is, no judge (or other magistrate) calculates the social value of a patented invention or copyrighted work and then determines the corresponding reward; the IP system is supposed to *automatically* match reward to contribution through market valuation.[2] This assumption is important because, if the government had sufficient information to calculate the correct

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1. JOHN STUART MILL, PRINCIPLES OF POLITICAL ECONOMY 933 (W.J. Ashley ed., 1940) (1848) (arguing IP "leaves nothing to anyone's discretion").

2. *Id.* ("[T]he greater the usefulness, the greater the reward."); Giles S. Rich, *Principles of Patentability*, 28 GEO. WASH. L. REV. 393, 402 (1960) ("That is one of the beauties of the patent system. The reward is measured automatically by the popularity of the contribution."); Oskar Liivak, *When Nominal is Reasonable: Damages for the Unpracticed Patent*, 56 B.C. L. REV. 1031, 1041 n.45 (2015) ("One advantage of the patent system over alternative prize or grant schemes is the idea that . . . the patent reward automatically modulates the reward based on the social importance of the patentee's contribution."); Richard A. Posner, *Intellectual Property: The Law and Economics Approach*, 19 J. ECON. PERSP. 57, 59 (2005) ("The property rights approach proportions the creator's return on investment to the commercial success of the invention (in the case of patents) or expressive work (in the case of copyrights) automatically."); FEDERAL TRADE COMMISSION, EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION 138–39 (2011).

amount of reward that an author or inventor should receive, then it would be more efficient to give those rewards in the form of taxpayer-funded prizes than in the form of monopoly rents.[3]

Yet judges in fact routinely calibrate IP rewards. In copyright, doctrines such as the idea/expression dichotomy and fair use frequently turn on judicial estimations regarding the social value of a work or the proper reward for an author.[4] In patent, scope doctrines surrounding claim construction and enablement often do the same thing.[5] To be sure, these (often unstated, implicit, and unconscious) judicial estimates of social value are highly imperfect, but even imperfect calibration is contrary to the theoretical assumption that judges do not calibrate at all.

The contradiction between these two points is what I call the "paradox of IP." One way to resolve this paradox, of course, is to conclude that IP should be abolished and replaced with direct funding mechanisms. But few people argue for broadly replacing IP with prizes or grants;[6] I myself do not favor such a solution. My goal in this Article is not to use the paradox as a cudgel to argue for the abolition of IP, nor to advocate any other resolution. Rather, my claim is that, even without a resolution, understanding the paradox helps illuminate many debates in IP today.

Take the debate over when injunctions are an appropriate remedy. If one begins with the position that having an IP system necessarily pre-assumes that government actors are exceptionally bad at determining the value of copyrighted works and patented inventions, then

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3. Louis Kaplow, *The Patent-Antitrust Intersection: A Reappraisal*, 97 HARV. L. REV. 1813, 1844 (1984) ("A central reason for reliance on a patent system is that it is thought to be too difficult to determine the appropriate level of reward fairly and accurately on a case-by-case basis."); Michael Kremer, *Patent Buyouts: A Mechanism for Encouraging Innovation*, Q.J. ECON 1137, 1140 (1998) ("[F]inancing research with monopoly profits . . . is generically less efficient than financing research through tax revenue."); Suzanne Scotchmer, *On the Optimality of the Patent Renewal System*, 30 RAND J. ECON. 181, 181 (1999) ("If the patent authorities were as well informed as firms, a better system would be to commission R&D directly.").

4. *See* Herbert Rosenthal Jewelry Corp. v. Kalpakian, 446 F.2d 738, 742 (9th Cir. 1971) ("The guiding consideration in drawing the line is the preservation of the balance between competition and protection reflected in the patent and copyright laws."); Wendy J. Gordon, *Fair Use as Market Failure*, 82 COLUM. L. REV. 1600, 1616 (1982) ("The courts in fair use cases frequently make intuitive estimates of social value.").

5. *See* Eibel Process Co. v. Minn. & Ont. Paper Co., 261 U.S. 45, 63 (1923) ("[T]he court first looks . . . to find . . . whether [the invention] has advanced the art substantially. If it has done so, then the court is liberal in its construction of the patent, to secure to the inventor the reward he deserves."); *see also* Tun-Jen Chiang, *The Levels of Abstraction Problem in Patent Law*, 105 NW. U. L. REV. 1097, 1134–37 (2011).

6. *But see* MICHELE BOLDRIN & DAVID K. LEVINE, AGAINST INTELLECTUAL MONOPOLY (2008). Proposals to replace IP with prizes in some defined areas are heard more frequently. *See, e.g.*, Joseph E. Stiglitz, *Prizes, Not Patents*, POST-AUTISTIC ECON. REV., May 2007, at 48–49; Neil Weinstock Netanel, *Impose a Noncommercial Use Levy to Allow Free Peer-to-Peer File Sharing*, 17 HARV. J.L. & TECH. 1 (2003).

it follows that courts should issue injunctions in virtually every case where infringement is found, as doing so avoids the need for judges to determine ongoing royalties in the immediate case and incentivizes private resolution in future cases.[7] This rationale, in turn, corresponds to the traditional rule that courts grant injunctions in virtually all cases where IP infringement is found.[8]

On the other hand, if one begins with the observation that judges in fact frequently calibrate IP rewards according to estimates of value,[9] and that their doing so is what makes the whole system even minimally sensible, then a rigid rule that injunctions will issue almost automatically is a terrible rule — it allows the issuance of inefficient, innovation-hampering, injunctions.[10] An adherent of this line of reasoning will logically advocate that judges should calibrate IP remedies according to judicial estimations of value,[11] including by denying injunctions when they would result in overcompensation.[12] And we in fact see many such proposals advanced.

Again, my point here is not to resolve the endless injunction debate, but rather to explain why the injunction debate is endless. The traditional injunction rule finds support from the theoretical anti-calibration premises of the IP system; the anti-injunction argument finds support from the observation that calibration is both possible and apparently beneficial. Because each side's predicates seem valid

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7. *See In re* Mahurkar Double Lumen Hemodialysis Catheter Patent Litig., 831 F. Supp. 1354, 1397 (N.D. Ill. 1993) (Easterbrook, J.).

8. *See, e.g.*, Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1247 (Fed. Cir. 1989) ("It is the general rule that an injunction will issue when infringement has been adjudged, absent a sound reason for denying it."); Nat'l Football League v. McBee & Bruno's, Inc., 792 F.2d 726, 729 (8th Cir. 1986) ("Copyright law has long held that irreparable injury is presumed when the exclusive rights of the holder are infringed."); *see also* eBay Inc. v. MercExchange, L.L.C., 547 U.S. 388, 395 (2006) (Roberts, C.J., concurring) ("From at least the early 19th century, courts have granted injunctive relief upon a finding of infringement in the vast majority of patent cases.").

9. *See* Dan L. Burk & Mark A. Lemley, *Policy Levers in Patent Law*, 89 VA. L. REV. 1575, 1627–75 (2003) (discussing a wide range of existing and potential policy levers that courts can use to tailor patents); *see also* Mark A. Lemley & Philip J. Weiser, *Should Property or Liability Rules Govern Information?*, 85 TEX. L. REV. 783, 841 (2007) ("[C]ourts should recognize that there are core cases where they can and should superintend liability rules effectively.").

10. *See generally* Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991 (2007) (arguing injunctions produce holdup).

11. *See, e.g.*, Ted Sichelman, *Purging Patent Law of "Private Law" Remedies*, 92 TEX. L. REV. 517, 517 (2014) ("[P]atent law remedies should be tailored simply to promote the types and levels of innovation that most benefit society."); Sarah R. Wasserman Rajec, *Tailoring Remedies to Spur Innovation*, 61 AM. U. L. REV. 733 (2012).

12. *See, e.g.*, Carl Shapiro, *Injunctions, Hold-Up, and Patent Royalties*, 12 AM. L. & ECON. REV. 280, 302 (2010); Carl Shapiro, *Patent Reform: Aligning Reward and Contribution*, in INNOVATION POLICY AND THE ECONOMY, VOLUME 8 111, 138–39 (Adam B. Jaffe et al., eds. 2008); *see also eBay*, 547 U.S. at 396 (Kennedy, J., concurring) (arguing that injunctions give some patentees "undue leverage in negotiations" that allow them to "charge exorbitant fees").

in isolation but paradoxical when put together, the debate is never resolved. The same pattern applies to many other debates in IP law.

