

The Public Perception of Intellectual Property

Gregory N. Mandel

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THE PUBLIC PERCEPTION OF INTELLECTUAL PROPERTY

*Gregory N. Mandel**

Abstract

Though the success of intellectual property law depends upon its ability to affect human perception and behavior, the public psychology of intellectual property has barely been explored. Over 1,700 U.S. adults took part in an experimental study designed to investigate popular conceptions of intellectual property rights. Respondents' views of what intellectual property rights ought to be differed substantially from what intellectual property law actually provides, and popular conceptions of the basis for intellectual property rights were contrary to commonly accepted bases relied upon in legal and policy decision-making. Linear regression analysis reveals previously unrecognized cultural divides concerning intellectual property law based upon respondents' income, age, education, political ideology, and gender.

| | |
|---|-----|
| INTRODUCTION | 262 |
| I. INTELLECTUAL PROPERTY LAW | 265 |
| A. <i>Copyright and Patent Law</i> | 266 |
| B. <i>Intellectual Property Policy</i> | 268 |
| C. <i>Intellectual Property Debates</i> | 271 |
| D. <i>Influence of the Public Psychology of Intellectual Property</i> | 274 |
| II. EXPERIMENTAL STUDIES ON THE PSYCHOLOGY OF INTELLECTUAL PROPERTY | 278 |
| A. <i>Methodology</i> | 278 |
| B. <i>Results</i> | 279 |
| 1. Scenario One: Infringement | 279 |
| 2. Scenario Two: Creativity Threshold | 281 |
| 3. Scenario Three: Independent Creators | 282 |

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| | | |
|------|---|-----|
| 4. | Scenario Four: Joint Creators..... | 284 |
| 5. | Basis for Intellectual Property Rights | 286 |
| 6. | Preferences for the Strength of Intellectual Property Rights..... | 289 |
| III. | DISCUSSION..... | 292 |
| | A. <i>Public Perception of Intellectual Property Rights and the Law</i> | 292 |
| | B. <i>Public Perception of Artistic Versus Inventive Creativity</i> | 297 |
| | C. <i>The Basis for Intellectual Property Rights</i> | 299 |
| | D. <i>Intellectual Property Demographics</i> | 300 |
| IV. | THE PSYCHOLOGY OF OWNERSHIP | 305 |
| | CONCLUSION..... | 308 |

INTRODUCTION

The success of intellectual property law depends upon its ability to influence human behavior pursuant to the widely accepted incentive theory of intellectual property. Under the incentive rationale, intellectual property law is built on the premise that providing creators with certain rights will induce them to produce, distribute, and commercialize more intellectual works of greater creativity than they otherwise would. Intellectual property law also depends on behavioral effect for compliance. The ease of copying, enabled by modern technological advances, combined with the high transaction costs of enforcement, makes widespread voluntary compliance necessary for the intellectual property system to function as desired.

Because intellectual property law is designed to operate through producing a behavioral response, public understanding of intellectual property law plays an integral role in the success or failure of the intellectual property system. Public understanding can influence the activities of potential intellectual property creators and users, as well as the decision-making of jurors, judges, and legislators. It can also affect issue framing and public discourse among voters, the media, and the general public. Despite the central importance of public perception and human behavior to the success of the intellectual property system, popular understanding of intellectual property rights has barely been explored. This article presents the first investigation of the relationship between popular conceptions of what intellectual property rights *should be* and what intellectual property rights *actually are*, across different types of creative works. The results have important implications for understanding compliance with intellectual property rights, how

effectively intellectual property law promotes the production of creative works, and how intellectual property law is applied. The results also elucidate the ability of law to shape human perception and behavior more generally.¹

Utilizing a series of intellectual property scenario experiments given to a national sample of over 1,700 American adults, the study reported here examines three primary issues: (1) whether and how popular conceptions of intellectual property rights differ from actual intellectual property law; (2) whether and how popular conceptions of intellectual property rights vary between artistic versus technological creative endeavors; and (3) how the popular understanding of the basis for intellectual property rights compares to the primary rationale applied in policy and legal decision-making.

The study results demonstrate that respondents' views of what should be protected by intellectual property rights differ substantially from the actual provisions of the law. Public perception of what intellectual property rights should be also varies, in an inconsistent manner, between the areas of copyright and patent law. Because intellectual property law is designed to induce certain behavior, the public disconnect suggested by these results indicates that intellectual property law may not be able to produce its desired effects concerning either the promotion of creative activity or compliance with intellectual property rights.² That is, people may not invest in, produce, or commercialize creative activity to the extent anticipated by intellectual property law, and may not comply with intellectual property law even in situations where they intend to respect the rights of others.

The study results also reveal that popular conceptions of the basis for intellectual property rights are contrary to commonly accepted bases relied upon in legal and policy decision-making. Whereas intellectual property law is *designed* based on an incentive theory of intellectual property rights,³ lay people *understand* intellectual property law to be

1. Cf. W. Jonathan Cardi, Randall D. Penfield & Albert H. Yoon, *Does Tort Law Deter Individuals? A Behavioral Science Study*, 9 J. EMPIRICAL LEGAL STUD. 567 (2012) (reporting experimental studies on potential tort liability in an effort to examine the “widely accepted but grossly undertested assumption that tort liability in fact deters tortious conduct”).

