

The Distributive Effects of IP Registration

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ABSTRACT

Although the law often seeks to level the playing field, all too often the law has the opposite effect and tilts the playing field in favor of some over others. Intellectual property law is no different. This article focuses in particular on the registration of intellectual property (IP) rights, which has long been a prerequisite for full protection under patent, trademark, and copyright law. Registering IP rights yields significant advantages, but it also imposes significant costs, which in turn may create distributive effects by hindering some more than others. Acknowledging IP rights without registration can therefore be a more egalitarian way of protecting innovation and creativity.

Indeed, some forms of IP—specifically copyright and trademark—allow for both registered and unregistered rights. Yet this article is the first to explore the distributive implications of such two-tiered regimes. On the one hand, register-

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ing IP rights helps provide the public with notice of those rights and their (approximate) boundaries. Some registration systems, such as those in U.S. patent and trademark law, also examine whether the work in question substantively qualifies for protection. On the other hand, registration of IP rights can be not only a complex and costly process (particularly for patent rights) but also one fraught with inherent biases. Requiring registration of IP rights therefore has serious negative implications for women, racial minorities, and other disadvantaged creators. Protection of IP rights without registration, by contrast, gives creators of innovative works greater access to IP protections and the consequent possibility of leveraging the value of their own works.

Until the gender, racial, economic, and other gaps in IP rights are remedied, maintaining a two-tiered regime of both registered and unregistered rights for all forms of IP alongside minimizing the gaps between registered and unregistered rights offers a promising way to level the playing field for creators of protectable works. We therefore propose not only more equality in the treatment of registered and unregistered rights in copyright and trademark but also the creation of an unregistered rights regime in patent law to provide automatic rights in patentable inventions, albeit for a very short period of time and only against direct copying. These measures, in combination with other efforts to level the playing field for creators, could go a long way toward a more egalitarian distribution of benefits from innovation and creativity.

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I. INTRODUCTION

Access to intellectual property (IP) protection is not equal. While registering IP rights offers significant advantages, empirical research shows that not all inventors and authors have equal access to IP rights. A large body of literature suggests that different groups are underrepresented in the IP world, including women, women of color, African Americans and others. A recent study by researchers at the Yale School of Management shows that patent applications filed by women routinely received less favorable treatment in the U.S. Patent and Trademark Office (USPTO).¹ A similar study by Robert Brauneis and Dotan Oliar of registrations in the U.S. Copyright Office shows significant underrepresentation of many groups as defined by their race, ethnicity, gender and age.² The reasons for these gender, race, and other gaps in IP protections are complex and

1. Kyle Jensen et al., *Gender Differences in Obtaining and Maintaining Patent Rights*, 36 NATURE BIOTECHNOLOGY 307, 307 (2018).

2. Robert Brauneis & Dotan Oliar, *An Empirical Study of the Race, Ethnicity, Gender, and Age of Copyright Registrants*, 86 GEO. WASH. L. REV. 46 (2018).

not fully understood, but one factor almost universally overlooked is the role of registration itself. In this article, we argue that some of the main characteristics of the registration processes used to grant IP rights make those rights inherently and systematically less accessible to various groups of inventors and creators in ways that create distributive effects that have long been unnoticed.

Specifically, we argue that, although many have noted the disparate impact sometimes caused by the criteria used to grant or deny rights, both registered and unregistered, the registration process *itself* can also systematically restrict access to full IP rights. Three major characteristics of the various intellectual property regimes cause this long-overlooked lack of accessibility. The first is the cost of the registration process, including filing and maintenance fees, legal advice, and more. High costs naturally present obstacles for those who cannot afford them and can prevent poorly funded creators from obtaining IP protection. The second characteristic is examination by human agents as a condition for registration and the inevitable biases, whether conscious or unconscious, to which this gives rein. Bias is particularly likely to affect registration processes that are complex and highly discretionary and rely on a long list of substantively vague requirements; conversely, bias is less likely when the registration process is simpler and less discretionary in nature. The third characteristic is that registering for IP rights requires at least some understanding of the registration process and the advantages it can offer. Inventors and creators who lack access to the requisite knowledge will thus be at a disadvantage in protecting their works. We argue that the sum total effect of these characteristics contributes to the underrepresentation of certain groups as intellectual property rights holders in ways largely unacknowledged by other commentators.

That being said, we recognize the value of registering legal rights and do not call for the abolition of IP registration regimes. Registration offers significant advantages that should be maintained. Because granting IP rights automatically, without requiring registration, is less prone to bias

and other inequities, we must rethink the role of unregistered IP rights and strengthen their use in tandem with registered IP rights.

The article proceeds as follows. Part II provides an overview of existing registered and unregistered IP regimes in copyright and trademark, touching upon their design, the major differences between the registered and unregistered routes of protection, and the justifications for their co-existence. Part II also discusses the fact that, by contrast, no patent system has ever employed such a two-tiered approach, instead requiring registration and substantive examination to obtain patent protection. Part III then examines evidence of many of the inequities and possible distributive effects arising from IP registration, highlighting the various empirical studies on gender, racial, ethnic, and socio-economic gaps in intellectual property protection. The available empirical data focuses mainly on gender gaps in patent and copyright and racial/ethnic and age gaps in copyright; very little is known about whether similar gaps exist in other forms of IP. The available literature, in turn, focuses mainly on the creators of protectable works and the criteria by which those works are measured; none focus on registration itself as source of inequity.

Part IV moves on to our argument that some of the hallmark characteristics of IP registration regimes impose significant costs on applicants and put particular groups of potential applicants at a distinct disadvantage. While the academic literature on registration of IP rights consistently focuses on its economic benefits, the inequities that arise from the registration process have long been overlooked. The costs imposed by registration, of course, cannot by themselves explain all of the gender, racial, and other gaps that we see in intellectual property rights, but we argue that these costs nonetheless create significant drags on equitable access to protection. Indeed, the negative effects of requiring registration to acquire rights are not limited to IP but appear in other areas of the law as well, such as voting rights in the U.S.³

3. For a history of voting registries and their effect on the U.S. electorate, see generally Dayna L. Cunningham, *Who Are to Be the Electors? A Reflection on the History of Voter Registration in the United States*, 9 YALE L. & POL'Y REV. 370 (1991).

Part V introduces proposals for remedying these distributive effects. Reform should focus on rethinking the design of registration regimes while at the same time strengthening unregistered IP regimes. Intellectual property creators should continue to be incentivized to register their rights, but the registration process should be devised in a way that minimizes possible distributive effects. However, realizing that such reform can take time to achieve its goals, we propose a set of preliminary recommendations regarding unregistered rights. Chief among them is the introduction of unregistered patents and a reduction in the advantages of existing registered IP rights over unregistered rights.

II. REGISTERED AND UNREGISTERED IP REGIMES

Looking at the effects of registration in securing legal rights is particularly apropos in the field of intellectual property, which is a mix of registered and unregistered rights regimes. Both copyright and trademark law in the United States, for example, employ a two-tiered approach: protection is automatic for all works that meet the requisite criteria, but protection can also be secured through registration.⁴ Patent law, by contrast, does not employ a two-tiered approach and instead mandates registration and examination to receive protection. Trade secrecy exists only on an unregistered basis.⁵ Some part of this is likely historical accident. For reasons that are unclear, both copyright and trademark rights originated as (or, at least, are perceived as having started as)⁶ automatically arising,

4. We are aware that industrial design protection in the European Union (E.U.) and other jurisdictions also employs the two-tiered registered and unregistered rights approach. Discussion of E.U. industrial design protection lies outside the scope of this article, however, which focuses solely on U.S. law.

5. The public nature of registration is presumably inconsistent with secrecy. Given our focus on the distributive effects of registration, we therefore limit further discussion of trade secrecy here.

6. Compare Rebecca Tushnet, *Registering Disagreement: Registration in Modern American Trademark Law*, 130 HARV. L. REV. 867, 879 & n.51 (2017) (describing the common belief that trademarks originated as unregistered rights established by use), with text accompanying notes 46-49, *infra* (describing how trademark's origins are not quite so clear).

unregistered rights. This received history created settled expectations and perceptions that later, when modern-day IP registration systems were introduced, led to the more or less consistent preservation of unregistered copyright and trademark rights. Patents, on the other hand, have never been protected on an unregistered basis, for reasons that are also unclear.

While it is uncertain exactly why lawmakers have opted over the centuries to allow unregistered rights in copyright and trademark but not in patent, on the other hand, it is clear why all three forms of IP have adopted registration regimes. Registering rights and interests in property and property-like instruments has become common due to the number of advantages registration provides, particularly for the kinds of creative and yet intangible works protected under IP law. Thus, even in two-tiered regimes like copyright and trademark, registration is heavily favored and offers benefits that unregistered rights do not enjoy.

While a good deal of thought and planning went into the creation of formal registration systems for all three forms of IP, the retention of unregistered rights seems to be based solely on history and tradition. In neither case do the distributive effects of either type of regime appear to have been considered. As the next Part reveals, however, registration brings significant but seldom recognized costs that impede access to protection. Offering greater protections to registered rights than to unregistered ones—and in the case of patents, offering protection only to registered rights—thus has obvious distributive implications. To understand this, one needs first to understand why and how modern-day IP law espouses registration.

A. The Theory Behind Registration

Registering property rights serves several functions that help explain why it has become a standard part of intellectual property regimes.

First and foremost is the public-notice function of registration: registration informs the public of not only the existence of the right to exclude others but also some sense of the boundaries of that right as well as who

owns it.⁷ Because property rights are *in rem*, registries can be a cost-effective way to protect the interests of both rights owners and the public.⁸ Rather than having to invest in privately communicating the boundaries of their property to others individual by individual, right owners can invest only once in public registration to notify everyone all at once; in turn, by providing the public with this information, registries save potential rights infringers from having to invest privately in collecting and verifying that information themselves, reducing their clearance costs.⁹

In this way, property rights registries also help streamline transactions between willing sellers and buyers.¹⁰ Registries furnish buyers with credible information about a seller's claim of ownership of the asset in issue,¹¹ thus enhancing the marketability and value of property assets.¹² Similarly, registries allow the transfer of only partial property rights, such as security interests or leaseholds, without concern about who holds physical possession.¹³ This comports with the basic premise of property rights economics¹⁴ and transaction cost economics¹⁵ that legal rules and institutions should be designed to streamline transactions and lower transaction costs. Registries also reduce transaction costs by lowering verification costs and obviating the need for legal services.¹⁶ This is not as true when registration requires not only procedural formalities such as

7. Douglas G. Baird & Thomas H. Jackson, *Information, Uncertainty, and the Transfer of Property*, 13 J. LEGAL STUD. 299, 303-04 (1984).

8. *Id.*

9. See, e.g., Robert Burrell & Michael Handler, *Dilution and Trademark Registration*, 17 TRANSNAT'L L. & CONTEMP. PROBS. 713, 715-16, 722 (2008) (noting trademark registration lowers clearance costs).

10. Abraham Bell & Gideon Parchomovsky, *Of Property and Information*, 116 COLUM. L. REV. 237, 245-46 (2016).

11. *Id.*

12. *Id.* at 242; *Trademark Registration*, INT'L TRADEMARK ASS'N, <https://perma.cc/W9HJ-BZ5W> (last updated Mar. 2015).

13. Baird & Jackson, *supra* note 7, at 305-08.

14. YORAM BARZEL, *ECONOMIC ANALYSIS OF PROPERTY RIGHTS* 3 (1997); Gary D. Libecap & Dean Lueck, *The Demarcation of Land and the Role of Coordinating Property Institutions*, 119 J. POL. ECON. 426, 428 (2011).

15. Patrick W. Schmitz, *Bargaining Position, Bargaining Power, and the Property Rights Approach*, 119 ECON. LETTERS 28, 29 (2013).

16. Benito Arruñada, *Registries*, 1 MAN & ECON. 209 (2014).

submitting the proper documentation but also substantive examination of whether the asset at issue even meets the standards for registration; in this latter case, parties may often dispute whether the registration was validly granted. Even in those cases, however, registration and examination at least lend credence to the owner's claim of property ownership.

Furthermore, registries help owners protect their property rights in at least two additional ways.¹⁷ First, by revealing the true rights owners and boundaries of their rights, registries make it more difficult for others to appropriate property by fraudulently passing it off as their own.¹⁸ Owners who register their assets can more easily prove their ownership rights against such fraudulent third-party claims of ownership. Second, registries can also help owners identify, locate and recover assets that have been stolen, lost, or poorly transferred.¹⁹

When it comes to claiming property rights over new creations, as happens under IP law, registration of rights serves a number of additional purposes. For schemes that involve substantive examination, registration also provides vetting that the rights granted are in fact warranted and valid.²⁰ This may increase the value of the property right and can signal the legitimacy and expertise of the rights owner. Registration can help settle conflicting claims to the same creation by giving priority to the first in time, whether that claimant is the first to register, the first to use, the first to create or possess, and so on. Registration also then gives all those who come afterward notice of the previous claimant's rights and saves them from inefficiently wasting their resources in duplicating another's efforts. Failure to register rights in a new creation, on the other hand, can be read as a signal that the creator is dedicating the creation to the public or otherwise abandoning it. Registries can similarly reduce the

17. Bell & Parchomovsky, *supra* note 10, at 241-42.

18. *Id.* at 242.

19. *Id.*

20. *See, e.g.*, 35 U.S.C. § 282(a) (2018) (presumption of validity of a patent); 15 U.S.C. § 1115(a) (2018) (presumption of validity of a trademark registered at the Principal Register).

number of ownership claims by imposing registration fees and other costs to weed out claims to low-value creations or other assets.²¹

Last but not least is the informational value of registries beyond just the identities of owners and their properties. Registration can assist researchers in cross-sectional and longitudinal collection of data to trace patterns across categories and over time. We can see much of this value in the data presented below on the distributive effects of IP registrations. Furthermore, the registration system in patent law elicits disclosures of information that the patentee might otherwise keep as trade secrets. This “patent bargain” quid pro quo—full disclosure of technical information in exchange for property rights—is specifically designed to enhance knowledge by making these additional disclosures publicly available.²²

In this way we can see why registries have become so widespread in IP law, which involves creations that are not only new but also intangible. The intangibility of IP means that they lack physically visible boundaries, making registries that much more important as a means of communicating to the public what the boundaries are of the claimed property right. Accordingly, trademark, copyright, and patent law all employ registries to varying degrees.

B. Trademark

Trademark law employs a two-tiered approach, in that it protects marks regardless of whether rights in those marks are registered or unregistered. The protections provided differ somewhat depending on registration status, particularly with regard to available remedies for infringement.

21. Bell & Parchomovsky, *supra* note 10, at 241-42.

22. See Shubha Ghosh, *Patents and the Regulatory State: Rethinking the Patent Bargain Metaphor After Eldred*, 19 BERKELEY TECH. L.J. 1315, 1319-21 (2004).

A trademark is a word, logo, or package design, or combination thereof, used by a manufacturer or merchant to identify its goods or services and distinguish them from others.²³ Trademarks include brand names, service marks, certification marks, and collective marks.²⁴ Trademark users do not need to register their marks with the U.S. Patent and Trademark Office (USPTO) in order to protect them from use by others—instead, simply being the first to use a sufficiently distinctive mark “in commerce” on or in connection with goods or services allows the user to acquire rights automatically within the geographic area of use, even if someone else subsequently tries to register rights in the same mark.²⁵

Indeed, trademarks enjoy the same protections for the most part, regardless of whether they are registered or unregistered. Protections for both continue indefinitely as long as the marks continue to meet the requisite standards for use in commerce and distinctiveness,²⁶ although mark owners must take some additional steps, such as periodically certifying continued use, in order to maintain federal registrations.²⁷ Both registered and unregistered marks can be licensed²⁸ or assigned²⁹ under specific circumstances. Both federal and state trademark law protect a mark, regardless of its registration status, not only against infringement by use of a sufficiently similar mark in a way that is likely to cause consumer confusion,³⁰ but also against dilution by use of a sufficiently similar mark in a way that harms the first mark’s distinctiveness or reputation,³¹ and

23. 15 U.S.C. § 1127 (2018); *see also* Kellogg Co. v. Nat’l Biscuit Co., 305 U.S. 111 (1938); RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 9 (AM. LAW INST. 1995).

24. 15 U.S.C. § 1127.

25. *Id.*

26. 15 U.S.C. §§ 1064(3), 1127 (2018); *see, e.g.*, Saratoga Vichy Spring Co. v. Lehman, 625 F.2d 1037, 1043 (2d Cir. 1980); King-Seeley Thermos Co. v. Aladdin Indus., 321 F.2d 577, 579 (2d Cir. 1963); Bayer Co. v. United Drug Co., 272 F. 505, 509 (S.D.N.Y. 1921).

27. 15 U.S.C. §§ 1058-59 (2018).

