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Reinventing Copyright and Patent

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REINVENTING COPYRIGHT AND PATENT

Abraham Bell*
Gideon Parchomovsky**

Intellectual property systems all over the world are modeled on a one-size-fits-all principle. However important or unimportant, inventions and original works receive the same scope of protection, for the same period of time, backed by the same variety of legal remedies. Essentially, all intellectual property is equal under the law. This equality comes at a heavy price, however. The equality principle gives all creators access to the same remedies, even when those remedies create perverse litigation incentives. Moreover, society overpays for innovation through more monopoly losses than are strictly necessary to incentivize production.

In this Article, we propose a solution for these problems in the form of a self-tailored system of intellectual property rights. This self-tailored system would allow inventors and creators to select the optimal type and scope of protection for their intellectual property. Working from the bottom up, our self-tailored system would give each innovator a basic package of intellectual property rights and enforcement powers and then allow her to add more rights and legal remedies in exchange for a fee.

Our self-tailored system would reduce wasteful litigation while encouraging wider dissemination and more extensive use of inventions and expressive works. In addition, our proposal would lower the social cost of granting monopoly protection to intellectual goods while maintaining an adequate level of

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economic incentives to create. Accordingly, our self-tailored system would constitute a marked improvement over the extant one-size-fits-all design of intellectual property rights.

Unlike other proposals for reform, which often seek to improve access to expressive works and inventions through compulsory licenses and other coercive policies, our model is purely voluntary. It respects authors' and inventors' autonomy and uses market mechanisms—specifically, pricing—to recalibrate our intellectual property system in a way that improves societal well-being.

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INTRODUCTION

Intellectual property systems all over the world are modeled on a one-size-fits-all principle. Under current patent law, for instance, an invention that meets the patentability criteria is entitled to protection of the law for a specified period.¹ Big inventions or small inventions, valuable inventions or

1. See *infra* Section I.A.

worthless inventions—all receive the same scope of protection, and the same variety of legal remedies, for the same period of time. Essentially, all inventions are equal under the law.

While one size fits all is easy to administer, it generates two kinds of problems for the patent system. First, the equality principle gives all creators access to the same remedies, even when those remedies create perverse incentives. Scholarly literature has focused on the phenomenon of “patent trolls”—patent holders who have no interest in marketing or manufacturing their inventions but simply wait for apparent breaches of the patent in order to sue.² While scholars have characterized trolling as a problem of underproductive patents,³ we view it as a problem of incentives. Patents that are enforced by trolls could potentially be valuable to society, but the one-size-fits-all system’s excessive litigation rewards incentivize trolls to hoard their patents for opportunistic litigation rather than license them for productive use. Specifically, by providing uniformly large remedies even for very small inventions, the judicial system allows patent trolls to reap more profit through infringement suits than through selling their inventions on the market. This is not intrinsically problematic, but the judicial system is not cost free. Society subsidizes judges, courtrooms, and enforcement measures while litigating parties bear only some of the costs themselves.⁴ In the case of patent trolls, these societal subsidies encourage parties to conduct their transactions in the courtroom when the optimal forum is actually private market transactions. In many other cases, partly because the costs of litigation are asymmetric and must be paid in part even by prevailing parties, the threat of these litigation costs can force parties into inefficient transactions.⁵

At the same time, the market does not always succeed in allocating rights efficiently. Owners of intellectual property rights and users—that is, potential consumers of those rights—are not always aware of one another, leading users to infringe and owners to fail to exploit markets optimally. The

2. E.g., Michael Abramowicz & John F. Duffy, *The Inducement Standard of Patentability*, 120 YALE L.J. 1590, 1650 (2011) (defining a patent troll as “a nonpracticing entity that has contributed little technology but hopes to use patenting as a source of profit”); Caroline Coker Coursey, *Battling the Patent Troll: Tips for Defending Patent Infringement Claims by Non-Manufacturing Patentees*, 33 AM. J. TRIAL ADVOC. 237, 237–40 (2009) (defining patent trolls); Matthew Fawcett & Jeremiah Chan, *March of the Trolls: Footsteps Getting Louder*, 13 INTELL. PROP. L. BULL. 1, 1 (2008) (lamenting a lack of legislation to deter patent trolls).

3. For an excellent discussion, see Tom Ewing & Robin Feldman, *The Giants Among Us*, 2012 STAN. TECH. L. REV. 1, <http://journals.law.stanford.edu/sites/default/files/stanford-technology-law-review-stlr/online/feldman-giants-among-us.pdf>.

4. Brendan S. Maher, *The Civil Judicial Subsidy*, 85 IND. L.J. 1527, 1529–33 (2010) (proposing that subsidizing the justice system provides everyone with “court insurance”).

5. See, e.g., Robert D. Cooter & Daniel L. Rubinfeld, *Economic Analysis of Legal Disputes and Their Resolution*, 27 J. ECON. LITERATURE 1067, 1076 (1989) (“[A]ny policy that increases litigation costs . . . will increase settlements.”); cf. Owen M. Fiss, *Against Settlement*, 93 YALE L.J. 1073, 1075 (1984) (discouraging settlements because “[c]onsent is often coerced; the bargain may be struck by someone without authority; the absence of a trial and judgment renders subsequent judicial involvement troublesome; and . . . justice may not be done”).

one-size-fits-all system greatly exacerbates these problems. For some creations, the uniform statutory remedies are too generous. These uniform remedies therefore encourage inefficient use of the legal system in instances where voluntary bargaining would have been superior; in other cases, the remedies deter nonconsensual use that would be optimal.

Second, the one-size-fits-all system exacerbates the monopoly problem created by patents. Patent law grants legal protection in order to incentivize creation.⁶ Whatever the patent, the law offers a monopoly consisting of a specified set of rights over the invention for a fixed period of time. The monopoly gives the inventor the opportunity to profit handsomely, but it also subjects society to all the costs of monopoly pricing. As documented in the economic literature, these costs include excessively high prices and artificially low production.⁷ Rewarding inventors with monopoly rights thus necessarily comes at a price. Society receives desirable innovation. But society also pays the price of monopolistic inefficiencies. Because the same monopolistic protection is accorded to all inventions irrespective of their value, society often pays too high a price for innovation. Many inventors would have produced their innovative products and processes even if the reward were lower. The one-size-fits-all regime thus means that sometimes society overpays for innovation by absorbing more monopoly losses than are strictly necessary to incentivize production.

In this Article, we propose an alternative design for our patent system. Specifically, we argue that society would be better served by abolishing the extant one-size-fits-all approach to patent protection and adopting in its stead a self-tailored system. In our vision, inventors would be offered a menu of options with varying degrees of protection terms, scopes, and remedies. They would then be allowed to tailor the protection to best fit their needs. Importantly, the various options would be subject to differential pricing to reflect the cost society stands to incur from the choice of the inventor.

An example can provide a helpful illustration of how our alternative regime would work. Basics Inc. is a medical-device company that produces simple applications whose expected commercial life is four years. Basics Inc. has no use for a patent-protection term of twenty years. Moreover, Basics Inc. has very little marketing capacity and would have a much easier time if potential users were able to search out Basics Inc., rather than Basics Inc. expending efforts to identify potential users. Under our proposed regime, Basics Inc. would be allowed to purchase a protection term of four years. Furthermore, Basics Inc. would have the option voluntarily to give up the

6. See, e.g., Kenneth J. Arrow, *Economic Welfare and the Allocation of Resources for Invention*, in *THE RATE AND DIRECTION OF INVENTIVE ACTIVITY* 609, 609 (Princeton Univ. Press 1962). The same rationale also applies to copyright protection. See, e.g., Robert M. Hurt & Robert M. Schuchman, *The Economic Rationale of Copyright*, 56 *AM. ECON. REV.* 421, 425 (1966) ("The general welfare will . . . be enhanced by enacting copyright legislation which encourages the creation and publication of manuscripts that otherwise would not have come into existence.").

7. See *infra* Section I.A.1.

possibility of injunctive relief and instead to confine itself to monetary damages if its patent were infringed. In exchange, Basics Inc. would pay a relatively low price for the protection it would receive.

Nano Tech Industries, by contrast, is in the business of developing complex medical instruments that require considerable expenditures on R&D and whose commercial life is much longer. Accordingly, Nano Tech would likely choose a protection design that closely resembles the current patent regime. Under our system, its wish would be granted. But at a higher price.

A self-tailored patent system would yield several important advantages. First, and most importantly, it would cause patentees to take into account the cost they impose on society through perverse litigation incentives and monopolization. While society should welcome innovation, we need not pay an excessive price to get it. Under our proposal, inventors would be entrusted with the task of deciding the degree of protection they wish to receive but would be asked to pay for their preference. Voluntary relinquishment of protection, either in terms of time or scope, would result in social net gain by reducing the deadweight loss associated with patent protection. While this effect may be small per patent, in the aggregate society would benefit from the same level of innovation at a lower social cost.

Second, our self-tailored system would enhance societal welfare by increasing beneficial use of existing patents. Excessive protection of patents, together with inefficient use of the judicial system, increases the costs of transactions between patent holders and users, decreases efficient nonconsensual use of granted patents, and increases the number of inefficient nonuses resulting from strategic holdups by patent owners and other bargaining failures.⁸ Our system would reduce all of these undesirable effects of the patent system. In particular, our system would reduce artificial incentives for transferring intellectual property rights through litigation and would increase the number of voluntary licensed uses of creations.

Third, and relatedly, self-tailored protection would benefit *future innovators*. As several theorists have noted, the patent system involves a temporal trade-off. The more protection given to existing patents, the higher the cost of future innovation that relies on or incorporates current inventions.⁹ To a large extent, innovation is cumulative. Many inventors must either get licenses from existing patent holders or design around existing patents in order to produce their own inventions. Implementing our proposal would help clear the path for, and lower the cost of, future innovation. We expect our system to yield patents with more limited scope and with shorter expiration

8. Michael A. Heller & Rebecca S. Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, 280 *SCIENCE* 698, 698–99 (1998) (discussing the holdup problem); Robert P. Merges & Richard R. Nelson, *On the Complex Economics of Patent Scope*, 90 *COLUM. L. REV.* 839, 865–68 (1990) (same).

9. E.g., Mark A. Lemley, *The Economics of Improvement in Intellectual Property Law*, 75 *TEX. L. REV.* 989, 990 (1997) (pointing out that too much intellectual property protection deters subsequent innovation, as it “freeze[s] development at the first generation of products”); Roberto Mazzoleni & Richard R. Nelson, *The Benefits and Costs of Strong Patent Protection: A Contribution to the Current Debate*, 27 *RES. POL’Y* 273, 281 (1998).

dates. Consequently, follow-on innovators would incur lower costs in producing their inventions.

Finally, our system would reduce the judicial costs associated with adjudicating patent conflicts. The expected reduction in the total number and scope of patent rights would lower the number of infringement suits and correspondingly limit the amount of resources society must allocate to this end.

Our self-tailored approach does not end with patent law. We also demonstrate that our self-tailored system of protection should be extended to copyrights. Copyright protection is even more multidimensional than patent protection. In the case of copyrights, creators could choose from a menu of varying protection terms and substantive rights. For example, an author could waive her rights to exclusivity in copying and creating derivative works in appropriate cases. Conversely, she might settle for the right to demand attribution of authorship. Along the same dimension, she could cede her right to enforce against noncommercial users or against users who created a single copy of the work but stopped short of distributing it. All of these choices, of course, would be built into the pricing system. More copyright rights would be more expensive to obtain; fewer rights would be cheaper.

Other scholars have previously discussed uniformity's potential drawbacks, and we compare our proposal to two alternative approaches that may be found in the literature. The first is Professor Burk and Professor Lemley's call to enhance judicial development of patent law through technology-specific interpretation of various microdoctrines.¹⁰ We show that our system would result in more efficiency-enhancing outcomes than Burk and Lemley's system. Our system is based on ex ante determinations of the value of *individual* inventions. This self-tailored system necessarily outperforms any broad doctrinal reform, even if the reforms are limited to particular technologies or industries. In addition, our proposal is not susceptible to the kinds of legal uncertainty and gaming that might affect Burk and Lemley's system.

A second alternative approach is that proposed by Professor Carroll.¹¹ While expressing reservations about the one-size-fits-all design of the current intellectual property system, Carroll ultimately endorses it as a "second-best solution."¹² He posits that it is desirable to reduce uniformity costs, but he stops short of advancing a single, coherent approach to the challenge of

10. DAN L. BURK & MARK A. LEMLEY, *THE PATENT CRISIS AND HOW THE COURTS CAN SOLVE IT* (2009) [hereinafter BURK & LEMLEY, *PATENT CRISIS*]; Dan L. Burk & Mark A. Lemley, *Policy Levers in Patent Law*, 89 VA. L. REV. 1575 (2003) [hereinafter Burk & Lemley, *Policy Levers*]; Dan L. Burk & Mark A. Lemley, *Is Patent Law Technology-Specific?*, 17 BERKELEY TECH. L.J. 1155 (2002) [hereinafter Burk & Lemley, *Technology-Specific*].

11. Michael W. Carroll, *One for All: The Problem of Uniformity Cost in Intellectual Property Law*, 55 AM. U. L. REV. 845 (2006); see also Michael W. Carroll, *One Size Does Not Fit All: A Framework for Tailoring Intellectual Property Rights*, 70 OHIO ST. L.J. 1361 (2009) [hereinafter Carroll, *One Size*]; Michael W. Carroll, *Patent Injunctions and the Problem of Uniformity Cost*, 13 MICH. TELECOMM. & TECH. L. REV. 421 (2007).

12. Carroll, *One Size*, *supra* note 11, at 1391.

uniformity. Instead, he argues that, in many cases, adopting “flexible standards”—and, more generally, flexible thinking to “render formally defined uniform rights more pliable in application”—is the best that can be done.¹³ In other cases, Carroll embraces tailoring rights along industry- or technology-specific lines.¹⁴ Yet he openly admits that these suggestions “are not a complete answer to the problem.”¹⁵ He also confesses that his framework is problematic from a practical standpoint. Hence, Carroll does not provide a comprehensive solution to the uniformity problem. Instead, he provides a list of factors to be considered by policymakers in evaluating possible approaches to the problem as well as some preliminary reflections as to possible directions they can weigh.¹⁶ We show that our solution of self-tailoring largely avoids Carroll’s concerns. Furthermore, we demonstrate that our proposal can be implemented in practice and that it would lead to more nuanced and precise tailoring than Carroll’s admittedly inchoate framework.

This Article presents our argument in four parts. In Part I, we examine the motivations and mechanics of the extant intellectual property system, demonstrating the problems created by the one-size-fits-all approach. Part II presents our alternative proposal, showing how self-tailored rights can be easily implemented in patent and copyright. Part III examines the incentive effects and other benefits of our proposed self-tailored approach. In this Part, we demonstrate the proposal’s likely effect of developing markets for intellectual property rights and reducing strategic but inefficient use of the judicial system. Finally, in Part IV, we respond to four potential objections to our proposal and elucidate why it is superior to such alternatives as technology-specific protection and contract-based modification of rights.