2. See Jeanne C. Fromer, *Expressive Incentives in Intellectual Property*, 98 VA. L. REV. 1745, 1777 (2012) (“Incentives—the underpinning of intellectual property—work only if they motivate authors and inventors to create (or indirectly stimulate others, like firms, to encourage them to create.)”); Mark D. Janis & Timothy R. Holbrook, *Patent Law’s Audience*, 97 MINN. L. REV. 72, 74–75 (2012) (discussing how a lack of awareness of patent law on the part of potential creators complicates the incentive theory of patent law); Tom R. Tyler, *Compliance with Intellectual Property Laws: A Psychological Perspective*, 29 N.Y.U. J. INT’L L. & POL. 219, 224 (1996) (“The effectiveness of intellectual property law is therefore heavily dependent on gaining *voluntary* cooperation with the law.”).

3. See *infra* Section I.B.

based on the natural entitlement of authors and inventors to their intellectual creations.⁴ While legal and political experts tend to view intellectual property law from one perspective, the public sees it from another. These findings have significant implications for intellectual property policy, as the disconnect between public perception and intellectual property rights can undermine the legitimacy and effectiveness of the law.⁵

The results of these experiments shed light on contemporary high-profile intellectual property debates, such as battles concerning the Stop Online Piracy Act⁶ (SOPA) and PROTECT IP Act of 2011⁷ (PIPA), the six-year-long patent reform legislation debate in the U.S. Congress, and numerous recent intellectual property cases before the Supreme Court. Regression analysis of participant study responses reveals that having *lower income*, being *older*, being *more educated*, and having *less experience* with intellectual property all correlate with a desire for *stronger* intellectual property protection. Further, for certain intellectual property rights, conservatives prefer stronger intellectual property rights than liberals, women prefer stronger rights than men, and minorities prefer stronger rights than whites. These results indicate previously unrecognized cultural divides over intellectual property that are expected to shape the public discourse and outcomes of future intellectual property debates.

Prior research has investigated a number of manners in which human decision-making concerning intellectual property is “boundedly rational.”⁸ Because people are not perfect rational actors, this research indicates, they will not make fully rational decisions concerning intellectual property endeavors and activity. For example, it appears that people tend to irrationally overvalue the quality of their own creations due to endowment and creativity effects,⁹ and cannot accurately evaluate whether inventions merit patent protection due to the hindsight

4. Some scholars support this natural rights basis for intellectual property, as opposed to the incentive basis. *See infra* Section I.B.

5. *E.g.*, Robert MacCoun et al., *Do Citizens Know Whether Their State Has Decriminalized Marijuana? Assessing the Perceptual Component of Deterrence Theory*, 5 REV. L. & ECON. 347 (2009) (discussing lack of support for the theory that changes in the law will produce corresponding changes in behavior, based on data concerning citizens’ perceptions of marijuana possession legal penalties); *cf.* Tom R. Tyler, *Psychological Perspectives on Legitimacy and Legitimation*, 57 ANN. REV. PSYCHOL. 375, 380–82 (2006) (discussing how the public’s perception of governmental institutions as legitimate contributes to effective democratic governance).

6. H.R. 3261, 112th Cong. (1st Sess. 2011).

7. S. 968, 112th Cong. (1st Sess. 2011).

8. *See infra* Part IV.

9. Christopher Buccafusco & Christopher Jon Sprigman, *The Creativity Effect*, 78 U. CHI. L. REV. 31, 31–32 (2011).

bias.¹⁰

The studies reported here take these concerns a step further. Even if we could de-bias the cognitive heuristics that cloud intellectual property decision-making, human beings still would not operate as desired rational actors in the intellectual property sphere because most people do not comprehend what the law is and do not concur with the rationale on which intellectual property laws are based. As a result, the intellectual property system will have a hard time functioning as designed. A behavioral system cannot operate properly if the actors within the system function pursuant to a different set of behavioral determinants than the model on which the system is founded.¹¹

Part I of this Article provides an introduction to patent and copyright law and policy. It also explains why the public psychology of intellectual property is crucial to the success of the intellectual property system. Part II reports the methodology and results of a series of four intellectual property scenario experiments designed to investigate the public psychology of intellectual property. Part III discusses the implications of the experimental results for the existing behavioral model of intellectual property law and analyzes the repercussions of this new understanding for current intellectual property debates. Part IV of this Article places the current intellectual property study within a broader field of literature on the psychology of ownership, a field that, until now, has largely focused on the ownership of physical property. This Article concludes with recommendations for further avenues of research.

I. INTELLECTUAL PROPERTY LAW

Evaluating the relationship between public perception and intellectual property rights requires understanding intellectual property law and policy in the first instance. This section provides a brief introduction to intellectual property law and how it is expected to function by affecting the behavior of both the creators and users of intellectual property. The interplay between intellectual property law and public perception is highlighted using examples from several current, high-profile intellectual property law debates.¹² The section concludes with a discussion of how the public psychology of intellectual property rights mediates the success of the intellectual property system through its influence upon intellectual property

10. Gregory N. Mandel, *Patently Non-Obvious: Empirical Demonstration That the Hindsight Bias Renders Patent Decisions Irrational*, 67 OHIO ST. L.J. 1391, 1393–95 (2006).

11. See Ori Friedman, *First Possession: An Assumption Guiding Inferences About Who Owns What*, 15 PSYCHONOMIC BULL. & REV. 290, 290 (2008) (noting that “[o]wnership of property is an important determinant of behavior”); see also Tyler, *supra* note 2, at 224.