II. THE PARADOX

A. The Theoretical Case Against IP Calibration

Economists generally agree that rewarding creators through direct funding mechanisms such as prizes[13] is more efficient than rewarding them through IP monopoly rents.[14] Given this fact, why do we incentivize the creation of copyrightable works and technological advancements primarily through IP and not through prizes?[15] The standard response is that prize systems require the government to know how much reward to give, and the government lacks that information.[16] The economic justification for having an IP system — more

13. A "prize" system for present purposes is one that replicates, as closely as possible, the patent or copyright system to which it is being compared, except as to the form of the reward. Thus, a prize system could limit its eligibility criteria to inventors who create new, useful, and non-obvious inventions and authors who create original works of authorship. *See* 35 U.S.C. §§ 101–103; 17 U.S.C. § 102. It could require inventors to file applications disclosing inventions and authors to register their works. *See* 35 U.S.C. § 112; 17 U.S.C. §§ 408, 411. The essential difference is that the author or inventor would receive a government check rather than a government-sponsored exclusive right.

14. *See, e.g.*, Kenneth J. Arrow, *Economic Welfare and the Allocation of Resources for Invention*, in THE RATE AND DIRECTION OF INVENTIVE ACTIVITY: ECONOMIC AND SOCIAL FACTORS 609, 623 (1962) ("[F]or optimal allocation to invention it would be necessary for the government or some other agency not governed by profit-and-loss criteria to finance research and invention."); Brian D. Wright, *The Economics of Invention Incentives: Patents, Prizes, and Research Contracts*, 73 AM. ECON. REV. 691, 691–92 (1983) (arguing that direct financing mechanisms are superior to patents unless there is informational imbalance).

15. There is much recent legal literature that explores non-IP policy mechanisms for incentivizing innovation. *See, e.g.*, Michael J. Burstein & Fiona E. Murray, *Innovation Prizes in Practice and Theory*, 29 HARV. J.L. & TECH. 401 (2016); Ian Ayres & Amy Kapczynski, *Innovation Sticks: The Limited Case for Penalizing Failures to Innovate*, 82 U. CHI. L. REV. 1781 (2015); Daniel J. Hemel & Lisa Larrimore Ouellette, *Beyond the Patents-Prizes Debate*, 92 TEX. L. REV. 303 (2013); Michael Abramowicz, *Perfecting Patent Prizes*, 56 VAND. L. REV. 115 (2003); Brett Frischmann, *Innovation and Institutions: Rethinking the Economics of U.S. Science and Technology Policy*, 24 Vt. L. Rev. 347 (2000); Douglas Gary Lichtman, *Pricing Prozac: Why the Government Should Subsidize the Purchase of Patented Pharmaceuticals*, 11 HARV. J.L. & TECH. 123 (1997). Nonetheless, even the fiercest critics of the status quo acknowledge that, as a descriptive matter, IP dominates the discussion. Amy Kapczynski, *The Cost of Price: Why and How to Get Beyond Intellectual Property Internalism*, 59 UCLA L. REV. 970, 972 (2012) ("The field is constructed around one particular institutional approach . . . : exclusive rights.").

16. Harold Demsetz, *Information and Efficiency: Another Viewpoint*, 12 J.L. & ECON. 1, 11–12 (1969) ("If, somehow, we knew how much and what types of information it would be desirable to produce, then we could administer production independently . . . . But we do not know these things."). Another commonly given rationale for preferring IP over prizes is a fear that prize-givers are too susceptible to improper influence. Posner, *supra* note 2, at 59. But improper influence in setting a reward amount is likely only if the "correct" amount is difficult to verify, so the reasoning comes back to the argument that observers lack information on the correct reward.

specifically, a patent or copyright system, which are the types of IP I am considering in this Article — therefore hinges strongly on two assumptions: (1) government actors lack the ability to accurately calibrate IP rewards,[17] and (2) IP systems avoid the need for such calibration because they automatically calibrate rewards according to market demand.[18]

By government "calibration," I mean the government determining the amount of reward by a first-order calculation of the social value of a copyrighted work or patented invention. Every property system involves government decision-making that shapes rewards at some level, but not every property system involves government calibration. When Congress sets patent and copyright terms,[19] it affects the amount of IP rewards, but this is not "calibration" as I use it because patent and copyright terms are not finely tailored according to individualized calculations of social value. Congress does not make individualized determinations that, say, *Harry Potter* makes a valuable contribution to society and receives a 100-year copyright term, while a lesser novel makes little contribution and will receive only one year — it prescribes a general rule on terms for *all* copyrighted works.

Similarly, even though every property system requires courts to determine the boundaries of underlying assets on an individualized basis, there is no "calibration" when that determination occurs under a second-order rule that operates independently of a first-order calculation of social value. A court adjudicating a claim of trespass to Blackacre must determine, on an individualized basis, where the boundaries of Blackacre lie. But the court will not be calibrating the boundaries of Blackacre because the determination of real property boundaries is not dependent on a first-order calculation of social value — a court does not (at least not often) make Blackacre bigger because it is being used in a valuable way. The belief that government actors do not calibrate IP rights, in sum, is not a belief that government decisions play no role whatsoever, but rather a belief that the government's role is confined to providing and neutrally enforcing second-order, generally-applicable, ground rules, such that differences in rewards between individual works and inventions are the product of neutral valuation by market forces.[20]

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17. Steven Shavell & Tanguy van Ypersele, *Rewards Versus Intellectual Property Rights*, J.L. & ECON. 525, 536 (2001) ("[I]f the information that the government has about demand is sufficiently good, then the reward system will dominate patent."); Nancy Gallini & Suzanne Scotchmer, *Intellectual Property: When Is It the Best Incentive System?*, in 2 INNOVATION POLICY AND THE ECONOMY 54, 62 (Adam Jaffe et al. eds. 2002).

18. Mill, *supra* note 1, at 933; Rich, *supra* note 2, at 402.

19. 35 U.S.C. § 154; 17 U.S.C. § 302.

20. Hemel & Ouellette, *supra* note 15, at 307 (arguing that, in a patent system, "the government simply establishes general ground rules for the reward system without making tailored, technology-specific judgments").

B. The Reality of IP Calibration

Although the economic theory of IP assumes that IP rights are automatically calibrated, experienced lawyers know that the reality of IP practice is very different. In practice, judges have enormous discretion over the scope of IP rights,[21] and how this discretion is exercised often depends on judicial calculations of social value.[22]

At first glance, this assertion might seem very odd. After all, the scope of IP is supposedly governed by a simple rule: the creator receives a monopoly over his work or invention.[23] Given this seemingly bright-line rule, there should be no room for judicial discretion or calibration.

The primary[24] complication is that what constitutes a "work" or "invention" is not as simple as it appears at first glance because every work and invention can be expressed at multiple levels of abstraction.[25] Is *Harry Potter* a story about a boy wizard at a magical school, or is it a much more specific story about a boy wizard with a lightning scar, whose parents were killed by a dark wizard named Voldemort, who attends a magical school in Great Britain, and whose best friends are a redhead boy and a bookworm girl? Both are accurate descriptions of the "work" of *Harry Potter* — they differ only in their level of abstraction. But a monopoly over all books about boy wizards at magical schools is much broader — it provides more incentives and imposes higher deadweight losses — than a monopoly over the more specific story. A rule that the author has exclusive rights to her work[26] does not answer the question of what constitutes the "work." Nor does the rule that "copyright protection does not extend to an idea"[27] help: short of limiting copyright protection to verbatim copying, every level of abstraction is an "idea" in some sense of the term — the problem is

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21. *See generally* Robert P. Merges & Richard R. Nelson, *On the Complex Economics of Patent Scope*, 90 COLUM. L. REV. 839 (1990) (explaining that scope decisions are subject to a great degree of latitude); Burk & Lemley, *supra* note 9 (exploring various "policy levers" that give courts discretion over patent scope).

22. *See supra* notes 4–5 and accompanying text.