I. THE ONE-SIZE-FITS-ALL DESIGN OF THE INTELLECTUAL PROPERTY SYSTEM

In this Part, we examine the uniform structure of the extant intellectual property system and explore the social costs of that uniformity. In particular, we show that uniformity raises the anticompetitive effects of intellectual property law—thereby raising prices and reducing output—while also increasing the costs of resolving disputes among intellectual property owners and potential users. We end the Part by examining several possible justifications for uniformity.

A. *Uniformity and Its Costs*

Despite their many differences, the patent and copyright subfields of intellectual property law share a common characteristic: their protection

13. *Id.* at 1366.

14. *Id.* at 1400.

15. *Id.* at 1366.

16. *Id.* at 1406–24.

schemes are predicated on the one-size-fits-all principle. All patentable inventions enjoy the same scope of protection for a uniform period of time.¹⁷ Expressive works confer upon their authors a uniform bundle of rights for a uniform statutory duration.¹⁸

Congress's current approach allocates intellectual property protection by granting equal *potential* protection to creations that meet certain threshold requirements. In patent law, these requirements are novelty, usefulness, and non-obviousness.¹⁹ Copyright law screens through the requirements of originality, fixation, and classifications of works as "works of authorship."²⁰

Once the threshold conditions are met, each body of law bestows an identical exclusive set of rights upon the owner of the intellectual asset. Patent law confers upon inventors the rights to exclusivity in using, selling, offering for sale, and importing the patented invention.²¹ Copyright law bestows upon authors exclusivity in the rights to reproduce, adapt, distribute, publicly (or digitally) perform, and publicly display the work.²²

This one-size-fits-all approach comes at a real cost to society. Specifically, it forces society to pay an excessive price for the production of intellectual assets.

17. See 35 U.S.C. § 154(a)(1) (2012) ("Every patent shall contain . . . a grant to the patentee, his heirs or assigns, of the right to exclude others from making, using, offering for sale, or selling the invention . . . and, if the invention is a process, of the right to exclude others from using, offering for sale or selling throughout the United States . . ."); *id.* § 154(a)(2) ("[S]uch grant shall be for a term beginning on the date on which the patent issues and ending 20 years from the date on which the application for the patent was filed . . ."). As we discuss in more detail below, however, many scholars contend that this uniformity imposes serious costs on society. See, e.g., Glynn S. Lunney, Jr., *Patent Law, the Federal Circuit, and the Supreme Court: A Quiet Revolution*, 11 SUP. CT. ECON. REV. 1, 5–6 (2004) (detailing the costs of uniform protection and calling for narrow tailoring of protection under appropriate circumstances).

18. The Copyright Act grants the rights to reproduce the copyrighted work, prepare derivative works, distribute copies, and perform and display the work in public. 17 U.S.C. § 106(1)–(5) (2012); see also *id.* § 302(a) ("Copyright in a work created on or after January 1, 1978 subsists from its creation and . . . endures for a term consisting of the life of the author and 70 years after the author's death."). The Copyright Act does dictate some minor variations in rights, depending on the type of work. For instance, certain works of visual art are entitled to an additional set of "moral rights" concerning the work's integrity and attribution of authorship. *Id.* § 106A. Other countries eschew many of the minor variations; in European copyright systems, for instance, *all* works receive moral rights protection. See Thomas F. Cotter, *Pragmatism, Economics, and the Droit Moral*, 76 N.C. L. REV. 1, 6–27 (1997) (summarizing the history of the droit moral in Europe and the United States).

19. 35 U.S.C. §§ 101–103.

20. See 17 U.S.C. § 102(a) ("Copyright protection subsists . . . in original works of authorship fixed in any tangible medium of expression . . ."); Jane C. Ginsburg, *The Concept of Authorship in Comparative Copyright Law*, 52 DEPAUL L. REV. 1063 (2003).

21. 35 U.S.C. § 154(a)(1).

22. 17 U.S.C. § 106.

1. Anticompetitive Effects

It is well established in the economic and legal literature that the exclusivity of rights created by intellectual property protection leads to monopolistic pricing of intellectual goods.²³ The very essence of intellectual property rights is to insulate their holders from competition by prohibiting direct copying (and other utilization) for a certain period of time. The justification for such monopoly protection is straightforward: intellectual works are public goods that cannot be efficiently produced or sold in a market without legal protection.²⁴ If inventions were unprotected by the law, very few users of the invention would ever pay the inventor. Instead, they would imitate the invention or cut a deal with an imitator. In the long run, the market price for rights in the invention would tend toward zero.²⁵ With no realistic chance of profits from an invention, potential creators would not invent new products. Legal monopoly protection is supposed to overcome this problem by giving creators a chance to earn a profit on their inventions during the period of the monopoly. Monopoly protection for the intellectual property rights is supposed to give inventors and authors the opportunity to recoup the fixed cost of inventorship and authorship—namely, the initial cost of producing the goods.²⁶

Yet the monopoly benefit bestowed upon inventors and authors distorts the price of creations and skews the allocation of resources in society. Inventors and authors sell rights to their inventions and works at prices reflecting a monopolistic rather than a competitive market. Economic theory tells us that monopolistic prices are higher than competitive prices, while the good is scarcer in a monopolistic market than it would be in the competitive market.²⁷

In addition, the earnings of the inventor or author during the monopoly period bear no relationship to the costs of production. A cheaply produced invention may yield enormous profits for the inventor during the period of monopoly protection. An expensively produced work of authorship may yield relatively meager profits. Although one's intuition might suggest otherwise, the former phenomenon is extremely problematic, while the latter

23. Michael A. Carrier, *Unraveling the Patent-Antitrust Paradox*, 150 U. PA. L. REV. 761, 772 (2002) (“[P]atent laws reward [invention] by promising the inventor the right to exploit the invention by excluding competitors or charging prices higher than its postinvention costs.”); Rick Harbaugh & Rahul Khemka, *Does Copyright Enforcement Encourage Piracy?*, 58 J. INDUS. ECON. 306, 309–14 (2010) (examining the relationship between prices of copyrighted works and piracy).

24. Carrier, *supra* note 23, at 767.

25. See 1 HERBERT HOVENKAMP ET AL., *IP AND ANTITRUST: AN ANALYSIS OF ANTITRUST PRINCIPLES APPLIED TO INTELLECTUAL PROPERTY LAW* § 1.1, at 1–4 (2d ed. 2010) (“If we assume that it is nearly costless to distribute information to others . . . it will prove virtually impossible to charge for information over the intermediate run . . .”).

26. SUZANNE SCOTCHMER, *INNOVATION AND INCENTIVES* 36 (2004).

27. WILLIAM A. McEACHERN, *ECONOMICS: A CONTEMPORARY INTRODUCTION* 204–05 (10th ed. 2014). For a useful overview of some of the literature on monopolies, see Donald C. Wellington and Joseph C. Gallo, *The Social Costs of Monopoly?*, 9 REV. INDUS. ORG. 221 (1994).

need not concern us. Where an enormous investment is likely to yield only small earnings, the potential inventor will probably never create the invention: it makes no sense to invest more in the creative process than can be earned from the creation.

It is highly problematic, however, when a small investment brings a windfall profit. The state could have offered far less monopoly protection and still have induced the same inventiveness. If monopoly were costless, then the windfall for inventors would be unobjectionable. But monopoly comes at the cost of high market prices and underproduction. Overpaying for the invention imposes a serious cost on society.

Patents provide a clear illustration of the problem. Consider an agricultural company that patents a genetically enhanced wheat seed that is far more resistant to disease than a natural seed. By dint of the patent protection it secured, the company will enjoy a period of exclusivity of close to twenty years. In that period, the company will set a profit-maximizing price for the genetically modified seed that is higher than the competitive price.

Monopolistic pricing generates two effects. The first effect is distributive. It transfers resources from consumers to the monopolist.²⁸ In our example, farmers who wish to take advantage of the superior seed would have to pay a supracompetitive price to obtain it. If the monopolistic price of a bag of seeds is \$100, instead of a competitive price of \$80, the monopolist becomes richer than she would be in a competitive market and the farmer becomes poorer.

The second effect concerns allocative efficiency. Monopolistic pricing invariably generates a deadweight loss.²⁹ This loss arises from the fact that certain farmers value the product at more than the competitive price but less than the monopolistic price. For instance, there are farmers who can extract \$90 of utility from a bag of seeds. They would gladly have purchased the goods for the competitive price of \$80 but will not pay the monopolistic price of \$100. When these farmers forgo the use of the superior seeds, they eliminate \$10 of utility per bag that would have existed in the competitive market. Likewise, they eliminate the potential profit the seller would have earned on the sale in the competitive market. More generally, the forgone transactions impose a loss on both consumers and producers represented by the combined surplus the parties would have received in a competitive market.³⁰

The monopolistic losses of patented goods like farm seed are similar to the monopolistic losses created by copyright protection. Copyright protection confers upon authors a bundle of exclusive rights in order to motivate

28. See McEACHERN, *supra* note 27, at 205 (“[T]he monopolist’s economic profit comes entirely from what was consumer surplus under perfect competition.”); Richard A. Posner, *The Social Costs of Monopoly and Regulation*, 83 J. POL. ECON. 807 (1975).

29. McEACHERN, *supra* note 27, at 205.

30. MASSIMO MOTTA, *COMPETITION POLICY* 41–42 (2004).

them to produce original expressive content.³¹ The monopolistic distortions in the case of copyright protection may be more limited and more attenuated than in the case of patent law, but they are no less real.

Most copyrighted works have close substitutes, which serves as a check on the ability of copyright holders to secure monopolistic rents. For example, if the publisher of a book were to charge an excessively high price, readers might choose to buy different books. Indeed, Professor Yoo³² and Professor Abramowicz³³ independently argue that the market for copyrighted works is best captured by the model of monopolistic competition—a market structure in which each product is unique but has close substitutes, with the problem being too little or too much variety among the products. Even so, scholars overwhelmingly agree that copyright protection distorts efficiency.³⁴

It is noteworthy that Professor Ayres and Professor Klemperer have demonstrated that each additional year of exclusivity comes at an increasing cost to society.³⁵ The intuition behind this result is straightforward. Each year of future protection creates a progressively smaller marginal increase in incentives to produce. Thus, the incentives to produce created by protection in years one through five are enormously greater than the incentives created by years seventy through seventy-five.

The reason for this is a phenomenon known in economics as the time value of goods or money. This phenomenon is the economic version of the platitude “a bird in the hand is worth two in the bush.” Money or an asset in hand is far more valuable than money or an asset that will be obtained only in the future because present possession allows present enjoyment of utility.³⁶ The farther into the future one postpones possession, the more utility one loses over time. The net present value of \$1,000 to be obtained 120 years from now (the equivalent of the copyright-protection term) is only \$2.87.³⁷

31. See, e.g., Sara K. Stadler, *Incentive and Expectation in Copyright*, 58 HASTINGS L.J. 433, 433–34 (2006) (describing the established field of thought for the incentives provided by copyrights).

32. Christopher S. Yoo, *Copyright and Product Differentiation*, 79 N.Y.U. L. REV. 212, 241 (2004).

33. Michael Abramowicz, *An Industrial Organization Approach to Copyright Law*, 46 WM. & MARY L. REV. 33, 35–39 (2004).

34. See, e.g., Giovanni B. Ramello, *Copyright and Antitrust Issues*, in THE ECONOMICS OF COPYRIGHT 118, 124 (Wendy J. Gordon & Richard Watt eds., 2003); Shyamkrishna Balganesh, *Foreseeability and Copyright Incentives*, 122 HARV. L. REV. 1569, 1578 (2009); Niva Elkin-Koren, *Copyright Policy and the Limits of Freedom of Contract*, 12 BERKELEY TECH. L.J. 93, 99 (1997).

35. Ian Ayres & Paul Klemperer, *Limiting Patentees' Market Power Without Reducing Innovation Incentives: The Perverse Benefits of Uncertainty and Non-Injunctive Remedies*, 97 MICH. L. REV. 985, 992 (1999).

36. See TIMOTHY J. GALLAGHER & JOSEPH D. ANDREW, FINANCIAL MANAGEMENT: PRINCIPLES AND PRACTICE 196 (4th ed. 2007) (explaining why money has time value).

37. The calculation assumes an interest of 5%. Naturally, a higher interest rate would further decrease the amount, whereas a lower interest rate would increase it.

Extending the term of protection for intellectual property thus produces decreasing benefits the longer the term is extended. The deadweight loss, by contrast, remains significant over time. Adding up the two effects, Ayres and Klemperer write that “[t]he last bit of monopoly pricing produces large amounts of deadweight loss for a relatively small amount of patentee profit.”³⁸ Furthermore, they admonish legal scholars for “fail[ing] to appreciate that unconstrained monopoly pricing is not a cost-justified means of rewarding patentees.”³⁹

Just as importantly, copyright protection also stunts the development of new technologies. The copyright system’s doctrines of “secondary liability” allow copyright owners to sue technology and internet companies for bringing new technologies to market where the technologies potentially facilitate and abet copyright infringement.⁴⁰ As the Supreme Court acknowledged in *MGM v. Grokster, Ltd.*, “[t]he more artistic protection is favored, the more technological innovation may be discouraged; the administration of copyright law is an exercise in managing the tradeoff.”⁴¹ It is critical to understand that, because technology providers can never know in advance whose rights their technology might infringe, they must secure permission from *all* copyright owners. Hence, they face the proverbial holdup problem,⁴² where each copyright owner has veto power over the distribution of the new technology.

It is therefore acknowledged that patent and copyright protection provide a second-best solution. They incentivize production of intellectual assets at the cost of restricting public access to those assets and creating other societal losses. This trade-off is well known to economists, legal theorists, and students.⁴³

Compare the losses created by monopoly protection in patent and copyright with those created by such protection in trademark. Trademark law is

38. Ayres & Klemperer, *supra* note 35, at 987.

39. *Id.*

40. 3 MELVILLE B. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT § 12.04[A][3][b] (2013).

41. 545 U.S. 913, 928 (2005) (citing *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 442 (1984)).

42. See, e.g., Carl Shapiro, *Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard Setting*, in 1 INNOVATION POLICY AND THE ECONOMY 119, 125–26 (Adam B. Jaffe et al. eds., 2001); James Bessen, *Holdup and Licensing of Cumulative Innovations with Private Information*, 82 ECON. LETTERS 321 (2004); James Bessen & Eric Maskin, *Sequential Innovation, Patents, and Imitation*, 40 RAND J. ECON. 611 (2009); Heller & Eisenberg, *supra* note 8; Mazzoleni & Nelson, *supra* note 9, at 275–76; Arti K. Rai, *Fostering Cumulative Innovation in the Biopharmaceutical Industry: The Role of Patents and Antitrust*, 16 BERKELEY TECH. L.J. 813, 838–44 (2001); Arti Kaur Rai, *Regulating Scientific Research: Intellectual Property Rights and the Norms of Science*, 94 NW. U. L. REV. 77, 127–28 (1999).