12. See *infra* Section I.C.

creators, users, jurors and judges, legislators, and the general public.

A. Copyright and Patent Law

The Constitution grants Congress patent and copyright authority in a single Intellectual Property Clause, and each body of law is directed to the same constitutional purpose: “promot[ing] . . . [p]rogress.”¹³ Congress passed the first patent act at the beginning of its first term in 1790,¹⁴ and the first copyright act one month later.¹⁵ Despite these similar origins, there is a striking divergence between the rights accorded to authors and artists (protected by copyright law) and the rights accorded to inventors (protected by patent law).¹⁶

Copyright law protects original works of authorship, including literary, dramatic, musical, and artistic work.¹⁷ Patent law protects product and process inventions.¹⁸ These two fields of intellectual property law differ in the methods for acquiring rights, standards for obtaining protection, rights afforded by an intellectual property grant, and the scope and duration of such rights.

Copyright law provides automatic protection for an original work of authorship the moment the work is fixed in a tangible medium of expression, such as being written down or recorded.¹⁹ No formal application, registration, or publication is required.²⁰ Patent law, on the other hand, requires an applicant to go through a lengthy and expensive patent prosecution process to convince the United States Patent and Trademark Office that the invented subject matter satisfies a series of validity requirements.²¹ In order to secure a patent, an applicant must

13. U.S. CONST. art. I, § 8, cl. 8 (“[The Congress shall have Power] [t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries[.]”).

14. An Act to promote the progress of useful Arts, ch. 7, § 1, 1 Stat. 109 (1790) (repealed 1793).

15. An Act for the encouragement of learning, by securing the copies of maps, charts, and books, to the authors and proprietors of such copies, during the times therein mentioned, ch. 15, § 1, 1 Stat. 124 (1790) (repealed 1802).

16. The study reported here focuses on patent and copyright law, leaving trademark law, the third primary strand of intellectual property, to future work. While patent and copyright law are based on incentive models, trademark law is generally recognized to have a different foundation based on reducing consumer search costs, and therefore raises different issues concerning public perceptions. WILLIAM M. LANDES & RICHARD A. POSNER, *THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY LAW* 166–67 (2003).

17. 17 U.S.C. § 102 (2006).

18. 35 U.S.C. § 101 (2006).

19. 17 U.S.C. § 102.

20. 17 U.S.C. §§ 102, 408 (2010). To bring an infringement action, the copyright owner must ordinarily have registered the copyright with the U.S. Copyright Office. *Id.* § 411(a).

21. 35 U.S.C. § 131; John Gladstone Mills III et al., *Relation Between Invention and Patents*, in *PATENT LAW BASICS* § 1:25 (2012).

demonstrate, among other things, that the invention is new, useful, and nonobvious, and must adequately disclose how to make and use the invention.²² In contrast, in order to merit a copyright, an author is only required to meet a *de minimis* originality standard.²³

Copyright protection, though easier to obtain, is narrower in scope than patent protection. A copyright protects its owner against another person copying (either wholly or to create a derivative work), distributing, or publicly performing or displaying the copyrighted work itself.²⁴ A copyright does not provide protection against another person independently creating the same or similar work and distributing or displaying that independently created work.²⁵ A patent, conversely, vests its owner with the right to prevent anyone else from making, using, selling, offering for sale, or importing the patented subject matter.²⁶ Thus, a patent protects against independent creation, while a copyright does not. Further, a patent grants rights to a field of subject matter, not just an individual work. The scope of the patent-protected field is defined by a patent's claims that, in almost every case, are broader than the individual embodiment of an invention.²⁷ A copyright, on the other hand, only protects against copying the particular work; it does not establish a sphere of protection.²⁸

Copyright protection lasts much longer than patent protection. A copyright, in general, lasts for the life of the author plus an additional seventy years.²⁹ A patent term runs twenty years from the date of the patent application,³⁰ providing an average of about seventeen years of protection from the time of a patent grant.³¹ Neither term can be renewed.³²

The broad differences between copyright and patent law are due to a variety of factors, including path-dependent histories, differing subject

22. 35 U.S.C. §§ 101–03, 112.

23. *Feist Publ'ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 345 (1991) (“[T]he requisite level of creativity is extremely low; even a slight amount will suffice.”); *see also* *Bleistein v. Donaldson Lithographing Co.*, 188 U.S. 239, 250 (1903) (“[A] very modest grade of art has in it something irreducible, which is one man's alone. That something he may copyright unless there is a restriction in the words of the act.”).

24. *See* 17 U.S.C. § 106.

25. *E.g.*, *Feist*, 499 U.S. at 361; *see also* *Bleistein*, 188 U.S. at 249.

26. 35 U.S.C. § 271.

27. *Laitram Corp. v. Cambridge Wire Cloth Co.*, 863 F.2d 855, 865 (Fed. Cir. 1988); *Tex. Instruments, Inc. v. U.S. Int'l Trade Comm'n*, 805 F.2d 1558, 1562–63 (Fed. Cir. 1986).

28. 17 U.S.C. § 102; H.R. REP. NO. 94-1476, at 56–57 (1976).

29. 17 U.S.C. § 302(a).

30. 35 U.S.C. § 154(a)(2).

31. *See* 35 U.S.C. § 154(c)(1).