28. 15 U.S.C. § 1127; Yokum v. Covington, 216 U.S.P.Q. 210 (T.T.A.B. 1982); Dual Groupe, LLC v. Gans-Mex LLC, 932 F. Supp. 2d 569, 573-74 (S.D.N.Y. 2013).

29. 15 U.S.C. § 1060 (2018); Clark & Freeman Corp. v. Heartland Co., 811 F. Supp. 137, 139-40 & n.2 (S.D.N.Y. 1993).

30. 15 U.S.C. §§ 1114(a), 1125(a) (2018).

31. 15 U.S.C. § 1125(c).

against cyberpiracy by registering, trafficking in, or using a domain name that would infringe or dilute the mark.³² In terms of relief, both registered and unregistered marks enjoy the right to injunctive relief against future infringement under both federal and most state laws.³³

Although registration is thus not mandatory, the law clearly favors registration by buttressing the rights of mark owners in a number of ways if they register their marks with the USPTO.³⁴ First, federal registration provides protection nationwide, regardless of whether the mark is actually being used nationwide.³⁵ Mark owners can also register their marks with individual states, but this protects the mark only within that particular state³⁶ and can be superseded by subsequent federal registration in many states.³⁷ Second, registrants can also attach a statutory registration insignia to their marks,³⁸ which relieves them of the need to prove that defendants had actual notice of the registrants' ownership of their marks when seeking damages and attorneys' fees in infringement cases.³⁹

As further incentive to register, registration relieves trade dress owners of the burden of proving the non-functionality of their trade dress,⁴⁰ and federal registration grants a presumption that a mark is valid and that it is owned by the registrant.⁴¹ And perhaps most significantly, only

32. 15 U.S.C. § 1125(d).

33. 15 U.S.C. § 1116 (2018) (for both registered and unregistered rights under federal law); 1 JAMES E. HAWES & AMANDA V. DWIGHT, TRADEMARK REGISTRATION PRACTICE § 1:10 (2020) (federal and state law).

34. 15 U.S.C. § 1126 (2018); *Eastman Kodak Co. v. Bell & Howell Document Mgmt. Prods. Co.*, 994 F.2d 1569 (Fed. Cir. 1993); *Commodore Elecs. Ltd. v. CBM Kaibushiki Kaisha*, 26 U.S.P.Q.2d 1503 (T.T.A.B. 1993).

35. 15 U.S.C. §§ 1072, 1507(c) (2018).

36. 15 U.S.C. § 1126; *Zirco Corp. v. Am. Tel. & Tel. Co.*, 21 U.S.P.Q.2d 1542 (T.T.A.B. 1991).

37. 15 U.S.C. §§ 1115(b), 1127.

38. 15 U.S.C. § 1111 (2018).

39. *Id.* Under certain circumstances, however, the Lanham Act gives unregistered mark owners to recover attorneys' fees and costs for commercial misrepresentation of the source of goods. 15 U.S.C. § 1117 (2018).

40. 15 U.S.C. § 1125(a)(3).

41. 15 U.S.C. §§ 1057(b), 1115(a) (2018). This presumption is rebuttable by a mere preponderance of the evidence, however. *See, e.g., Christian Louboutin S.A. v. Yves Saint Laurent Am. Holdings, Inc.*, 696 F.3d 206, 216 n.10 (2d Cir. 2012); *Custom Vehicles, Inc. v. Forest River, Inc.*, 476 F.3d 481, 486 (7th Cir. 2007).

marks that have been registered and have continually been in use for five or more years can reach “incontestability,” which limits the grounds on which the marks may be invalidated.⁴² Registered mark owners may also seek statutory damages against the use of counterfeit marks⁴³ and may ask border control to block importation of goods with infringing marks.⁴⁴ Federal law also provides criminal penalties for trafficking in counterfeit marks that are identical to or substantially indistinguishable from registered marks.⁴⁵

It is not clear why trademark law maintains this two-tiered system. Some part may simply be a historical accident, given that trademark-like practices have existed for centuries.⁴⁶ In medieval England, for example, towns and professional guilds adopted symbols that members were required to use on their goods to show that the goods had been monitored by the town authorities or guild and had met the established quality standards.⁴⁷ Enforcement and regulation of these symbols were highly decentralized and highly variable: who enforced protection of the symbols, how they did so, and whether the symbols had to be registered with authorities depended on the guild, locality, or town at issue.⁴⁸

Despite this tenuous history, by the time that the law in nineteenth century England and the U.S. began to protect trademarks in earnest as designations of origin, legislators and courts regarded medieval history as showing that trademarks are common-law rights existing independent of registration or statutory creation.⁴⁹ It was only later, as trademarks became even more valued, that both domestic and international pressure

42. 15 U.S.C. § 1065 (2018).

43. 15 U.S.C. §§ 1116(d)(1)(B)(i), 1117(c) (2018).

44. 15 U.S.C. § 1124 (2018).

45. 18 U.S.C. § 2320 (2018).

46. FRANK I. SCHECHTER, *THE HISTORICAL FOUNDATIONS OF THE LAW RELATING TO TRADE-MARKS* 19-20 (1925).

47. *Id.* at 42-63.

48. *Id.*

49. *Id.* at 9-10, 123-24, 152-53; David E. Missirian, *The Death of Moral Freedom:*

led to the creation of national trademark registries in order to bring more certainty to the ownership and geographic scope of rights.⁵⁰ Even then, state and, ultimately, federal courts in the U.S. continued to regard trademarks as common-law rights,⁵¹ presumably to protect settled expectations. As trademark continued to develop into its own area of law and the benefits of registration made themselves known, however, the law continued to create more and more benefits to registration, such as nationwide priority and heightened remedies, as a way to incentivize registration.⁵² There has been little or no commentary, by contrast, on the potential benefits of the law's continued protections for unregistered trademark rights.

C. Copyright

The purpose of copyright law is to promote literary and artistic creativity by providing exclusive rights for a limited time in the "writings" of "authors,"⁵³ although copyright has gradually been expanded to include not just written, pictorial, and sculptural works but also audiovisual works; sound recordings; computer programs; and even architectural works.⁵⁴ Copyright is limited to the particular expression of ideas, not the ideas themselves,⁵⁵ but otherwise works need only be "original" to be

How the Trademark Dilution Act Has Allowed Federal Courts to Punish Subjectively-Defined Immoral Secondary Use of Trademarks, 18 CHI.-KENT J. INTELL. PROP. 396, 398 (2019). It was apparently not until this time that trademarks came to be regarded as assets of value protecting a merchant's goodwill rather than as merely private or public regulatory marks. SCHECHTER, *supra* note 46, at 122-23.

50. SCHECHTER, *supra* note 46, at 146-71; 10 CONG. REC. 2799 (1880); CONG. GLOBE, 41st Cong., 2d Sess. 4821 (1870).

51. 3 J. THOMAS MCCARTHY, MCCARTHY ON TRADEMARKS AND UNFAIR COMPETITION § 19:1.75 (5th ed. 2020); *see also* J. Thomas McCarthy, *Lanham Act § 43(a): The Sleeping Giant Is Now Wide Awake*, 59 LAW & CONTEMP. PROBS. 45, 51-54 (1996) (explaining how modern U.S. trademark law came to incorporate unregistered rights).

52. Deborah R. Gerhardt & Jon P. McClanahan, *Do Trademark Lawyers Matter?*, 16 STAN. TECH. L. REV. 583, 587 (2013).

53. U.S. CONST. art. 1, § 8, cl. 8; Zechariah Chafee, *Reflections on the Law of Copyright*, 45 COLUM. L. REV. 503, 506-11 (1945); William Landes & Richard A. Posner, *An Economic Analysis of Copyright*, 18 J. LEGAL STUD. 325, 325-33, 344-46 (1989).

54. 17 U.S.C. § 102(a) (2018).

55. 17 U.S.C. § 102(b); *Baker v. Selden*, 101 U.S. 99, 100 (1879).

protectable.⁵⁶ In the U.S., all authors, regardless of registration, enjoy the exclusive right to reproduce, distribute, publicly display and perform, and make derivatives from their protectable works.⁵⁷ For some fine artworks, authors also have the right to attribution or modification.⁵⁸

Like trademark law, copyright in the U.S. employs a two-tiered approach, allowing for both registered and unregistered protection of works. This places the U.S. on one side of an international divide in copyright law. Although many other countries also use a two-tiered structure for copyright protection, a large number of countries, including several developed countries, do not provide for copyright registration at all, opting instead for an unregistered-rights-only approach. This divide reflects an ongoing debate over the merits of giving authors automatic ownership rights to their expressive works versus the merits of maintaining publicly accessible registries of such rights.

Despite the relative ease of registration, the overwhelming majority of works enjoy copyright protections as unregistered works, even in the U.S. All authors enjoy automatic copyright protection the moment they create an at least minimally original work and fix it onto a tangible medium, regardless of whether the work has been published or registered;⁵⁹ no copyright registration is required.⁶⁰ Moreover, protection endures for quite a long time: a work created on or after January 1, 1978 is protected for the author's lifetime plus seventy years.⁶¹ Because the requirements for copyright protections are so easily and often met, most authors are not even aware of their rights and therefore do not undertake the time and cost to register their works. That being said, both registered and unregistered owners of protectable works created after March 1, 1989, may

56. 17 U.S.C. § 102(a); *Feist Publ'ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 345 (1991); BENJAMIN KAPLAN, AN UNHURRIED VIEW OF COPYRIGHT 45-46 (1967).

57. 17 U.S.C. § 106 (2018).

58. 17 U.S.C. § 106A (2018).

59. 17 U.S.C. § 102(a) (2018); H.R. REP. NO. 94-1476, at 52-53 (1976).

60. 17 U.S.C. § 401(a) (2018).

61. 17 U.S.C. § 302 (2018); H.R. REP. NO. 94-1476, at 133-36; Zechariah Chafee, *Reflections on the Law of Copyright* (pt. 2), 45 COLUM. L. REV. 719, 719-21, 725-27, 729-30.

affix a statutory copyright notice to all publicly distributed copies of their works to give others notification of their rights.⁶²

Copyright protections are in many ways narrower than those provided by trademark or patent law, however. Copyright generally protects against only unauthorized use or copying of a work.⁶³ Actual copying is difficult to prove directly, but owners can rely instead on evidence that the alleged infringer had access to the protected work and that the allegedly infringing copy has “substantial similarity” to the protected work.⁶⁴ Federal law in the U.S. contains many detailed limitations on what is not infringement, moreover. Use of the basic idea expressed,⁶⁵ independent creation, and “fair use” for “transformative” purposes such as criticism, comment, news reporting, teaching, scholarship, or research, and many other defenses and exceptions limit an owner’s right to sue for infringement.⁶⁶

Copyright protections as we now know them are of more ancient lineage than trademark protections and have long been regarded as natural or common-law rights. Although rights to print a work in Elizabethan England had to be registered with a printing guild, authors’ rights to their works were considered to arise under common law and last into perpetuity without the need for registration.⁶⁷ Copyright registration was created later to record the content and date of a protectable work and to limit what otherwise would have been a perpetual common-law monopoly over the protected work.⁶⁸ State laws continued to protect unregistered

62. 17 U.S.C. § 401.

63. 17 U.S.C. § 501 (2018).

64. *See, e.g.,* Ringgold v. Black Entm’t Television, Inc., 126 F.3d 70, 74 (2d Cir. 1997); Alan Latman, “Probative Similarity” as Proof of Copying: Toward Dispelling Some Myths in Copyright Infringement, 90 COLUM. L. REV. 1187 (1990).

65. 17 U.S.C. § 102(b) (2018).

66. 17 U.S.C. § 107 (2018); *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 578-79 (1994); *Harper & Row Publ’g, Inc., v. Nation Enters.*, 471 U.S. 539, 587-88 (1985).

67. Tyler T. Ochoa & Mark Rose, *The Anti-Monopoly Origins of the Patent and Copyright Clause*, 84 J. PAT. & TRADEMARK OFF. SOC’Y 909, 914-17 (2002).

68. Deborah R. Gerhardt, *Copyright Publication: An Empirical Study*, 87 NOTRE DAME L. REV. 135, 141-42 (2011).

works as long as they were unpublished, however, presumably to protect settled expectations, much as with trademark law. Federal law also protected unregistered but published works, although only if the authors marked every copy with a copyright notice.⁶⁹

Furthermore, federal law in the U.S. expanded to protect all unregistered works, regardless of publication or other formalities such as marking, in 1978, after finally acceding to the Berne Convention, the TRIPS Agreement, and other such international agreements, which kept signatory countries from imposing registration or other formalities as a condition for protection.⁷⁰ Indeed, the Berne Convention developed over several decades not only to enhance copyright protections but also to make them more uniformly and easily obtainable, especially for foreign authors or others who might not be fully aware of a particular country's domestic copyright provisions.⁷¹ At least with regard to foreign authors, U.S. copyright law recognizes the potential distributive effects of requiring formalities such as registration.

That being said, the U.S. not only retains but also strongly incentivizes copyright registration by granting enhanced protections for registered works.⁷² Most important of these is the fact that copyright owners must at least attempt to register works of U.S. origin as a prerequisite for initiating infringement suits,⁷³ and current law allows statutory damages

69. See Copyright Act of 1909, H.R. 28192, 60th Cong. § 9, *repealed by* Copyright Act of 1976, 17 U.S.C. §§ 407-12 (2018).

70. 17 U.S.C. § 408 (2018); Berne Convention for the Protection of Literary and Artistic Works art. 5(2), July 24, 1971, 25 U.S.T. 1341, 1161 U.N.T.S. 3; *see also* 1 MELVILLE B. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT §7.02[B], at 7-14 (2019) (detailing development of the 1976 Act).

71. Jane C. Ginsburg, *With Untired Spirits and Formal Constancy: Berne Compatibility of Formal Declaratory Measures to Enhance Copyright Title-Searching*, 28 BERKELEY TECH. L.J. 1583, 1588-91 (2013).

72. 17 U.S.C. § 408 (2018).

73. 17 U.S.C. § 411 (2018). Section 411 limits itself to "any United States work," however, and thus excludes foreign works. *See* AD HOC WORKING GROUP, FINAL REPORT OF THE AD HOC WORKING GROUP ON U.S. ADHERENCE TO THE BERNE CONVENTION CH. IX, *reprinted in* 10 COLUM.-VLA J.L. & ARTS 565, 572-73 (1985). Section 411 does, however, allow an infringement suit to proceed even if the Copyright Office decides to refuse registration of a duly filed application, as long as the owner notifies the Office of any such suit. 17 U.S.C. § 411.

and attorneys' fees only for infringement occurring after registration.⁷⁴ Registration also constitutes prima facie evidence of the validity and ownership of the copyright.⁷⁵ Owners of works who take advantage of their right to mark their works after registration similarly can bar defendants from arguing non-willful infringement to mitigate their liability for damages.⁷⁶ Registered copyright owners can also record transfers of their rights, establishing priority to and constructive notice of the transfer.⁷⁷ Thus, registration and recordation offer several advantages for copyright owners.

Perhaps because the U.S. only recently switched from a registration-required regime to a two-tiered regime, commentators have acknowledged and frequently debated the merits of copyright formalities generally and registration specifically. Complying with formalities can be expensive, particularly when seeking to protect a work in multiple jurisdictions, but forgoing registration increases clearance costs for others trying to determine whether a work is copyrighted and if so, who owns the rights to it.⁷⁸ These costs in turn hinder licensing of protected works and free use of unprotected works.⁷⁹

The advent of information technology has served to increase the number of copyrightable works significantly, thereby greatly exacerbating clearance costs, while simultaneously decreasing the costs of complying with copyright formalities.⁸⁰ Because of this change in the cost-benefit ratio for requiring formalities, a number of scholars and policy advocates are now calling for the reintroduction of formalities into copyright law,

74. 17 U.S.C. § 412 (2018).

75. 17 U.S.C. § 410(c) (2018).

76. *See, e.g.*, 17 U.S.C. § 401(d) (2018).

77. 17 U.S.C. § 205(c) (2018). The law continues to require deposit, but punishes failure to comply with a fine, rather than with forfeiture of the copyright. 17 U.S.C. § 407(d) (2018).

78. Stef van Gompel, *Filters of Protection or Facilitators of Licensing*, 28 BERKELEY TECH. L.J. 1425, 1431-34 (2013).

79. *Id.*

80. *See* Christopher Sprigman, *Reform(aliz)ing Copyright*, 57 STAN. L. REV. 485, 489, 517-18 (2004).

and registration in particular,⁸¹ as a means of reducing the number of works protected, enabling greater reuse of existing works, and facilitating access to content.⁸² Other scholars have also argued that, at the very least, compliance with formalities should be more strongly incentivized by limiting liability for infringement of unregistered rights to reasonable licensing fees.⁸³ Even so, formalities impose costs on copyright owners in a way that unregistered rights do not.