43. E.g., Balganesch, *supra* note 34; Qianwei Fu, Note, *Eldred v. Ashcroft: Failure in Balancing Incentives and Access*, 38 U.C. DAVIS L. REV. 1755, 1758 (2005); see also Ian E. Novos & Michael Waldman, *The Effects of Increased Copyright Protection: An Analytic Approach*, 92 J. POL. ECON. 236, 237 (1984).

not traditionally justified by reference to the incentive theory.⁴⁴ Rather, the conventional economic justification for trademark protection is grounded in information costs.⁴⁵ Trademarks economize on consumers' information costs by providing consumers with a low-cost means for identifying the source of goods and services.⁴⁶ This, in turn, provides businesses with an incentive to ensure the high quality of goods and services in order to create and lock in a loyal consumer base.⁴⁷ The contrast with copyright and patent protection is striking. Because investments in trademark pay off directly by lowering information costs for each consumer, the benefits to producers derive from advantages in the competitive market rather than from the creation of monopolies. Gone are the deadweight losses that accompany the exclusivity of copyright and patent rights. Whereas one-size-fits-all protection for trademark ensures legal protection that matches the societal benefit of the protected information, one-size-fits-all protection in copyright and patent virtually guarantees unnecessary societal losses for many legal protections.

2. Dispute-Resolution Costs

The second societal cost imposed by intellectual property protection derives from the enforcement of rights. The dilemma of how to enforce legal rights is familiar from other areas of the law. Thanks to Professor Calabresi and Douglas Melamed,⁴⁸ a vast scholarly literature addresses the question of when the law should support legal entitlements with injunctive relief (roughly equivalent to "property-rule protection" in Calabresi and Melamed's terminology) and when it should offer only compensatory damages (roughly "liability-rule protection" according to Calabresi and Melamed) upon breach of the entitlement.⁴⁹ The literature is highly influenced by

44. See Greg Lastowka, *Trademark's Daemons*, 48 HOUS. L. REV. 779, 781–82 (2011) (noting that consumer protection is the primary justification of trademark law, which distinguishes it from copyright and patent law).

45. Robert G. Bone, *Hunting Goodwill: A History of the Concept of Goodwill in Trademark Law*, 86 B.U. L. REV. 547, 556 (2006).

46. See *id.*

47. See *id.*

48. Guido Calabresi & A. Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARV. L. REV. 1089 (1972).

49. E.g., Ian Ayres & Eric Talley, *Solomonic Bargaining: Dividing a Legal Entitlement to Facilitate Coasean Trade*, 104 YALE L.J. 1027, 1031–32 (1995) (likening liability-rules protection of intellectual property to a favorable Solomonic division); Wendy J. Gordon, *A Property Right in Self-Expression: Equality and Individualism in the Natural Law of Intellectual Property*, 102 YALE L.J. 1533, 1573–76 (1993) (considering liability-rule protection for intellectual property); F. Scott Kieff, *Property Rights and Property Rules for Commercializing Inventions*, 85 MINN. L. REV. 697, 732–36 (2001) (examining the benefits of a property-rules regime for patent law).

transaction-cost economics, and it focuses on the possibility of private bargaining around legal entitlements.⁵⁰ For instance, when high transaction costs combine with “sticky” entitlements, like injunctions, legal entitlements may end up being held by owners who do not value those entitlements as highly as potential transferees.

While all areas of the law confront enforcement questions, enforcement is particularly problematic in intellectual property due to the law’s provision of the same expansive list of remedies to all holders of intellectual property rights. The remedy menu includes preliminary and temporary injunctions, actual damages, defendant’s profits, statutory damages, and in particular cases enhanced statutory damages and treble damages.⁵¹ Certainly in some cases, one or more of these remedies is appropriate for enforcing intellectual property rights. But just as certainly in other cases, the impressive array of remedial options is too much. The panoply of remedies may deter some kinds of optimal use of protected intellectual property rights, leaving potentially high-value users of the entitlement without a realistic possibility of enjoying the benefits of the intellectual property.

In some instances, two other factors may combine with the array of remedy options to complicate further this enforcement problem and lead patent and copyright holders to refrain from voluntarily transacting with potential users of the invention or expressive work. These two factors are the vagueness of intellectual property rights and the high search costs for users. Together, the factors enhance the attractiveness of litigation as opposed to standard licensing. As a result, they may lead owners to rely on infringement litigation to generate revenue rather than licensing their inventions or expressive works. Consequently, owners may make more money by foiling use of intellectual property works than by facilitating use of them.

The vagueness of intellectual property rights imposes a significant degree of uncertainty on third parties. Intellectual property law protects intellectual assets not only against direct infringements—that is, cases involving exact replications of the intellectual asset. It also protects against indirect infringements—that is, cases involving close approximations of intellectual assets.⁵² The former type of protection may be termed *central protection* and the latter *peripheral protection*. Peripheral protection of intellectual assets makes it very difficult for third parties to discern the precise boundaries of intellectual assets. Unlike the readily identifiable boundaries of physical assets, the outer contours of intellectual property assets are elusive and indeterminable *ex ante*. Doctrines such as pattern similarity in copyright law⁵³

50. *E.g.*, Duncan Kennedy, *Cost-Benefit Analysis of Entitlement Problems: A Critique*, 33 STAN. L. REV. 387, 392–93 (1981); Lemley, *supra* note 9, at 1053–55; Henry E. Smith, *Property and Property Rules*, 79 N.Y.U. L. REV. 1719 (2004).

51. 15 U.S.C. §§ 1114–1117 (2012); 17 U.S.C. §§ 502–505 (2012); 35 U.S.C. §§ 283–285 (2012).

52. Jeanne C. Fromer, *Claiming Intellectual Property*, 76 U. CHI. L. REV. 719 (2009).

53. *See Arnstein v. Porter*, 154 F.2d 464 (2d Cir. 1946) (establishing a copying-analysis framework suggesting that increased access to a prior copyrighted work lowers the required similarity to find infringement).

and the doctrine of equivalents in patent law⁵⁴ expose even the most diligent of users to the risk of potential legal liability.

Moreover, in many cases, it is unclear whether an intellectual product constitutes protectable intellectual property at all. Patent law requires registration of inventions as a prerequisite for legal protection, but registration of a patent does not actually guarantee that the law protects the invention.⁵⁵ The validity of intellectual property rights in a new invention may always be attacked in court.⁵⁶ This means that it is very difficult for potential users of an invention to know whether that work enjoys any legal protection. Roughly half of all registered patents that are attacked in court are found to be invalid.⁵⁷ In some ways, the situation is even worse in the case of copyright. Copyright law does not require registration of the expression in order for the work to constitute intellectual property,⁵⁸ and, in any event, registration does not guarantee that the claimed property is actually protectable under law.⁵⁹ It is often difficult for potential users of expressions to be certain that there is any intellectual property to infringe.

For users and creators of intellectual products, the vague standards mean that litigation over rights can be a roll of the dice. Not all users and creators are equally risk averse. Some creators are happy to take their chances, imposing high costs of risk on all potential risk-averse users. This imposition of risk can constitute a substantial cost to society.

High search costs combine with the vagueness of intellectual property rights to make enforcement even more costly for society. The vagueness itself exposes users to high search costs; even where users discover the existence of a protected right, they cannot easily discern what is protected and what remains in the public domain. It bears emphasis, however, that the problem of search costs is distinct from the vagueness problem and that high search costs stem from several sources.

The problem is most acute in the context of copyright law, where protection is not conditioned on registration and where most works are not organized in a searchable database or a central repository. Additionally, the

54. Under the doctrine of equivalents, courts may find liability if the allegedly infringing device “performs substantially the same function in substantially the same way to obtain the same result.” *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605, 608 (1950) (quoting *Sanitary Refrigerator Co. v. Winters*, 280 U.S. 30, 42 (1929)) (internal quotation marks omitted).

55. See, e.g., 35 U.S.C. § 282(b)(2)–(3) (allowing defendants in patent-infringement suits to assert invalidity of the patent as a defense).

56. *Id.*

57. Carl Shapiro, *Patent System Reform: Economic Analysis and Critique*, 19 *BERKELEY TECH. L.J.* 1017, 1028 (2004).

58. See Robert D. Hadl, *Notice, Deposit and Registration*, 25 *BULL. COPYRIGHT SOC'Y U.S.A.* 218, 220 (1978) (“Registration, like deposit, is not a condition of copyright protection.”).

59. See generally Margreth Barrett, *Reconciling Fair Use and Trademark Use*, 28 *CARDOZO ARTS & ENT. L.J.* 1 (2010) (exploring the relationship among trademark use, registration, protection, and fair use).

tools available for searching copyrighted works are relatively limited.⁶⁰ While one can search for combinations of words and even for musical compositions and recordings, a potential user will find it very difficult to design effective search algorithms for color combinations, compositions of dance steps, or the design of useful articles. The search tools are even less effective if copyright protection inheres in the selection and arrangement of the constitutive expressive elements of the work.⁶¹ Compounding the problem is the fact that legal copyright rights can be nested, meaning that a single expression may turn out to be subject to several different intellectual property rights owned by several different parties, all of which must be collected in order to use the work.⁶² For instance, a user's ability to broadcast a film may be subject not only to the rights of the owner of the copyright in the film but also to the rights of the owner of the novel on which the screenplay for the film was based.

The search costs are somewhat lower in the domain of patents. Patent protection arises from registration.⁶³ Consequently, we have a searchable repository of all patent applications. Furthermore, the search tools in this case are quite effective, and they continue to improve.⁶⁴ Nevertheless, the search costs in the area of patent law are far from negligible. One reason for these costs is the sheer number of patents. Any patent *anywhere* in the world ought to be searched if one wishes to avoid patent infringement. Furthermore, it is necessary to search all preexisting literature. Additionally, patent applications are notoriously vague and difficult to parse,⁶⁵ and the language of claims is generally indefinite. Claims also incorporate various terms of art and cross references, which render the claims virtually incomprehensible to

60. See generally U.S. COPYRIGHT OFFICE, CIRCULAR NO. 22, HOW TO INVESTIGATE THE COPYRIGHT STATUS OF A WORK (2012).

61. See *Feist Publ'ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340 (1991) (holding that the selection and arrangement of works consisting of otherwise unoriginal elements may still be protected).

62. H.R. REP. NO. 94-1476, at 61 (1976) ("These exclusive rights, which comprise the so-called 'bundle of rights' that is a copyright, are cumulative and may overlap in some cases."); see also 17 U.S.C. § 201 (2012) (recognizing the various types of copyright ownership and the possibility of joint and collective ownership).

63. The patent itself does not exist until it is vested to the inventor by the government. See 35 U.S.C. § 153 (2012) ("Patents shall be issued in the name of the United States of America . . ."). Protection arises only after the issuance of this patent. See *id.* § 154 ("Every patent shall contain . . . a grant to the patentee, his heirs or assigns, of the right to exclude others from making, using, offering for sale, or selling the invention . . .").

64. See generally PATENT SEARCHING (David Hunt et al. eds., 2007); Dennis Crouch, *Google's Improved Patent Search*, PATENTLY-O (Aug. 14, 2012), <http://www.patentlyo.com/patent/2012/08/googles-improved-patent-search.html>.

65. See Edward D. Manzo, *How to Improve Patent Claim Interpretations*, 22 FED. CIR. B.J. 203, 203 ("[D]espite the crucial role that claim construction plays in patent litigation, our rules are still ill-defined and inconsistently applied, even by us[, the Federal Circuit].") (quoting *Retractable Techs. Inc. v. Becton, Dickinson, & Co.*, 659 F.3d 1369, 1370 (Fed. Cir. 2011)) (internal quotation marks omitted).

untrained readers. Surely, these obstacles can be overcome, but at a high cost.

As a result of the combined impact of an impressive array of remedial options, vagueness of rights, and high search costs for users, patent and copyright holders often find it more profitable to generate revenue through litigation than by commercializing their inventions and expressive works. This explains, in part, the emergence of so-called patent and copyright trolls—or, in less colorful terms, “non-practicing entities”—that amass portfolios of intellectual property rights without ever intending to turn them into fully developed products subject to market transactions. The sheer volume of intellectual property remedies, the vague content and scope of the rights, and the attendant high search costs make conflicts over intellectual property rights more likely to occur than disputes over other legal rights. The upshot is that holders of intellectual property rights rely on the court system at a disproportionate rate.

It is important to emphasize that part of the cost falls on the rest of society. The private cost of litigation does not equal the social cost.⁶⁶ The public purse partially subsidizes the operation of the legal system. This social subsidy gives private litigants an incentive to utilize the legal system. Thus, inefficient enforcement is costly to society both directly and indirectly. Uniform rules contribute significantly to the inefficiency of intellectual property enforcement.

B. *Arguments in Favor of Uniformity*

Given the obvious costs of uniformity, why has the one-size-fits-all approach persisted for so long? A careful perusal of the literature reveals three principal arguments that support a one-size-fits-all intellectual property law: (1) administrative costs; (2) considerations of political economy; and (3) information costs. In this Section, we address each of these arguments and assess the force of each. We conclude that none of these justifications in its own right presents a compelling case against differential protection. Nor do all of them combined.

1. Administrative Costs

The first and most intuitive argument in favor of a uniform system of intellectual property protection is the relatively low cost of administering this model. Carroll argues that variation in available legal rights creates two types of costs that can be called “administrative.”⁶⁷

One type of administrative cost arises primarily at the stage when rights are transferred. Licensing and transfer agreements concerning intellectual

66. Steven Shavell, *The Fundamental Divergence Between the Private and Social Motive to Use the Legal System*, 26 J. LEGAL STUD. 575, 581–86 (1997).

67. Carroll, *One Size*, *supra* note 11, at 1396.

property rights must necessarily be more detailed and precise as the variation in intellectual property rights grows. In the extreme case where intellectual property rights come in only one variety, drafting agreements should be relatively short and straightforward. As intellectual property owners acquire greater flexibility in tailoring their rights and transferring them, they must be more precise in delineating exactly what they wish to transfer. Drafting and policing agreements specifying many rights would presumably be more costly. Carroll concludes that this cost may be significant enough to foil the efficiency gains from tailored rights.⁶⁸ Stated otherwise, notwithstanding the inefficiencies of the one-size-fits-all model of intellectual property protection, its administrative cost savings are significant enough to make the one-size-fits-all approach preferable to the alternative of variable rights.

The other type of cost associated with administrating variable rights, according to Carroll, concerns expected efforts by litigants to test the boundaries of the different variants of legal protection.⁶⁹ If different kinds of intellectual property rights benefit from different levels of protection, rights owners will naturally attempt to game the system by characterizing their rights as the kind that enjoy greater protection, while potential users will try to game the system by recharacterizing the same rights as those enjoying less protection. Courts will have to expend efforts after the fact to determine the boundaries of the different rights, and legislators will have to do the same *ex ante*. Together, these efforts can impose substantial costs on society. A one-size-fits-all approach reduces these costs by reducing variability.