23. *See* Schriber-Schroth Co. v. Cleveland Trust Co., 305 U.S. 47, 57 (1938) ("[T]he patent monopoly does not extend beyond the invention.").

24. The malleability of the asset-defining concepts of "work" and "invention" — reflected in the idea/expression dichotomy in copyright and multiple doctrines in patent law — is not the only avenue for judicial calibration. Other avenues exist, such as the fair use defense, Gordon, *supra* note 4, at 1616; Maureen O'Rourke, *Toward a Doctrine of Fair Use in Patent Law*, 100 COLUM. L. REV. 1177, 1207–08 (2000), and remedies tailoring, *see infra* Section II.A. Due to space constraints, I will focus on the malleability of asset definition in this section.

25. Nichols v. Universal Pictures Corp., 45 F.2d 119 (2d Cir. 1930).

26. 17 U.S.C. § 106.

27. Boyle v. United States, 200 F.3d 1369, 1373 (Fed. Cir. 2000); *see* 17 U.S.C. § 102(b).

figuring out which levels of abstraction constitute unprotected ideas, and which constitute protected ones.[28]

Because doctrinal labels such as "work" and "idea" lack the internal content to draw a line, courts must make decisions using other considerations. Those "other considerations" generally involve some kind of social value calculation in balancing incentive benefits against monopoly costs. As Professor Jane Ginsburg has explained, "In copyright law, an 'idea' is not an epistemological concept, but a legal conclusion . . . . Thus, copyright doctrine attaches the label 'idea' to aspects of works which, if protected, would (or, we fear, might) preclude, or render too expensive, subsequent authors' endeavors."[29] The Ninth Circuit even acknowledged in *Herbert Rosenthal Jewelry Corp. v. Kalpakian* that the "guiding consideration in drawing the line is the preservation of the balance between competition and protection reflected in the patent and copyright laws."[30] Within such a framework, a decision to protect one level of abstraction (e.g. stories featuring boy wizards with lightning scars on their foreheads) but not others (e.g. stories featuring boy wizards) logically requires an implicit judicial estimation of the value of the incentive benefits and monopoly costs of each level of protection.[31] Judges may not consciously think in quantitative terms — no judge thinks that granting J.K. Rowling a monopoly over stories with boy wizards will result in $X in monopoly costs compared to $Y of benefits; they just think that such a result "goes beyond the work." Nevertheless, quantitative valuations underlie the analysis.[32]

The same point applies to patent law. An invention, like a work, exists on multiple levels of abstraction.[33] One can accurately describe the Wright brothers as having invented the "airplane" (a description that would cover all fixed wing flying machines, including modern jets), or as having invented a "wooden airplane with cloth wings."[34] A rule saying "the patent monopoly does not extend beyond the inven-

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28. *Nichols*, 45 F.2d at 121 ("Nobody has ever been able to fix that boundary, and nobody ever can.").

29. Jane C. Ginsburg, *No "Sweat"? Copyright and Other Protection of Works of Information After* Feist v. Rural Telephone, 92 COLUM. L. REV. 338, 346 (1992).

30. 446 F.2d 738, 742 (9th Cir. 1971).

31. This economic interpretation of the idea/expression dichotomy is conceptually similar to the Hand formula in tort law. *See* United States v. Carroll Towing Co., 159 F.2d 169 (2d Cir. 1947). No judge adjudicating a negligence case ever thinks, "the burden of an additional precaution would have been $X, the probability of avoiding the loss through the precaution was Y, and the loss was $Z, and since X < YZ the defendant was negligent." But, within the economic understanding of tort law, every finding of negligence rests on an implicit valuation of B<PL.

32. *See* WILLIAM M. LANDES & RICHARD A. POSNER, THE ECONOMIC STRUCTURE OF TORT LAW 23 (1987) ("People can apply the principles of economics intuitively — and thus 'do' economics without knowing they are doing it.").

33. *See generally* Chiang, *supra* note 5.

34. *See* U.S. Patent No. 821,393 (filed Mar. 23, 1903).

tion"[35] does not tell a court what level of abstraction constitutes the "invention." Courts must choose.[36] As Judge Learned Hand recognized, "courts have differed, and always will differ, as to the allowable latitude in a given instance."[37]

It must be emphasized that the difficulty here is not that Congress has not been sufficiently clear in articulating bright-line rules. It is in fact quite easy to imagine a bright-line rule on which level of abstraction should be selected: namely, a rule to always choose the *lowest* level of abstraction, confining IP scope to the exact thing(s) that the author or inventor actually disclosed. The patent statute in fact strongly suggests something akin to such a rule.[38] The difficulty is that abiding by the rule would destroy the patent system. Strictly confining patentees to the *exact* embodiments they described in the patent specification would make patent protection worthless because any imitator could avoid any patent simply by changing a nut or screw.[39] Even a more generous rule, confining patent scope to those embodiments that a *reasonably skilled* reader could have made at the time of patent filing,[40] would still eviscerate patent incentives because general technological progress ensures that a patent strictly limited to technology available at the time of filing would become outdated very quickly.[41] And once we reject a rule limiting IP protection to literal replication, there is no other obvious principled limit.[42] Judges are left to "muddle through,"[43] or, in other words, to calibrate IP scope using guesstimates of social value.

One further clarification is in order: a common response I have received from commentators is that my claim of vast judicial discretion over IP rewards is overstated because real life courts are constrained by common sense — for example, no judge in real life would limit the Wright brothers' patent to only wooden airplanes with cloth

35. Schriber-Schroth Co. v. Cleveland Trust Co., 305 U.S. 47, 57 (1938).

36. *See* JANICE M. MUELLER, PATENT LAW 108 (3d ed. 2009) ("Deceptively simple on its face, the task of awarding the 'right' claim scope . . . actually involves a delicate balancing of policy concerns.").

37. Royal Typewriter Co. v. Remington Rand, Inc., 168 F.2d 691, 693–94 (2d Cir. 1948).

38. *See* 35 U.S.C. § 112(a) ("The specification shall contain a written description of the invention . . . in such full, clear, concise, and exact terms as to enable any person skilled in the art . . . to make and use the same.").

39. Graver Tank & Mfg. Co. v. Linde Air Prods. Co., 339 U.S. 605, 607 (1950).

40. *See* AK Steel Corp. v. Sollac, 344 F.3d 1234, 1244 (Fed. Cir. 2003).

41. Invitrogen Corp. v. Clontech Labs., Inc., 429 F.3d 1052, 1071 (Fed. Cir. 2005).

42. *See generally* Jeffrey A. Lefstin, *The Formal Structure of Patent Law and the Limits of Enablement*, 23 BERKELEY TECH. L.J. 1141 (2008); Kevin Emerson Collins, *The Reach of Literal Claim Scope into After-Arising Technology: On Thing Construction and the Meaning of Meaning*, 41 CONN. L. REV. 493, 553–58 (2008).

43. Nash v. CBS, Inc., 899 F.2d 1537, 1541 (7th Cir. 1990).

wings.[44] The observation is true but it does not undermine my claim. Real judges do not reach absurd results, but that is because they are making sound intuitive economic estimates of value and calibrating definitions of IP scope accordingly. The observation that judges reach sensible results simply proves that judges exercise their discretion sensibly; it does not negate the a priori existence of that discretion.[45]

C. Paradox and Solutions

The result of the above is that there is serious tension between the founding assumptions of IP and the reality of IP in practice. Contrary to such eminent authorities as John Stuart Mill and Giles Sutherland Rich, it is simply not true that IP automatically determines rewards without judicial calibration.[46] And disproving the assumption that judges *do not* calibrate IP rewards calls into question the related assumption that judges *cannot* — because they lack information, or are too susceptible to improper influence[47] — calibrate IP rewards.[48] Judges in fact seem to do an okay job, insofar as the world (or at least innovation) has not collapsed despite the prevalence of judicial calibration of IP rewards. If judges are not as bad at valuing IP as the economic theory of IP assumes, then how do we justify having an IP system?