32. 17 U.S.C. § 302; Edward C. Walterscheid, *The Remarkable—and Irrational—Disparity Between the Patent Term and the Copyright Term*, 83 J. PAT. & TRADEMARK OFF. SOC'Y 233, 255–57 (2001).

matter, and differing political economies. In addition, I have argued in previous work that certain of these differences map remarkably consistently onto (now largely debunked) social stereotypes about differences between right-brain artists and left-brain inventors, and that such socio-cultural creativity stereotypes have influenced patent and copyright doctrine.³³ Regardless of the basis for the divergence, the patent and copyright systems function very differently in both the acquisition and scope of rights provided by an intellectual property grant.

B. Intellectual Property Policy

Despite the substantial doctrinal differences between copyright and patent law, there is significant convergence in legal and policy analysis concerning the objectives of the copyright and patent systems and how these systems are expected to function. Consistent with the Constitution's mandate that the power to enact intellectual property laws is granted in order to "promote the [p]rogress,"³⁴ both Congress³⁵ and the Supreme Court³⁶ have repeatedly explained that intellectual property law exists to *incentivize* authors and inventors to produce and distribute creative works. This utilitarian incentive theory of intellectual property law is largely shared by numerous experts in a variety of fields.³⁷

33. Gregory N. Mandel, *Left-Brain Versus Right-Brain: Competing Conceptions of Creativity in Intellectual Property Law*, 44 U.C. DAVIS L. REV. 283, 322–25 (2010).

34. U.S. CONST. art. I, § 8, cl. 8.

35. See NONOBVIOUSNESS—THE ULTIMATE CONDITION OF PATENTABILITY (J. Witherspoon ed., 1978) [hereinafter NONOBVIOUSNESS] (discussing the legislative history of the 1952 amendments to the Patent Act, which were based on utilitarian incentive objectives); Joe Matal, *A Guide to the Legislative History of the America Invents Act: Part I of II*, 21 FED. CIR. BAR. J. 435, 435 (2012) (discussing the legislative history of the America Invents Act).

36. *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1305 (2012) (“[T]he promise of exclusive rights provides monetary incentives that lead to creation, invention, and discovery.”); *Eldred v. Ashcroft*, 537 U.S. 186, 223 (2003) (Stevens, J., dissenting) (“[T]he grant of exclusive rights [in the Intellectual Property clause] is intended to encourage the creativity of ‘Authors and Inventors.’”); *Feist Publ’ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 349 (1991) (“The primary objective of copyright is not to reward the labor of authors, but ‘[t]o promote the Progress of Science and useful Arts.’” (alteration in original)); *Harper & Row Publishers, Inc. v. Nation Enters.*, 471 U.S. 539, 558 (1985) (“[C]opyright supplies the economic incentive to create and disseminate ideas.”); *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 429 (1984) (granting patents and copyrights is “intended to motivate the creative activity of authors and inventors”); *United States v. Paramount Pictures, Inc.*, 334 U.S. 131, 158 (1948) (“The sole interest of the United States and the primary object in conferring the [copyright] monopoly lie in the general benefits derived by the public.” (quoting *Fox Film Corps. v. Doyal*, 286 U.S. 123, 127 (1932))).

37. Fromer, *supra* note 2, at 1750–51; e.g., *id.* at 1746 (“According to the dominant American theory of intellectual property, copyright and patent laws are premised on providing creators with . . . incentive[s] to create artistic, scientific, and technological works . . .”);

The incentive theory of intellectual property law is based on the rationale that, absent intellectual property protection, there would be a market failure in innovation.³⁸ This would occur because new inventions and artistic works are generally nonexcludable and nonrivalrous.³⁹ Absent intellectual property protection, creators could not prevent the widespread copying and distribution of new inventions and works of authorship once they were publically disclosed. Authors and inventors, therefore, could not profit from the full extent of their intellectual creation's use or social value. As a result, potential inventors and authors would be less inclined to invest substantial effort and resources into intellectual creation in the first instance.⁴⁰ Too little innovation and artistic creation would occur.

Intellectual property protection seeks to solve this potential market failure, according to incentive theory, by granting creators certain rights in their creative work.⁴¹ These intellectual property rights prevent others from copying or distributing the work without permission. Intellectual property law makes creative works excludable, which allows the producer to capture greater profits from an intellectual creation. This brings the private benefits of a creative work more in line with its social value.⁴² Intellectual property rights thus provide an economic incentive

Christopher Buccafusco & Christopher Sprigman, *Valuing Intellectual Property: An Experiment*, 96 CORNELL L. REV. 1, 3 (2010) (“IP, perhaps more than any other substantive area of law, is grounded in the rational actor model . . . [a]ccording [to which] the monopolistic rights granted by copyrights and patents exist to provide economic incentives to creators.”); LANDES & POSNER, *supra* note 16, at 4 (“[I]t is acknowledged that analysis and evaluation of intellectual property law are appropriately conducted within an economic framework that seeks to align that law with the dictates of economic efficiency.”).

38. See ROBERT P. MERGES ET AL., *INTELLECTUAL PROPERTY IN THE NEW TECHNOLOGICAL AGE* 12–13 (5th ed. 2010) (“The result [of not providing exclusive rights in intellectual property], according to economic theory, would be an underproduction of books and of other works of invention and creation with similar public goods characteristics.”); cf. *Harper & Row Publishers*, 471 U.S. at 558 (“[T]he Framers intended copyright itself to be the engine of free expression. By establishing a marketable right to the use of one’s expression, copyright supplies the economic incentive to create and disseminate ideas.”); *Mazer v. Stein*, 347 U.S. 201, 219 (1954) (“The economic philosophy behind the clause empowering Congress to grant patents and copyrights is the conviction that encouragement of individual effort by personal gain is the best way to advance public welfare through the talents of authors and inventors in ‘Science and useful Arts.’”).