As we show later, the concerns about administrative costs are significant and noteworthy, but they do not apply equally to all efforts to tailor rights.⁷⁰ It is possible, we argue, to relax significantly the one-size-fits-all principle without incurring large administrative costs. Indeed, we argue that our proposal would likely lower such costs.

2. Considerations of Political Economy

A different argument for uniformity in the intellectual property system focuses on political-economy concerns. This argument holds that adherence to a one-size-fits-all design requires a broad consensus as a prerequisite for changing our intellectual property system. Since any change affects all right holders, alterations can pass only if they enjoy broad support from all relevant parties.⁷¹

This argument does not withstand scrutiny. As a descriptive matter, it is an empirical claim that lacks supporting data. More abstractly, there are ample reasons to doubt that an empirical examination would support the

68. *Id.* at 1399.

69. *See id.* at 1425.

70. *See infra* Section IV.A.

71. Carroll, *One Size*, *supra* note 11, at 1398 (“With uniform patents or copyrights, legislative change must submit to what Tom Olson calls the ‘iron law of consensus,’ by which all industries affected by the law must agree for an amendment to pass through the many veto points in the legislative process.” (footnote omitted)).

claim. There is a substantial literature demonstrating the gap between collective preferences and the outcomes of legislative processes.⁷² The argument that intellectual property legislation truly reflects societal consensus implicitly assumes that the various interest groups that affect intellectual property policy wield approximately the same political clout. This assumption is not supported by reality, however. In fact, the world of intellectual property politics is characterized by very strong groups, such as pharmaceutical companies and big movie studios,⁷³ that operate alongside much weaker groups, such as documentary filmmakers and small-time musicians. At least anecdotally, it is clear that strong interest groups can secure the legislation they want without help from others.⁷⁴ It is doubtful that the current shape of intellectual property law—including the various amendments that are adopted yearly—reflects wide consensus.⁷⁵

3. Information Costs

A final justification for the one-size-fits-all system is rooted in information costs. The argument is simple. It posits that the mere existence of different kinds of rights raises information costs for third parties. This argument relies heavily on the work of scholars such as Professor Merrill and Professor Smith.⁷⁶ In an influential article, Merrill and Smith persuasively argue that there is an optimal standardization of property and intellectual property rights, because such rights are *in rem* rights that apply against the rest of the world. Consequently, third parties must educate themselves about the scope and content of such rights. The more variance there is, the greater the informational burden with which the public must contend. Hence, according to Merrill and Smith, there ought to be a limit on the menu of property and intellectual property rights and, moreover, the recognition of new rights should be reserved to the state; as a matter of sound legal policy, private

72. The most famous illustration of this gap is Arrow's impossibility theorem, according to which, under conditions that plausibly apply to most democratic decisionmaking, it is impossible to measure collective preference through voting. See KENNETH J. ARROW, *SOCIAL CHOICE AND INDIVIDUAL VALUES* (3d ed. 2012). For a helpful review of some of the literature's main findings, see DENNIS C. MUELLER, *PUBLIC CHOICE III* (2003).

73. Eric E. Johnson, *Calibrating Patent Lifetimes*, 22 *SANTA CLARA COMPUTER & HIGH TECH. L.J.* 269, 290 (2006) (describing the pharmaceutical industry as "one of the most patent-advantaged industries"); see also Niels Schaumann, *Copyright Class War*, 11 *UCLA ENT. L. REV.* 247, 270–72 (2004) (explaining that members of the music and movie industries came to a position of influence in copyright law).

74. See, e.g., FREE EXPRESSION POLICY PROJECT, "THE PROGRESS OF SCIENCE AND USEFUL ARTS": WHY COPYRIGHT TODAY THREATENS INTELLECTUAL FREEDOM 15 (2003), available at <http://fepproject.org/policyreports/copyright2d.pdf> (detailing the extensive lobbying by Disney to extend the length of copyrights with the Sonny Bono Law).

75. See generally Jessica Litman, *Copyright Legislation and Technological Change*, 68 *OR. L. REV.* 275 (1989) (discussing the production of intellectual property legislation).

76. Thomas W. Merrill & Henry E. Smith, *Optimal Standardization in the Law of Property: The Numerus Clausus Principle*, 110 *YALE L.J.* 1 (2000). For similar insights in the context of intellectual property, see Clarisa Long, *Information Costs in Patent and Copyright*, 90 *V.A. L. REV.* 465 (2004).

parties should not have the power to create new property and intellectual property rights.⁷⁷

Merrill and Smith's insight is powerful and important. Yet it is not universally accepted.⁷⁸ Without rehashing the scholarly debate, it is sufficient for our purposes to make two observations. First, while Merrill and Smith provide a *prima facie* argument for optimal standardization, they never attempt to identify where the optimality point lies. Instead, they construct a theoretical argument proving that it would be socially undesirable to create an endless list of property and intellectual property rights and asserting that there exists an optimal standardization standard. The article does not attempt to argue that the current enumeration of intellectual property rights is necessarily the optimal one. Rather, the authors remain agnostic on this subject.⁷⁹ Hence, while the problem of excessive information costs on third parties is notable, it does not provide an adequate argument in favor of the status quo.

Second, and relatedly, in the domain of intellectual property rights there is already a great deal of experimentation carried out through private ordering. Patent and copyright law vest in right holders a broad power to reconfigure the standard bundle of rights they receive through private licensing and other transactions.⁸⁰ Right holders are at liberty to restrict their rights substantively (by giving away certain use permits but not others), temporally (by imposing time limits on licenses given to others), and geographically (by giving others use rights in certain geographic locations but not others). At the same time, as we noted,⁸¹ registration requirements in intellectual property law are quite limited. Hence, the information costs that the current uniform design imposes are significant. As we will explain,⁸² our proposal can actually reduce information costs, both by limiting the scope of overall protection and by imposing formal requirements that would make it cheaper for third parties to verify the content of intellectual property rights.

77. Merrill & Smith, *supra* note 76, at 26–34.

78. *E.g.*, Henry Hansmann & Reinier Kraakman, *Property, Contract, and Verification: The Numerus Clausus Problem and the Divisibility of Rights*, 31 J. LEGAL STUD. 3373, 3374 (2002); Daphna Lewinsohn-Zamir, *The Objectivity of Well-Being and the Objectives of Property Law*, 78 N.Y.U. L. REV. 1669, 1731–33 (2003).

79. Merrill & Smith, *supra* note 76, at 4–5, 38–40.

80. *E.g.*, Mark A. Lemley, *Contracting Around Liability Rules*, 100 CALIF. L. REV. 463 (2012) (showing that the same dynamic can occur when intellectual property rights are protected by liability rules); Robert P. Merges, *Contracting into Liability Rules: Intellectual Property Rights and Collective Rights Organizations*, 84 CALIF. L. REV. 1293 (1996) (discussing how intellectual property holders reconfigure their rights in response to changing market conditions). For a general discussion of the phenomenon of reconfiguring rights in property and intellectual property, see Abraham Bell & Gideon Parchomovsky, *Reconfiguring Property in Three Dimensions*, 75 U. CHI. L. REV. 1015 (2008).

81. *See supra* Section I.A.2.

82. *See infra* Section III.C.

II. A SELF-TAILORED SYSTEM OF INTELLECTUAL PROPERTY PROTECTION

In this Part, we propose a new direction for intellectual property protection. In particular, we provide the mechanics of our proposal; in the next Part, we examine more closely the incentives created by our proposed system and its overall effects. Since the basics of our proposed self-tailored system are similar for patent and copyright, we begin with a very general sketch of these two fields and subsequently explain the elements of our proposal that are common to these areas of intellectual property. We then elucidate how our proposed system would work for patent and copyright individually. We close by offering some observations common to both fields of intellectual property law.

As a preliminary matter, our proposal assumes that intellectual property rights are granted solely to incentivize creation. Consequently, society benefits by simultaneously incentivizing all cost-effective creation while paying the lowest possible price (particularly in terms of rights granted) necessary to incentivize creation.⁸³ This view of intellectual property rights excludes the idea that there is anything *intrinsically* wrong with nonconsensual use of intellectual property. We are concerned with protecting the exclusive rights of intellectual property owners only insofar as this protection ensures that the creator realizes enough profit to justify her creative activity. As Professor Balganesh writes, this expectation lies at the heart of the incentive theory of intellectual property: “[c]reators [and inventors] are presumed to be rational utility maximizers and therefore capable of being induced to create by the prospect of controlling a future market for their yet-to-be-created works.”⁸⁴ Once this profit margin is reached, infringements do not bother us at all.

This is a simplifying assumption. We can imagine a system of intellectual property protection that incorporates other aims of society. For instance, society might wish to protect creators’ rights for reasons other than incentivizing creation, and the law might therefore offer additional protections for creators, including “moral rights.” Of course, so long as incentivizing creation remains a goal of this alternative system, aspects of our proposal would still be valuable. Our system, though, would have to be modified or added to in order to incorporate other goals of the intellectual property system.

83. For discussions of the centrality of incentivizing creators to American copyright and patent law, see, for example, Jeanne C. Fromer, *Expressive Incentives in Intellectual Property*, 98 VA. L. REV. 1745, 1746 (2012) (noting that “[a]ccording to the dominant American theory of intellectual property, copyright and patent laws are premised on providing creators with just enough incentive to create”), and WILLIAM M. LANDES & RICHARD A. POSNER, *THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY LAW* 4–5 (2003).

84. Balganesh, *supra* note 34, at 1573.

A. *An Overview of Patent and Copyright*

Before introducing our self-tailored system, we briefly review the mechanics of extant patent and copyright law, beginning with the law of patents.

Under current patent law in the United States, inventors can obtain legal protection for inventions that are novel, non-obvious, and useful, so long as the invention is of a patentable subject matter.⁸⁵ Traditionally, the first inventor to create the invention obtained the law's protection.⁸⁶ Today, the United States has begun transitioning to a first-to-file system in which priority goes to the first inventor to register her invention rather than the first to invent it.⁸⁷

U.S. law has always required registration as a condition of patent protection.⁸⁸ Inventors must disclose their inventions to the Patent and Trademark Office ("PTO") in a patent application that enables others to replicate the invention.⁸⁹ Patent examiners at the PTO can decide whether to accept or reject a patent application,⁹⁰ but the courts get the last word. If the PTO rejects the patent application, the applicant has the right to administrative appeals as well as resort to courts of law.⁹¹ Even if the PTO approves the application and issues the patent, courts may always reject the patent after the fact as improvidently granted;⁹² in fact, studies show that, in patent litigation, courts ultimately reject nearly half of patents that are challenged.⁹³

Patents convey to the owner the right to prevent others from engaging in the manufacture, sale, offer for sale, use, or importation of the protected invention.⁹⁴ The patent rights endure for twenty years,⁹⁵ with the exception of design patents, which receive only fourteen years of protection.⁹⁶ Because patents grant only the negative right to prevent others' actions⁹⁷ but not the affirmative right to use the invention, there may be some cases where no one can use a patented invention for an extended time. For instance, a newly patented drug may lack approval by the Food and Drug Administration. In

85. 35 U.S.C. §§ 102, 103 (2012).

86. See MARGRETH BARRETT, INTELLECTUAL PROPERTY 40 (Emanuel Law Outlines Series, 2d ed. 2008) ("Subsections 102(a), (e), and (g), taken together, demonstrate the general U.S. policy of reserving a patent for the first person to invent . . .").

87. Leahy-Smith America Invents Act, Pub. L. No. 112-29, § 3, 125 Stat. 284, 285 (2011).

88. 35 U.S.C. §§ 153, 154.

89. *Id.* § 112.

90. *Id.* § 131.

91. *Id.* §§ 134, 141, 145.

92. See *id.* § 282(b) (listing invalidity of a patent as a defense in an infringement suit).

93. Shapiro, *supra* note 57, at 1028.

94. 35 U.S.C. § 154(a)(i).

95. *Id.* § 154(a)(2).

96. *Id.* § 173.

97. See *id.* § 154(a)(i) (including "the *right to exclude* others from . . . using . . . the invention" (emphasis added)).

that case, non-patent holders cannot use the drug due to patent law, and the inventor cannot use the drug due to federal regulations related to drugs. Patent law makes some allowance for this situation, giving patent owners the opportunity to extend the term of certain patents due to regulatory processes.⁹⁸

Patent law imposes liability on two categories of people who have not directly infringed the patented rights: those who actively induce infringement⁹⁹ and those who engage in contributory infringement by selling, importing, or offering certain products that others will use to infringe.¹⁰⁰ Together, the two types of liability for noninfringing parties are generally called secondary liability.

The remedies imposed by law for patent infringement include injunctive relief,¹⁰¹ actual damages,¹⁰² defendant's profits,¹⁰³ treble damages,¹⁰⁴ statutory damages,¹⁰⁵ and sometimes enhanced statutory damages.¹⁰⁶

Copyright law protects original works of authorship that are fixed in a tangible medium.¹⁰⁷ Authors obtain protection for their works the moment they fix them in that medium.¹⁰⁸ Authors do not need to register their works or otherwise notify the world of their creation. But works cannot be infringed unless the infringer actually relies on a protected work.¹⁰⁹ Thus, if a user elsewhere in the country manages to reproduce the author's expression without ever having encountered the original work, there is no infringement. As Judge Hand observed, "if by some magic a man who had never

98. See *id.* § 156(a)(4) (allowing term extensions for products "subject to a regulatory review period"); Karin L. Tyson, *The Role of the Patent and Trademark Office Under 35 U.S.C. Section 156*, 54 *FOOD & DRUG L.J.* 205 (1999) (detailing the extension process).

99. 35 U.S.C. § 271(b).

100. *Id.* § 271(c).

101. *Id.* § 283.

102. *Id.* § 284 (directing courts to provide damages "adequate to compensate for the infringement").

103. *Id.* § 289 (allowing damages in the form of defendant's profits only in the case of design patent infringements).

104. *Id.* § 284.

105. 35 U.S.C. § 284 also provides that the court may award damages of a reasonable royalty.

106. 35 U.S.C. § 285 permits the court to award attorneys' fees if the patent holder is already entitled to damages.

107. 17 U.S.C. § 102(a) (2012).

108. See *id.* ("Copyright protection *subsists* . . . in original works of authorship fixed in any tangible medium of expression . . ." (emphasis added)); H.R. REP. NO. 94-1476, at 52 (1976) ("[T]he concept of fixation is important since it not only determines whether the provisions of the statute apply to a work, but it also represents the dividing line between common law and statutory protection.").