One resolution, of course, is concluding that the IP system is not justified and should be abolished. If that is your response, then my paradox poses no challenge. Similarly, those who justify IP by something other than the standard reward theory — for example, those who believe in IP rights as a matter of natural law or distributive justice — will also find no challenge in my paradox.[49] But few people in the literature explicitly embrace either the abolitionist position or non-reward justifications for IP. If, as is common, the proffered justification for having an IP system instead of a prize system is that judges lack the capability or credibility to value works and inventions, then

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44. *See* Wright Co. v. Herring-Curtiss Co., 211 F. 654, 655 (2d Cir. 1914) (stating "the claims should have a liberal interpretation" because "the patentees may fairly be considered pioneers in the practical art of flying").

45. Chiang, *supra* note 5, at 1123; *see generally* Karl N. Llewellyn, *Remarks on the Theory of Appellate Decision and the Rules or Canons About How Statutes Are to Be Construed*, 3 VAND. L. REV. 395, 401–06 (1950) (arguing that judges make decisions according to their "good sense of the situation").

46. Mill, *supra* note 1, at 933; Rich, *supra* note 2, at 402.

47. *See supra* note 16.

48. *See* Lemley & Weiser, *supra* note 9, at 841; Sichelman, *supra* note 11, at 565 ("Yet, the same kinds of evidence required to determine social values are available under today's damages regime.").

49. *See* ROBERT P. MERGES, JUSTIFYING INTELLECTUAL PROPERTY (2011) (presenting deontological justifications for IP); *see also* F. Scott Kieff, *Property Rights and Property Rules for Commercializing Inventions*, 85 MINN. L. REV. 697 (2001) (arguing the purpose of patents is to facilitate post-invention commercialization rather than to reward creation).

the fact that our IP system also calls upon judges to value works and inventions poses a difficulty. Below, I consider some possible responses to this difficulty.

1. Imperfect Calibration

First, one might respond that there is no contradiction between the economic theory position that judges lack sufficient information to accurately value works and inventions, and the observation that judges attempt to imperfectly calibrate IP rights all the time. The resolution would be that judges do not value works and inventions very accurately, but imperfect calibration is still better than no calibration at all.[50]

This is not a satisfactory response to the paradox I am positing because the paradox does not argue that no calibration is better than imperfect calibration. It argues that imperfectly calibrated *prizes* are better than imperfectly calibrated IP,[51] and if judges have the information to imperfectly value IP then they have the information to imperfectly value prizes.

2. Administrative Cost

Alternatively, one might argue that IP systems still help minimize judicial valuation inquiries, notwithstanding the fact that judges routinely calibrate IP rights, because an IP system only requires judicial valuation when the IP owner is willing to invest upfront expenditures in filing for the IP right and then enforcing it through litigation, whereas a prize system requires government decision-making in every case. Assuming there is some correlation between the private value to an IP owner and the work or invention's social value, it is plausible to argue that our current IP system channels judicial valuation inquiries to the more important cases and thereby saves administrative costs.[52]

The response to this argument is that there is no obvious reason that a prize system cannot have a similar screening mechanism to channel valuation inquiries.[53] If we want to ensure that only works and inventions with some minimum threshold of expected private value incur the administrative cost of valuation, then we can just charge a filing fee to claim a prize.[54] A prize system can in fact achieve finer

50. *Cf.* Lemley & Weiser, *supra* note 9, at 785 ("[W]here property rules have pernicious consequences, liability rules look better by comparison.").

51. Tun-Jen Chiang, *Forcing Patent Claims*, 113 MICH. L. REV. 513, 536 (2015).

52. *See generally* Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495 (2001).

53. *See supra* note 13.

54. *See* Jonathan S. Masur, *Costly Screens and Patent Examination*, 2 J. LEGAL ANALYSIS 687 (2011).

sorting of this kind, where applicants can choose between the cursory examination for low-expected-value works (low fee, cap on maximum prize) and the gold-plated examination for high-expected-value works (high fee, no cap).[55]

Another argument in the same vein is that an IP system allows licensing and settlement, whereas licensing and settlement are not possible in a prize system. In its simplistic form, this argument is backwards: licensing and settlement in an IP system helps reduce litigation costs, but a prize system has no litigation costs to begin with because prizes do not require litigation against third-parties the way that IP systems do. In a more sophisticated form, it is true that a prize system requires valuation in every case whereas IP rights require detailed valuation only in contested cases, but that simply returns to the question of how limited decision-making resources are channeled: the Patent and Trademark Office still does a (non-detailed) valuation of every patent,[56] and the Copyright Office does an even more cursory examination of every registration application.[57] It is not as if doing valuation in every case is a unique feature of prize systems. Rather, we can have very cursory valuation in either an IP system or a prize system (the relevant adjudicator — either a patent or copyright examiner, administrative prize awarder, or Article III judge — would just decide issues by tossing darts); we can have very detailed and costly valuation in either an IP system or a prize system (the adjudicator would conduct long trials with legions of experts); and we can do cursory valuation for routine cases while channeling more adjudicative resources into important cases under either an IP system or a prize system.[58] The fact that our IP system attempts such channeling using litigation self-selection as a sorting mechanism — where a large set of cases receive cursory scrutiny at an administrative level, while a much smaller set of litigated cases receive more exacting scrutiny in Article III courts — is simply an organizational detail.[59] The fundamental tradeoff is still between detailed scrutiny with higher administrative costs versus cursory scrutiny with higher error costs; there is no rea-

55. *Cf.* Doug Lichtman & Mark A. Lemley, *Rethinking Patent Law's Presumption of Validity*, 60 STAN. L. REV. 45 (2007) (proposing two-tier patent examination system).

56. 35 U.S.C. § 131 (2012).

57. 17 U.S.C. § 410(a) (2012).

58. *Cf.* Lemley, *supra* note 52 (arguing that cursory patent examination is efficient).

59. To the extent the argument is that private licensing and settlement is more accurate because private parties have better information than government adjudicators, this faces the difficulty that rational parties would determine the license or settlement value according to their predictions of how a court would rule, and not what they think the "true" value of the license is as a matter of intrinsic merit. *See* George L. Priest & Benjamin Klein, *The Selection of Disputes for Litigation*, 13 J. LEGAL STUD. 1, 9–12 (1984). The accuracy of the settlement values is thus only as good as the accuracy of the adjudicative decision being predicted.

son to think that IP has an inherent advantage in balancing this tradeoff.

3. Calibrating Things Versus Calibrating Numbers

Third, one might argue that there is a difference between judges deciding on a numerical prize and judges deciding on a set of things to be covered by the IP right. The latter exercise may be easier for judges in some circumstances. For example, as a generalization, it will rarely be efficient to give inventors and authors more than they were expecting at the time of creation,[60] and it may be easier for a court to determine the things that a creator did or did not expect to cover, as opposed to the dollar amount of monopoly profit that the creator expected to receive.

This is a possible solution to the paradox, but there are several difficulties. First, for this solution to work, thing-centric decision-making in an IP regime must be meaningfully different from, and not logically equivalent to, a first-order analysis that is directly translatable to numbers.[61] It is not clear that this is the case:[62] if the set of things covered by an IP right is ultimately determined by judicial guesses about the incentive benefits and monopoly costs — even if such valuations are done only at a subconscious or implicit level — then the things-numbers distinction collapses. As I and others have argued in prior work, the central doctrinal scope inquiries in patent and copyright law are vacuous to the point of reducing to a first-order social welfare analysis of incentive benefits and monopoly costs;[63] no one has ever suggested some other coherent principle to determine what counts as an "idea" or the proper level of abstraction.[64] If all an

60. *See* Shyamkrishna Balganesh, *Foreseeability and Copyright Incentives*, 122 HARV. L. REV. 1569 (2009); Tun-Jen Chiang, *Fixing Patent Boundaries*, 108 MICH. L. REV. 523, 526 (2010).

61. *Cf.* Frank H. Easterbrook, *On Identifying Exclusionary Conduct*, 61 NOTRE DAME L. REV. 972, 980 (1986) ("What we need is a set of intelligent presumptions, not a stab at the ultimate question of efficiency.").

62. *See* Scott Baker, *Can the Courts Rescue Us from the Patent Crisis?*, 88 TEX. L. REV. 593, 608 (2010) ("In torts, it seems sensible to reason from railroad crossings to highway crossings in understanding the costs and benefits of precautions. In many areas of patent law, on the other hand, specific cases do not impound much relevant and useful information for promulgating future rules.").