39. MERGES, *supra* note 38, at 12; Shyamkrishna Balganes, *The Obligatory Structure of Copyright Law: Unbundling the Wrong of Copying*, 125 HARV. L. REV. 1664, 1670 (2012).

40. Fromer, *supra* note 2, at 1751; Christopher A. Cotropia & James Gibson, *The Upside of Intellectual Property’s Downside*, 57 UCLA L. REV. 921, 926–27 (2010) (“If innovators can only recover their marginal cost of production, they will lack the incentive to create the information good in the first place.”).

41. See Balganes, *supra* note 39, at 1670.

42. See Brett M. Frischmann & Mark A. Lemley, *Spillovers*, 107 COLUM. L. REV. 257, 276 (2007); see also Cotropia & Gibson, *supra* note 40, at 926–27.

to induce potential authors and inventors to create, distribute, and commercialize more creative works than they would absent intellectual property protection.⁴³

Though the incentive basis is the dominant conceptual basis for intellectual property law, it is not the only accepted basis. Other theories of intellectual property rights have also been propounded. Some scholars rely on John Locke's labor theory of property rights and other similar concepts to argue that authors and inventors should hold natural rights in their creative works.⁴⁴ This equitable perspective views individuals as automatically entitled to the fruits of their efforts.⁴⁵ Natural rights theory supports intellectual property rights on the basis that a creator is morally entitled to control the copying and distribution of inventions or artistic creations produced as a result of the creator's own labor and effort.⁴⁶

Other scholars contend, based on reasoning from Kant and Hegel, that intellectual property rights can serve an expressive function for creators, allowing greater human flourishing and cultural development, and should be protected for this reason.⁴⁷ Just as individuals use physical property, such as homes or clothing, to express their

43. There are a number of variations on the incentive theory of intellectual property, particularly concerning what the law actually is or may be designed to incentivize, including the creation, distribution, or commercialization of intellectual works. *See generally* Rebecca S. Eisenberg, *Patents and the Progress of Science: Exclusive Rights and Experimental Use*, 56 U. CHI. L. REV. 1017 (1989) (discussing various incentive theories of patent law). The differences among these various incentive theories are not significant for the purposes of this Article.

44. *See, e.g.*, Wendy J. Gordon, *A Property Right in Self-Expression: Equality and Individualism in the Natural Law of Intellectual Property*, 102 YALE L.J. 1533, 1540 (1993). *See generally* Justin Hughes, *The Philosophy of Intellectual Property*, 77 GEO. L.J. 287, 296–330 (1988) (discussing Locke's labor theory as it relates to intellectual property rights). Some scholarship not only supports the natural rights theory of intellectual property, but makes a historical argument that this was an originally understood basis for such rights. PAUL CLEMENT ET AL., *THE CONSTITUTIONAL AND HISTORICAL FOUNDATIONS OF COPYRIGHT PROTECTION* 1 (2012) (“[F]rom its inception[,] copyright was seen not merely as a matter of legislative grace designed to incentivize productive activity, but as a broader recognition of individuals' inherent property right in the fruits of their own labor.”); Adam Mossoff, *Rethinking the Development of Patents: An Intellectual History, 1550–1800*, 52 HASTINGS L.J. 1255, 1257 (2001) (“It is my intention, nonetheless, to offer a modest challenge to the prevailing view that the ideas of the natural rights philosophers did not influence the early development of patent law.”).

45. ROBERT P. MERGES, *JUSTIFYING INTELLECTUAL PROPERTY* 33–41 (2011).

46. *See* Gordon, *supra* note 44, at 1543 (“[A]ll persons have a duty not to interfere with the resources others have appropriated or produced by laboring on the common. This duty is conditional, and is a keystone in the moral justification for property rights.” (footnote omitted)); Hughes, *supra* note 44, at 297 (“Locke proposes that . . . there are enough unclaimed goods so that everyone can appropriate the objects of his labors without infringing upon goods that have been appropriated by someone else.”).

47. *See, e.g.*, Gordon, *supra* note 44, at 1535–36; Margaret Jane Radin, *Market-Inalienability*, 100 HARV. L. REV. 1849, 1851–52 (1987). *See generally* Hughes, *supra* note 44, at 330–65 (discussing Hegel's personality justification for intellectual property rights).

personality,⁴⁸ an individual's intellectual creations may be used in a similar manner.

Consistent with these alternative notions of intellectual property rights, several European countries endow authors with significant "moral rights" in their works.⁴⁹ These moral rights can include a right of attribution (requiring that an author of a work be identified) and a right of integrity (permitting the author of a work to prevent others from distorting the work in a way that would injure the author's reputation).⁵⁰ In the United States, however, alternative foundations for intellectual property rights tend to play less of a role than incentive-based rationales in most expert and policy discourse concerning the actual operation and scope of intellectual property law.⁵¹

C. *Intellectual Property Debates*

Considering their similar histories and objectives, it is striking how little patent law and copyright law cohere. Their broad doctrinal differences are often accepted without question in many intellectual property law circles. This is likely a result of the long-standing nature of the differences and their being the status quo for those trained in intellectual property doctrine and policy. Both the doctrinal structure and the policy basis for intellectual property law, however, are currently under pressure due to technological evolution. This evolution has resulted in the development and distribution of new types of creative works, along with new means for copying and disseminating them. These changes have manifested in several recent, high-profile debates concerning copyright infringement on the Internet, patent reform legislation, and a number of intellectual property cases before the Supreme Court.