D. Patent

Among the different types of intellectual property rights (IPRs), patents remain the exception. Unlike copyright and trademark protections, all three types of patent protections available in the U.S.—“utility patents” for new and useful processes, machines, articles of manufacture, and compositions of matter,⁸⁴ “design patents” for a new ornamental designs for articles of manufacture,⁸⁵ and “plant patents” for new cultivated varieties of asexually reproducing plants—require registration.⁸⁶

81. *See id.* at 487.

82. *See, e.g.,* LAWRENCE LESSIG, *FREE CULTURE: HOW BIG MEDIA USES TECHNOLOGY AND THE LAW TO LOCK DOWN CULTURE AND CONTROL CREATIVITY* 287-91 (2004); Stef Van Gompel, *Formalities in the Digital Era: An Obstacle or Opportunity?*, in *GLOBAL COPYRIGHT: THREE HUNDRED YEARS SINCE THE STATUTE OF ANNE, FROM 1709 TO CYBERSPACE* 395-423 (Lionel Bently et al. eds., 2010); Niva Elkin-Koren, *Can Formalities Save the Public Domain? Reconsidering Formalities for the 2010s*, 28 *BERKELEY TECH. L.J.* 1537 (2013); James Gibson, *Once and Future Copyright*, 81 *NOTRE DAME L. REV.* 167 (2005); Pamela Samuelson, *Preliminary Thoughts on Copyright Reform*, 2007 *UTAH L. REV.* 551, 562-63.

83. Daniel Gervais & Dashiell Renaud, *The Future of United States Copyright Formalities: Why We Should Prioritize Recordation, and How to Do It*, 28 *BERKELEY TECH. L.J.* 1459 (2013); Christopher J. Sprigman, *Berne's Vanishing Ban on Formalities*, 28 *BERKELEY TECH. L.J.* 1565 (2013); van Gompel, *supra* note 78. Such measures could be especially useful in the final twenty years of copyright term, which are not mandated or governed by The Agreement on Trade-Related Aspects of Intellectual Property (TRIPS). Maria A. Pallante, *The Curious Case of Copyright Formalities*, 28 *BERKELEY TECH. L.J.* 1415 (2013).

84. 35 U.S.C. § 101 (2018); DAN L. BURK & MARK A. LEMLEY, *THE PATENT CRISIS AND HOW THE COURTS CAN SOLVE IT* 9 (2009).

85. 35 U.S.C. § 171 (2018); BURK & LEMLEY, *supra* note 84, at 8.

86. 35 U.S.C. § 161 (2018); BURK & LEMLEY, *supra* note 84, at 8.

For example, utility patents (the most common type of patent and often referred to simply as patents) protect an invention only through registration and examination by the USPTO.⁸⁷ Examination allows the USPTO to determine whether the subject invention meets the various rigorous standards for patentability: subject matter eligibility,⁸⁸ novelty,⁸⁹ nonobviousness,⁹⁰ and utility.⁹¹ Only the first inventor to file a patent application is eligible for protection.⁹² The complexity and rigor of the patenting process can thus consume years, with an average pendency of just under three years.⁹³ Not surprisingly, the total cost of applying for and maintaining a patent in the United States for the full twenty-year maximum could total tens of thousands of dollars.⁹⁴

Once granted, patents are short in term but broad in protection. Utility and plant patents last for a maximum of twenty years from date of filing if periodic maintenance fees are paid (although this term can be extended under special circumstances).⁹⁵ Design patents last fifteen years from date of issuance.⁹⁶ During that term, however, a patent provides a patentee with the right to exclude all others from making, using, selling, or offering an invention for sale, regardless of independent invention or

87. See generally 35 U.S.C. § 102 (2018); BURK & LEMLEY, *supra* note 84, at 9.

88. 35 U.S.C. § 101; BURK & LEMLEY, *supra* note 84, at 9.

89. 35 U.S.C. § 102; BURK & LEMLEY, *supra* note 84, at 9.

90. 35 U.S.C. § 103 (2018); BURK & LEMLEY, *supra* note 84, at 9.

91. 35 U.S.C. § 101; BURK & LEMLEY, *supra* note 84, at 9.

92. 35 U.S.C. § 102; BURK & LEMLEY, *supra* note 84, at 10. Other countries vary somewhat in their patentability criteria, although centralized filing procedures are available under the Patent Cooperation Treaty, June 19, 1970, 28 U.S.T. 7645, 1160 U.N.T.S. 231 (as in force from Apr. 1, 2002), or the Convention on the Grant of European Patents (European Patent Convention), Oct. 5, 1973, 1065 U.N.T.S. 199, *amended by* 13 I.L.M. 268 (1974).

93. Open Data Portal, *Pendency of Patent Applications*, U.S. PAT. & TRADEMARK OFF., <https://perma.cc/4ZJP-C6ZS> (last visited July 5, 2020) (showing an average traditional total pendency of 26.3 months, but an average of 34.8 months after accounting for requests for continued examination).

94. See *USPTO Fee Schedule*, U.S. PAT. & TRADEMARK OFF., <https://perma.cc/UER6-93YA> (last updated Mar. 1, 2020).

95. 35 U.S.C. § 154 (2018).

96. 35 U.S.C. § 173 (2018).

even awareness of the patentee's rights.⁹⁷ It also protects against the importation, use, or sale in the U.S. of a product made from a patented process without authorization.⁹⁸ There are no criminal penalties for patent infringement, but federal patent law provides injunctive relief⁹⁹ and, in the case of utility patent infringement, damages, which may be trebled.¹⁰⁰ The only part of patent protection that is not mandatory is marking with the word "patent" or "pat." and the patent number, although failure to mark does preclude a patentee from obtaining infringement damages unless the infringer otherwise had notice of the patentee's rights.¹⁰¹

The only alternative to applying for utility or plant patent protection is trade secrecy, which provides automatic, unregistered rights under federal or state law as long as the inventive concept can be kept secret¹⁰² and reasonable measures are taken to maintain that secrecy.¹⁰³ Trade secrecy provides much less robust protections than patents and protects against only "wrongful" or "improper" acquisition or use of the secret,¹⁰⁴ not against independent creation or even innocent copying. Thus, with the exception of trade secrecy's fairly weak form of protection for unregistered secret inventions, current law offers no automatic protection for unregistered inventions and plants.

It is not clear why patent law has not developed the two-tiered, registered and unregistered rights structure that we see in trademark and copyright law. Some of it is undoubtedly historical. From their early days

97. 35 U.S.C. § 154.

98. *Id.*

99. 35 U.S.C. § 283 (2018).

100. 35 U.S.C. § 284 (2018).

101. 35 U.S.C. § 287 (2018).

102. Uniform Trade Secrets Act, 18 U.S.C. § 1839 (2018); RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 39 (AM. LAW INST. 1995) (defining a "trade secret" as "any information that can be used in the operation of a business or other enterprise and that is sufficiently valuable and secret to afford an actual or potential economic advantage over others"); Geeta Daswani, *Trade Secrets, Its Significance and a Comparative Analysis of Trade Secret Protection in Different Jurisdictions* (Nov. 16, 2016) (unpublished manuscript), <https://perma.cc/7Q45-UPS9>.

103. See Robert G. Bone, *A New Look at Trade Secret Law: Doctrine in Search of Justification*, 86 CALIF. L. REV. 241, 247-48 (1998).

104. *Id.*; see also 18 U.S.C. § 1839 (2018).

in the Venetian Republic and then as “letters patent” in Elizabethan England, patents appear always to have been affirmatively granted rather than automatically arising as a natural or common-law right, although some scholars challenge this view.¹⁰⁵

The sense that patents require some form of government approval may also stem from discomfort with monopolies, particularly those that utility patents can create. Patents are in many ways the strongest form of IP protection, as there are no defenses to infringement such as fair or experimental use or even independent creation—indeed, those sued for infringement are quite often inventors themselves who just happened to be second-in-time.¹⁰⁶ There may be some sense as well that the potential universe of operative inventive concepts is much more limited than the myriad ways there are in which to express an idea or to create a distinctive mark. Perhaps most compelling is the concern that technology is not only cumulative, much like creative expression can be, but also complementary. Most technology has utility only when used in conjunction with other technologies, such that patent exclusivities are frequently thought to create anticommons in which the transaction costs of coordinating productive use of multiple individual property rights become impossibly high.¹⁰⁷ Given the highly deleterious effects patent monopolies could have, it makes sense that such protection should not be granted without registration and rigorous examination to ensure that a patent is in fact warranted.

105. Compare Ted Sichelman & Sean O’Connor, *Patents As Promoters of Competition: The Guild Origins of Patent Law in the Venetian Republic*, 49 SAN DIEGO L. REV. 1267, 1273, 1280-81 (2012) (describing early Venetian and Elizabethan patents as affirmatively granted rights), with Adam Mossoff, *Rethinking the Development of Patents: An Intellectual History, 1550-1800*, 52 HASTINGS L.J. 1255, *passim* (2001) (describing early English patents as based on natural rights philosophies).

106. JAMES BESSEN & MICHAEL J. MEURER, PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK 123-24 (2008).

107. Jonathan M. Barnett, *The Anti-Commons Revisited*, 29 HARV. J.L. & TECH. 127, *passim* (2015).

In summary, most IP regimes offer a two-tiered regime: registered and unregistered rights. However, this brief overview suggests that existing registered regimes offer rights owners significant advantages not provided by unregistered rights, such as the ability to file a lawsuit for infringement or to obtain certain major remedies. The justification for privileging registered rights over unregistered rights is the many social benefits of registration, which are correspondingly significant. Beyond these basic characteristics of registered and unregistered IP rights are the major distributive effects existing under the current registered IP rights regimes, particularly for women and minorities.

III. DISPARITIES UNDER IP REGISTRATION

In this Part, we provide an overview of the distributive effects of registration of IP rights, mainly in the form of underrepresentation of different groups as IP rights holders. This Part describes these effects by field, surveying a large body of social science literature and legal scholarship on the subject.¹⁰⁸ A multitude of factors explain the various gaps in gender, race, and other demographics that we see amongst IPR holders; the existing literature focuses mostly on the standards for protection. We argue, however, that the *design of the current processes for registering IP rights* also significantly contributes to these distributive effects in ways that have long been overlooked.

A. Patent Registries

To see the distributive effects of IP registration itself, it is perhaps most revealing to look at the empirical data on the one form of IP that has no unregistered rights alternative—patents. Patent law is not alone in exhibiting gender, racial, and other gaps in rights ownership, but does ex-

108. See, e.g., Ajanli Vats & Dierdre A. Keller, *Critical Race IP*, 36 CARDOZO ARTS & ENT. L.J. 735, 755 (2018).

hibit perhaps the starkest gaps as compared to the empirical data on copyright and trademark. Again, the reasons for these distributive effects are complex and not fully understood, but we argue that registries introduce costs that contribute to these distributive effects.

1. *Patents and Gender*

A growing interest in women's access to IPRs has led to various studies on gender disparity in IP, including patents. Below is a review of the existing literature on patenting trends among women.

Study after study, including a comprehensive 2016 World Intellectual Property Organization (WIPO) study of international patent application patterns, has shown a sizeable gender gap in applications for and grants and ownership of patents.¹⁰⁹ Less than 30% of international patent applications list female inventors, and less than 5% list only female inventors.¹¹⁰ Academic patenting reveals very similar trends, even in areas approaching gender parity (such as bioscience),¹¹¹ and women continue to patent less often than they publish.¹¹² This may in part be due to the fact that even now, less than 13% of all inventors worldwide are women, although this number is slowly growing.¹¹³ Women are also well known to

109. Barnett, *supra* note 107.

110. Gema L. Martinez et al., *Identifying the Gender of PCT Inventors*, 33 WIPO ECON. & STAT. SERIES 8 (2016); see also INTELLECTUAL PROP. OFFICE, GENDER PROFILES IN WORLDWIDE PATENTING: AN ANALYSIS OF FEMALE INVENTORSHIP 30 (2016), <https://perma.cc/76UK-WD9Y>.

111. Annette I. Kahler, *Examining Exclusion in Woman-Inventor Patenting: Comparison of Educational Trends and Patent Data in the Era of Computer Engineer Barbie*, 19 AM. U. J. GENDER SOC. POL'Y & L. 773, 776-77 (2011).

112. Rainer Frietsch et al., *Gender-Specific Patterns in Patenting and Publishing*, 38 RES. POL'Y 590, 592-95 (2009).

113. INTELLECTUAL PROP. OFFICE, GENDER PROFILES IN WORLDWIDE PATENTING: AN ANALYSIS OF FEMALE INVENTORSHIP 4 (2019), <https://perma.cc/UH8D-C9D5>; Waverly W. Ding et al., *Gender Differences in Patenting in the Academic Life Sciences*, 313 SCIENCE, 665, 666 (2006); Frietsch et al., *supra* note 112, at 597; Taehyun Jung & Olof Ejermo, *Demographic Patterns and Trends in Patenting: Gender, Age, and Education of Inventors*, 86 TECHNOLOGICAL FORECASTING & SOC. CHANGE 110, 110 (2014).

be underrepresented in the STEM fields generally and patent-intensive STEM fields specifically.¹¹⁴

Mere disparity in the number of women in STEM fields cannot alone account for the gender gap in patenting, however. Studies of the intersection of IP law and gender have identified a number of ways in which the law and other factors also contribute to gender disparities in IPRs, including patents.¹¹⁵ These factors fall into three basic categories: the way IP doctrines apply to subject matter involving gender and sexuality; the gendered nature of the various IP doctrines themselves; and the above mentioned gender disparities in ownership of IP rights.¹¹⁶

For example, although patents by women in fields such as biotechnology are thought to be equal to or better in quality and impact than those by men,¹¹⁷ other research shows patent applications from women were more likely to be rejected and that those rejections were less likely to be appealed.¹¹⁸ Patent applications by women inventors, for example, are 21% more likely to be rejected by the patent office as compared to applications submitted by men, even when controlling for field of invention.¹¹⁹ Examiners also tended to allow fewer claims in women's applications and tended to narrow the claims that they did allow in scope and value more than those in men's applications.¹²⁰ Finally, patents granted

114. DAVID BEEDE ET AL., U.S. DEP'T OF COM., ISSUE BRIEF NO. 04-11, WOMEN IN STEM: A GENDER GAP TO INNOVATION 2-3 (2011), <https://perma.cc/Y3V3-WBSS>; Lisa D. Cook & Chaleampong Kongcharoen, *The Idea Gap in Pink and Black* (Nat'l Bureau of Econ. Research, Working Paper No. 16331, 2010), <https://perma.cc/4U95-LWZY>.

115. Kara W. Swanson, *Intellectual Property and Gender: Reflections on Accomplishments and Methodology*, 24 AM. U. J. GENDER SOC. POL'Y & L. 175, 176 (2015).

116. *Id.* at 182-83.

117. Steven G. McMillan, *Gender Differences in Patenting Activity: An Examination of the US Biotechnology Industry*, 80 SCIENTOMETRICS 683, 683 (2009); Kjersten B. Whittington & Laurel Smith-Doerr, *Gender and Commercial Science: Women's Patenting in the Life Sciences*, 30 J. TECH. TRANSFER 355 (2005) (measuring patent quality based on its impact and usefulness for follow-up innovation, measured by forward and backward patent citations).

118. Jensen et al., *supra* note 1, at 307.

119. *Id.*; Michael Schuster et al., *An Empirical Study of Patent Grant Rates as a Function of Race and Gender*, AM. BUS. L.J. (forthcoming 2020) (manuscript at 2, 26) (on file with authors).

120. Jensen et al., *supra* note 1, at 307.

to women are less often cited and less likely to be maintained by their assignees.¹²¹

This is due in part to the fact that many patent doctrines that appear to be neutral on their face instead assume a certain level of masculinity in practice.¹²² The notoriously nebulous “PHOSITA” (“Person Having Ordinary Skill In The Art”) standard for the utility and nonobviousness requirements for patentability is subject to cultural biases and assumptions about who has ordinary skill in a given art.¹²³ Likewise, patentable subject matter doctrine is based on inherently androcentric definitions of “invention,” “technology,” and “industrial application” in ways that may be detrimental to female inventors.¹²⁴ Empirical findings also suggest that the patent gender gap stems in part from gender biases among patent examiners.¹²⁵ Gender gaps in patent approval rates were more pronounced when applicants had names easily recognizable as feminine.¹²⁶

Even before they file applications with the patent office, however, female inventors also face other hurdles that prevent them from even accessing the patent system. The patenting process is complicated and often requires a substantial investment of time and money—often as much as tens of thousands of dollars per patent.¹²⁷ Women tend to have fewer financial resources, including access to venture capital and other funding.¹²⁸ Women also have less access to the kinds of networks of experienced professionals and other support structures that can aid in entering

121. *Id.*

122. Swanson, *supra* note 115, at 185, 191.

123. Dan L. Burk, *Diversity Levers*, 23 DUKE J. GENDER L. & POL’Y 25, 37-38 (2015); Dan L. Burk, *Do Patents Have Gender?*, 19 AM. U. J. GENDER SOC. POL’Y & L. 881, 883-84, 907-09 (2011).