63. *See* Ginsburg, *supra* note 29, at 346 (arguing that an "idea" in copyright law is "not an epistemological concept"); Chiang, *supra* note 5, at 1134–42 (explaining how the levels of abstraction problem in patent law reduces to a policy question); Mark A. Lemley *et al.*, *Life After Bilski*, 63 STAN. L. REV. 1315, 1340 (2011) (arguing that patentable subject matter doctrine "is about balancing the incentives needed for the patentee against the risk of stifling future innovation").

64. This point is important. To the extent the scope of the property right is determined according to second-order rules that operate independently of any first-order social welfare analysis (e.g., we have a set of rules regarding how the boundaries of Blackacre are determined, and that inquiry transcends the immediate social welfare effects of making Blackacre

IP system does is shield judges from consciously and expressly making numerical value calculations — while still having those calculations logically implied — then there is no real difference between calibrating a numerical prize and calibrating what is covered by IP law.[65]

Second, to the extent that decisions in an IP system did (or at least could) differ from the results of a first-order social welfare analysis, those differences would be by definition inefficient (at least at a local level), and this would undermine whatever thing-centric rule was being used. To return to the example, the generalization that it is rarely efficient to give authors and inventors more than they were expecting at the time of creation may be untrue precisely when thing-centric and numbers-centric expectations diverge, such as when an author or inventor can vaguely foresee the future emergence of a substitute that would eviscerate his monopoly profits but cannot describe the substitute in detail. A rule that authors and inventors cannot cover things they cannot envision at a concrete level (but can envision at the level of its effects on numerical profits) may therefore under-incentivize ex ante creation.[66] But if courts created an exception to the rule every time they thought it would under-incentivize ex ante creation, then the inquiry again logically reduces to a first-order social welfare analysis.

Third, to jump ahead, this resolution does not solve the difficulties that the IP paradox poses for various sides in the IP literature and thus does not undermine my larger claim. To the extent that an important line of thought in the IP literature and case law begins with the premise that IP systems feature the automatic calibration of reward to contribution,[67] that premise is still false. Conversely, to the extent another important line of thought argues that courts should directly calibrate IP rights and remedies according to the economic value of works and inventions,[68] that argument still contradicts the founding premises of an IP system.

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bigger or smaller), there is no paradox. *See supra* notes 19–20 and accompanying text. My claim hinges on a premise that courts do not follow a similar set of second-order rules regarding IP scope.

65. *See supra* note 31; *cf.* Richard A. Posner, *A Theory of Negligence*, 1 J. LEGAL STUD. 29, 32 (1972) (arguing that the *Carroll-Towing* numerical formula simply "make[s] explicit the standard that the courts had long applied").

66. *See* Invitrogen Corp. v. Clontech Labs., Inc., 429 F.3d 1052, 1071 (Fed. Cir. 2005).

67. *See, e.g.*, Posner, *supra* note 2, at 59; Hemel & Ouellette, *supra* note 15, at 307 (arguing that in a patent system, the government eschews technology-specific judgments).

68. *See, e.g.*, Sichelman, *supra* note 11, at 517 ("patent law remedies should be tailored simply to promote the types and levels of innovation that most benefit society"); Colleen V. Chien & Mark A. Lemley, *Patent Holdup, the ITC, and the Public Interest*, 98 CORNELL L. REV. 1, 1 (2012) ("The ITC should use this flexibility to craft exclusion orders that limit the ability of a patentee to extract settlements that exceed the economic value of the patent."); Mark A. Lemley & Mark P. McKenna, *Scope*, 57 WM. & MARY L. REV. 2197, 2273 (2016) (arguing for an integrated scope proceeding that takes the issue away from "a jury unversed in the tradeoffs inherent to the IP system").

III. THE PARADOX IN IP DEBATES

Assuming the paradox is real, why should a reader care if I am not offering a solution? At first glance, my argument would seem to be an "academic" exercise in the most pejorative sense of the word, akin to pondering Kant's influence on 18th century Bulgarian evidence law.[69]

My contention is that understanding the paradox helps illuminate many doctrinal debates in IP law today because two sides of the IP paradox map onto two broad schools of thought. One school of thought, which I call the "IP-as-regulation" school, argues that judges and other government actors can and should adopt a hands-on approach to calibrating IP rights.[70] This school of thought favors compulsory licensing when injunctive relief would result in excessive compensation;[71] monetary damages calculations that seek to directly assess the economic value of a work or invention;[72] and a flexible claim construction methodology to tailor patent scope;[73] among other things. At its logical endpoint, this school of thought argues that IP rights and remedies "should be tailored simply to promote the types and levels of innovation that most benefit society." [74] The opposing school of thought, which I call the "IP-as-property" school, argues that government actors cannot, and should not, actively calibrate IP rights. This school of thought favors granting injunctive relief in virtually every case where IP infringement is found;[75] opposes asking judges or juries to precisely calculate the economic value of a work or

69. *See generally* Orin S. Kerr, *The Influence of Immanuel Kant on Evidentiary Approaches in Eighteenth Century Bulgaria*, 18 THE GREEN BAG 251 (2015).

70. *See* JAMES BESSEN & MICHAEL J. MEURER, PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK 251–52 (2008).

71. eBay Inc. v. MercExchange, L.L.C., 547 U.S. 388, 396–97 (2006) (Kennedy, J., concurring) (arguing damages are sufficient when "the threat of an injunction is employed simply for undue leverage"); Lemley & Weiser, *supra* note 9, at 785; Peter Lee, *The Accession Insight and Patent Infringement Remedies*, 110 MICH. L. REV. 175 (2011).

72. *See* Amy L. Landers, *Patent Claim Apportionment, Patentee Injury, and Sequential Invention*, 19 GEO. MASON L. REV. 471, 472 (2012) (arguing for damages apportionment to establish "the necessary relationship between the reasonable royalty and the patentee's contribution"); *see also* Patent Reform Act of 2007, H.R. 1908, 110th Cong. § 5 (2007) (not enacted) (directing courts to calculate reasonable royalties according to the "economic value properly attributable to the patent's specific contribution over the prior art").

73. Dan L. Burk & Mark A. Lemley, *Fence Posts or Sign Posts? Rethinking Patent Claim Construction*, 157 U. PA. L. REV. 1743, 1765 (2009); Peter Lee, *Substantive Claim Construction as a Patent Scope Lever*, 1 IP THEORY 100, 111 (2010).

74. Sichelman, *supra* note 11, at 517.

75. *See* Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1247 (Fed. Cir. 1989) ("It is the general rule that an injunction will issue when infringement has been adjudged . . . ."); eBay Inc. v. MercExchange, L.L.C., 547 U.S. 388, 395 (2006) (Roberts, C.J., concurring) ("From at least the early 19th century, courts have granted injunctive relief upon a finding of infringement in the vast majority of patent cases."); *see generally* Richard A. Epstein, *A Clear View of the Cathedral: The Dominance of Property Rules*, 106 YALE L.J. 2091 (1997).

invention in assessing damages;[76] and supports relatively formalistic rules on patent claim construction.[77] Its logic is embedded in the rhetoric and traditional structure of intellectual property law.[78]

What the IP paradox contributes here is two things. First, it shows that despite falling into very different doctrinal silos — injunctions and claim construction are not often thought to have much to do with each other — these debates in fact concern a common substantive issue of whether, and to what extent, government actors can and should calibrate IP rights. Second, it explains why these debates are so intractable. The surface debates over doctrine cannot be resolved without resolving the underlying substantive question. And we cannot easily resolve the substantive question.