48. Nestor M. Davidson, *Property and Identity: Vulnerability and Insecurity in the Housing Crisis*, 47 HARV. C.R.-C.L. L. REV. 119, 119–20 (2012).

49. E.g., Jane C. Ginsburg, "European Copyright Code"—Back to First Principles (With Some Additional Detail), 58 J. COPYRIGHT SOC'Y U.S.A. 265, 278–80 (2010); ROBERTA ROSENTHAL K WALL, *THE SOUL OF CREATIVITY: FORGING A MORAL RIGHTS LAW FOR THE UNITED STATES* 37–47 (2010).

50. Ginsburg, *supra* note 49, at 278–80.

51. See, e.g., Fromer, *supra* note 2, at 1750–51 ("The Supreme Court, Congress, and many legal scholars consider utilitarianism the dominant purpose of American copyright and patent law." (footnote omitted)); John P. Conley & Christopher S. Yoo, *Nonrivalry and Price Discrimination in Copyright Economics*, 157 U. PA. L. REV. 1801, 1802 (2009) ("[B]oth sides [in debates over copyright laws] generally frame the arguments in largely economic terms."); Dan L. Burk & Mark A. Lemley, *Policy Levers in Patent Law*, 89 VA. L. REV. 1575, 1597–99 (2003) ("To a greater extent than any other area of intellectual property, courts and commentators widely agree that the basic purpose of patent law is utilitarian: We grant patents in order to encourage invention. While there have been a few theories of patent law based in moral right, reward, or distributive justice, they are hard to take seriously as explanations for the actual scope of patent law." (footnotes omitted)).

The Stop Online Piracy Act⁵² (SOPA) and PROTECT IP Act of 2011⁵³ (PIPA) were the House and Senate versions, respectively, of bills designed to thwart the widespread availability of movies, music, and other media accessible on the Internet in violation of copyright law.⁵⁴ These bills were promoted by large media lobbies, including the Motion Picture Association of America and the Recording Industry Association of America, as well as by the United States Chamber of Commerce.⁵⁵ SOPA and PIPA were intended to operate by penalizing or prohibiting Internet search engines and web payment sites from providing access or payment to websites distributing material in violation of United States copyright laws.⁵⁶

Initially, SOPA and PIPA had widespread, bipartisan support in Congress and appeared headed towards adoption as legislation.⁵⁷ In December 2011, however, a collection of technology and Internet companies came out in strong opposition to the bills based on concerns about Internet censorship, the impact of the bills on free speech, and the potential for the legislation to stifle online innovation.⁵⁸ Congressional leaders were taken aback by the rapid groundswell of public opposition to SOPA and PIPA, and in January 2012, they indefinitely postponed votes and other action on the legislation.⁵⁹ This series of events may have been caused in part by the disconnect between expert and lay perspectives on intellectual property. The legislative debates concerning reform in this area are not likely over. Media piracy remains a significant challenge for certain industries, and concerns about how to address copyright infringement on the Internet continue to fester, raising the likelihood that Congress will consider revised versions of SOPA and PIPA in the future.⁶⁰

52. Stop Online Piracy Act, H.R. 3261, 112th Cong. (1st Sess. 2011).

53. Preventing Real Online Threats to Economic Creativity and Theft of Intellectual Property Act of 2011, S. 968, 112th Cong. (1st Sess. 2011).

54. Jenna Wortham, *A Political Coming of Age for the Tech Industry*, N.Y. TIMES (Jan. 17, 2012), <http://www.nytimes.com/2012/01/18/technology/web-wide-protest-over-two-antipiracy-bills.html>.

55. *Id.*

56. H.R. 3261, 112th Cong. §§ 102(c)(1), (c)(2)(A)(i), (c)(2)(B)–(C)(i), (c)(4)(A) (1st Sess. 2011); S. 968, 112th Cong. §§ 3(d)(1), (d)(2)(C)–(D), (e)(1) (1st Sess. 2011).

57. Jonathan Weisman, *After an Online Firestorm, Congress Shelves Antipiracy Bills*, N.Y. TIMES (Jan. 20, 2012), <http://www.nytimes.com/2012/01/21/technology/senate-postpones-piracy-vote.html>; see, e.g., Edward Wyatt, *Lines Drawn on Antipiracy Bills*, N.Y. TIMES (Dec. 14, 2011), <http://www.nytimes.com/2011/12/15/technology/lines-are-drawn-on-legislation-against-internet-piracy.html>.

58. Wyatt, *supra* note 57; Wortham, *supra* note 54.

59. Weisman, *supra* note 57.

60. See Amy Chozick, *Tech and Media Elite are Likely to Debate Piracy*, N.Y. TIMES (July 9, 2012), <http://www.nytimes.com/2012/07/10/business/media/tech-and-media-elite-are-likely-to-debate-piracy.html>.

Patent legislation has also been a recent hot topic. In September 2011, Congress passed the America Invents Act (AIA),⁶¹ introducing the most significant statutory changes to patent law in over half a century. The AIA represents the culmination of six years of vociferous patent reform debates in Congress.⁶² These debates pitted some of America's largest industries against each other, as the software and information technology industries began to see the patent system as producing a drag on innovation, while the pharmaceutical and biotechnology sectors feared that any weakening of patent laws would wreak havoc on innovation in their fields.⁶³ The debates over patent reform made it clear that different industries interact with the patent system in different ways, and that patent law affects innovation in different industries in different manners.