124. Shlomit Yanisky-Ravid, *Eligible Patent Matter—Gender Analysis of Patent Law: International and Comparative Perspectives*, 19 AM. U. J. GENDER SOC. POL’Y & L. 851, 852-54, 875-77 (2011).

125. Michael Schuster et al., *supra* note 119, at 2, 24.

126. *Id.*; Jensen et al., *supra* note 1, at 309.

127. *USPTO Fee Schedule*, *supra* note 94.

128. ALICIA ROBB, SMALL BUS. ADMIN., ACCESS TO CAPITAL AMONG YOUNG FIRMS, MINORITY-OWNED FIRMS, WOMEN-OWNED FIRMS, AND HIGH-TECH FIRMS 31 (2013), <https://perma.cc/MN2B-RGF3>; Paula E. Stephan & Asmaa El-Ganainy, *The Entrepreneurial Puzzle: Explaining the Gender Gap*, 32 J. TECH. TRANSFER 475, 481 (2007).

into and navigating the patenting process.¹²⁹ Blatant sexism from peers, industry contacts, customers, and even patent examiners also plays a role in whether women perceive their own work as patentable and whether others perceive that work as important.¹³⁰

For all of the insights that previous studies have revealed, however, one seldom recognized consideration is what several of these factors—the gendered application of patentability doctrines; bias among patent examiners; and the handicaps women face in simply accessing the patent system—have in common: the patent registration and examination system. An alternative to the patent registration system and its built-in barriers to female inventors could go a long way in narrowing the patent gender gap.

This gender gap in patenting likely has very real consequences for women. Given the value of patents to technological entrepreneurialism, this gap also continues to be an obstacle for women in commercializing their innovations. Innovation is expensive, so inventors and entrepreneurs need patents to protect against free-riding on investments in their inventions¹³¹ as well as their investments in commercializing those inventions.¹³² Patents also help to signal an enterprise's technological expertise and the innovative legitimacy of its products and services to potential investors and potential cross-licensing partners.¹³³ Patent owners can even use their patents to ward off infringement lawsuits by meaningfully

129. Ding et al., *supra* note 113, at 666.

130. DELIXUS, INC. & NAT'L WOMEN'S BUS. COUNCIL, *INTELLECTUAL PROPERTY AND WOMEN ENTREPRENEURS - PART II: QUALITATIVE 15-16* (2012); Fiona Murray & Leigh Graham, *Buying Science and Selling Science: Gender Differences in the Market for Commercial Science*, 16 *INDUS. & CORP. CHANGE* 657, 668 (2007); Christine Wenneras & Agnes Wold, *Nepotism and Sexism in Peer-Review*, 387 *NATURE* 341, 341 (1997).

131. WILLIAM M. LANDES & RICHARD A. POSNER, *THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY LAW* 294-95 (2003).

132. Michael Abramowicz & John F. Duffy, *Intellectual Property for Market Experimentation*, 83 *N.Y.U. L. REV.* 337 (2008). *But see* Ted Sichelman, *Commercializing Patents*, 62 *STAN. L. REV.* 341 (2010) (questioning whether the current patent system provides adequate protection for commercialization investments).

133. Stuart J.H. Graham et al., *High Technology Entrepreneurs and the Patent System: Results of the 2008 Berkeley Patent Survey*, 24 *BERKELEY TECH. L.J.* 1255, 1287-1309 (2009).

threatening to countersue for infringement.¹³⁴ Last but perhaps most important, patent applications and patents also increase the probability of obtaining necessary investment funding from various sources.¹³⁵ Despite the economic importance of patents, however, research has repeatedly shown that women have less access to patent protections than their male counterparts.

2. *Patents and Race*

Unlike the growing interest in the gender gap in patenting, racial and ethnic gaps have not been as carefully studied. Historically, African Americans could not own patents because under the *Dred Scott* case they were not citizens of the United States.¹³⁶ In 1858, the Attorney General of the U.S. issued an opinion titled *Invention of a Slave*, determining that a slave owner could not patent a machine invented by his slave because neither the slave owner nor the slave could take the required patent oath.¹³⁷ “The slave owner could not swear to be the inventor, and the slave could not take an oath at all.”¹³⁸ The opinion was later abrogated by the Fourteenth Amendment, but it nonetheless indicates the historical exclusion of African Americans from the American patent system that in many ways continues today.¹³⁹

Although scholars such as Shubha Ghosh have made notable studies of patents on inventions tailored or targeted to specific ethnically or racially defined groups or that incorporate racial stereotypes,¹⁴⁰ very little

134. Ted Sichelman & Stuart J.H. Graham, *Patenting by Entrepreneurs: An Empirical Study*, 17 MICH. TELECOMM. & TECH. L. REV. 111, 113 (2010) (and sources cited therein).

135. EMMA WILLIAMS-BARRON ET AL., INNOVATION AND INTELLECTUAL PROPERTY AMONG WOMEN ENTREPRENEURS 1 (2018), <https://perma.cc/M475-ZF4Q>.

136. *Dred Scott v. Sandford*, 60 U.S. (19 How.) 393, 427 (1856).

137. Brian L. Frye, *Invention of a Slave*, 68 SYRACUSE L. REV. 181, 181 (2018).

138. *Id.* at 181-82.

139. *Id.* at 182.

140. SHUBHA GHOSH, IDENTITY, INVENTION, AND THE CULTURE OF PERSONALIZED MEDICINE PATENTING (2012); Shubha Ghosh, *Race-Specific Patents, Commercialization, and Intellectual Property Policy*, 56 BUFF. L. REV. 409 (2008).

empirical research exists on race. The USPTO does not collect demographic information on inventors, and identifying inventors' ethnicity or race is difficult at best. The Institute for Women's Policy Research, however, studied people of color in the patent system using data from the 2003 National Survey of College Graduates.¹⁴¹ Their study confirmed that female college graduates were less likely than male graduates to apply for a patent, regardless of race and ethnicity, but that the gender gap in patent applications is narrower among people of color, particularly among Hispanic and Black graduates.¹⁴² Interestingly, both Asian men and women were the most likely to have applied for a patent in the five years prior to the study as compared to men and women in other racial and ethnic groups respectively, with Hispanic and Black inventors being the least likely to file patent applications, particularly among male inventors.¹⁴³ The study also tallied the rate at which these applications were actually granted patents, showing not only that women's applications were less likely to be granted overall but also that applications by inventors of color were also less likely to be granted, particularly among women of color.¹⁴⁴ While this study is based on limited and somewhat dated data, it does reflect the underrepresentation of certain racial and ethnic groups in the patent system, with women of color being even more underrepresented than their male counterparts.

While more empirical research is needed, the early history of patent law as well as the limited empirical data available demonstrate clear patent gaps with regard to ethnicity and race. As is the case with the gender gap in patenting, moreover, the evidence suggests that the patent examination process is also not neutral with regard to race and ethnicity, resulting in the issuance of problematic patents and an ethnic and racial

141. JESSICA MILLI ET AL., EQUITY IN INNOVATION: WOMEN INVENTORS AND PATENTS 5 (2016), <https://perma.cc/7TX8-UJA7>.

142. *Id.*

143. *Id.*

144. *Id.* at 6; *see also* Schuster et al., *supra* note 119, at 2, 26, 29.

bias in the examination process. These problems internal to the patent registration process thus again lead to distributive effects.

3. *Patents and Entrepreneurs*

Entrepreneurs contribute significantly to economic growth globally and in the U.S.¹⁴⁵ IP law is an important legal regime that affects the success or failure of many entrepreneurial endeavors and the opportunities for engaging in entrepreneurship.¹⁴⁶ Nonetheless, recent research on American entrepreneurs consistently suggests that the patent system also disadvantages entrepreneurs. A 2008 wide-scale survey conducted by the Berkeley Center for Law and Technology studied how high-technology start-up firms use and are affected by the patent system.¹⁴⁷ One of the study's findings was that technology entrepreneurs have various reasons not to seek patents,¹⁴⁸ including the ease of inventing around the patent; adequacy of trade secret protection; the cost of enforcing the patent, including actions in court; and lack of need for patent protection.¹⁴⁹ Significantly, entrepreneurs also mentioned other reasons for not seeking patent protection directly related to the burdens created by registration and examination: unwillingness to disclose the requisite information; disbelief that the technology was patentable; and, importantly, the cost of obtaining the patent, including attorneys' fees.¹⁵⁰

One of the Berkeley survey's major findings was that among technology start-ups, the most commonly cited reason for not patenting a technology were the burdens of obtaining a patent.¹⁵¹ The largest number of respondents cited the cost of prosecuting and enforcing the patent (56.6%

145. See JOSEPH A. SCHUMPETER, *THE THEORY OF ECONOMIC DEVELOPMENT: AN INQUIRY INTO PROFITS, CAPITAL, CREDIT, INTEREST, AND THE BUSINESS CYCLE* 74-79 (1934).

146. See Sichelman & Graham, *supra* note 134.

147. Graham et al., *supra* note 133.

148. *Id.* at 1309-15.

149. *Id.* at 1309.

150. *Id.*

151. *Id.* at 1309-15.

and 45.5%, respectively).¹⁵² For smaller firms, this greater sensitivity to patenting costs was not due merely to capital constraints, moreover, as smaller firms on average paid considerably more for patent prosecution because of the nature of the patents that they file and because of the need to hire outside counsel.¹⁵³ In contrast, for biotechnology companies the most important reason to forgo patenting was a reluctance to make the information disclosures necessary for a patent application.¹⁵⁴ A 1998 Small Business Administration survey reached similar findings,¹⁵⁵ and a Carnegie Mellon study likewise revealed that smaller firms showed a significantly greater sensitivity to the costs of filing and enforcing patents.¹⁵⁶ Patent reform initiatives have tried to address the concerns about cost through lower filing and maintenance fees for small entities. The USPTO provides a 50% fee discount to qualified “small entities” of up to 500 employees, and universities and non-profit organizations also can qualify.¹⁵⁷ The America Invents Act in 2012 also made a 75% fee discount for “micro entities,” defined as small entities with a limited gross income, four or fewer previously filed patent applications, and no obligation of assignment to a wealthier entity.¹⁵⁸ While these fee reductions are important and helpful, small business interests must still foot the bill for attorney prosecution fees and other expenses that constitute the significantly greater portion of overall patenting costs. The reform does not solve the more significant challenge that the patent system’s registration and examination requirement poses for entrepreneurs.

152. *Id.* at 1311 fig.4.

153. *Id.* at 1311-12.

154. *Id.* at 1312-14.

155. JOSEPH J. CORDES ET AL., U.S. SMALL BUS. ADMIN., A SURVEY OF HIGH TECHNOLOGY FIRMS 55-59 (1999), <https://perma.cc/7923-VMHN>.

156. Wesley M. Cohen et al., *Protecting Their Intellectual Assets: Appropriability Conditions and Why U.S. Manufacturing Firms Patent (or Not)* 15-16 (Nat’l Bureau of Econ. Research, Working Paper No. 7552, 2000).

157. *USPTO Fee Schedule*, *supra* note 94.

158. Leahy-Smith America Invents Act, Pub. L. No. 112-29, § 26 (2011); *see also USPTO Fee Schedule*, *supra* note 94.

B. *Copyright Registries*

Because the U.S. has maintained a copyright registry for many years, it provides a wealth of information on the disparities that arise along the lines of gender, race, and ethnicity in copyright registration. Very few studies of this rich data, however, point specifically to registration itself as one of the sources of these gaps.

1. *Empirical Data on Copyright and Race/Ethnicity, Gender and Age*

Brauneis and Oliar performed an extensive empirical study of the U.S. copyright registry and the representation of different gender, racial, and age groups in the copyright system as revealed by the named authors in the registry according to race, ethnicity, gender, and age for valid monograph registrations for the years 1978-2012.¹⁵⁹ The results are quite telling.

First, Brauneis and Oliar show that authors of different race differ in the rates at which they registered their copyrighted works.¹⁶⁰ For example, they found that white authors are overrepresented, accounting for nearly 80% of all authors, or 116% of their proportion of the general population.¹⁶¹ This can partially be explained by age, given the combined facts that both the white population and the population of those who register copyrights tend to be older.¹⁶² The data also show that Latinx authors tend to register all works at rates significantly lower than authors of all other races and ethnicities, accounting for much less than 10% of all copyright registrations, a rate only 44.6% of their proportion of the general U.S. population; again, this could be explained by the relatively young age of the Latinx population in the U.S. as well as the fact that a large

159. Brauneis & Oliar, *supra* note 2.

160. *Id.* at 59-60.

161. *Id.*

162. *Id.*

portion may be unauthorized immigrants, who may fear filing documents with the U.S. federal government.¹⁶³ Interestingly, black authors are also overrepresented, accounting for approximately 14% to 15% of all registrations, equating to approximately 120% of their proportion of the general U.S. population.¹⁶⁴

That being said, Brauneis and Oliar also found that members of different races and ethnicities differ substantially in the types of work they create.¹⁶⁵ For example, white authors predominate in dramatic works and software, while black authors predominate in music and drama and Latinx authors predominate in music and movies. Asians and Pacific Islanders were the strongest in art and software and weakest in music and drama, while those who self-identify as Jewish were associated with a high per-capita rate of registrations, mainly of textual works.¹⁶⁶

Second, with regard to gender, Brauneis and Oliar found that two-thirds of registered authors were male but that this gender gap differs across types of works and that female authors increased their representation over time.¹⁶⁷ The proportion of registered female authors nonetheless remained at less than the proportion of women in the labor force.¹⁶⁸ The fields least dominated by male authors were art and text, while the fields most dominated by men were movies and software.¹⁶⁹ The degree to which female authors were increasing in representation varied by type of work and was driven mainly by the works of text.¹⁷⁰ Brauneis and Oliar also analyzed authors' ages,¹⁷¹ showing that the average has increased over time, with peak productive years between the ages of 27 and 36.¹⁷²

163. *Id.* at 60-62.

164. *Id.* at 62.

165. *Id.* at 62-63.

166. *Id.* at 62-67.

167. *Id.* at 73-74.

168. *Id.*

169. *Id.* at 75-76.

170. *Id.* at 76.

171. *Id.* at 76-78.

172. *Id.* at 79.

As with gender and race/ethnicity, age also correlated with type of work.¹⁷³

2. *Theoretical Work on Copyright and Gender*

Beyond the empirical work of Brauneis and Oliar, a number of scholars have analyzed the intersection of copyright law and gender from a feminist perspective. Their main conclusions are that copyright doctrines are designed and interpreted by the courts in a way that undervalues women's creativity and, as a result, under-allocates IP rights to female creators. Although copyright registration employs these doctrines, however, our review of the empirical work revealed nothing that looks specifically at the effect of the registration process itself.

Shelley Wright, for example, conducted one of the earliest feminist analyses of copyright law, arguing that women as artists and crafts-women have been marginalized by the ideologies surrounding the artistic process such that women authors and artists are not recognized as creators of "art" but rather of "crafts" and "domestic arts falling below the minimum threshold for legal protection."¹⁷⁴ Copyright law's economic and moral rights, by contrast, are more individualistic and patriarchal. For example, Wright points to copyright law's emphasis on authors as single entities rather than collaborative groups in ways that tend to favor traditionally more masculine approaches to creativity and often led to the misattribution of women's works to their (often more famous) male teachers or associates.¹⁷⁵

173. *Id.* at 81-82.

174. Shelley Wright, *A Feminist Exploration of the Legal Protection of Art*, 7 CAN. J. WOMEN & L. 59, 96 (1994).

175. *Id.* at 80-81; see also Dan L. Burk, *Copyright and Feminism in Digital Media*, 14 AM. U. J. GENDER SOC. POL'Y & L. 519 (2006) (noting continuation of individualistic views of authorship); Sonia K. Katyal, *Slash/Ing Gender and Intellectual Property: A View from Fan Fiction*, in DIVERSITY IN INTELLECTUAL PROPERTY: IDENTITIES, INTERESTS, AND INTERSECTIONS 315 (Irene Calboli & Srividhya Ragavan eds., 2015); Sonia K. Katyal, *Performance, Property, and Slashing of Gender in Fan Fiction*, 14 AM. U. J. GENDER SOC. POL'Y & L. 461 (2006); Emily Chaloner, Comment, *A Story of Her Own: A Feminist Critique of Copyright Law*, 6 I/S: J.L. & POL'Y 221, 224, 226 (2010).