A. The Debate Over IP Remedies

In the introduction, I have already explained how the debate over injunctions reflects the deeper debate over the IP paradox.[79] If one begins with the perspective that the founding premise of having any IP system is the belief that judges are incapable of determining the value of works and inventions, then one would logically support the traditional injunction rule.[80] If one begins with a different perspective that judges seem quite capable of valuing works and inventions in practice, then automatic injunctions will seem like unthinking, reality-ignoring formalism.[81]

A similar dynamic exists with respect to damages. Initially, one might think that there should be little dispute about judicial calibration when it comes to damages analysis.[82] After all, it would intuitively seem that courts have little choice but to engage in fine-tuned valuation decisions once they reach the damages stage.[83] Outside of the IP

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76. *See* Letter from Paul R. Michel, Chief Judge, United States Court of Appeals for the Federal Circuit, to Patrick Leahy and Orin Hatch, Senators, United States Congress (May 7, 2007) [hereinafter "Michel Letter"], http://www.fr.com/files/Uploads/attachments/patentdamages/05-03-07Michelletter.pdf [https://perma.cc/4L7A-5L28].

77. *See* Keystone Bridge Co. v. Phoenix Iron Co., 95 U.S. 274, 278 (1877) (stating that claims were added "for the purpose of relieving the courts from the duty of ascertaining the exact invention of the patentee").

78. Bleistein v. Donaldson Lithographing Co., 188 U.S. 239, 251 (1903) ("It would be a dangerous undertaking for persons trained only to the law to constitute themselves final judges of the worth of pictorial illustrations . . . .").

79. *See supra* notes 7–12 and accompanying text.

80. *See, e.g.*, Thomas F. Cotter, *Patent Holdup, Patent Remedies, and Antitrust Responses*, 34 J. CORP. L. 1151, 1175–76 (2009).

81. *See* Peter Lee, *Patent Law and the Two Cultures*, 120 YALE L.J. 2, 39–40 (2010) (describing the Federal Circuit's injunction rule as a product of formalism designed to minimize judges' cognitive burden).

82. *See* ROGER D. BLAIR & THOMAS F. COTTER, INTELLECTUAL PROPERTY: ECONOMIC AND LEGAL DIMENSIONS OF RIGHTS AND REMEDIES 42 (2005).

83. *See* Epstein, *supra* note 75, at 2100–02 ("It is too late for any form of prohibition . . . .").

arena, even diehard skeptics of judicial valuation do not generally contest the propriety of judges attempting to calculate value when done in the context of assessing monetary damages.[84]

Yet there is an intense debate over how to do damages calculations in IP law.[85] Indeed, the most controversial topic in the congressional efforts at patent reform was that of damages,[86] specifically the proposal that courts assessing damages should attempt to determine the "economic value properly attributable to the patent's specific contribution over the prior art" and limit awards to this amount.[87] If one does not appreciate the IP paradox, the controversy surrounding this provision would be mystifying to both sides. Proponents find it inexplicable that anyone except a self-interested opportunist could possibly oppose a principle that patentees should be limited to the economic value of their actual social contributions.[88] Opponents find it inexplicable that anyone except an ivory tower egghead could possibly believe that courts have the administrative capability to implement the kind of economic analysis called for by the proposed statstatute.[89] Each side suspects the other of bad faith and the debate goes nowhere.

Viewed from the perspective of the IP paradox, the debate makes more sense, and it becomes obvious that the conventional debate involves two sides talking past each other. Properly understood, the objection to requiring courts to consider the "economic value properly attributable to the patent's specific contribution over the prior art" is not that doing so is administratively costly.[90] An administrative cost objection, taken at face value, rather misses the proponents' point: to proponents of a regulatory approach to patent damages, the important thing is to acknowledge the principle of awarding damages according to the social value of the patent as *the* correct, if aspirational, goal of

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84. *Id.*

85. I will focus on patent law, but the same kind of phenomenon plays out in the copyright arena as well, though the debate is much quieter. *See, e.g.*, Alan E. Garfield, *Calibrating Copyright Statutory Damages to Promote Speech*, 38 FLA. ST. U. L. REV. 1, 30–34 (2010) (arguing for greater calibration of copyright remedies).

86. 155 Cong. Rec. H6269 (Mar. 3, 2009) (statement of Sen. Leahy) ("Perhaps the most hotly debated topic in the patent reform debate last Congress was the damages provision.").

87. Patent Reform Act of 2007, H.R. 1908, 110th Cong. § 5 (2007) (not enacted).

88. *See, e.g.*, Mark A. Lemley, *Distinguishing Lost Profits From Reasonable Royalties*, 51 WM. & MARY L. REV. 655, 670 (2009) (expressing surprise that the "proposed reform has proven controversial, raising objections not just from patent trolls who want to lay claim to a disproportionate share of the defendant's product . . .").

89. *See* Michel Letter, *supra* note 76; *see also* Letter from Chief Judge Paul R. Michel to Shanna A. Winters (June 7, 2007), http://patentlyo.com/media/docs/2007/06/michel_letter_6707.pdf [https://perma.cc/HP9K-5N6B] (praising the author of an article opposing the proposed statute as "a seasoned patent litigator" in contrast to "many law professors").

90. *See* Michel Letter, *supra* note 76 (arguing that a proper analysis involves "indigestible quantities of economic data" and would require "massive resources and unlimited time").

the patent system — it is what patent damages inquiries should be about.[91] Someone holding this view can easily neutralize an administrative cost objection by conceding that courts will do an imperfect (and therefore cheaper) job at an operational level.[92]

The real debate is whether courts should even aspire to calibrate damages according to social value at all, at least at a direct first-order level. If one's worldview of IP starts from the perspective that the central reason for having a patent system in the first place is because courts cannot directly determine the social benefits and costs of a technological advancement, then the patent system should not even aspire to such a goal. Rather, patent damages are about devising a set of second-order rules of thumb that might — on average and over the long-run — achieve an approximately good balance between incentive benefits and monopoly costs on a systemwide basis, while accepting a considerable amount of inaccuracy in individual cases.[93] The guiding sentiment of this school of thought is aptly summarized by Judge Frank Easterbrook, albeit from a slightly different context: "What we need is a set of intelligent presumptions, not a stab at the ultimate question of efficiency."[94]

On the other hand, if one's worldview of IP starts with the observation that IP judges value works and inventions all the time, then requiring judges to consider (and a priori compute) the economic value of inventions when determining patent damages seems completely obvious.[95] Doing anything else would just be a detour from the utilitarian purpose of patent law.[96] The guiding sentiment of this school of thought is well articulated by Professor Ted Sichelman: "patent law remedies should be tailored *simply* to promote the types and levels of innovation that most benefit society."[97] Properly understood, the disa-

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91. *See* Sichelman, *supra* note 11, at 528–29; *see also* Mark A. Lemley, *Taking the Regulatory Nature of IP Seriously*, 92 TEX. L. REV. 107, 110 (2014) ("At a theoretical level Sichelman is surely right."); *id.* at 112 (arguing that Sichelman's theoretical model "is a perfectly correct statement of aspirations, but nothing that could ever be operationalized without perfect knowledge"); *id.* at 112 n.27 (noting that "Sichelman is himself skeptical about how this theoretical model could be implemented, viewing it more as a goal to aim towards than a guide to action").

92. *See, e.g.*, Sichelman, *supra* note 11, at 565 (conceding that "[i]n closer cases," sticking with traditional approaches may be "appropriate, at least until we are quite confident in the abilities of adjudicators").

93. *See, e.g.*, Robert Goldscheider, John Jarosz & Carla Mulhern, *Use of The 25 Per Cent Rule in Valuing IP*, 37 LES NOUVELLES 123, 123 (Dec. 2002).

94. Easterbrook, *supra* note 61, at 980.

95. *See* Sichelman, *supra* note 11, at 565 (arguing for calibrating remedies because "the same kinds of evidence required to determine social values are available under today's damages regime").

96. Lemley, *supra* note 91, at 71 ("Government distortion of the free market is justified only if necessary to achieve [social policy] ends — anything beyond that is social waste."). *See also* Uniloc USA, Inc. v. Microsoft Corp., 632 F.3d 1292, 1313–14 (Fed. Cir. 2011) (disapproving use of the 25% rule of thumb).

97. Sichelman, *supra* note 11, at 517.

greement between the two sides in patent damages debates is not about administrative feasibility or other operational issues, but about one's deep philosophical position on what patent law is *about*.