Concurrent with these legislative activities, the Supreme Court has been active in the intellectual property arena as well. Issues in recent, hotly-debated cases include copyright liability for peer-to-peer file sharing,⁶⁴ the types of subject matter eligible for patent protection,⁶⁵ whether copyright protection can be extended to works already in the public domain,⁶⁶ reconsideration of the inventiveness standard for patent protection,⁶⁷ and the remedies for patent infringement.⁶⁸ Numerous amicus briefs were filed in each of these cases, many concerning the potential effect of a decision on the broader functioning of the patent or copyright systems,⁶⁹ and these cases received more

61. America Invents Act, S. 23, 112th Cong. (1st Sess. 2011); Leahy-Smith America Invents Act, H.R. 1249, 112th Cong. (1st Sess. 2011).

62. See DAN L. BURK & MARK A. LEMLEY, *THE PATENT CRISIS AND HOW THE COURTS CAN SOLVE IT* 4, 100 (2009).

63. *Id.* at 100–01.

64. *MGM Studios, Inc. v. Grokster, Ltd.*, 545 U.S. 913, 936–37 (2005) (holding that distributors of peer-to-peer file sharing software can be liable for copyright infringement if “affirmative steps [are] taken to foster infringement”).

65. *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1294 (2012) (holding that a method for obtaining correlations between blood test results and patient health was not patent-eligible subject matter because it incorporates a law of nature); *Bilski v. Kappos*, 130 S. Ct. 3218, 3229–30 (2010) (holding that a method for hedging losses through investments was not patent-eligible subject matter because it was an abstract idea).

66. *Golan v. Holder*, 132 S. Ct. 873, 878 (2012) (holding that Congress can take works out of the public domain for purposes of copyright and patent protection).

67. *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 419–20 (2007) (effectively increasing the stringency of the nonobviousness patent requirement).

68. *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 392–94 (2006) (holding that patent owners are not necessarily entitled to injunctions for patent infringement).

69. *E.g.*, Brief of Amicus Curiae Sharman Networks Ltd. in Support of Respondents, *MGM Studios, Inc. v. Grokster, Ltd.*, 545 U.S. 913 (2005) (No. 04-480), 2005 WL 508106, at *5; Brief of Amicus Curiae Am. Intellectual Prop. Law Ass'n in Support of Respondent, *Mayo Collaborative Servs. v. Prometheus Labs, Inc.*, 132 S. Ct. 1289 (2011) (No. 10-1150), 2011 WL 5373692, at *2–3; Brief of Am. Bar Ass'n as Amicus Curiae in Support of Respondents, *Golan*

media attention than almost any other intellectual property cases in history.

Each of these intellectual property debates focuses on how well intellectual property law serves its traditional incentive function, and on what effects changes to the law would have on the investment, production, and distribution of creative works. The debates, however, in general largely assume fully informed rational actors making decisions about how much time, energy, and resources to invest in creative efforts, about whether to respect the intellectual property rights of others, and about how to decide intellectual property cases. Whether these assumptions are accurate depends, in part, on public perception and understanding concerning the basis for and manner of intellectual property ownership.

D. *Influence of the Public Psychology of Intellectual Property*

The public psychology of intellectual property rights matters because this perception will influence the behavior of numerous human actors throughout the intellectual property system.⁷⁰ Public perception and understanding is pertinent to varying degrees in other fields of law as well, but it rarely plays as significant a role as it does for intellectual property. While intellectual property law must affect human psychology and behavior *ex ante* in order to function as designed, most other legal regimes can achieve significant objectives after the fact. For example, criminal law can provide retribution, restraint, and rehabilitation;⁷¹ tort law can compensate victims of accidents;⁷² statutes of limitations can foreclose claims;⁷³ and environmental law can require remediation⁷⁴—

v. Holder, 132 S. Ct. 873 (2011) (No. 10-545), 2011 WL 3561887, at *4-5; Brief for Practicing Patent Attorneys as Amici Curiae in Support of Respondents, *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398 (2006) (No. 04-1350), 2006 WL 2967756, at *1-2; Brief for United States as Amicus Curiae Supporting Respondent, *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388 (2006) (No. 05-130), 2006 WL 622120, at *1.

70. See, e.g., MacCoun et al., *supra* note 5, at 347 (discussing how public perception of marijuana laws will affect behavioral decisions concerning compliance).

71. Paul H. Robinson, *Punishing Dangerousness: Cloaking Preventive Detention as Criminal Justice*, 114 HARV. L. REV. 1429, 1440-41 (2001) (discussing retribution, restraint, and rehabilitation as various goals of criminal law).

72. W. PAGE KEETON ET AL., PROSSER AND KEETON ON THE LAW OF TORTS § 4 (W. Page Keeton ed., 5th ed. 1984) (recognizing compensation as “a powerful factor influencing tort law”).

73. E.g., 18 U.S.C. § 3282 (2006) (codifying federal statute of limitations for noncapital crimes); WILLIAM BALLANTINE, A TREATISE ON THE STATUTE OF LIMITATIONS (21 JAC. 1. C. 16.) 1-5 (1810) (discussing historic statute of limitations law).