A number of scholars also have pointed to the fact that copyright continues to exclude many types of creative works traditionally associated with the domestic (read: feminine) arts, such as recipes, food preparation methods, sewing, knitting, and crocheting techniques, and clothing designs.¹⁷⁶ Similarly, copyright law provides lesser protections for derivative works, such as media fandoms, that are mainly produced by and for women.¹⁷⁷ The doctrine of fair use, which narrows copyright protections to allow transformative and other uses of existing works, also favors male authors by tending to apply less liberally to commercially exploited and valuable works, which have historically been dominated by men.¹⁷⁸ Copyright laws thus have an impact upon whether women are treated equally to men in copyright-related contexts.¹⁷⁹

Feminist analyses of copyrights in pornographic works by scholars such as Ann Bartow have also looked at the inherent inequalities in the way that copyright deals with pornographic films and images by failing to protect those in front of the camera—most often women—and giving all rights to those behind it, particularly with regard to “revenge porn” and “crush porn.”¹⁸⁰ Other scholars have also shown how copyright law treats sexual content differently than other works, giving pornography less protection by more liberal construction of the fair use doctrine and

176. Ann Bartow, *Fair Use and the Fairer Sex: Gender, Feminism and Copyright Law*, 14 AM. U. J. GENDER SOC. POL'Y & L. 551, 572 (2006); Malla Pollack, *Towards a Feminist Theory of the Public Domain, or Rejecting the Gendered Scope of United States Copyrightable and Patentable Subject Matter*, 12 WM. & MARY J. WOMEN & L. 603, 607-09 (2006) (arguing that the choice not to protect food and clothing under copyright law is gendered and anti-feminine); Rebecca Tushnet, *My Fair Ladies: Sex, Gender, and Fair Use in Copyright*, 15 AM. U. J. GENDER SOC. POL'Y & L. 273, 275, 303-04 (2007).

177. Rebecca Tushnet, *The Romantic Author and the Romance Writer: Resisting Gendered Concepts of Creativity*, in DIVERSITY IN INTELLECTUAL PROPERTY: IDENTITIES, INTERESTS, AND INTERSECTIONS, *supra* note 175, at 294.

178. Bartow, *supra* note 176, at 566.

179. *Id.*

180. Ann Bartow, *Copyright Law and the Commodification of Sex*, in DIVERSITY IN INTELLECTUAL PROPERTY: IDENTITIES, INTERESTS, AND INTERSECTIONS, *supra* note 175, at 339; Ann Bartow, *Copyright Law and Pornography*, 91 OR. L. REV. 1 (2012); Ann Bartow, *Copyright Law and Pornography: Reconsidering Incentives to Create and Distribute Pornography*, 39 U. BAL. L.F. 75 (2008); Ann Bartow, *Pornography, Coercion, and Copyright Law 2.0*, 10 VAND. J. ENT. & TECH. L. 799 (2008).

other exceptions to copyright protection in a way that further disadvantages the subjects of pornography.¹⁸¹

3. *Theoretical Work on Copyright and Race*

A number of scholars have also looked specifically at the intersection between race and copyright law, but K.J. Greene is one of the few copyright scholars to look at not only the standards for copyrightability but also specifically at the registration process itself. He has documented how the IP system has disadvantaged black artists and others who historically have not had the access to capital, expertise, or even education necessary to apply and meet the qualifications for copyright protection.¹⁸²

In addition to the pervasive racism and discrimination that black authors have faced and continue to face, for example, Greene points to “race-neutral” copyright doctrines as also placing African American artists at a disadvantage. An example is the idea/expression dichotomy used to distinguish protectable expression from unprotectable ideas or genres. This dichotomy has often been employed to hold that pioneering new music forms by black artists are unprotectable as “genres” or “ideas.”¹⁸³ Similarly, the requirement that protectable works be fixed in a tangible medium have created problems for African American artists whose works consist of improvisational or other performance modes.¹⁸⁴ Greene argues that even the originality requirement, for all of its liberality, often works to the detriment of African American creators by allowing others

181. Jennifer Rothman, *Sex Exceptionalism in Intellectual Property*, 23 STAN. L. & POL'Y REV. 119 (2012); see also Tushnet, *supra* note 176 (noting how copyright law treats sexuality differently).

182. K.J. Greene, *Copyright, Culture & Black Music: A Legacy of Unequal Protection*, 21 HASTINGS COMM. & ENT. L.J. 339, 340 (1999) [hereinafter Greene, *Copyright, Culture, & Black Music*]; K.J. Greene, *Intellectual Property at the Intersection of Race and Gender: Lady Sings the Blues*, 16 AM. U. J. GENDER SOC. POL'Y & L. 365 (2008) [hereinafter Greene, *Lady Sings the Blues*]; see also Ann Bartow, *Women in the Web of Secondary Copyright Liability and Internet Filtering*, 32 N. KY. L. REV. 449 (2005).

183. Greene, *Copyright, Culture, & Black Music*, *supra* note 182, at 382-83; Greene, *Lady Sings the Blues*, *supra* note 182, at 371.

184. Greene, *Copyright, Culture, & Black Music*, *supra* note 182, at 378-79; Greene, *Lady Sings the Blues*, *supra* note 182, at 371.

to create and copyright imitations of their works.¹⁸⁵ The lack of moral rights for U.S. authors merely compounds the problem.¹⁸⁶

Greene's work on black artists is also illustrative with regard to the "convoluted and complex" registration requirements for copyright protection, under which authors "could easily find their works injected into the public domain, which resulted in the loss of their economic rights."¹⁸⁷ For instance, African American artists frequently lack the awareness and legal advice necessary to comply with the formalities formerly required for copyright protection and even now for enforcing copyright rights.¹⁸⁸ Contributing to this are inequality of bargaining power and broad social discrimination.¹⁸⁹ Thus, although the copyright system seems to be race-neutral, its confluence with socio-demographic realities sets black authors and others at a marked disadvantage.¹⁹⁰

C. Trademark Registries

Unlike patent and copyright, there is very little scholarship on the distributive effects of trademark registration. Below is a survey of what little is known about trademarks and their intersection with gender and race. Much of what does exist relates to the content of marks; relatively little bears on the trademark registration process itself. Nonetheless, the existing literature does highlight both the ambiguity of trademark doctrines and the subjectivity with which they are applied.

1. Trademarks and Gender

While no empirical work analyzes gender and trademark registration, there is legal scholarship on the tension between trademarks and

185. Greene, *Copyright, Culture, & Black Music*, *supra* note 182, at 380-81, 391; Greene, *Lady Sings the Blues*, *supra* note 182, at 371.

186. Greene, *Copyright, Culture, & Black Music*, *supra* note 182, at 378-83, 390-91; Greene, *Lady Sings the Blues*, *supra* note 182, at 371-72.

187. Greene, *Copyright, Culture, & Black Music*, *supra* note 182, at 354.

188. *Id.* at 382-83; Greene, *Lady Sings the Blues*, *supra* note 182, at 371.

189. Greene, *Copyright, Culture, & Black Music*, *supra* note 182, at 356-57.

190. *Id.* at 358-60.

gender.¹⁹¹ Ann Bartow, for example, has pointed to the tendency of judges in trademark infringement disputes to rely on personal intuition and stereotypes about women as being less discerning and more easily confused, although her analysis relates mostly to consumers and not to rights holders.¹⁹² Others have used this perspective to consider the doctrine of tarnishing in trademark law and the disparate treatment of sexualized trademarks incorporating feminine versus masculine images.¹⁹³ Thus, although this research does not look at gender gaps in trademark registration, it does show gender-based biases in how trademark doctrines are applied.

2. Trademarks and Race

As noted above, the empirical evidence on trademark law and race is very thin, and the literature that does exist focuses not so much on the effect of trademark registration as on how trademark reflects as well as influences societal perceptions of race, ethnicity, and identity.¹⁹⁴ Historically, advertising and trademarks have been rife with stereotyped images of not just black men and black women but also Native Americans and Asian Americans.¹⁹⁵

Indeed, the two cases that have involved race and trademark registration involve Native Americans and Asian Americans: the Washington Redskins trademark cases and the Slants trademark case, respectively. The Lanham Act of 1946 prohibits registration of a mark that “[c]onsists

191. Swanson, *supra* note 115, *passim*.

192. See, e.g., Ann Bartow, *Likelihood of Confusion*, 41 SAN DIEGO L. REV. 721 (2004).

193. Leigh A. Hansmann, *Sex, Selling Power, & Salacious Commentary: Applying the Copyright Fair Use Doctrine in the Trademark Context*, 2008 MICH. ST. L. REV. 843, 862-64 (2008).

194. See Llewellyn Joseph Gibbons, *Semiotics of the Scandalous and Immoral and the Disparaging: Section 2(A) Trademark Law After Lawrence v. Texas*, 9 MARQ. INTELL. PROP. L. REV. 187, 196 (2005); Deseriee A. Kennedy, *Marketing Goods, Marketing Images: The Impact of Advertising on Race*, 32 ARIZ. ST. L.J. 615, 615-17 (2000).

195. See Ross D. Petty et al., *Regulating Target Marketing and Other Race-based Advertising Practices*, 8 MICH. J. RACE & L. 335, 347-49 (2003); Greene, *Copyright, Culture, & Black Music*, *supra* note 182, at 375-77.

of or comprises . . . [a] matter which may disparage or falsely suggest a connection with persons, living or dead, institutions, beliefs, or national symbols, or bring them into contempt, or disrepute.”¹⁹⁶ In the Washington Redskins trademark dispute, Native Americans challenged the Redskins trademarks as disparaging racial slurs and sought to prevent the Washington Redskins football team from maintaining its federal trademark registrations.¹⁹⁷ In the Slants trademark case, by contrast, it was the leader of an Asian American rock band himself that had intentionally named his band “The Slants” who was appealing the USPTO’s denial of his application for trademark registration.¹⁹⁸

In the first of two Redskins cases, the PTO judges agreed that “Redskins” was disparaging to Native Americans and canceled its federal registration.¹⁹⁹ On appeal the district court reversed for insufficient evidence of disparagement, however, and subsequent appeals were denied on the basis of laches.²⁰⁰ In a second case with different plaintiffs challenging the “Redskins” mark, the Trademark Trial and Appeal Board (TTAB) again voted to cancel the six trademarks held by the team as disparaging to a “substantial composite of Native Americans.”²⁰¹ This time, however, the district court affirmed the TTAB’s decision on appeal.²⁰²

In *Matal v. Tam*, by contrast, the Supreme Court unanimously ruled in favor of Simon Tam, the leader of the Asian American band that had named his band “The Slants” in an effort to reclaim the term, which had

196. 15 U.S.C. § 1052(a) (2018); see also Stephen R. Baird, *Moral Intervention in the Trademark Arena: Banning the Registration of Scandalous or Immoral Trademarks*, 83 TRADEMARK REP. 661, 662-63 (1993); Rosemary Coombe, *Marking Difference in American Commerce: Trademarks and Alterity at Century’s End*, 19 POL. & LEGAL ANTHROPOLOGY REV. 105, 111 (1996).

197. *Pro-Football, Inc. v. Harjo*, 415 F.3d 44 (D.C. Cir. 2005); *Blackhorse v. Pro-Football Inc.*, Cancellation No. 92046185, 2014 TTAB LEXIS 231 (T.T.A.B. 2014).

198. *Matal v. Tam*, 137 S. Ct. 1744, 1748 (2017).

199. *Pro-Football, Inc. v. Harjo*, 415 F.3d 44 (D.C. Cir. 2005).

200. *Pro-Football, Inc. v. Harjo*, 567 F. Supp. 2d 46 (D.C. Cir. 2008).

201. *Blackhorse v. Pro-Football Inc.*, Cancellation No. 92046185, 2014 TTAB LEXIS 231 (T.T.A.B. 2014); see also Megan M. Carpenter, *Trademark Law Promotes Fair Competition, Not Morality*, N.Y. TIMES (May 4, 2016, 9:51 AM), <https://perma.cc/BT5Z-EB7Y>.

202. *Pro-Football, Inc. v. Blackhorse*, 112 F. Supp. 3d 439 (E.D. Va. 2015).

long been used as a racial slur against Asian-Americans. The Court's majority opinion held "the disparagement clause violates the First Amendment's Free Speech Clause" because trademarks are "private, not government speech."²⁰³ Following this holding, the Redskins litigants withdrew their cases as moot.²⁰⁴

One of the most interesting things about these cases from our point of view, however, is not the Supreme Court's reasoning in *Tam* but rather the USPTO's reasoning in denying registration for "The Slants." Tam had argued that his band used the term "slant" not as a racial slur but rather as a reference to the band's particular perspective (i.e., slant) and that, in any event, the term had a multitude of other, nondisparaging meanings.²⁰⁵ The PTO examiner rejected these arguments and noted that the term was nonetheless disparaging *exactly because* it was being used by an Asian American band.²⁰⁶ In other words, "The Slants" might have been registrable as nondisparaging if it had been used by anyone *other than* Asian Americans.²⁰⁷ *Tam* is thus a clear example of how trademark registration has been used effectively to disadvantage applicants based on racial, ethnic, or other status.

The holdings in the Redskins and *Tam* cases have been the subject of much heated debate. Most of the debate centers on whether trademark law can be used to express governmental disapproval of offensive content or whether that would violate freedom of speech, particularly given that applicants can protect their marks even without registration.²⁰⁸ Other scholars have also distinguished the Slants case from the Redskins cases

203. *Tam*, 137 S. Ct. at 1748.

204. Ian Shapira & Ann E. Marimow, *Washington Redskins Win Trademark Fight over the Team's Name*, WASH. POST (June 29, 2017), <https://perma.cc/ZLT4-LCLM>.

205. Simon Tam, *First Amendment, Trademarks, and "The Slants": Our Journey to the Supreme Court*, 12 BUFF. INTELL. PROP. L.J. 1, 4, 7-9 (2018).

206. *In re Tam*, 108 U.S.P.Q.2d 1305 (T.T.A.B. 2013).

207. *Tam*, *supra* note 205, at 2.

208. Compare, Ashutosh Bhagwat, *Banning Trademarks Called Offensive Violates Free Speech*, N.Y. TIMES (May 4, 2016, 3:21 AM), <https://perma.cc/QY42-LCX3>, with Christine H. Farley, *Trademark Restrictions Permit Free Speech Without Approving Offensive Speech*, N.Y. TIMES (May 4, 2016, 9:52 AM), <https://perma.cc/58EU-VZZH>.

and point to the differences between reclaiming a racial slur and using it offensively.²⁰⁹ More relevant to the analysis here, however, is a recent study by Barton Beebe and Jeanne Fromer that finds that the USPTO in fact applied the immoral and scandalous bars in a largely inconsistent and arbitrary manner.²¹⁰ Specifically, they found that the USPTO often classified marks simultaneously as both unregistrably scandalous or disparaging *and* confusingly similar to marks that had previously been registered—in other words, similar to marks that were registered despite the fact that they themselves were often scandalous or disparaging.²¹¹ Thus, although Beebe and Fromer did not examine which applicants were being denied registrations and which received them, their study reveals the discretionary nature of trademark doctrine.

In summary, we can see that gender, racial/ethnic, age, and other gaps exist in IP protection. Explanations for why these gaps exist are obviously complex and many, but as the discussion above shows, some of the reasons for these gaps relate to the design of IP registries, the costs that they impose, and the subjectivity on which they are based.

IV. THE OVERLOOKED DISTRIBUTIVE EFFECTS OF IP REGISTRATION

The distributive effects of IP registries stem from three fundamental characteristics they all have in common: the costs of obtaining and maintaining IP rights, the discretion and resulting opportunity for bias that they allow, and the sophisticated knowledge and understanding that they require. These characteristics have been overlooked in the scholarship discussing registries generally and IP registries specifically. These

209. Sonia Katyal, *Trademark Officials Must Distinguish Between Irony and Offense*, N.Y. TIMES (May 4, 2016, 3:21 AM), <https://perma.cc/WH55-MDU5>. Recently, in *Iancu v. Brunetti*, the Supreme Court followed its holding in *Tam* and found that the Lanham Act's bar on the registration of "immoral" or "scandalous" trademarks discriminates on the basis of viewpoint and, thus, violates the First Amendment. 139 S. Ct. 2294 (2019).

210. Barton Beebe & Jeanne C. Fromer, *Immoral or Scandalous Marks: An Empirical Study*, 8 N.Y.U. J. INTELL. PROP. & ENT. L. 169, 172 (2019).

211. *Id.* at 196-203.

characteristics inevitably contribute to the exclusion of certain underrepresented groups from the different IP regimes, however. Unregistered IP regimes provide crucial alternatives to registration by granting rights that are automatic and do not impose costs for obtaining protection or require awareness and understanding of the rights in order to acquire them. As such, they remove significant accessibility challenges to IP rights. We now turn to discuss each of these characteristics.

A. *Costs of Obtaining and Maintaining Registered Intellectual Property Rights*

The process of obtaining registered IP rights can be very costly to applicants. Costs differ significantly when one compares the patenting process costs to the costs of obtaining copyrights or trademarks.