B. The Debate Over Claim Construction and IP Scope

As explained in Section II.B, the doctrines of IP scope do not at first glance seem to leave room for judicial calibration, but the levels of abstraction problem means that the discretion in fact exists. The Wright brothers could be accurately characterized as having invented the "airplane" or as having invented only a "wooden airplane with cloth wings," and everything in between. Judges cannot rely on some natural, intrinsic, law-of-the-universe definition to determine how to characterize the Wright brothers' invention; judges must choose. That choice has consequences for the level of reward, and the choice is often based on implicit first-order estimations about the social value of a creative or inventive contribution.

Nothing in the prior paragraph is exactly news — Learned Hand spotted the levels of abstraction problem in copyright law in 1930.[98] But although at some level it is well known that judges have discretion over IP scope and use that discretion to calibrate scope according to estimates of social value, at another level our IP system is fundamentally built on a foundation of denying any such discretion exists.[99] Understanding this logical tension explains many fissures in the landscape of IP scope debates.[100] In the interest of space, I will focus my discussion on the patent doctrine of claim construction, which is the primary doctrinal arena within which this issue manifests itself in patent law.[101]

If one starts from the perspective that judicial discretion over patent scope is unavoidable, that judicial valuation of a patentee's contribution is routine, and that judicial calibration in IP is not only not harmful but actually positively beneficial, then it would seem obvious

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98. Nichols v. Universal Pictures Corp., 45 F.2d 119 (2d Cir. 1930); *see also* Royal Typewriter Co. v. Remington Rand, Inc., 168 F.2d 691, 693–94 (2d Cir. 1948) (making similar point about patent law).

99. Mill, *supra* note 1, at 933.

100. An analogous manifestation in the copyright context is the so-called "aesthetic nondiscrimination principle," which holds that courts should not make judgments about the "worth" of copyrighted works. Bleistein v. Donaldson Lithographing Co., 188 U.S. 239, 251 (1903). This principle is deeply woven into the fabric of copyright law. At the same time, as numerous scholars have argued, courts in fact make judgments about the worth of individual works all the time. *See, e.g.*, Robert Kirk Walker & Ben Depoorter, *Unavoidable Aesthetic Judgments in Copyright Law: A Community of Practice Standard*, 109 NW. U. L. REV. 343 (2015).

101. Chiang, *supra* note 5, at 1143. The issue also manifests in other doctrines such as enablement and patentable subject matter, but courts are far keener to use claim construction as the policy lever in practice. *Id.*

that courts doing claim construction should simply be focused on getting to the "ideal scope of the patent,"[102] i.e. determining which level of abstraction optimally balances the underlying incentive benefits and monopoly costs of patent protection, and then construing the claims (anti-textually if necessary) to achieve that outcome. Pursuing any other objective — such as construing the claim according to the linguistic meaning of the claim text — is going on tangents and "tak[ing] our eyes off the ball."[103] Within this view, the claim text is nothing more than a self-serving statement written by self-interested patentees and their clever lawyers.[104] Following the text just because it is there, or because precedent says to, becomes unthinking formalism in the worst possible sense. This view implicitly underlies much of the academic literature and some case law in the claim construction debate,[105] though only Professors Dan Burk and Mark Lemley explicitly embrace its logical conclusion: that courts should give the linguistic meaning of claim text no independent weight whatsoever.[106]

On the other hand, if one starts from the view that a founding premise of the patent system is that judges cannot directly assess the value of an invention, then any claim construction methodology that ultimately calls for judges to take an explicit or implicit stab at determining the optimal scope of a patent is not only doomed to failure but also fundamentally misunderstands the point of having patent claims. In this view, the whole reason for having patentee-written claims is because it shifts the burden of defining the "invention" to a better informed party — the patentee — who may be prone to self-interested bias but at least can do the job.[107] An adherent of this school of thought will logically support a relatively textualist approach to claim construction, where courts eschew making stabs at the optimal scope of the patent in favor of reliance on patentee-written claims to guide

102. Burk & Lemley, *supra* note 73, at 1762.

103. *Id.*; Christopher A. Cotropia, *What Is the "Invention"?*, 53 WM. & MARY L. REV. 1855, 1897 (2012) (arguing reliance on claim text "invites disjointedness between protection and the real-world contributions of the inventor").

104. *See, e.g.*, Retractable Techs., Inc. v. Becton, Dickinson & Co., 653 F.3d 1296, 1311 (Fed. Cir. 2011) (Plager, J., concurring) ("However much desired by the claim drafters, who want claims that serve as business weapons and litigation threats, the claims cannot go beyond the actual invention that entitles the inventor to a patent."); Burk & Lemley, *supra* note 73, at 1752–53, 1762 ("we're not often litigating what the inventor did or what her patent should cover, because we are too concerned with what the lawyers did to define what the invention should cover"); *see also* Sean B. Seymore, *The Teaching Function of Patents*, 85 NOTRE DAME L. REV. 621, 638 (2010) (arguing that "patentees intentionally draft ambiguous claims in an effort to expand their patent rights as far as possible").

105. *See, e.g.*, Eibel Process Co. v. Minn. & Ont. Paper Co., 261 U.S. 45, 63 (1923); Chiang, *supra* note 51, at 523–29 (collecting citations).

106. Burk & Lemley, *supra* note 73, at 1784.

107. Chiang, *supra* note 51, at 530–42.

them.[108] This view has essentially no support in the claim construction academic literature, but it is deeply embedded in the structure of claim construction law,[109] not least in the fact that the patent statute requires patentees to write claims at all.[110] If one thinks courts have (or could develop) the ability to even passably approximate the optimal scope of patents on a first-order basis, then one logically should advocate for abolishing or ignoring patentee-written claim text outright, as Burk and Lemley do.[111]

The payoff from this reconstruction of the claim construction debate is that, properly understood, it is not a debate about linguistic ambiguity and linguistic methodology, as the literature and case law generally portrays it.[112] Instead, it is about theoretical disagreement over whether judges can and should attempt to directly value inventions. Superficial arguments about linguistic methodology are merely proxies for this deeper disagreement.

C. The Property/Regulation Debate Reconstructed

At a deeper level, appreciating the paradox of IP allows a better understanding of the landscape of the IP literature. Specifically, it sheds much light on the debate over whether IP is properly understood as "property" or "regulation."

The property/regulation debate is intense[113] yet surprisingly difficult to understand.[114] At first glance, the disagreement seems to be

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108. *See* Keystone Bridge Co. v. Phoenix Iron Co., 95 U.S. 274, 278 (1877) ("This provision [requiring claims] was inserted in the law for the purpose of relieving the courts from the duty of ascertaining the exact invention of the patentee by inference and conjecture . . . .").

109. Merrill v. Yeomans, 94 U.S. 568, 570 (1876) (claim text is "of primary importance").

110. 35 U.S.C. § 112(b).

111. Burk & Lemley, *supra* note 73, at 1784.

112. *See* Tun-Jen Chiang & Lawrence B. Solum, *The Interpretation-Construction Distinction in Patent Law*, 123 YALE L.J. 530, 540–43 (2013) (collecting citations).

113. *Compare* Consolidated Fruit-Jar Co. v. Wright, 94 U.S. 92, 96 (1876) ("A patent for an invention is as much property as a patent for land."), Frank H. Easterbrook, *Intellectual Property is Still Property*, 13 HARV. J.L. & PUB. POL'Y 108 (1990), Adam Mossoff, *The Use and Abuse of IP at the Birth of the Administrative State*, 157 U. PA. L. REV. 2001, 2014 (2009), *and* Henry Smith, *Intellectual Property as Property: Delineating Entitlements in Information*, 116 YALE L.J. 1742, 1745 (2007), *with* Lemley, *supra* note 91, at 68 ("Modern IP is certainly more like regulation than it is like property."), Herbert Hovenkamp, *Antitrust and the Regulatory Enterprise*, 2004 COLUM. BUS. L. REV. 335, 336 ("Anyone who does not believe that the IP laws are a form of regulation has not read the Patent, Lanham, or Copyright Acts and the maze of technical rules promulgated under them."), Jonathan S. Masur, *Regulating Patents*, 2010 SUP. CT. REV. 275, 297–98, *and* Shubha Ghosh, *Patents and the Regulatory State: Rethinking the Patent Bargain Metaphor After Eldred*, 19 BERKELEY TECH. L.J. 1315 (2004).