109. See PAUL K. SAINT-AMOUR, *THE COPYRIGHTS: INTELLECTUAL PROPERTY AND THE LITERARY IMAGINATION* 7 (2003) ("Copyright does not even stipulate that 'original' works be different from preexisting ones, only that they be the products of creative exertion rather than outright copying.").

known it were to compose anew Keats's Ode on a Grecian Urn, he would [himself] be an 'author,'" and he would not have infringed Keats's rights.¹¹⁰

The owner of a copyright in a work has the exclusive right to reproduce, adapt, distribute, display, and perform the protected work.¹¹¹ In addition to owners' rights, authors have several rights that they retain even if they transfer ownership of the protected work. These include rights of attribution and integrity for works of visual art,¹¹² and, in most cases, the right to terminate transfers of ownership of any works.¹¹³ There are no general-use rights protected by copyright, so an owner of a copy of a protected work may use it in any way that does not abridge the specific exclusive rights of the owner or author.

Copyrighted works are protected for extremely long terms. Under current law, a new work is generally protected for the life of the author plus another 70 years,¹¹⁴ although for some types of works and authors, the term of protection is 95 years from publication or 120 years from creation.¹¹⁵

Although there is no statutory provision for secondary liability in copyright law, case law has established two kinds of secondary infringement: contributory and vicarious.¹¹⁶ Many of secondary infringement's rules are similar to those in patent law, and courts often draw from patent law in shaping copyright doctrines of secondary liability.¹¹⁷

Copyright law provides for remedies including injunctive relief,¹¹⁸ actual damages,¹¹⁹ defendant's profits,¹²⁰ statutory damages,¹²¹ and sometimes enhanced statutory damages.¹²² In order to benefit from statutory damages, owners must have registered copyright in the protected work no later than the earlier of three months after first publication or one month after the

110. *Sheldon v. Metro-Goldwyn Pictures Corp.*, 81 F.2d 49, 54 (2d Cir. 1936).

111. 17 U.S.C. § 106.

112. *Id.* § 106A.

113. *Id.* §§ 203(a), 304(c).

114. *Id.* § 302(a).

115. *Id.* §§ 302(a), (c).

116. Sverker K. Högberg, Note, *The Search for Intent-Based Doctrines of Secondary Liability in Copyright Law*, 106 COLUM. L. REV. 909, 914 (2006) ("Although the Copyright Act does not explicitly proscribe indirect copyright infringement, the federal courts have adopted two common law secondary-liability doctrines—vicarious liability and contributory infringement—from tort law." (footnote omitted)).

117. The most important case in this regard is *Sony Corp. of America v. Universal City Studios, Inc.*, 464 U.S. 417, 420–21, 442 (1984), in which the Supreme Court relied on the "staple article of commerce" in patent law to determine the secondary liability of technology providers for copyright infringements committed by users.

118. 17 U.S.C. § 502.

119. *Id.* § 504(a)(1).

120. *Id.*

121. *Id.* § 504(c).

122. *Id.* § 504(d).

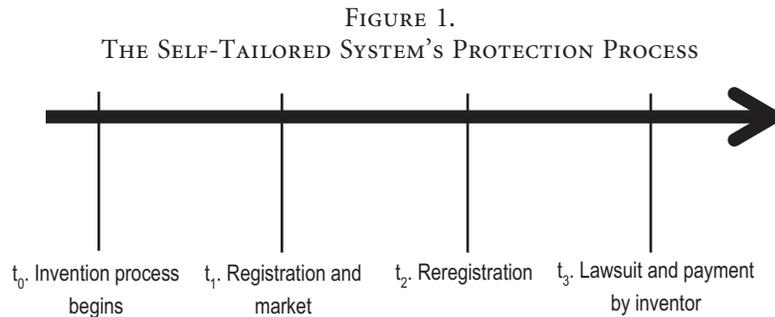
copyright owner learns of the infringement.¹²³ In order to file any kind of suit, the owner must register the copyright at any time prior to the suit.

B. *The Mechanics of Self-Tailored Rights*

We now introduce our self-tailored system against the background of extant patent and copyright law.

The basic concept animating our self-tailored system is that intellectual property rights should be neither automatic nor uniform. Our proposed system requires creators to buy their legal protection by paying a fee for their rights. Importantly, unlike current law, our proposed scheme would require registration of all covered intellectual property rights, even copyright. Rights would be considered invalid unless and until they were registered. Initial registration would be required to obtain the minimum package of rights guaranteed by law. One year later, creators would face mandatory reregistration, in which they would be required to specify what package of legal protections they want for their creations—either the full package offered by the law or smaller self-tailored packages, which run all the way down to a minimum package containing only a few rights for a short time, enforceable only against direct infringers.¹²⁴ The creator's choice of legal protection, in turn, would establish the fee that the creator would have to pay. Naturally, the size of the fee would depend on the amount of legal protection purchased. The minimum package of rights would be available for free, while the full package would cost the maximum fee.¹²⁵

In our self-tailored system, the protection process would begin with the creator or inventor. We envision the following time line:



123. *Id.* § 412.

124. In the context of adaptation rights in copyright law, Balganesch proposes that authors receive protection only for foreseeable uses of their works—unforeseeable uses would be unprotected. Balganesch, *supra* note 34. Unlike us, however, Balganesch does not put a price on foreseeable uses but rather allows authors to receive protection for free with respect to all such uses. *Id.*

125. We describe our pricing scheme in greater detail later in this Part. See discussion *infra* Section II.E.

At t_0 , the creator would commence the creative process. At t_1 , she would register the relevant creation after having perfected it. She could begin marketing it at this time but would be guaranteed only one year of copyright or patent protection. During this first year, the inventor would receive the full set of patent and copyright protections, which would allow her to test the market.

At the end of this year, the creator would be required to choose the extent of her rights. At this point— t_2 —she would reregister her creation and specify the “price” of infringing her chosen legal protections. The creator’s chosen price of infringement would then serve as the basis for calculating the size of the fee the creator would have to pay for her legal rights. The year of market testing between t_1 and t_2 would give the creator access to the information necessary to choose a price optimizing her profits from the creation.

It is important to note that the creator would *not* be required to pay this fee upon registration at t_1 or at reregistration at t_2 . She would make the actual payment at t_3 —when she seeks to enforce her rights. As we shall explain, the fee that the creator would eventually have to pay would be calculated based on this chosen price of infringement but would not be identical to the price.

The next piece of the puzzle is deciding what legal protections the creator would be able to purchase. To explain our proposal, we must take a step back and examine the components of extant intellectual property law. For simplicity’s sake, let us begin by dividing the basic components of intellectual property protection into four categories. Under current law, the creator of a protected piece of intellectual property receives (1) an exclusive set of rights; (2) that can be enforced against certain classes of people; (3) for a specified period of time; and (4) that are backed by a particular set of remedies.

Extant law establishes the scope of all four of these elements in fixed amounts and automatically awards them to each new qualified item of intellectual property. For instance, when an author creates a new copyrightable work of authorship and properly fixes it in a tangible medium, she automatically receives the set of rights specified in copyright law (such as the right to reproduce, adapt, display, and distribute)¹²⁶ for a period fixed by law (generally for the life of the author plus seventy years)¹²⁷ that is backed by a specified set of remedies (primarily rights to injunctive relief, statutory damages, and compensatory damages, as well as potential criminal penalties),¹²⁸ and that can be enforced against direct infringers of the rights as well as “secondary infringers.”¹²⁹ Current law slightly varies the package of legal protections according to very broad categories of works. Architectural works, for

126. 17 U.S.C. § 106.

127. *Id.* § 302(a).

128. *Id.* §§ 502, 504, 506.

129. See *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 434–35 (1984); H.R. REP. NO. 94-1476, at 61 (1976) (recognizing the liability of contributory infringers of copyrights).

instance, carry slightly different rights than do graphic works.¹³⁰ But such variations are beyond the author's control. If an author writes a novel, for instance, she cannot unilaterally change the package of rights; she cannot, for instance, establish at the outset that her rights will last for only twenty years or that her rights will not be enforceable by statutory damages. At best, the author can offer to others licenses to undertake activities protected by the author's exclusive rights—but such licenses cannot permanently eliminate the copyright owner's rights.¹³¹

By contrast, in our proposal, upon creating any item protected by intellectual property law, the creator would have to choose from a menu specifying terms of protection, protected rights, classes of potential infringers, and available remedies. We do not suggest eliminating the protections provided by current law. The list of terms, rights, classes of infringers, and remedies in our proposed system would all be based on the current list of protections in the law. Yet the creator would have to pay for each right, for each term of protection, for each class of infringer, and for each available remedy.

For instance, a novelist could buy the full set of rights offered by law for her novel: the exclusive rights to reproduce, adapt (i.e., prepare derivative works from the novel), distribute, perform, and display.¹³² Or she might waive the performance and display rights and buy only protection against reproduction, adaptation, and distribution. Similarly, she could purchase the full protection period of lifetime plus seventy years.¹³³ Alternatively, she could purchase protection for only ten or twenty or fifty years. She could likewise purchase the full set of extant protections of entitlement to injunctive relief, compensatory damages, and statutory damages,¹³⁴ or she could waive the injunctive rights and purchase only the right to compensation. She could buy the right to sue all secondary infringers as well as primary infringers, or she could waive the right to sue contributory infringers or other secondary infringers.

How would the creator choose her package of legal protections? And why would she ever choose anything less than the maximum set of protections?

The answer can be found in the fees our system would require creators to pay for intellectual property rights. Our proposal would demand that creators pay a large fee that would differ according to two variables: the package of legal protections and the “price” of infringement as established by the creator.

130. Compare 17 U.S.C. § 120(a) (describing the scope of “exclusive rights in architectural works”), with *id.* § 106A (describing the scope of rights to attribution and integrity in visual art works).

131. *Id.* § 203(a)(5) (making the author's right to terminate a license agreement inalienable).

132. See *id.* § 106.

133. See *id.* § 302(a).

134. See *id.* §§ 502, 504, 506.

We propose that the fee for the full package of legal protections should be some fixed percentage of the price of infringement. For simplicity's sake, in this Part, we assume that the fixed percentage would be set at 1% of the full price. That means that creators could obtain a full set of rights for the full term of legal protection backed by the full set of legal remedies against all parties in exchange for payment of a fee equal to 1% of the infringement price established by the creator. The creator could set any price of infringement she chooses, and the fee would then vary according to the fixed percentage established by law. For instance, a creator who believed her work to be extraordinarily valuable could specify an infringement price of \$100 million. The cost of this protection would be large; if she wanted the full set of legal rights, she would have to pay a \$1 million fee for them. A creator who believed the value of the work to be low—for instance, only \$100—but who still wished to obtain the full package of legal protections would pay a much smaller amount—only \$1—to protect her rights.

Naturally, this system appears to incentivize owners to declare a low price of infringement in order to reduce the fees they would have to pay for legal protection. To avoid this difficulty, our model would provide creators with a powerful incentive not to understate the price: in our proposal, the price of infringement would also set the cap for all future remedies the creator could receive. Thus, only a high price of infringement would allow the creator to obtain substantial damage awards.

In addition to permitting creators to specify a low price of infringement, our proposal would offer creators a second way to reduce the fee they would have to pay for legal protection. Creators could choose less-inclusive packages of legal protection, thereby reducing fees even for a high price of infringement. For instance, creators might choose shorter terms of protection, or smaller lists of rights, and have to pay only .2% or .5% of the price of infringement (i.e., only 20% or 50% of the fee for full protection).

In one extreme case, each intellectual property right would enjoy a free set of protections. For instance, the minimum protection for a copyrighted work might be a five-year term protected only by monetary relief and good only against primary infringers. The fee for this minimal package would be 0% of the price—that is, nothing. Thus, intellectual property would always enjoy a minimum level of protection. At the other extreme, the creator would get the entire package of protections available under current law, for the “full” fee (1% of the price, in our example).

It is clear that, under our proposal, even for small packages of protected rights, fees might turn out to be quite substantial. Fortunately for the creator, our proposal would not require paying the entire fee immediately upon registering the intellectual property right and selecting the package of legal protections. Rather, upon registration, the creator would pay a small amount reflecting the clerical costs of registering rights (for illustrative purposes, let's imagine the amount as \$25). The creator would pay the remainder of the fee only at the moment she files her first infringement suit.

At this point, it is important to explain the precise relationship between the price of infringement and the remedies that would be available to owners of intellectual property. For monetary remedies, the relationship would be straightforward. The price of infringement would serve as a cap on the total monetary damages (compensatory and statutory) that could be realized by the intellectual property owner during the term of protection. Once the total damages reach the cap, the owner would no longer be able to obtain any monetary damages from future infringers. For instance, the novelist who had specified a \$100-million value for her novel (and who had paid a \$1-million fee to buy the full set of legal protections) would be able to collect damages from numerous potential infringers before reaching the cap. The novelist who valued her work at \$100 would likely reach the cap in the first successful lawsuit.

The relationship between the price of infringement and injunctive relief is more complicated. In our proposal, no matter what the price of infringement, as long as the total cap on damages has not yet been exceeded, creators of intellectual property works would be entitled to injunctive relief as they are under existing law. Even after the issuance of the injunction, however, the potential user against whom the injunction was issued would be able to force the sale of a license by paying permanent damages, effectively lifting the injunction. This means that, under our proposal, courts would not issue unconditional injunctions. Instead, for any given injunctive order, the court would issue an accompanying alternative order of permanent damages, which the defendant could pay as an alternative to continuing to obey the injunction.¹³⁵ The price of infringement—or what remains of it after previous damages have partially exhausted the rights of the creator—would serve as the upper limit of the court order of permanent damages. If the cap had already been reached—that is, if all the allowable damages under the price of infringement had already been paid due to previous lawsuits—the court could not issue an injunction.

Statutory damages would also be available in our proposal, but they, too, would count against the damage cap established by the creator-specified price of infringement. Criminal sanctions against users would not be available at all.

C. *Tailoring Patent and Copyright*

Having generally provided the basics of our self-tailored system of protection, we now explain the system in greater detail in relation to the subfields of patent and copyright. We begin with patent law.

Patent law provides ample room for self-tailored rights. As noted above, in our system, the package of rights to be tailored is composed of four categories: (1) the set of exclusive rights; (2) the classes of people against whom

135. The mechanism of permitting defendants to pay an award of “permanent damages” and thereby lift the injunction is well known in case law. *See, e.g.,* *Boomer v. Atl. Cement Co.*, 257 N.E.2d 870 (N.Y. 1970) (conditioning an injunction on the nonpayment of permanent damages).

the rights may be enforced; (3) the period of time for which the rights can be enforced; and (4) the set of remedies backing the rights.¹³⁶

Let us begin with the exclusive rights. Patent law protects four different kinds of exclusive rights: manufacture, use, sale, and import. For some kinds of inventions, the sale rights might be the most valuable; for others, the use rights. Each right could be sold separately or together as a package. For instance, inventors could take the full package of all four sets of rights or a lesser package of, say, selling and importing only. The smallest packages would be any of the four rights standing alone.