The patenting process is very complicated and often requires a substantial investment of resources, such as money and time. When an inventor believes she has a patentable idea, the first step is to conduct a patent search to ensure that her idea is new and eligible for patent protection.²¹² Utility patent search fees, for example, range from \$165 to \$660, depending on the size of the entity filing the application and the invention.²¹³ If a patent search indicates that the idea is worth patenting, an inventor can apply for a provisional patent application to establish a filing date as soon as possible and to give herself twelve months to explore whether to invest in filing a more expensive, non-provisional patent application.²¹⁴ The fee for filing a provisional patent ranges from \$70 to \$280.²¹⁵ Filing a patent application generally requires time and effort due to its complexity. To file a patent application, an inventor must submit an application that meets certain criteria, which vary based on the type of the patent application that is being filed (utility, design, or plant patent),

212. *Patent Process Overview*, U.S. PAT. & TRADEMARK OFF., <https://perma.cc/78CQ-XTM8> (last updated May 15, 2020, 1:34 PM EDT).

213. *USPTO Fee Schedule*, *supra* note 94.

214. *Patent Process Overview*, *supra* note 212.

215. *USPTO Fee Schedule*, *supra* note 94.

and furnish a detailed description of the subject invention.²¹⁶ The mandatory fees for filing a patent application vary depending on the nature of the filing entity (regular, small, or micro entity) and the complexity of the invention. Mandatory fees that cover filing, examination, and issuance range from a few hundred dollars to a few thousand.²¹⁷ Surcharges for late submission, extension of time, an accelerated examination, and other special requests can also increase the cost of patent filing by thousands of dollars.²¹⁸

After the applications and fees are submitted to the USPTO, the applications are assigned to an examiner. If an examiner rejects an application, she will explain her decision and give the applicant an opportunity to make amendments to the application or dispute the examiner's objections. A patent application that is rejected twice can be appealed to the Patent Trial and Appeal Board (PTAB).²¹⁹ At any point in the application process, inventors may also request an interview with a patent examiner, which can help resolve issues with the application and reduce the amount of time until a decision is made.²²⁰ If the patent is ultimately issued, the patent applicant must pay an issuance and publication fee,²²¹ which range from \$175 to \$1,000, as well as any number of other fees for overly lengthy applications, particularly complex prosecutions, translations, corrections, PTAB proceedings, and more.²²²

216. *Design Patent Application Guide*, U.S. PAT. & TRADEMARK OFF., <https://perma.cc/J9MZ-CSVK> (last updated Apr. 15, 2019, 12:46 PM EDT); *General Information About 35 U.S.C. 161 Plant Patents*, U.S. PAT. & TRADEMARK OFF., <https://perma.cc/7KCZ-M37H> (last updated Sept. 22, 2017, 11:21 AM EDT); *Nonprovisional (Utility) Patent Application Filing Guide*, U.S. PAT. & TRADEMARK OFF., <https://perma.cc/9QRM-5DZT> (last updated Feb. 26, 2020, 12:22 PM EST).

217. *USPTO Fee Schedule*, *supra* note 94.

218. *Id.*

219. *Patent Trial and Appeal Board (PTAB) FAQs*, U.S. PAT. & TRADEMARK OFF., <https://perma.cc/4HKR-AKQS> (last updated Feb. 6, 2019, 9:34 AM EST).

220. U.S. PATENT & TRADEMARK OFFICE, *MANUAL OF PATENT EXAMINING PROCEDURE* § 713 (2018), <https://perma.cc/U63M-29J5>.

221. *Patent Process Overview*, *supra* note 212.

222. *USPTO Fee Schedule*, *supra* note 94.

Moreover, maintenance fees must be paid to keep a patent in force at 3.5, 7.5, and 11.5 years after the patent is issued.²²³ Maintenance fees vary depending on the entity filing the patent and the patent's complexity. The maintenance fees for a patent that is maintained in all its renewal periods range from around \$3,200 to over \$12,000.²²⁴ As the patent process is difficult and complex and requires knowledge of patent law and familiarity with the patent system, many patent applicants are assisted by patent attorneys during the application process. Patent attorney costs can be very high. The cost for an attorney's assistance through the entire process, including patent searches and patent examination through patent issuance, can range between \$6,000 to \$20,000 or more.²²⁵ In total, average patent prosecution costs vary from \$10,000 to almost \$40,000.²²⁶

In summary, depending on the size of the entity filing the patent application, the type of application pursued, and the complexity of the invention, the total costs of applying for a patent, with an attorney's assistance through the process, could total tens of thousands of dollars.²²⁷ For many inventors, such as women, entrepreneurs, minority groups, the poor, and others, filing a patent application is a risky and costly venture. Obtaining financial resources to file a patent application is frequently difficult for members of such groups, leading most if not all of them to forgo patent protection altogether.²²⁸ As noted above, studies have documented how women and small-business entrepreneurs have been deterred from patenting by their lack of financial resources, support networks, and familiarity with the patenting system.²²⁹

223. *Id.*

224. *Id.*

225. Gene Quinn, *The Cost of Obtaining a Patent in the US*, IPWATCHDOG (Apr. 4, 2015), <https://perma.cc/LGP4-M2GA>.

226. Graham et al., *supra* note 133, at 1311.

227. *See USPTO Fee Schedule*, *supra* note 94.

228. *See* text accompanying notes 128, 150, 158, *supra*.

229. *See supra* Part III.A.

Trademark registration also involves the investment of time, expertise, and money, although to a much lesser degree than patents.²³⁰ The first step is selecting a mark: not every mark is protectable and registrable, and at times an applicant may need expert legal advice in selecting an eligible and worthy mark.²³¹ Once this is done, the applicant must format her mark, identify the good or services to which the mark will apply, and then search the USPTO database to determine whether anyone else has already filed for rights in a similar or identical mark.²³²

The second step is to prepare and submit an application, with application fees ranging from \$275 to \$600.²³³ In addition to verifying that all documents have been properly completed, the USPTO will then substantively examine the mark at issue, mostly to ensure that it does not violate the statutory limits placed on registrability.²³⁴ Thus, the USPTO will refuse to register a mark that is merely a generic term for the good or service it will be used to identify; is merely descriptive of the good or service or the geographic locale from which it originates; is deceptively misdescriptive of the good or service or its origin; or is merely functional in nature.²³⁵ The USPTO will also determine whether a conflicting registration has been filed, although the ultimate burden rests with the USPTO to prove that the mark does not qualify for protection.²³⁶

If the examining attorney decides that a mark should not be registered, the examining attorney will issue a letter with her decision.²³⁷ If

230. *Trademark Process*, U.S. PAT. & TRADEMARK OFF., <https://perma.cc/VLP5-5KNG> (last updated Feb. 15, 2020, 7:40 AM EST).

231. *Id.*

232. *Id.*

233. *Id.*

234. *Id.*

235. 15 U.S.C. § 1052; *see also* Susan M. Richey, *The Troubling Role of Federal Registration in Proving Intellectual Property Crimes*, 50 AM. CRIM. L. REV. 455, 464-65 (2013). Section 1052 also prohibited registration of “disparaging or scandalous subject matter,” but the Supreme Court’s 2017 and 2019 decisions in *Tam* and *Brunetti* respectively invalidated this section of the state as violative of the First Amendment. *See* text accompanying notes 203 & 209, *supra*.

236. Richey, *supra* note 235, at 464-65.

237. *Trademark Process*, *supra* note 230; Trademark Manual of Examining Procedure (TMEP) § 705 (Oct. 2018).

there is no objection to registration, the mark will be approved for publication. After the mark is published, there is a timeframe of thirty days for the filing of an opposition to registration by anyone who believes she may be damaged by the registration.²³⁸ If no opposition is filed or if the opposition is unsuccessful, a registration certificate will issue within a few months. If the applicant registers a mark based on her intent to use it in commerce, the USPTO will issue a notice of allowance conditioned upon filing a statement of use within six months from the notice date or the request of an extension for the filing of such a statement.²³⁹ Statements of use also undergo review before a registration certificate is issued. Like patents, trademark registrations must also be maintained after issuance, with fees ranging from \$300 to \$500.²⁴⁰

Overall, the cost of trademark registration can amount to a few thousand dollars when all applicable fees are taken into consideration along with the additional costs of hiring a trademark attorney to handle the entire process, which can take anywhere from six months to a year, with an average of a little over nine months.²⁴¹ In addition, a recent empirical study by Deborah Gerhardt and Jon McClanahan examines whether lawyers make a difference in prosecuting federal trademark applications and, if so, how much.²⁴² Their major findings suggest that while trademark lawyers are not essential to prosecuting a successful trademark application, having an attorney may significantly increase the likelihood of overcoming barriers in the process and obtaining a certificate of registration.²⁴³ When an office action was issued, applications handled by an experienced trademark lawyer were 68% more likely to publish than those that were handled by an inexperienced pro se applicant (30%).²⁴⁴ Thus,

238. TMEP § 1715.

239. *Id.* § 1106.

240. *Trademark Process*, *supra* note 230.

241. *Data Visualization Center: Trademarks Dashboard*, U.S. PAT. & TRADEMARK OFF., <https://perma.cc/GV82-XNLW> (last visited Apr. 11, 2020).

242. Deborah R. Gerhardt & Jon P. McClanahan, *Do Trademark Lawyers Matter?*, 16 STAN. TECH. L. REV. 583, 622 (2013).

243. *Id.*

244. *Id.*

while trademark registration costs are not as high as those for the patent application process, those costs may still be prohibitively high for many applicants.

The least costly is the copyright registration process, which in the U.S. is largely ministerial and involves little to no substantive examination.²⁴⁵ The Copyright Office merely checks to make sure the paperwork is in order and that the requisite deposit of a copy with the Library of Congress has been made.²⁴⁶ The Copyright Office otherwise does not evaluate whether the work at issue meets the requirements for copyrightability, as minimal as those requirements are.²⁴⁷ Instead, the Copyright Office employs “the rule of doubt,” under which all works are presumed to be copyrightable unless the Copyright Office has a reasonable doubt that a court would agree.²⁴⁸ The Copyright Office does not even decide between conflicting registration applications, leaving it to the respective parties to resolve.²⁴⁹ As a result, the estimated cost of registration ranges anywhere from \$45 to \$65 for authors who file for registration themselves²⁵⁰ and from \$250 to \$500 if an attorney is involved,²⁵¹ with an average estimated processing time of only four months.²⁵²

Despite the relative simplicity and low cost of copyright registration, however, many artists do not fully appreciate the importance of registration, while yet others do not want to deal with the paperwork.²⁵³ Beyond

245. Richey, *supra* note 235, at 465-66, 488.

246. *Id.* at 465.

247. *Id.*

248. *Id.*; see also *Feist Publ'ns, Inc.*, 499 U.S. at 345 (holding copyrightability requires only minimal creativity).

249. *Id.* at 465-66.

250. *Fees*, U.S. COPYRIGHT OFF., <https://perma.cc/PN2W-SJUL> (archived May 26, 2020).

251. Nicholas Wells, *How Much Does a U.S. Copyright Registration Cost?*, NICHOLAS WELLS, <https://perma.cc/NH39-PKAX> (archived May 26, 2020).

252. U.S. COPYRIGHT OFFICE, *REGISTRATION PROCESSING TIMES*, <https://perma.cc/5E3J-LGPM> (archived May 26, 2020).

253. John Tehranian, *The Emperor Has No Copyright: Registration, Cultural Hierarchy, and the Myth of American Copyright Militancy*, 24 *BERKELEY TECH. L.J.* 1399, 1448 (2009).

this, moreover, the costs of copyright registration can still be prohibitive.²⁵⁴ For example, artists such as professional photographers typically take a large number of images in any one sitting, but each image would have to be registered as an individual work.²⁵⁵ Even at \$45 per image, registering the thousands of images they produce would cost photographers far more than they can afford.²⁵⁶ As a result, even small fee increases can lead to significant decreases in registration.²⁵⁷

Other artists, such as screenwriters, do not register their works because they rely on private registration regimes that grant them some of the benefits of registering their copyright. However, this group has been traditionally disadvantaged even under this scheme.²⁵⁸ Indeed, when legislation was introduced in Congress in the early 1990s in order to repeal the § 412 bar to statutory damages and attorneys' fees for applicants who have not registered their copyrights, various author groups, particularly photographers, graphic artists, and foreign copyright owners, have argued that the registration requirements are unduly onerous and unfairly inhibit meaningful access to judicial relief, effectively raising distributive arguments about access to copyright registration.²⁵⁹

B. Possible Bias in Examination Due to Human Involvement in the Registration Process

We lack strong empirical findings regarding why other groups, such as particular racial or ethnic groups, are underrepresented in different IP registries. However, we argue that registries provide a convenient platform for discriminatory effects, particularly in combination with the

254. *Id.*

255. *Id.*

256. Charles Ossola, *Registration and Remedies: Recovery of Attorney's Fees and Statutory Damages Under the Copyright Reform Act*, 13 CARDOZO ARTS & ENT. L.J. 559, 560 (1995). This continues to be true despite the recent group registration rules, Tehranian, *supra* note 253, at 1448, which are restricted to only works published in periodicals, 17 U.S.C. § 408 (2018).

257. LANDES & POSNER, *supra* note 131, at 254.

258. Tehranian, *supra* note 253, at 1448.

259. *Id.*

vague and often complex standards for registering IP rights, the incentives and potential biases among the administrative agencies that administer those registries, and the relatively limited role that courts play in monitoring those agencies.

It takes little imagination to understand why basing rights on complex and vague registration standards opens the door to discriminatory application of those standards. Laws and regulations can be divided roughly into rules and standards. Rules give the public *ex ante* notice of the law by defining it with specificity and predictability, leaving only issues of fact to be determined in order to resolve any given case. Standards, by contrast, define only the rough contours of the law, leaving for later not only factual determinations but also determination *ex post* of what exactly the law should be in the circumstances at hand. This vagueness is designed to allow standards the flexibility to be interpreted and adapted to changing or unforeseen circumstances.²⁶⁰ Standards thus necessarily depend on human judgment and afford decision-makers broad discretion in their application.²⁶¹

The criteria for the protectability of IP rights clearly fall within the category of standards. Patentability standards are both broad and vague in order to address not only the growing diversity of patentable technologies but also the fact that the patent system by design incentivizes the invention of new and unforeseeable technologies.²⁶² Copyright and trademark standards are similarly vague, as the ways in which protectable expression and source identification can be created and used are also growing in diversity. The ambiguity of these standards, however, also allows patent, copyright, and trademark examiners to exercise their discretion

260. Danielle Keats Citron, *Technological Due Process*, 85 WASH. U. L. REV. 1249, 1302 (2008); Louis Kaplow, *Rules Versus Standards: An Economic Analysis*, 42 DUKE L.J. 557, 586-87 (1992).

261. Evan J. Criddle, *When Delegation Begets Domination: Due Process of Administrative Lawmaking*, 46 GA. L. REV. 117, 162 (2011).

262. Dan L. Burk & Mark A. Lemley, *Policy Levers in Patent Law*, 89 VA. L. REV. 1575, 1576 (2003); Emily Michiko Morris, *Res or Rules?: Patents and the (Uncertain) Rules of the Game*, 18 MICH. TELECOMM. & TECH. L. REV. 481, 486 (2012).

in ways that can be discriminatory.²⁶³ Both the ambiguity and complexity of examination standards also provide examiners cover for justifying their decisions even when discriminatory. The bias that women experience during the patent examination process is possibly just the tip of the iceberg, as racial, gender, and cultural biases are not uncommon in administrative decision making.²⁶⁴

Adding to this is the fact that registration of IP rights is of course mediated by administrative agencies, not courts. The USPTO and the Copyright Office certainly have the technical expertise to assess the merits of a work of expression or invention,²⁶⁵ but the judiciary has certain advantages that may help achieve greater equity in IP rights, especially for unregistered rights. For one, courts have legal expertise in interpreting the law as well as any constitutional issues that may arise;²⁶⁶ given that the vague standards for protectability in IP require frequent interpretation, such judicial expertise is paramount. As generalists, judges are also more likely to look beyond the narrow technical details of given registration application to make a decision that advances broader economic and social values.²⁶⁷ As such, courts may be more likely to evaluate registration applications with more of a focus on equity than the USPTO or the Copyright Office might.

For another thing, the judiciary lies outside the administrative apparatus in a separate branch of government. As such, its members are unlikely to have any associative connections with or to feel any favorable

263. See Criddle, *supra* note 261, at 162-63.

264. Elaine Golin, *Solving the Problem of Gender and Racial Bias in Administrative Adjudication*, 95 COLUM. L. REV. 1532, 1533, 1544-49 (1995); see also *supra* Part III.

265. Adrian Vermeule, *Essay, Deference and Due Process*, 129 HARV. L. REV. 1890, 1895 (2016).

266. Ronald M. Levin, *Administrative Procedure and Judicial Restraint*, 129 HARV. L. REV. F. 338, 342 (2016); Ronald M. Levin, *Identifying Questions of Law in Administrative Law*, 74 GEO. L.J. 1, 47 (1985).