114. Stephen L. Carter, *Does it Matter Whether Intellectual Property is Property?*, 68 CHI.-KENT L. REV. 715, 715 (1993) ("[S]cholars write about whether intellectual property is property. Nobody else seems to care.").

merely about a label. Once we put aside the label, everyone agrees that IP rights have property-like traits in that they confer a right to exclude,[115] are transferable,[116] and cannot be revoked by the government without compensation.[117] Conversely, everyone also agrees that the patent and copyright systems are government creations that exist to serve a public purpose.[118] If we all agree on the specific features of the patent and copyright systems — some of which are evocative of property regimes, and some of which are evocative of regulatory regimes — then what is with all the fuss?

One immediate answer is that the label makes a political difference in shaping perceptions.[119] That is, although sophisticated lawyers know that property rights are subject to many limits and nuances, in the public imagination a "property" right often connotes absolute dominion and perpetual control.[120] Calling IP rights "property" thus subtly conveys an impression that IP rights inherently deserve strong protection. As a matter of rhetorical dice loading, it therefore makes complete sense for advocates of stronger IP protection to seek to characterize IP as a species of "property" while advocates of weaker IP protection seek to resist that label and advance the characterization of IP as "regulation" (the label "regulation" serves nicely because it has negative connotations in our current political environment).[121] But if this was the extent of the property/regulation debate, then the debate should hold no interest for legal academics — it would be a pure political sloganeering contest with no theoretical substance.

Looking at the property/regulation debate through the lens of the paradox of IP offers a different understanding. In this view, the property/regulation debate is about how much fine-tuned calibration of IP rewards judges (or, more generally, government actors) can and should do. If one believes that a core purpose of the IP system is to avoid having judges assessing the value of works and inventions (as in

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115. 35 U.S.C. § 154; 17 U.S.C. § 106.

116. 35 U.S.C. § 261; 17 U.S.C. § 201(d).

117. James v. Campbell, 104 U.S. 356, 357–58 (1881); Johnson & Johnson, Inc. v. Wallace A. Erickson & Co. Eyeglasses, 627 F.2d 57, 59 (7th Cir. 1980).

118. U.S. CONST. art. I, § 8.

119. Mark A. Lemley, *Property, Intellectual Property, and Free Riding*, 83 TEX. L. REV. 1031, 1031–32 (2005) (arguing that labeling IP as "property" suggests "absolute protection" and encourages courts to "seek out and punish virtually any use of an intellectual property right by another").

120. Lawrence Lessig, *Re-crafting a Public Domain*, 18 YALE J.L. & HUMAN. 56, 81 (Supp. 2006) ("The ordinary [layperson's] view about property is binary at its core. Limits or subtle restrictions on the scope or strength of 'copyright' are not internalized within this view."); *see generally* 2 WILLIAM BLACKSTONE, COMMENTARIES ON THE LAWS OF ENGLAND 2 (facsimile ed. 1979) (1765-69) (describing property as "sole and despotic dominion").

121. *See* Mark A Lemley, *The Regulatory Turn in IP*, 36 HARV. J.L. & PUB. POL'Y 109, 110 (2013) ("To libertarians, property regimes are good . . . , government restrictions on what people can do in a marketplace are bad . . . .").

a prize or grant system), then one would logically support an IP system that granted injunctive relief by default, that calculated monetary damages according to simple and crude methodologies, and that adhered to relatively formalistic rules for determining IP scope rather than attempt fine-tuned ex post calibration. Conversely, if one believes that avoiding governmental calibration of reward is not central to the premises of an IP system — that IP judges are quite capable of calibrating IP rewards, and that such judicial calibration is what keeps the IP system tethered to its central purpose of promoting progress and innovation — then one would logically support an IP system that assesses injunctive relief according to whether it results in overcompensation, that finely-tailors monetary relief according to the social value of an invention or work, and that attempts to tailor IP scope through some judicial policy lever. As a matter of empirical observation, the former set of proposals is closely associated with the "property" school of thought, while the latter set of proposals is closely asassociated with the "regulation" school of thought.[122]

I should make clear that this account is a reconstruction: I do not offer it as a definitive or exclusive understanding of the property/regulation debate. But I do submit that my account captures an important facet of the debate and gives the debate more theoretical substance. In this account, the property/regulation debate is not merely a sloganeering contest; it is a deeply theoretical debate between two sides with very different conceptions of what IP rights are about and two opposing sets of foundational premises. And the reason that the disagreement persists is not because the two sides are composed of unreasoning ideologues;[123] it is because the opposing premises result in paradox when put together. It is impossible to conclude that one side or the other is wrong unless we first resolve the paradox, and no one has yet resolved the paradox.

At this point, a reader might think all that I have done is repackage the rules/standards debate in fancy language. After all, what I have claimed is that proponents of the property view will favor rule-like legal directives in setting IP scope and assessing IP remedies, while proponents of the regulation view will favor standard-like ex post calibration. The fact that there are trade-offs between rules and standards, and that there are often arguments in support of each side, is well known.[124] There would be little need to speak of a "paradox"

122. *See supra* Sections II.A & II.B.

123. *See* Mark A. Lemley, *Faith-Based Intellectual Property*, 62 UCLA L. REV. 1328, 1335–38 (2015) (arguing that debates in IP are often matters of ideological faith). This is not to deny the possibility that some members of each school *are* unreasoning ideologues. My claim is merely that one *can be* a member of either school without being an ideologue.

124. *See generally* Kathleen M. Sullivan, *The Supreme Court, 1991 Term — Foreword: The Justices of Rules and Standards*, 106 HARV. L. REV. 22 (1992); Colin S. Diver, *The*

and add unnecessary complication if all I was saying is that people disagree about whether IP is better governed by rules or standards, and this disagreement leads to contrasting positions in various doctrinal debates — that has been said many times before.[125]

My claim is different: A conventional rules-versus-standards problem is about a tradeoff, whereas my claim is that IP faces a paradox. A tradeoff involves broad agreement on the need for balance between various competing considerations — in principle, everyone agrees that notice and flexibility are both valuable — with only disagreement on how exactly to strike the balance. A paradox, on the other hand, involves a logical contradiction between incompatible premises, with no room for common ground. There is simply no common ground between a claim that the founding premise of having an IP system is that judges cannot and should not calibrate, and a claim that IP judges routinely calibrate and should do it even more often. Because the property/regulation debate is at heart about a paradox, it is deeper and more intractable than a mere tradeoff. The two sides do not merely disagree about the precise solution; they disagree all the way down to their fundamental premises.

IV. CONCLUSION

The contradiction between the IP system's founding premise that government actors cannot and should not calibrate IP rights, and the reality that government actors in fact routinely calibrate IP rights, underlies many debates in IP law today. The purpose of this Essay is not to argue which side of these debates is correct, or how the paradox should be resolved. My goal is to clarify and improve the debate. Without understanding the paradox, participants in IP debates often cannot understand where the other side comes from, and no discussion of the real issue at stake occurs. The debate thereby becomes very hollow, resurfacing every generation in one doctrinal guise or another, but never making progress. Understanding the paradox will not, by itself, lead to a solution, but it can give us a better understanding of what is at the heart of many IP debates and why reasonable people take positions on opposing sides. It also calls upon each side to more deeply justify its position. For those who argue that the government cannot (and therefore should not) calibrate IP rights, the IP paradox

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Optimal Precision of Administrative Rules, 93 YALE L.J. 65 (1983); Isaac Ehrlich & Richard A. Posner, *An Economic Analysis of Legal Rulemaking*, 3 J. LEGAL. STUD. 257 (1974).

125. *See, e.g.*, John F. Duffy, *Rules and Standards on the Forefront of Patentability*, 51 WM. & MARY L. REV. 609 (2009); Tun-Jen Chiang, *The Rules and Standards of Patentable Subject Matter*, 2010 WIS. L. REV. 1353; Craig Allen Nard, *Legal Forms and the Common Law of Patents*, 90 B.U. L. REV. 51, 77–98 (2010); Burk & Lemley, *supra* note 73, at 1777–83.

asks them to explain how their argument is consistent with the reality of IP practice. For those who argue that the government can and should calibrate, the paradox asks how this argument is consistent with having any IP rights at all. Posing these questions explicitly allows us to make more progress.