The second set of options for tailoring packages of rights can be found in the targeted classes of people against whom rights could be enforced. The full package would allow suits against primary infringers, inducers, and contributory infringers. The smaller packages would allow suits against only two or one of these classes of infringers.

The terms of protection would be most readily tailored. Packages could vary from a minimum term (of a single year, for example) to the maximum term of twenty years plus potential extensions. Smaller packages might be available year by year or perhaps only in blocs of several years. Additionally, packages might include or exclude the possibility of obtaining extensions due to regulatory activities.

The final set of options for packaging rights would concern available remedies. Here, all packages would be centered on an inventor-specified price of infringement that would cap damages. The full package would add to this the rights to injunctive relief (subject to purchase by the infringer, as specified *supra* in Section II.B), statutory damages, enhanced damages (such as treble damages), and profits. Lesser packages would waive one or more of these rights. The minimum package would provide relief only for actual damages up to the cap of the price of infringement.

It is important to note that patent law already requires registration as a condition for acquiring legal rights. Unlike copyright and trademark law, for instance, patent law denies intellectual property protection to inventions that are not registered with the PTO.¹³⁷ In addition, utility patents are subject to periodic reregistration, in the form of paying maintenance fees. In order to maintain such patents, patent owners must pay fees ranging from several hundred to several thousand dollars¹³⁸ three times during the life of the patent (approximately at three, seven, and eleven years).¹³⁹

Thus, patent law already allows for a small amount of self-tailoring of rights. Our proposal would greatly expand that self-tailoring.

As with patent law, it is not difficult to contrive packages of rights that could be offered to copyright owners. There are eight basic kinds of exclusive rights granted to authors under copyright law, if one includes termination

136. See *supra* Section II.B.

137. See 35 U.S.C. § 111 (2012).

138. The current fee schedule is available at *Fee Schedule*, U.S. PAT. & TRADEMARK OFF., <http://www.uspto.gov/web/offices/ac/qs/ope/fee010114.htm> (last revised May 12, 2014).

139. 37 C.F.R. § 1.20(e)–(g) (2013).

rights and the moral rights that attach to works of visual art: reproduction, adaptation, distribution, display, performance, termination, integrity, and attribution. Each right could be sold separately or together as a package. Creators could purchase a full package of all six to eight rights (depending on whether the work is one of visual art) or lesser packages of as few as a single right. As with patent, packages could also be tailored according to the targeted classes of people against whom rights could be enforced, from a full package allowing suits against primary infringers, vicarious infringers, and contributory infringers to smaller packages allowing suits against only two or one of these classes. The packages associated with available remedies should be similar to those presented in the context of patent law and centered on a creator-specified price of infringement that would cap damages.

Given the extremely long duration of copyright protection, it is quite easy to draft different packages of terms of rights. The minimum package could have a very short minimum term (perhaps only 1 year or 5 years), while the maximum package could include maximum terms of 70 years plus life, 120 years from creation, or 95 years from publication. Again, it should be possible to draft smaller packages by the length of term.

D. *Optimizing Packages*

Our proposed system has envisioned a great deal of self-tailoring, allowing creators to vary their rights along four dimensions with few limitations: legal rights, term of rights, targeted defendants, and remedies. An alternative strategy would reduce the number of packages to a small set of popular configurations.

The Creative Commons project employs an example of this latter strategy. An organization founded in 2001 as part of a movement to increase the number of copyrightable works in the public domain, Creative Commons has released several model license agreements that owners of copyrighted works can use to waive some of their rights for the benefit of users.¹⁴⁰ Creative Commons licenses are based on four modules—Attribution, NonCommercial, ShareAlike, and NoDerivatives—which consist of a set of restrictions on users.¹⁴¹ For instance, the NonCommercial module forbids commercial use of the works, while the Attribution module forbids use without attributing the work to the original owner.¹⁴² The modules can be combined with one another and a waiver of the owners' other rights to produce a set of licenses allowing users to use the work in all but the manner forbidden by the modules. The theoretical result is sixteen possible licenses

140. *History*, CREATIVE COMMONS, <http://creativecommons.org/about/history> (last visited May 14, 2014).

141. Creative Commons provides an explanation of the licenses at *Frequently Asked Questions*, CREATIVE COMMONS, <http://wiki.creativecommons.org/FAQ> (last visited May 19, 2014).

142. *Id.*

from which owners can choose,¹⁴³ although Creative Commons forces owners' hands on some of the modules, and it therefore lists only six "major" licenses.¹⁴⁴

Obviously, the Creative Commons licenses do not exhaust all of the possible configurations of open licenses that owners could potentially employ. Indeed, Creative Commons itself suggests to authors several other open licenses that other groups have developed.¹⁴⁵ The Creative Commons strategy for licenses thus sacrifices completeness for comprehension. Instead of offering copyright owners a full menu of licensing choices, Creative Commons focuses on sets of rights that it deems most likely to meet authors' needs and to advance the organization's goal of increasing the number and quality of works available to the general public.

Under our system, in designing packages of rights, lawmakers will similarly have to choose between completeness and comprehension. Our proposal offers creators many choices, but it does not offer complete freedom. For instance, we imagine packages containing a right to exclusivity in use or exclusivity in creating derivative works. More precisely tailored packages could define particular kinds of uses and particular kinds of derivative works. At the same time, our proposal offers greater freedom to tailor than does the set of licenses suggested by Creative Commons.

E. Pricing Packages

Up to this point, we have described possible ways to package intellectual property rights for inventors and creators to purchase, but we have said little about how to price the different packages. In describing our proposal, we posited a fee of 1% of the price of infringement. While this figure was merely illustrative, it demonstrates how our system could be operationalized—in particular since it shows that even a relatively small charge can bring about an intellectual property system that differs dramatically from the one we know.

In setting the actual fee for intellectual property protection, policymakers will have to balance two competing policy concerns. On the one hand, the initial charge should be substantial enough to prompt producers of intellectual property works to consider it when selecting how much protection to procure. For this reason, a token fee consisting of a tiny fraction of the damages cap would not do. If policymakers were to impose a .0001% charge, creators would not likely relinquish any protection voluntarily, and we would find ourselves with a system much like the one we know today. On

143. There are sixteen (2⁴) possible combinations of four-module decisions.

144. A current list of the major licenses is available at *About the Licenses*, CREATIVE COMMONS, <http://creativecommons.org/licenses/> (last visited May 19, 2014) (Attribution, Attribution-ShareAlike, Attribution-NoDerivatives, Attribution-NonCommercial, Attribution-NonCommercial-ShareAlike, and Attribution-NonCommercial-NoDerivatives).

145. *Frequently Asked Questions*, *supra* note 141 ("We recommend against using Creative Commons licenses for software. . . . We recommend considering licenses made available by the Free Software Foundation or listed as 'open source' by the Open Source Initiative.").

the other hand, the charge cannot be too high, lest it substantially erode incentives to produce the work in the first place. For example, imposing a fee of as much as 50% of the total price of infringement would seriously deter production of intellectual property, especially by risk-averse individuals and small firms. This result would be highly undesirable.

While theoretical considerations can guide us in the task of pricing different bundles, the question is ultimately empirical in nature. The best way to set the fees is to base the calculations on empirical data. At present we lack data telling us exactly what combination of rights is necessary to incentivize different kinds of creations. But—in what we view as another potential advantage of our proposal—implementing our system would provide lawmakers with the data they need to set accurate fees that correspond to different levels of protection.

On top of its other advantages, the system we propose is information forcing. It relies on creators selecting their legal protections from menus. One of the well-known virtues of menus is that they allow self-screening in a way that one-size-fits-all protection cannot.¹⁴⁶ By offering intellectual property owners different bundles of protection and inviting them to choose among them, our system collects valuable information about the nature of the incentives necessary to underwrite production of intangible items. This information could be used to better price and tailor future menus without unduly diminishing incentives to create. Naturally, this result would be achieved through a process of trial and error. Optimal pricing would not likely emerge instantaneously. Over time, though, through a process of periodic adjustments, the fees would approximate a price that strikes the right balance between incentivizing creativity and avoiding excessive protection.

III. IMPLICATIONS OF SELF-TAILORED INTELLECTUAL PROPERTY RIGHTS

Several important benefits emerge from adopting a bottom-up, fee-based, self-tailored intellectual property system.

First, the self-tailored system would force patentees and creators to take into account the costs they impose on society at large. It is true, of course, that a world without intellectual property protection would not sufficiently incentivize creation. Intellectual property laws incentivize creation by granting inventors the right to exclusive enjoyment of many of the benefits that their inventions bestow on society.¹⁴⁷ But current intellectual property laws also impose costs on society by creating monopolies and by encouraging potentially excessive litigation.¹⁴⁸ Extant intellectual property laws do not

146. See generally Ian Ayres, *Menus Matter*, 73 U. CHI. L. REV. 3 (2006) (discussing the ways in which menus change contractual relations and affect decisionmaking).

147. E.g., U.S. CONST. art. I, § 8, cl. 8 (giving the U.S. Congress the power to grant patents and copyrights in order to “promote the Progress of Science and useful Arts”); *Mazer v. Stein*, 347 U.S. 201, 219 (1954) (“The economic philosophy behind the clause empowering Congress to grant patents and copyrights is the conviction that encouragement of individual effort by personal gain is the best way to advance public welfare . . .”).

148. See *supra* Section I.A.1.

force inventors and creators to take account of these costs. Thus, the law today encourages creators to take advantage of rights that are both harmful to society and of greater scope than necessary to incentivize creation. Our system would lead inventors and creators to tailor their intellectual property protection to fit their needs, thus preserving incentives to create and innovate while lowering the anticompetitive effects stemming from intellectual property protection. While it is impossible to predict in the abstract the magnitude of this benefit per any given intellectual work, it is important to understand that in the aggregate the effect may be significant.

Second, self-tailored protection would increase the use of *existing* works. The excessive protections offered by extant law tend to harm consumers, both by reducing access and by raising the price of products.¹⁴⁹ Our self-tailored system leaves consumers in the same position only in the event that creators and inventors choose the full package of rights. But given the financial incentives, creators and inventors would often choose smaller packages of rights. And where the fees associated with self-tailored protection lead creators to choose a smaller package of rights, consumers necessarily benefit. By reducing the scope of intellectual property protection, our self-tailored system would ensure consumers quicker, broader, and cheaper access to protected works.

In this respect, our system can be thought of as generating the same effect as the Creative Commons movement, except much more effectively and on a much greater scale. The movement applies only to copyrighted works¹⁵⁰ and relies solely on ideological or personal incentives. Our proposal, by contrast, also extends to patents and would employ monetary incentives in addition to ideological and personal ones. By lessening the overall amount of intellectual property protection, our system would enhance the use of existing works, reduce the potential for holdups and misuse of rights, and ease pressure on the courts.

Third, and just as importantly, the narrower scope of protection that would result from our self-tailored system would create more elbow room for *future* creators and innovators. In the age of remixes and follow-on innovation, inventors and creators are some of the most important consumers of protected intellectual property.¹⁵¹ Greater consumer access to intellectual property means, *inter alia*, greater access for inventors and creators. Our self-tailored system's narrower scope of intellectual property rights would reduce the need for follow-on inventors to expend resources in order to secure permissions from preexisting right holders (or design around their

149. See *supra* Section I.A.1.

150. Séverine Dusollier, *The Master's Tools v. The Master's House: Creative Commons v. Copyright*, 29 COLUM. J.L. & ARTS 271, 274 (2006) ("The main purpose of Creative Commons parallels that of the free software movement which seeks to use copyright to authorize, rather than inhibit, copying, distribution, modification and re-use of software and other copyrighted works.").

151. See generally LAWRENCE LESSIG, REMIX: MAKING ART AND COMMERCE THRIVE IN THE HYBRID ECONOMY (2008).

protection). It would enable those innovators instead to focus their resources and attention on producing new intellectual property. In other words, our system has the potential to improve the terms of the temporal trade-off implicated by intellectual property protection in favor of future creators without meaningfully weakening the production incentives for current copyright holders and patentees.

Finally, we expect self-tailored protection to benefit the legal system by reducing the number of cases that go to court. The reduction in the total number of intellectual property rights should bring down the number of suits filed. Furthermore, we expect cases to be less complicated and time consuming on account of a drop in the number of rights asserted in every suit. The incentive effects of our self-tailored system deserve further explication, and in the remainder of this Part, we discuss those effects in greater detail. We can already note, however, that the self-tailored system should greatly reduce the inefficiencies of current litigation and encourage creators to favor voluntary market transactions over litigation.

In the remainder of this Part, we look to the incentives created by self-tailored protection and then turn the spotlight on our system's impact on non-practicing right holders, widely known in the literature as "trolls." We conclude by pointing to several additional benefits of our proposal.

A. *Incentives of the Self-Tailored System*

Our self-tailored protection system aims to reduce protections claimed by authors and inventors while preserving, as much as possible, the existing law of intellectual property protection. Thus, our system does not fundamentally change the kinds of protections offered by intellectual property law or the kinds of intellectual property protected by law. Our system does not mandate reducing intellectual property protection, and it does not propose any new substantive barriers to obtaining protection. Rather, our self-tailored system is based on charging creators fees for the protections they select. These fees would guide creators in deciding how much protection they wish to secure for their inventions and expressive works.

The effect of our self-tailored system on the world of intellectual property thus hinges on its effect on the incentives of creators. Our aim is to create a system that lowers the amount of protection the law offers while preserving incentives for creation. To accomplish this aim, the system must set fees paid by creators at a level that deters creators from purchasing excessive levels of protection. Naturally, by conditioning protection on payment, our system runs the risk that, on the margin, some works will never be created.

Still, for two reasons, we believe that the risk of significantly deterring innovation is quite small. First, creators would still have the ability to reduce the fees they pay for intellectual property protection by purchasing only those rights from which they expect to profit most highly. This means that it would be rare for the fee paid by creators to be so large as to push a creator

past the margin where it is no longer valuable to create. Second, since creators would have to pay the fee only upon initiating an infringement suit, creators could limit their exposure to the risk of payment. If a piece of intellectual property turned out to be less profitable than hoped, its creator could avoid paying a disproportionately large fee by essentially abandoning her rights to sue.

Furthermore, creators would need to pay their fee only at the point of registration, when the invention or work of authorship is already complete. Thus, the fee would affect only *ex ante* creation incentives to the extent that they are excessive in comparison with expected profit. At the moment of registration, however, creators would choose fees in line with the expected profit from the work, based on what they know from the period of development. Because creators could choose their fees according to their level of confidence in the work and the range of remedies and time necessary to maximize profits, creators could limit the downside risk of fees while maintaining the upside profit potential. Thus, it would be in only the rarest of cases that the risk of fees would deter potential creators.