267. See Richard J. Pierce, Jr., *Political Control Versus Impermissible Bias in Agency Decisionmaking: Lessons from Chevron and Mistretta*, 57 U. CHI. L. REV. 481, 516 (1990) (acknowledging that, while agencies have more expertise for decision-making on procedures and policy, courts are better positioned for substantive decision-making).

inclination, subconscious or otherwise, toward a particular administrative agency, its policies, or its culture.²⁶⁸ Administrative agencies such as the USPTO also draw their examiners from the same technological fields in which inventors work—in other words, those same technological fields in which systemic racism, sexism, and other biases affect certain groups of inventors.²⁶⁹ These examiners are therefore more likely to make registration decisions that reflect these same subconscious biases.²⁷⁰ Agencies also lack many of the procedural justice and due process constraints to which courts are subject.²⁷¹ Of course, judges are human too and subject to their own biases, as noted above,²⁷² but allowing courts to recognize unregistered IP rights would at least provide an additional avenue for disadvantaged creators to secure rights.

While administrative agency discretion is subject to judicial review, moreover, this review often tends to be rather deferential.²⁷³ This fact limits the value of judicial review in monitoring the equity of agency decisions on registration of IP rights.²⁷⁴ And as with any administrative proceeding, availing oneself of the right to judicial review requires some understanding of that right.²⁷⁵ Allowing courts to recognize unregistered IP rights could therefore be a more equitable way of granting those rights,

268. Martin H. Redish & Kristin McCall, *Due Process, Free Expression, and the Administrative State*, 94 NOTRE DAME L. REV. 297, 298 (2018). *But see* Vermeule, *supra* note 265, at 1928-29 (arguing that agency motivation seldom affects decision-making).

269. *See supra* text accompanying notes 129-144.

270. Redish & McCall, *supra* note 268, at 307-08 (noting that “biased assimilation” makes people more “likely to credit or dismiss evidence or argument selectively based on how it conforms to their group, belief, or position”).

271. Ronald J. Krotoszynski, Jr., *Taming the Tail That Wags the Dog: Ex Post and Ex Ante Constraints on Informal Adjudication*, 56 ADMIN. L. REV. 1057, 1058 (2004).

272. *See supra* Part III; *see also* Thomas W. Merrill, *Fair and Impartial Adjudication*, 26 GEO. MASON L. REV. 897, 897 (2019) (noting possibility of biases in courts as well as agencies).

273. *See, e.g.*, *Dickinson v. Zurko*, 527 U.S. 150, 152 (1999) (holding that Administrative Procedures Act generally requires judicial deference to agency findings of fact).

274. Krotoszynski, *supra* note 271, at 1060 (describing judicial review of agency decisions as an “imperfect mechanism for ensuring fair process in the first instance”).

275. *Id.* at 1058.

rather than forcing everyone either to go through the registration process or to forgo their rights altogether.

Moreover, the registration process itself can be used to discriminate against and unduly burden certain segments of society. This point can easily be seen in the problematic and long discriminatory history of voter registration in the U.S.²⁷⁶ Unlike other modern countries, the United States' electorate has been shaped and defined by state and local voter registration laws.²⁷⁷ These laws have been abused by those with political power to exclude voters they consider undesirable or unreliable.²⁷⁸ Although often framed as measures to prevent voting fraud, voting registries have long been used to effect government-sanctioned discrimination against African American voters and others.²⁷⁹

At the turn of the nineteenth century, the American voting process in the North and South transformed to require that each voter affirmatively prove eligibility to vote.²⁸⁰ The states created onerous requirements and duties for proving eligibility, causing many to lose their voting rights. In the South in particular, this movement was motivated by white supremacy and a desire to consolidate conservative control.²⁸¹

Between 1890 and 1910, for example, Southern states adopted laws with burdensome residency requirements, poll taxes, literacy or other "understanding" requirements, character standards, the need for repeated registration, and stringent disqualification provisions.²⁸² Although none of these provisions cited explicit racial classifications, the literacy tests were the most aggressive way of excluding African

276. See generally Dayna L. Cunningham, *Who Are to Be the Electors?: A Reflection on the History of Voter Registration in the United States*, 9 YALE L. & POL'Y REV. 370 (1991) (describing long history of discrimination in U.S. voting rights).

277. *Id.* at 373-74.

278. *Id.* at 403.

279. *Id.* at 374.

280. *Id.* at 373-86.

281. *Id.* at 373-77.

282. *Id.* at 377, 380.

Americans, among whom illiteracy was the norm.²⁸³ Eventually, the discretion granted to local officials to control voter registration became the most powerful tool for disenfranchising Blacks under the “understanding” and “good character” clauses commonly used to evaluate eligibility.²⁸⁴ Over time, these early laws were repealed, only to be replaced by equally discriminatory laws requiring individuals to appear periodically before local officials to verify their eligibility, early registration deadlines, and increasingly centralized and inaccessible locations for registration.²⁸⁵ These increased requirements’ complexity and costs effectively barred many voters from political participation.²⁸⁶

The 1965 Voting Rights Act expanded registration opportunities for disadvantaged voters by eliminating literacy tests, poll taxes, and other discriminatory practices and procedures.²⁸⁷ Nonetheless, American voter participation has continued to decline well into the twenty-first century, with large numbers of unregistered voters among minorities and the poor due to the persistence of discriminatory registration schemes involving inconvenient hours and locations for voter registration, voter identification and in-person voting requirements, voter registration purges, and—most pertinent to the discussion here—the continued unchecked exercise of discretion by local officials to enforce registration requirements in a discriminatory fashion.²⁸⁸

In summary, voting registration standards and their operation by different state agencies show a systematic scheme of discriminatory practices that have excluded minority groups from the electorate for many years. When the standards for registration such as “character” tests are sufficiently vague and coupled with a human agent’s strong discretion, registration becomes a powerful weapon for excluding voters of certain

283. *Id.* at 377-78.

284. *Id.* at 380.

285. *Id.* at 384-85.

286. *Id.* at 385.

287. *Id.* at 388-400; Voting Rights Act of 1965, Pub. L. No. 89-110, 79 Stat. 445 (codified as amended at 42 U.S.C. §§ 1971, 1973 to 1973bb-1).

288. *Id.* at 385-402.

backgrounds. Unlike IP rights, of course, the voting franchise is one that should be granted as widely as possible, but the overall point stands: the simple act of requiring registration to obtain rights has a tendency to exclude many who otherwise would be entitled to those rights.

And while it is true that IP law is designed in a way that is ostensibly more gender and race neutral than the voting registration procedures, there is good reason to believe that the government agencies that administer IP rights are also subject to discriminatory biases. The vaguer the registration standards are and the more discretion examiners have in applying those standards, the more likely it is that registration will have discriminatory effects.

C. *Knowledge and Understanding of Registered Intellectual Property Rights*

Another major problem associated with registering rights is simply the need to know about how to register one's rights and to understand the value of registering them. A general lack of awareness of legal rights and how to register them is to some degree equivalent to having no rights at all. While it is difficult to establish empirically the exact reasons certain groups fail to register for IP rights, Part III discusses the evidence that female inventors and African American artists do not file for patent protection and copyright protection in part because of the complexity of the law and the registration process, the mistaken perception that their works are not protectable, and lack of awareness of applicable protections.²⁸⁹

The literature that addresses access to justice focuses primarily on disadvantaged groups and their experiences with the court system and the legal process.²⁹⁰ Members of these disadvantaged groups face various

289. Lateef Mtima, *Copyright Social Utility and Social Justice Interdependence: A Paradigm for Intellectual Property Empowerment and Digital Entrepreneurship*, 112 W. VA. L. REV. 97, 132 (arguing that African American artists were taken advantage of, mainly because of lack of knowledge of the legal means required for protecting their works).

290. E.g., DEBORAH L. RHODE, *ACCESS TO JUSTICE* (2004); Frank I. Michelman, *The*

obstacles in participating in the legal process: lack of representation, unfamiliarity with the law and their legal rights, inability to call out injustices, limited ability to interact with state authorities, difficulty accessing administrative procedures, and limited understanding of the legal regime and legal rules.²⁹¹ In recent years, the focus has included the public's ability to access legislation and legislative information.²⁹² Many countries have initiated different projects to increase public access to legislation: digitization of legislation;²⁹³ rewording law for nonprofessional audiences;²⁹⁴ and recognition of the importance of legal literacy as part of the strength of democratic society.²⁹⁵ Because these solutions require time, effort, and significant cost, however, they will not soon yield a significant change in the public's access to legislation in general and IP legislation in particular, given the complexity of IP law. In the meantime, disadvantaged creators will continue to struggle to gain access to IP protections.

In summary, three characteristics of registries arguably contribute to the underrepresentation of certain groups in IP registries. This underrepresentation calls for a rethinking of the design of IP registries as well as consideration of other solutions. The next Part progresses to a discussion of possible reforms to registered rights, arguing that one tactic for closing the gap in IP registries is by strengthening unregistered rights.

Supreme Court and Litigation Access Fees: The Right to Protect One's Rights—Part I, 1973 DUKE L.J. 1153 (1973); Org. for Econ. Co-operation & Dev., *Understanding Effective Access to Justice* (2016) (working paper), <https://perma.cc/29L4-GHRX>.

291. Marc Galanter, *Essay, Why the "Haves" Come Out Ahead: Speculation on the Limits of Legal Change*, 9 L. & SOC'Y REV. 95, 95-97 (1974).

292. Symposium, *Political Lawyering: Conversation on Progressive Social Change*, 31 HARV. C.R.-C.L. L. REV. 285, 285-86 (1996).

293. See Teresa Scassa, *The Best Things in Law Are Free?: Towards Quality Free Public Access to Primary Legal Materials in Canada*, 23 DALHOUSIE L.J. 301, 315-18 (2000).

294. See generally Mark Adler, *The Plain Language Movement*, in THE OXFORD HANDBOOK OF LANGUAGE AND LAW 66 (Peter M. Tiersma & Lawrence M. Solan eds., 2012) (describing the plain language movement).

295. See generally Kirsten Wurmman, *Public Legal Education Bibliography*, 34 CAN. L. LIBR. REV. 232 (2009) (emphasizing the role of libraries in legal education and literacy).

V. PROPOSALS FOR REMEDYING THE DISTRIBUTIVE EFFECTS

Over the years, many have introduced various proposals to remedy different distributive effects in IP protections. Many of the proposals, surveyed above, relate to judicial interpretation of legal IP doctrines as well as other targeted solutions to non-IP related challenges certain disadvantaged groups face.²⁹⁶ Beyond that, almost no attention has been paid to the design of IP registries and the costs they introduce.

It is only logical to look at correcting what is broken in the current design of IP registries. The costs of obtaining IP protection, discriminatory biases that affect the registration process, and lack of awareness of IP law generally can be addressed in different ways. For example, filing fees can be restructured and adjusted in a way that accounts for an applicant's income, thus remedying some of the resource constraints applicants face. This was one of the reforms created to help small entities and micro entities apply for patent protection and could be extended to other types of applicants. Attorneys' fees incurred during filing for IP protection are arguably a greater challenge because they are the most significant cost of obtaining IP protection. Few attorneys want to provide legal assistance for reduced or no fees, but a network of support services for inventors could offer guidance and support throughout the filing process.

Similarly, discriminatory biases during the registration process could be resolved by redacting applicants' names and any other identifying data to make the process anonymous. Of course, this is not always possible, and at times the IP examination process calls for face-to-face interactions between the applicant and the examiner in a way that makes anonymity impossible.²⁹⁷ The bias could be addressed by training programs for examiners about bias in examination and subconscious effects on their

296. See, e.g., Keith Aoki, *Distributive and Syncretic Motives in Intellectual Property Law (with Special Reference to Coercion, Agency, and Development)*, 40 U.C. DAVIS L. REV. 717, 774-79 (2007).

297. See *Examination of Applications and Proceedings in the United States Patent and Trademark Office*, U.S. PAT. & TRADEMARK OFF. (Oct. 2015), <https://perma.cc/P8Y3-F9E5>.

decision-making process, although bias training has not been known to be particularly successful.²⁹⁸ Moreover, hiring more examiners from minority groups may help to minimize the bias in the registration process. Collecting voluntary demographic information that is hidden from examiners can be used to monitor and address differences among underrepresented groups during examination. Lastly, educational programs for the public can help address the knowledge gap.

Many of the design flaws in IP registration systems cannot easily be changed, however, and even if changed would take a long time to have any meaningful effect. And while such measures may seem appealing, they are costly and time-consuming to implement. It is quite difficult to change deeply ingrained views and stereotypes. Therefore, we propose that alongside targeted efforts to improve the IP registration process, we should also focus on a more promising route: unregistered IP rights.

Registration of IP rights is important and beneficial, however, and should not be abolished. Registration provides many meaningful advantages and should be incentivized. Strengthening unregistered IP rights, and in the case of patents, creating unregistered rights, would help reduce underrepresentation in the current IP system. Unregistered rights regimes avoid some of the up-front challenges that registration poses for underrepresented groups and possibly others in obtaining IP protection. Automatic, unregistered rights would involve no initial costs of any kind (no filing and renewal fees and no prosecution costs), no human intervention and subconscious bias in the registration process, and no need for familiarity with IP registration complexities. This would provide greater access to IP protections compared to registered rights regimes.

298. See, e.g., Tomas Chamorro-Premuzic, *Implicit Bias Training Doesn't Work*, BLOOMBERG OPINION (Jan. 4, 2020), <https://perma.cc/Q5PV-EB35>; Dan Gates, *Why Unconscious Bias Training Does Not Work*, APPLIED (Aug. 27, 2019), <https://perma.cc/L9CW-BHJE>. But see Sarah M. Jackson et al., *Using Implicit Bias Training to Improve Attitudes Toward Women in STEM*, 17 SOC. PSYCHOL. EDUC. 419, 432 (2014) (finding implicit bias training to be partially effective).

While both regimes would later require enforcement costs in cases of infringement, unlike registered regimes, unregistered regimes do not introduce prohibitively up-front high costs in merely obtaining the right.

Building upon these important insights, we argue for minimizing the differences between registered and unregistered IP regimes while simultaneously maintaining strong incentives to register rights given their important economic value. Our proposals center around two core suggestions: introduction of an unregistered patent regime and closing existing major gaps between unregistered copyrights and trademarks and registered ones. Importantly, we recognize that when rights are unregistered, their acknowledgement and enforcement is transferred from the administrative agencies to the courts, thereby replacing one human agent with another one. Human intervention is not eliminated altogether but is rather replaced. Yet, as noted above, courts operate in a manner that is fairer to the parties, because courts are committed to due process more than administrative agencies. Last but certainly not least, we recognize that creating and strengthening unregistered IP rights could deter future innovation and creation, but we hope that any loss in derivative or cumulative innovation would be more than compensated for by the enhanced diversity and creativity among creators of IP.²⁹⁹

A. *Introduction of Unregistered Patents Regime*

Amongst the different fields of IP, patent law is the only field where only one route of protection is available: registered patents. In a previous article we therefore proposed a new approach: an unregistered patent rights regime as an alternative that would help disadvantaged inventors to protect their inventions.³⁰⁰

299. Cf. Bartow, *supra* note 176, at 570 (making a similar argument for strengthening copyright protections for women's expressive works).

300. Miriam Marcowitz-Bitton et al., *Unregistered Patents and Gender Equality*, 43 HARV. J.L. & GENDER 47 (2020).

The regime would be limited in scope and term but would provide disadvantaged inventors with at least some degree of protection.³⁰¹ An unregistered patent rights regime would also address many of the possible reasons for why disadvantaged inventors file fewer patent applications and receive fewer and narrower patent rights: bias, lack of funding to prepare and file patent applications, lack of knowledge about patent rights, eligibility concerns, insecurity, lack of confidence regarding their inventions, and more. An unregistered patent rights regime would bypass all these hurdles by granting automatic protections for qualified inventions. Because of the concerns that would undoubtedly arise about monopolistic rights, anticommons, and other problems, the proposed unregistered patent regime would be very limited in form.³⁰²

First, all inventors would be eligible for protection under our proposal, but protection would be subject to meeting certain threshold requirements identical to those required by the current registered patents regime, including subject matter eligibility,³⁰³ novelty,³⁰⁴ utility,³⁰⁵ and non-obviousness.³⁰⁶ For all inventions meeting those patentability standards, however, protection would automatically attach as soon as the inventions are made publicly available through exhibition, use in trade, publication of a written description of the invention, or other disclosure reasonably accessible to the public, similar to the rules regarding “pub-

301. Cf. Bartow, *supra* note 176, at 570 (advocating similarly limited copyright rights with low entry barriers to address gender-based copyright gap).

302. Marcowitz-Bitton et al., *supra* note 300, at 73-88.; cf. Council Regulation 6/2002, 2002 O.J. (L 3) 1, 5 art. 11 (granting community designs similarly unregistered protections); Charles-Henry Massa & Alain Strowel, *Community Design: Cinderella Revamped*, 2003 EUR. INTEL. PROP. REV. 68, 68-71 (discussing similar unregistered rights for designs in the E.U.).

303. 35 U.S.C. § 101 (2018).