Note that the current scheme of patent-maintenance fees—the payment of fees in roughly the third, seventh, and eleventh year of utility patents as a condition of maintaining the patents¹⁵²—already provides some indication of self-tailoring’s likely impact on *ex ante* incentives. Maintenance fees are, of course, far less nuanced than our proposed self-tailoring scheme. But, at their core, these fees require that inventors take account *ex ante* of the possibility that their rights may be sharply curtailed if they fail to make subsequent payments in support of continued intellectual property rights. The existence of today’s maintenance-fee scheme thus further suggests that our proposal for self-tailored rights would not significantly undermine *ex ante* incentives to create relative to extant law.

Yet while the self-tailored system would preserve the basic incentive to create, it would alter creators’ decisions regarding how and when to pursue intellectual property rights. Aside from incentives in litigation (which we examine more closely in the next Section),¹⁵³ the most important impact on creators’ incentives concerns the division of intellectual property rights among multiple creations or inventions. For example, imagine an author considering whether to release a two-volume work of fiction or a single novel containing roughly the same story. Our self-tailored system would provide the author with an incentive to divide the fictional work into two parts rather than keep it as one. If she were to publish the fictional work in two separate volumes, she could pay for a smaller package of rights for the initial volume and test the market. If the first volume proved popular, the author could then pay for a larger set of rights (with a higher price of infringement) for the second work. If the first volume were unpopular, however, the author could avoid high expenditures on rights for the second volume. More generally, any time inventions or creations could be divided

152. See *supra* notes 138–139 and accompanying text.

153. See *infra* Section III.B.

into several parts, creators might find it useful to divide the work so as to obtain pricing information to guide the choice of future selections of intellectual property rights.

There is no reason to believe that this sort of division of intellectual property works would be harmful. Indeed, the extensive practice of aggregating patent portfolios, and licensing entire portfolios rather than individual patents, suggests that dividing creations into synergistic smaller parts can be quite salutary.¹⁵⁴

B. *Litigation, “Trolling,” and the Self-Tailored System*

Our system of self-tailored rights would greatly impact litigation over intellectual property rights. Two factors in particular would impact the litigation incentives of intellectual property owners. First, our system would require these owners to pay a fee for their rights only upon their initial infringement action. This would greatly increase the marginal cost of the first infringement suit and greatly deter initial litigation. Second, our system would cap all damages at the price of infringement specified by the creator. This would lead intellectual property owners to tread carefully in filing lawsuits. Owners would certainly prefer to reach settlements or otherwise voluntarily sell or license rights in order to avoid reaching the cap. In addition, owners might well prefer to concentrate their lawsuits against a few large defendants rather than a large number of small defendants.

Let us begin with the impact on creators' decisions whether to sue infringers. In our model, litigation is essentially an option granted to creators of intellectual property. Holders of intellectual property rights might choose to exercise this option, but they would not have to. The ability not to exercise the litigation option would reduce the downside risk of having to pay a fee for a nonprofitable creation or invention. At the same time, it would raise the marginal cost of the initial lawsuit. A patentee who purchased the right to seek damages of up to \$1 million and who purchased a full package of rights would have to pay \$10,000 (1% of \$1 million) upon filing the first infringement suit. The obligation to pay the \$10,000 would not be conditioned on the actual amount sought or that awarded by the court. Any suit for any amount would trigger payment. Thus, if the amount requested by the patentee were only \$50,000, or even \$5,000, she would have to pay the full \$10,000 she had been assessed when she registered the patent.

When creators have not yet litigated their rights, they might turn a blind eye to trivial or small infringements. The reason is simple: it may not be worth their while to pay the full charge they were assessed (\$10,000 in our example) to collect a relatively small amount, say \$4,000 in damages. Of course, intellectual property owners could threaten to sue small-time infringers, but the threat would not be credible in most cases, and the subjects

154. Cf. Gideon Parchomovsky & R. Polk Wagner, *Patent Portfolios*, 154 U. PA. L. REV. 1 (2005).

of the threat would realize as much. The calculus would change dramatically, however, if there were a large number of simultaneous small infringements. In that case, it would make sense for the right holder to pay the charge and start suing. While each suit in isolation might not justify paying the enforcement charge, in aggregation the amount the intellectual property owner would expect to collect would justify payment. An interesting implication of this possibility is that small-time infringers would never be sure that they could infringe with impunity. Their confidence in their immunity from suit would depend not only on the size of their own infringement but also on whether the owner had previously sued (and paid the fee) as well as the number of similar infringers—factors they do not control and may not be able to verify without incurring significant expenses.

Because initial lawsuits could turn out to be quite expensive, there might be cases where intellectual property owners would decide not to sue at all. Quite simply, after the owner has established a high price of infringement, it might turn out that no infringer is worth suing. Even if no suit is filed, however, the theoretical possibility would remain that a future serious infringement would justify paying the charge and suing. This scenario raises the possibility that the rights in many works would become “idle” for long periods of time. Owners would simply lie in wait for many years until a serious infringement occurs and would then sue for infringement. While this might appear quite problematic, closer examination shows that it is not.

Under current law, it is already possible for patent and copyright owners to wait for infringements and then leap forth to sue. This strategy is potentially problematic for two reasons. First, right holders might eschew efficient bargaining in favor of litigation, because societal subsidies of the legal system may make litigation more lucrative for the individual right holder, even though it is more expensive for society. Worse, right holders may wait until their rivals make significant investments and only then sue for infringement. This creates the possibility of holdups.

Our proposed system reduces the potential losses from these strategies both by ending the possibility of true injunctive relief and, more generally, by reducing the appeal of litigation. Under our system, there would be no real injunctive relief, which dramatically reduces potential holdups. In our system, all injunctions could potentially be commuted to monetary relief and therefore could always be bought by defendants. At the same time, because our proposal would cap damages but not license fees, it would create strong incentives for owners to avoid litigation. Thus, the incentives for owners to lie in wait would be considerably reduced.

This last point warrants further explication. As we noted, our system would cap all damages at the price of infringement specified by the creator. This would provide a powerful incentive to reach license agreements in all cases, even after lawsuits were filed. So long as courts never issue damage judgments, owners could realize the price of infringement many times over. This strength, however, could also be a vulnerability. Because intellectual property owners would have such strong incentives to avoid court rulings, users’ power in bargaining would be greatly enhanced. The result would be

that the creator's specified price would not only cap damages but would also impact negotiations for consensual use.

Overall, we predict that our proposal would incentivize owners of intellectual property to litigate less while facilitating more use of protected intellectual property rights. In other words, our system would reduce artificial incentives for transferring intellectual property rights through litigation (which are subsidized) and would likely increase the number of efficient uses of creations.

C. Other Benefits of the Self-Tailored System

The self-tailored system we propose yields two additional benefits. First, because our self-tailored system would require owners to register their choice of the legal rights that apply to their creations, potential users could more easily discern the legal protections attached to any given work. This would be particularly valuable for copyright, which currently protects works even without registration.¹⁵⁵ But even for patents, which must already be registered under the current law,¹⁵⁶ our self-tailored system would add value by informing users of the nature and duration of the rights the patent owner wishes to protect.

A second, and arguably more important, advantage of our system is that in many cases it would lead to shorter de facto protection terms. Not only would our system incentivize creators to establish shorter terms of protection with fewer protected rights, but it would also potentially end protection even before the conclusion of the chosen term. Under our system, once an inventor or a creator reached her self-selected protection cap, she could no longer sue for infringement. For example, if Apple were to select a cap of \$1 billion for all the patents asserted in its recent lawsuit against Samsung,¹⁵⁷ and if a court of law were to find Samsung liable and order it to pay Apple \$1 billion in damages, subsequent infringers could use the relevant Apple patents without risking liability.

More generally, under our system, once a right holder reaches the compensation limit to which she is entitled based on her self-tailored protection price, the protection effectively lapses. This may seem an anomalous result, but it is not. The self-tailored system requires creators to set the price of

155. Mandatory registration (together with all other formalities) was abolished in 1989 by the Berne Convention Implementation Act of 1988, Pub. L. No. 100-568, 102 Stat. 2853. For criticisms, see Pamela Samuelson, *Preliminary Thoughts on Copyright Reform*, 2007 UTAH L. REV. 551, 562–63 (rethinking the possibility of reintroducing formalities), and Christopher Sprigman, *Reform(aliz)ing Copyright*, 57 STAN. L. REV. 485 (2004) (calling for the reintroduction of formalities, albeit in a new form).

156. See 35 U.S.C. § 153 (2012).

157. *Apple, Inc. v. Samsung Elecs. Co.*, 909 F. Supp. 2d 1147 (N.D. Cal. 2012), *aff'd in part, vacated in part*, 735 F.3d 1352 (Fed. Cir. 2013), *remanded to 2014 WL 60121* (N.D. Cal. Jan. 7, 2014).

infringement at a level that sufficiently incentivizes creators to produce intellectual property. Once the owner of the intellectual property right has realized this amount through litigation, there is no need to offer any further protection of the right. From the perspective of *ex ante* incentives, once an author or an inventor produces a work and selects her preferred level of protection, she essentially reveals that the level of compensation selected would have sufficed to prompt her to produce the work. No doubt, all things being equal, she would prefer to have the possibility of receiving a much greater award, if the legal system were to accommodate this possibility. But her desire for potentially greater revenues is not a relevant consideration for a system aimed at incentivizing innovation. So long as the system preserves incentives to create, efficiency demands that society strive to disseminate and use the work as broadly as possible.

IV. POTENTIAL OBJECTIONS

In this Part, we anticipate possible objections to our proposal and address them as best we can. The challenges we foresee concern (1) the administrative costs that would attend our proposal; (2) the arguable superiority of private ordering through market transactions as a means for introducing differentiation among intellectual property rights; (3) the availability of an alternative system of tailored rights by industry rather than by the choice of the creator; and (4) the cognitive inability of inventors and authors to gauge the scope of protection they would need.

A. *Administrative Costs*

The first potential objection to our proposal is that it would significantly increase administrative costs relative to the current system. Our proposal would greatly multiply the variations of intellectual property rights, protections, and remedies, thereby necessitating a more complex system of data keeping. Patent and copyright offices all over the world would be required to handle a much richer menu of intellectual property bundles. Furthermore, those offices would have to ensure that they have accurately recorded the precise scope of protection secured by each creator. Courts would have to investigate the precise scope of rights and remedies that attach to each item of intellectual property, and they could no longer rely on broad categories as baselines.

While we do not deny that implementing our proposal would add complexity to the system, we believe that the administrative-costs objection is not nearly as powerful as it may first appear. Although implementing our proposal would certainly add new intellectual property forms, it would not introduce any new parameters. This means that our proposal would not require PTO employees or the courts to learn new tasks. Nor would it require those employees to educate themselves about new substantive protection criteria.

Furthermore, we expect that our proposal would decrease the overall amount of intellectual property rights. Hence, our proposal involves a trade-off between complexity of protection and extent of protection; the former would increase and the latter would decrease. This increase in complexity does not necessarily imply a corresponding rise in administrative costs.

In fact, because our system relies on self-registration, it is unlikely to impose substantial new costs on administrative agencies. The patent and copyright offices would simply have to compile a list of protection variables. Creators and inventors would then be asked to select their preferred variables; once they finalized their selection, they would submit a form to the relevant office. Thereafter, as a procedural precondition for filing an infringement lawsuit, courts could require intellectual property owners to produce a receipt showing that they had paid for their rights. The creator or inventor would initiate payment at her convenience, and the PTO could easily calculate the required fee based on the information already within the system (the inventor's selected price of infringement and package of protections).

At the same time, the expected reduction in litigation would likely lower the cost of administering the court system. And the wider scope of information available from central registries would reduce search costs for potential users. Overall, we predict that our system would not substantially increase—and might even decrease—the administrative costs of protecting intellectual property rights.

B. *Private Ordering*

A second objection to our proposal might be that it is unnecessary. The one-size-fits-all system of current copyright and patent law creates uniformity. Critics might claim, however, that this uniformity exists only *de jure* and that, *de facto*, there is a lot of variance. The law is just the starting point, not the end. As Professor Merges famously observed, a right holder can settle for less protection than the law gives her.¹⁵⁸ Nothing forces her to take advantage of the full scope of protection that the law grants to her.

We do not disagree with this argument in principle. We concede that, even under extant law, market transactions can lead to more narrowly (or broadly) tailored intellectual property rights. The best example of this phenomenon is the Creative Commons movement, which has resulted in a multitude of copyright owners voluntarily relinquishing their rights.¹⁵⁹ At its core, Creative Commons offers creators an alternative menu of protection forms, all of which fall short of the high protection mark offered by the Copyright Act.¹⁶⁰ This is no accident: Creative Commons proposes a set of

158. Merges, *supra* note 80.

159. See Michael W. Carroll, *Creative Commons and the New Intermediaries*, 2006 MICH. ST. L. REV. 45, 47–49 (describing the structure of the Creative Commons movement).

160. See “Some Rights Reserved”: *Building a Layer of Reasonable Copyright*, CREATIVE COMMONS, <https://wiki.creativecommons.org/History> (last modified Apr. 28, 2011, 9:32 AM).

protection defaults designed to enable authors to give up a portion of their legal protection, thereby making more content available to users.¹⁶¹ Although there is some debate in the academic community as to the success of Creative Commons,¹⁶² we tend to side with the champions of the movement. And yet the success of Creative Commons is perhaps the strongest data point in support of our proposal. Neither we nor the movement's strongest supporters would argue that it has obviated the need for further reform or legislative intervention.

There are several reasons for this. To begin with, extant law does not permit owners of intellectual property rights perfect freedom in waiving their rights. Copyright law provides two outstanding examples. The first involves *termination rights*. Authors of copyrighted expressions have the right to transfer ownership of their standard copyright rights (such as the right to copy), but these authors also enjoy termination rights permitting them to nullify the transfer within a statutorily specified window of time and recover ownership of the copyright rights.¹⁶³ The termination rights cannot be assigned or waived, meaning that even if the author contractually promises never to terminate her transfer, the transferee may still find the rights he acquired taken away by the author or her successors.¹⁶⁴

The second example involves what are known as *moral rights*. Moral rights in a copyrighted work include the right to "attribution" (the right, when works are displayed, to have the author properly identified)¹⁶⁵ and the right to "integrity" (the right to protect the proper form of works and to prevent their "mutilation").¹⁶⁶ Federal copyright law establishes limited moral rights over works of visual art,¹⁶⁷ and state¹⁶⁸ and foreign¹⁶⁹ copyright law recognize a broader scope of moral rights and protected works. All the moral rights share the feature of being personal and inalienable.¹⁷⁰ Authors

161. See Carroll, *supra* note 159, at 48 (noting that Creative Commons offers copyright holders the option to dedicate their works to the public domain).

162. See, e.g., Shun-ling Chen, *To Surpass or to Conform—What are Public Licenses For?*, 2009 U. ILL. J.L. TECH. & POL'Y 107, 121–30; Zachary Katz, *Pitfalls of Open Licensing: An Analysis of Creative Commons Licensing*, 46 IDEA 391 (2006).

163. 17 U.S.C. §§ 203, 304 (2012).