304. The novelty requirement means that the invention was not previously made public knowledge. 35 U.S.C. § 102 (2018); BURK & LEMLEY, *supra* note 84, at 9.

305. The utility requirement means that the invention holds some real-world application. 35 U.S.C. § 101; BURK & LEMLEY, *supra* note 84, at 9.

306. The non-obviousness requirement means that a person having ordinary skill in the relevant art would not be able to immediately create it with little effort. 35 U.S.C. § 103; BURK & LEMLEY, *supra* note 84, at 9.

licly available” inventions under the current patent regime’s novelty doctrine.³⁰⁷ For inventors who are or become aware of their unregistered rights, moreover, those rights can be licensed or assigned in much the same fashion as registered patent rights (although unregistered rights owners obviously would not have the advantages of registration mentioned above during sales or licensing).

Second, our unregistered patent system would grant rights only against infringers who directly and knowingly copy the subject invention in identical or substantially similar form. Independent creation would thus be an absolute defense to infringement of such unregistered patent rights, much as it is in copyright law. In addition, although an inventor would be entitled to a presumption of validity of her unregistered patent rights, she would need to prove actual copying of her invention, as well as the date on which her invention first became public. Unlike copyright cases, however, in which independent creation can be difficult to prove, the relatively short time period in which a defendant would have to prove lack of copying would make the inquiry relatively simpler—and certainly less burdensome than having no independent creation defense at all, as would happen in a case involving a registered patent.

The presumption of validity of her patent rights would also be rebuttable by mere preponderance of the evidence, not clear and convincing evidence. It may seem odd to place the initial burden of proving invalidity on the defendant, as this is not the rule for unregistered trademarks or copyrights.³⁰⁸ Given how much more rigorous the standards are for patentability as compared to copyrightability or trademark protection as well as how much patent examination depends on comparison with ex-

307. See *Helsinn Healthcare S.A. v. Teva Pharm. USA, Inc.*, 139 S. Ct. 628, 631-32 (2019); *Metallizing Eng’g Co. v. Kenyon Bearing & Auto Parts Co.*, 153 F.2d 516, 518 (2d Cir. 1946).

308. See 17 U.S.C. § 411 (2018) (allowing enforcement of unregistered works of non-U.S. origin or whose registration application has been refused); 87 C.J.S. *Trademarks, Etc.* § 309 (2020) (unregistered trademark owner has burden of proving validity).

isting technologies, or “prior art,” it is likely more efficient for a defendant to prove invalidity than it is for the inventor to prove patentability. Even among registered patents, which are examined under the expertise of the USPTO, many are later invalidated in light of prior art references of which the USPTO was unaware but which defendants were able to uncover for litigation.³⁰⁹ Moreover, having the defendant proceed immediately to its invalidity argument, rather than forcing the defendant to wait until the plaintiff has mounted its validity argument, may lead to shorter and less costly infringement proceedings or, better yet, lead more directly to dismissal. And of course, the patent holder would always have the heightened burden of showing that the defendant directly and knowingly copied the invention at issue. If the unregistered rights are found to be not invalid as well as infringed, on the other hand, the remedies for infringement would include both injunctions and damages.

Third, and perhaps most important, our proposed unregistered patent rights would last for only three years from first publication.³¹⁰ The inventor would be eligible to apply for registered patent protection but only within one year of the first publication. This provision is thus consistent with the existing U.S. patent system’s *de facto* one-year grace period for novelty for inventors that publicly disclose their inventions prior to filing under 35 U.S.C. § 102(b) of the America Invents Act.³¹¹ This gives both registered and unregistered rights holders the incentive to disclose their inventions publicly as soon as possible to establish priority under

309. Despite examination by the USPTO, registered patents are still invalidated during litigation or administrative reexamination or review at rates of around 35%. Shine Tu, *Invalidated Patents and Associated Patent Examiners*, 18 VAND. J. ENT. & TECH. L. 135, 151-52 (2015) (surveying litigated patents); MICHAEL TIERNEY & WILLIAM SAINDON, *BOARDSIDE CHAT: NEW DEVELOPMENTS*, U.S. PAT. & TRADEMARK OFF. (June 11, 2020), <https://perma.cc/3YET-YRMM> (surveying administrative adjudications under the AIA). Of these, the vast majority were invalidated based on defendant-identified prior art previously unseen by the USPTO. Stephen Yelderman, *Prior Art in the District Court*, 95 NOTRE DAME L. REV. 837, 883-84 (2019); Tu, *supra*, at 159, 160-61.

310. *Cf.* Council Regulation 6/2002, art. 11 ¶ 1, 2002 O.J. (L 3) 1, 5 (EC) (discussing term of protection for unregistered design rights in the E.U.).

311. *See* ROBERT PATRICK MERGES & JOHN FITZGERALD DUFFY, *PATENT LAW AND POLICY* 390-91 (7th ed. 2017).

the existing regime. After an application for registered patent rights was filed, the subject invention would undergo the same examination process as any other application and would enjoy the same twenty-year term as any other patent. If the inventor forgoes filing for registered patent protection, she would thus have only three years of unregistered patent protection, a term more than adequate for many types of invention.³¹²

Our proposed unregistered patent rights regime thus removes many of the hurdles that different disadvantaged inventors face under the current registered patent regime. It involves no registration or renewal fees, no lengthy, expensive, and potentially biased patent examination, and no need for expertise or even familiarity with the patent system. An unregistered patent rights regime could even help both inventors and the public to become more aware of the legal rights to which inventors should be entitled. Although women and other disadvantaged inventors may not have the awareness now of the value of their forgone patent rights, the law can help lead the way by creating a baseline ethos that assumes such inventors do have rights, thereby creating a greater level of comfort and confidence for them in that space.³¹³

Such an unregistered patent system is a bold idea, of course, to which many might raise strenuous objections. Our proposal is a relatively modest one, however. First, our proposal extends unregistered protection only to those inventions that meet all of the same stringent patentability requirements that apply to registered patents and would always be subject to judicial review for invalidity. Second, our proposal would protect only against copying, not independent creation, thereby creating a safe harbor for most potential patent infringers.³¹⁴ Third, our proposed unregistered rights would last for only three years, creating another significant safe harbor for those who wait before copying another's invention.

312. See also *infra* text accompanying note 315, *infra*.

313. Bartow, *supra* note 176, at 577-78 (describing a similar effect for copyright rights, rights for women to participate in sports, etc.).

314. BESSEN & MEURER, *supra* note 106, at 123-28 (2008) (noting most alleged patent infringers are second-in-time inventors, not copyists).

Fourth, if the unregistered rights holder does apply for registered rights, their total period of exclusivity would never exceed twenty-one years (twenty years from date of filing plus up to one year pre-filing exclusivity), the same maximum period for which any other patentee would be eligible under U.S. law.

Our proposed unregistered patent rights are unlikely to increase transaction or other costs for others, moreover, because our proposed unregistered patent rights protect only against copying. The very fact of copying would also prove that the alleged infringer had notice of the patent owner's rights, thereby preserving the public notice function of patenting. More to the point, the proposed unregistered rights would apply only to published inventions and would be very limited in duration, greatly lowering the risk of nuisance suits, hold-outs, and so on. And although the public would not have the benefit of patent claims to publicly delimit the boundaries of an unregistered patent, comparing two similar devices or processes without the benefit of patent claim legalese is not entirely different than what the USPTO and courts must already do when measuring an invention's patentability against the current state of the art in its field.

Perhaps the most salient objection to our proposal, however, is that even if the costs of an unregistered patent rights system were not inevitably prohibitive, the remaining question is whether the unregistered patent rights proposed here would truly help disadvantaged inventors. Infringement litigation costs could still be exorbitant. An inventor may be more willing to invest and more able to raise funds for litigation once her invention has proven valuable enough to copy, however. Furthermore, the value of IPRs often arises in making the mere threat of enforcement more credible. And although the unregistered rights would last for only three years, most technologies do not need a twenty-year patent term; in

the computer software and electronics industries, three years of protection may be more than enough.³¹⁵

Overall, although not a first-best solution, which would require much more far-reaching changes, our proposal for unregistered patent rights could serve as a highly beneficial stop-gap measure.

B. Strengthening Unregistered Copyright by Eliminating Certain Advantages of Registered Copyrights

As outlined above, copyright law provides major advantages to copyright registration.³¹⁶ Although copyright registration is not mandatory, registration offers certain advantages that place authors with unregistered copyrights at a clear disadvantage. Registration creates a presumption of “constructive notice” that a work is under copyright. It is a prerequisite for initiating infringement actions for works of U.S. origin, and recovering statutory damages and attorneys’ fees is possible only for cases of infringement occurring after registration, requiring a plaintiff to register her work before a defendant’s act of infringement or within ninety days of the work’s publication. Moreover, the defense of non-willful infringement is disallowed for works marked with copyright notice.

We propose the elimination of some—but not all—of these advantages. As we noted earlier, it is important to maintain incentives for registration, because registration offers many economic benefits. Therefore, we propose that the presumption of “constructive notice” that a work is under copyright and the prima facie presumption of validity be maintained because it provides a strong incentive to register, providing plaintiffs with a lower evidentiary threshold when filing an infringement lawsuit. Some scholars, however, have disputed this notice function.³¹⁷

315. See, e.g., Michael Henry, *Should Software Startups Seek Patent Protection?*, HENRY PATENT LAW FIRM (May 24, 2018), <https://perma.cc/W4F3-URUR>; Verne A. Luckow & Steven C. Balsarotti, *Statistical Analysis of Federal District Court Cases Seeking Longer Patent Term Adjustments in the Wake of Wyeth v. Kappos*, 10 J. MARSHALL REV. INTELL. PROP. L. 1, 3 (2010).

316. See *supra* text accompanying notes 72-77.

317. Tehranian, *supra* note 253, at 1429-36.

Notably, in his work, Tehranian argues that the registration system has failed to achieve its basic notice function, contending that it is doubtful whether potential infringers would really engage in *ex ante* consultation of the registration rolls.³¹⁸ Even if they did, they would have trouble finding a definitive answer as to a work's registration status.³¹⁹ For works registered before 1978, registration records are not easily available.³²⁰ For recent works, the available database is not current.³²¹ Information available in the database is available in a text-only format, making it hard to identify the registration status of certain works and even harder for visual works.³²² Additionally, ascertaining the title of certain works can be challenging. Thus, it seems that even the current copyright registration system does not achieve its stated notice goal, and yet registration still provides a plaintiff with an evidentiary advantage when commencing litigation.³²³ On the other hand, registration also offers benefits such as proof of the date of creation.³²⁴ This benefit encourages timely registration because a work's date of registration sets its latest possible date of creation.³²⁵ Such proof can be beneficial in many ways, especially where a defense of earlier or independent creation is proffered.³²⁶ This particular benefit should therefore remain exclusive to registered rights and not apply to unregistered copyrights.

However, we propose eliminating the two major advantages of copyright registration, namely, (a) conditioning initiating infringement actions for works of U.S. origin upon registration; and (b) providing the remedies of statutory damages and attorneys' fees only in cases of infringement occurring after registration. Eliminating these limitations will

318. *Id.* at 1428-29.

319. *Id.* at 1428-30.

320. *Id.* at 1429.

321. *Id.* at 1430.

322. *Id.* at 1430.

323. *Id.* at 1415.

324. *Id.*

325. *Id.*

326. *Id.*

provide unregistered copyrights with stronger protection, making registration truly optional and making unregistered copyrights stronger.

As John Tehranian has shown, the imposition of seemingly neutral formalities has the effect of favoring sophisticated copyright owners over less sophisticated ones, who “enjoy only low-tier protection and remain vulnerable to unauthorized manipulation and appropriation.”³²⁷ Registered copyright owners can demand up to \$150,000 per willful act of infringement,³²⁸ allowing them significant benefits in the form of statutory damages.³²⁹ In contrast, unregistered copyright owners can resort only to the uncertain threat of injunctive relief and actual damages, which are rarely significant,³³⁰ and will have difficulty seeking statutory damages and attorneys’ fees even if infringement continues after registration.³³¹

In summary, closing the gap between registered and unregistered copyrights can be a significant distributive move in the copyright realm, providing authors with greater access to copyright by removing barriers to meaningful protection.

C. *Strengthening Unregistered Trademarks by Eliminating Certain Advantages of Registered Trademarks*

As noted above, trademark law also gives certain advantages to registered over unregistered rights,³³² while unregistered mark owners lack many of the benefits of registration under both federal and state law.³³³ These include geographic priority even without prior use in commerce and a presumption of validity and ownership, *inter alia*.³³⁴

327. *Id.* at 1402-04.

328. 17 U.S.C. § 504 (2018).

329. Tehranian, *supra* note 253, at 1407.

330. *Id.* at 1418-23.

331. *Id.* at 1453-54. Courts can be unforgiving of failure to register as well. *Id.*

332. Deborah R. Gerhardt & Jon McClanahan Lee, *Owning Colors*, 40 CARDOZO L. REV. 2483, 2515 (2019).

333. *Id.* at 2516.

334. *Id.* at 2515-17.

Similar to our recommendations in the copyright context, we propose that unregistered trademarks be treated even more similarly to registered ones. Specifically, unregistered marks should be eligible for incontestable status in much the same way that registered marks can under current law. As noted above, marks can reach incontestability after five years of continuous use under federal registration, but unregistered marks cannot.³³⁵ This is significant in that incontestability protects registered marks against invalidity arguments based on lack of secondary meaning, a risk that unregistered descriptive marks must always face. Secondary meaning is notoriously difficult to measure, however, and even owners who have invested in their marks for many years may lose them to allegations of lack of secondary meaning if the marks are unregistered. Incontestability status after some number of years—five, in the case of registered marks, and for unregistered marks perhaps five or some larger number—would protect and thus incentivize investment in both descriptive marks and the quality of the goods and services associated with them. Similarly, the law could provide unregistered rights with protections against counterfeit marks, especially as counterfeiting is considered to be the most “egregious” instance of trademark infringement and one suggesting that a mark is worth copying.³³⁶

At the same time, however, we wish to maintain the incentives to file for a registered trademark given the economic value of registration. As for priority rules and whether a first-use-in-commerce rule is preferable from a distributive perspective over a first-to-file rule, it is clear that a first-to-file rule is superior if we want to incentivize registration. Interestingly, this has not been the choice of federal law, which follows the first-use-in-commerce rule. True, federal law does allow registration of marks not yet in use, but only if the registrant promises to use the mark in commerce in the near future.³³⁷ This provision is designed to prevent stockpiling of unused marks (although it has admittedly been subject to much

335. 15 U.S.C. § 1065 (2018).

336. 15 U.S.C. §§ 1116(d)(1)(B)(i), 1117(c) (2018).

337. 15 U.S.C. § 1051(b)(1) (2018).

abuse). Moreover, even federal registration must give way to prior use of a mark, albeit if only in the immediate geographic area of the prior use. Distributively, a first-use-in-commerce rule is in some ways more egalitarian because it does not require registration as a condition for trademark ownership. On the other hand, a first-to-file rule can also aid those trademark owners who are unable to begin using their marks on their goods and products in a sufficiently widespread fashion before potential infringers can mount their own competing uses. We therefore propose maintaining the current law's rather nuanced reliance on the first-to-use principle while nonetheless incentivizing registration by allowing protection before use actually commences (intent-to-use registrations) and by granting registrations national priority with only regional cut-outs for prior use. There is no appreciable reason to provide unregistered trademarks greater geographic scope.

As for the other advantages of registered rights, such as the presumption of validity and ownership and, in the case of registered trade dress, the presumption of nonfunctionality, these should be maintained in order to incentivize registration. A trademark that survives examination under the expertise of the USPTO should provide its owner some evidentiary benefits compared to an unregistered mark.

In summary, we propose that unregistered copyrights and trademarks should be strengthened in a way that eliminates most of the benefits of registered rights so registration and the costs it introduces will not disadvantage owners of unregistered IP rights. We also argue for the introduction of an unregistered patent regime to provide disadvantaged inventors with meaningful protection while avoiding the prohibitively high costs of the registered patent process.

VI. CONCLUSION

Registered IP regimes currently disadvantage many groups. This article demonstrates that this phenomenon stems from a few major characteristics of registries that have been overlooked. Studying the distributive

effects of IP registries shows a gloomy picture, in which women, different racial and ethnic groups, entrepreneurs, unsophisticated players and others are constantly underrepresented in the current registered IP regimes. The article suggests that undertaking significant steps to reform existing registries alongside strengthening unregistered IP rights is a step in the right direction to expedite closing the different gaps and remedying their detrimental consequences. Importantly, our proposal does not attempt to dismiss the importance of registries—we are not calling for an abolition of IP registries, but rather argue that in order to remedy these problems, we advocate relaxation of some of the formal requirements currently imposed by the patent, copyright and trademark systems. This article details the features of our proposed unregistered patent regime and discusses its advantages and limitations, as well as our proposals for closing the gaps between registered and unregistered copyrights and trademarks.