164. See *id.* § 203(a)(5) ("Termination of the grant may be effected notwithstanding any agreement to the contrary, including an agreement to make a will or to make any future grant."); Benjamin Melniker & Harvey D. Melniker, *Termination of Transfers and Licenses Under the New Copyright Law*, 22 N.Y.L. SCH. L. REV. 589 (1977) (summarizing the relevant history of the termination right).

165. 17 U.S.C. § 106A(a)(1).

166. *Id.* § 106A(a)(3).

167. See *id.* § 106A(a) (extending moral rights only to visual arts).

168. See Dane S. Ciolino, *Moral Rights and Real Obligations: A Property-Law Framework for the Protection of Authors' Moral Rights*, 69 TUL. L. REV. 935, 952–55 (1995) (describing various state moral-rights laws).

169. See Cyrill P. Rigamonti, *Deconstructing Moral Rights*, 47 HARV. INT'L L.J. 353, 359–67 (2006) (summarizing the more expansive moral-rights regimes of Europe).

170. The rights are personal in that they inhere in the author, not the work. See 17 U.S.C. § 106A(e)(2) ("Ownership of the [moral] rights conferred . . . with respect to a work of visual

cannot transfer their moral rights, and transferees of the copyright rights can never acquire the right to disregard a legally protected right of attribution or integrity.¹⁷¹

More broadly, the market's ability to modulate intellectual property protection critically depends on the level of transaction costs in that market. When transaction costs are sufficiently low, we should expect to see a lot of variety in the scope and content of rights. In the extreme, in a world without transaction costs, the initial legal specification of intellectual property rights would be of no consequence. In such a world, it would not be necessary for lawmakers to specify legal rights; this task would better be left for the market.¹⁷²

In reality, though, the transaction costs that attend intellectual property rights are quite significant. As numerous scholars have pointed out, the domain of intellectual property rights exhibits high information costs, significant negotiation costs, and nontrivial enforcement costs.¹⁷³ The market for intellectual property is often characterized by overlapping claims, which create opportunities for holdups and strategic bargaining.¹⁷⁴ Hence, the market will not produce ideally configured intellectual property rights.

In the real world, where transaction costs are a factor, legal defaults matter. A growing body of research shows that the initial specification of the default entitlements affects the willingness of their holders to transact over them.¹⁷⁵ Default rights, it turns out, are “sticky.” Once endowed with a legal

art is distinct from ownership of any copy of that work, or of a copyright or any exclusive right under a copyright in that work.”). The rights are explicitly inalienable by statute as well. *Id.* § 106A(e)(1).

171. *Id.* § 106A(e)(1)–(2).

172. This is a feature of Professor Coase's famous observation that the allocation of legal entitlements loses consequence in a world of zero transaction costs. R.H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1 (1960).

173. See, e.g., LANDES & POSNER, *supra* note 83, at 16 (finding that “[t]ransaction costs tend to be high in the case of intellectual property even when there are only a few transactors, actual or potential, in the picture”); Jonathan M. Barnett, *Property as Process: How Innovation Markets Select Innovation Regimes*, 119 YALE L.J. 384, 407 (2009) (noting that “allocating entitlements over upstream innovations can generate transaction costs that in turn impede downstream innovations”); Dan L. Burk & Brett H. McDonnell, *The Goldilocks Hypothesis: Balancing Intellectual Property Rights at the Boundary of the Firm*, 2007 U. ILL. L. REV. 575, 613 (observing that, “[g]iven that intellectual property rights have effects on transaction costs both within firms and between firms, it follows that any provision of property rights will have simultaneous effects within firms as well as between firms”); Michael J. Burstein, *Exchanging Information Without Intellectual Property*, 91 TEX. L. REV. 227, 277 (2012) (challenging the conventional view that the dynamic benefits from intellectual property protection outweigh the static costs and pointing out that allocating entitlements over upstream innovations can generate transaction costs that in turn impede downstream innovations).

174. See, e.g., Robert P. Merges, *Of Property Rules, Coase, and Intellectual Property*, 94 COLUM. L. REV. 2655, 2659–60 (1994) (noting the difficulty of valuation caused by overlapping rights, which erodes the possibility of Coasean bargaining).

175. See, e.g., Richard Thaler, *Toward a Positive Theory of Consumer Choice*, 1 J. ECON. BEHAV. & ORG. 39, 44 (1980) (coining the term “endowment effect” to describe this principle); Russell Korobkin, *The Endowment Effect and Legal Analysis*, 97 NW. U. L. REV. 1227

entitlement, right holders ascribe sufficient importance to the initial legal specification of their entitlement that they are reluctant to deviate from it even in the presence of low transaction costs.¹⁷⁶ Hence, if the law provides intellectual property holders with an expansive list of rights, they will tend to retain the rights they have already received rather than give up those rights voluntarily. If, however, the law were to provide owners with only a modest list of entitlements, the owners would tend to refrain from accruing more rights contractually.

The result is that, even if extant law permitted enough tailoring of rights—and it does not—it would still distort owners' and users' choices by setting default-rights levels too high. Our self-tailored approach reduces the magnitude of this distortion.

C. Tailoring Rights by Industry

In an influential article, Burk and Lemley sought to reform patent law by having judges modify numerous small patent doctrines to make them sensitive to the needs of particular industries or technologies.¹⁷⁷ Their proposal draws on the empirical observation that patent protection already has differential effects on different industries.¹⁷⁸ For example, the pharmaceutical industry is heavily dependent on patent protection. Patents are a primary driver of innovation in the industry, and pharmaceutical companies take full advantage of the protection afforded to them by the law.¹⁷⁹ By contrast, firms in other technological sectors do not place the same significance on patent protection, and the average firm in most other industries does not need patent law's full range of rights and powers.¹⁸⁰ Burk and Lemley argue that differences in the utilization and importance of patent rights mean that, notwithstanding its uniform legal design, patent law is already varied in practice.¹⁸¹ They claim that courts apply the doctrines of patent law differently based on the technological categories to which the patents belong.¹⁸²

(2003); Cass R. Sunstein, *Endogenous Preferences*, *Environmental Law*, 22 J. LEGAL STUD. 217 (1993).

176. Korobkin, *supra* note 175, at 1251–52.

177. Burk & Lemley, *Technology-Specific*, *supra* note 10; see also Dan L. Burk & Mark A. Lemley, *Biotechnology's Uncertainty Principle*, 54 CASE W. RES. L. REV. 691, 722 (2004) (explaining that “different industries experience both innovation and the patent system in very different ways”).

178. Burk & Lemley, *Technology-Specific*, *supra* note 10, at 1156, 1158–85.

179. See Richard C. Levin et al., *Appropriating the Returns from Industrial Research and Development*, 1987 BROOKINGS PAPERS ON ECON. ACTIVITY 783, 818, 824; C.T. TAYLOR & Z.A. SILBERSTON, *THE ECONOMIC IMPACT OF THE PATENT SYSTEM: A STUDY OF THE BRITISH EXPERIENCE* (1973).

180. See Levin et al., *supra* note 179, at 817–18.

181. Burk & Lemley, *Technology-Specific*, *supra* note 10, at 1156 (noting that, “[a]s a practical matter, it appears that while patent law is technology-neutral in theory, it is technology-specific in application”). For a similar claim about copyright law, see generally Joseph P. Liu, *Regulatory Copyright*, 83 N.C. L. REV. 87, 105–06 (2004).

182. Burk & Lemley, *Technology-Specific*, *supra* note 10, at 1182–85.

Burk and Lemley propose that patent protection adopt *de jure* what has already become the *de facto* practice. Courts should consciously reinterpret various patent-law doctrines to apply in different ways to different industrial settings, with different industries being subjected to different patent doctrines.¹⁸³ Specifically, Burk and Lemley discuss five different industries—chemistry, pharmaceuticals, biotechnology, semiconductors, and software—and suggest how judges can utilize policy levers to tailor the protection based on the specific characteristics of each of the industries.¹⁸⁴

We share Burk and Lemley's belief that it would be socially advantageous to abandon the one-size-fits-all design of patent protection. But we part ways as to the best method of achieving this goal.

We believe that our self-tailored model is superior to theirs for several reasons. First, even if innovation in every industry shares certain important characteristics, there is also a lot of variance within industrial sectors and among inventions and inventors. This means that any standard protection package would invariably miss on the margin. Some inventors would find the standard bundle insufficient and would be disincentivized from inventing. For other inventors, the standard bundle would be too generous, leading to more monopoly protection than is necessary to incentivize creation. Tailoring intellectual property protection by industry would reduce but not eliminate these losses. Our proposal, by contrast, allows for individual tailoring by giving every inventor, author, or business owner the power to decide the optimal protection for her creation.

Second, Burk and Lemley's proposal, if implemented, would impose a heavy information burden on judges. Courts would not only have to struggle to classify the industry to which an invention belongs (and consequently, the right doctrine to apply); they would also have to follow industry practice and develop doctrine in accordance with commercial practices and developments within the industry. The burdens would be especially acute in the copyright context, as the world of art may be divided into a very large number of communities or groups of creative authorship. Add to this the high cost of the classification process itself, as well as the risk of rigging—the well-known problem that actors would try to move between categories based on their specific needs—and we would end up with a very costly and burdensome system.

Our proposal, by comparison, avoids most of these costs. It is based on a mechanism of *ex ante* self-screening, eliminating the possibility of strategic recharacterizations of the nature of the invention and greatly reducing the advantages of litigating for potential protection. Moreover, because our system permits each right holder to tailor her individual protection, it does not run the risk of under- or overprotecting inventors and creators.

183. Burk & Lemley, *Policy Levers*, *supra* note 10, at 1638–41.

184. See BURK & LEMLEY, *PATENT CRISIS*, *supra* note 10, at 109–41; Burk & Lemley, *Technology-Specific*, *supra* note 10, at 1158–85.

D. Owners' Inability to Value Their Rights

A final argument that may be raised against our proposal focuses on the limited cognition of the agents that produce intellectual property. According to this argument, inventors, authors, and maybe even businesses cannot be trusted to assess *ex ante* with any degree of accuracy the value of their intangible assets. Inventors, creators, and businesses are likely, so the argument goes, grossly to over- and underestimate the value the market will ultimately place on their creations. Hence, they would likely buy too little or too much protection.¹⁸⁵

It is true that creators' ability to predict the future success of their work is important. According to the incentive theory that underlies our conception of the intellectual property system, potential creators will invest in producing intellectual property only if they expect to earn more from the creation than they will invest in producing it. Uncertainty about future profits surely impacts creators' decisions. Because uncertain profits are less valuable than certain profits, creators will want greater property protection for their intellectual rights of uncertain value than they would demand for rights with a clearer stream of future income. Additionally, would-be creators might erroneously undervalue a potential intellectual property right and decide to forgo investing in creation altogether. But our proposal does not affect these problems in the least. It does not increase or decrease creators' certainty regarding the value of their creations. Under both the current system and our alternative proposal, creators make their investment decisions before they know the ultimate value of their work. Whatever the limitations on their knowledge, creators will decide *ex ante* whether to create and what price to put on their creation. About as much as current law, our proposal assures creators that they can acquire a set of rights that will justify their work.

Ultimately, our proposal is interested in preserving the incentives to produce intangible assets while reducing the cost to society. These incentives are based on *ex ante* estimations of value rather than after-the-fact knowledge. Accordingly, an after-the-fact discovery that a creator has bought too much or too little protection is of no consequence to us, so long as she expected enough value to induce her to create. Our proposal preserves the incentive to create, and that is enough.

Indeed, studies on inventors' expectations show that they tend to suffer from excessive optimism about the value of their work. The so-called lottery effect leads innovators to overestimate the likelihood that their work will find success in the market.¹⁸⁶ At the same time, other predictable behavioral

185. See, e.g., Yariv Brauner, *Value in the Eye of the Beholder: The Valuation of Intangibles for Transfer Pricing Purposes*, 28 VA. TAX REV. 79, 87–89 (2008) (explaining why it is so difficult to value intangible assets, specifically intellectual property).

186. See F.M. Scherer, *The Innovation Lottery*, in EXPANDING THE BOUNDARIES OF INTELLECTUAL PROPERTY: INNOVATION POLICY FOR THE KNOWLEDGE SOCIETY 3–21 (Rochelle Cooper Dreyfuss et al. eds., 2001); Dennis D. Crouch, *The Patent Lottery: Exploiting Behavioral Economics for the Common Good*, 16 GEO. MASON L. REV. 141, 141–42 (2008).

anomalies lead creators to overvalue their creation's worth.¹⁸⁷ These findings mean that creators' expected mistakes in evaluating their work's value actually incentivize more creation, not less. To the degree that creators fail to understand the probable rewards for their innovations, they are not likely to lack incentives.

We openly admit that our proposal does marginally affect incentives. If our proposal were adopted, creators of intellectual assets would need to pay more to receive the same protection they get free of charge under today's regime. This means both that the investment in any given creation would be larger and that the maximum potential return would be smaller. But these effects would be felt only at the margins: that is, where the value of a creation were expected to be extremely small or where the investment in the creation were expected to be enormous. At these extremes, our proposal might diminish the total number of intellectual assets. It must be borne in mind, however, that this change is not necessarily welfare diminishing. To see why, it is necessary to return to our starting point. As we noted, every increment in additional intellectual property protection brings decreasing marginal returns in incentives to create, while marginal losses to society remain significant.¹⁸⁸ Thus, the marginal loss in creativity resulting from our proposal's minor effect on incentives is likely to be quite small in relation to the savings to society from eliminating excess protection.

CONCLUSION

In this Article, we developed a self-tailored system of intellectual property rights that would allow inventors and creators to select the optimal protection for their intellectual works. Our design operates from the bottom up, giving each inventor or creator a basic package of rights and enforcement powers and then allowing her to add more rights and legal remedies in exchange for a fee. Importantly, our proposal lowers the social cost of production and protection of intellectual goods. At the same time, it maintains an adequate level of economic incentives to create and invent. Implementing our proposal would accordingly constitute a marked improvement over the extant one-size-fits-all design of intellectual property rights—a design that burdens society with costly litigation and excessive monopolization.

In an era in which technology is a key determinant of economic growth and information is an important driver of progress, our proposal promises wider dissemination and more extensive use of inventions and expressive works. Unlike other proposals for reform that seek to improve access to expressive works through compulsory licenses and other coercive policies, our

187. See, e.g., Christopher Buccafusco & Christopher Jon Sprigman, *The Creativity Effect*, 78 U. CHI. L. REV. 31 (2011); Christopher Buccafusco & Christopher Sprigman, *Valuing Intellectual Property: An Experiment*, 96 CORNELL L. REV. 1 (2010).

188. See LANDES & POSNER, *supra* note 83, at 20–21 (discussing the trade-off involved in intellectual property protection).

model is purely voluntary. It respects authors' and inventors' autonomy and uses market mechanisms—specifically, pricing—to recalibrate our intellectual property system in a way that incentivizes and rewards creativity.