74. WILLIAMS H. RODGERS, JR., ENVIRONMENTAL LAW 683 (2d ed. 1994) (identifying remediation of contamination as “[a]n overriding purpose of CERCLA [the Comprehensive Environmental Response, Compensation and Liability Act, commonly known as Superfund]”); *CERCLA Overview*, U.S. ENVTL. PROTECTION AGENCY, <http://www.epa.gov/superfund/policy/ce>

all *ex post*. Public perception is also less important in fields where the law is intended to apply primarily to sophisticated actors with particular knowledge of the applicable law, such as for a plethora of regulatory law in fields as diverse as health law,⁷⁵ securities law,⁷⁶ communications law,⁷⁷ and environmental law.⁷⁸

The incentive structure of intellectual property law, on the other hand, can succeed only if it affects human perception and consequently human behavior *ex ante*. This study, therefore, embarks on a new line of research to investigate the potential for intellectual property law to have its desired effect, focusing first on general public perception. Public perception of intellectual property rights is expected to represent the perspectives, and therefore influence the actions of, many potential intellectual property creators, users, jurors and judges, and legislators. Each of these categories of actors is discussed in turn.

First, public perception of intellectual property represents the perspective of a significant portion of potential intellectual property creators, and is expected to affect this population's decisions concerning what activities they will engage in. While some potential intellectual property producers will have sophisticated knowledge of intellectual property law, a substantial pool of creators is expected to operate on the basis of general public understanding. This pool includes many individual creators, who generally do not have sophisticated knowledge of intellectual property law, but still make substantial contributions to valuable copyright and patent activity.⁷⁹ This pool also includes many creators and decision makers at smaller companies, such as start-up

rela.htm (last visited Feb. 3, 2014).

75. *E.g.*, Federal Food, Drug, and Cosmetics Act, 21 U.S.C. §§ 351–60 (2006) (providing disclosure and commercialization requirements for pharmaceutical manufacturers).

76. *E.g.*, Securities Exchange Act of 1934, Pub. L. No. 73-291, 48 Stat. 881–909 (codified at 15 U.S.C. §§ 78a–78nn (2006)); Securities Act of 1933, Pub. L. No. 73-22, 48 Stat. 74 (codified as amended at 15 U.S.C. §§ 77a–77aa (2006)) (providing regulations for securities traders).

77. *E.g.*, Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (codified throughout Title 47 of the U.S.C.) (providing a variety of disclosure and regulatory requirements for firms in the telecommunications industry).

78. *E.g.*, Emergency Planning and Community Right to Know Act of 1986, 42 U.S.C. §§ 11001–11050 (2006) (requiring owners and operators of facilities using toxic chemicals to disclose certain information about the use); Resource Conservation and Recovery Act, 42 U.S.C. §§ 6901–6992k (2006) (governing the disposal of hazardous waste by hazardous waste generators); *Summary of the Resource Conservation and Recovery Act*, U.S. ENVTL. PROTECTION AGENCY, <http://www2.epa.gov/laws-regulations/summary-resource-conservation-and-recovery-act> (last visited Feb. 3, 2014).

79. *See* John R. Allison et al., *Valuable Patents*, 92 GEO. L.J. 435, 465–66 (2004) (reporting that a sample of 1,300 U.S. patents included 432 individual inventors and small entity owners); Raymond Shih Ray Ku et al., *Does Copyright Law Promote Creativity? An Empirical Analysis of Copyright's Bounty*, 62 VAND. L. REV. 1669, 1711–12 (2009) (discussing a potential increase in size of the “creative class,” made up of individual artists and authors).

entities and small firms, where individuals generally lack significant expertise in intellectual property law.⁸⁰ Professor Robert Merges, for example, has conducted an empirical survey of the professional creative landscape in copyright- and patent-intensive industries, and concludes that “[e]ighty-five percent of establishments in the arts, entertainment, and recreation industry employ fewer than [twenty] workers.”⁸¹ Merges concludes, “[R]esearch on innovation has in recent years consistently emphasized the increasing importance of smaller innovative companies” relative to larger companies.⁸² The prevalence of small entities in the creative industries and their relative contribution to innovation are critical, as research indicates that smaller firms are responsible for more significant innovation than larger firms.⁸³

Second, general public perception also characterizes the likely state of mind for most intellectual property users, many of whom are expected to operate with limited knowledge of intellectual property law. This is likely the state of understanding, with regard to intellectual property rights compliance and enforcement, for the dominant portion—at least in numerosity—of the user population.⁸⁴

Third, public perception of intellectual property represents the expected mindset for most jurors and many judges tasked with deciding intellectual property cases. In the recent *Apple Inc. v. Samsung Electronics Co.* litigation, for example, it appears that the jury foreman, widely recognized to have led the jury deliberation and decision-making, did not accurately understand patent law as explained through instruction by the court.⁸⁵ In such circumstances, presumably common in jury deliberation, the public psychology of intellectual property likely represents the dominant understanding in individual and group decision-making. Many district court judges also will not be specifically knowledgeable about intellectual property. Most district court judges hear copyright and patent cases so infrequently that they are not experts in intellectual property law.⁸⁶ Public perception of intellectual property

80. See Janis & Holbrook, *supra* note 2, at 84 (rejecting “the notion” that those who operate under the patent system are all sophisticated concerning the content of patent law).

81. MERGES, *supra* note 45, at 204.

82. *Id.* at 204 fig.7.1, 210.

83. *Id.* at 210–12; Josh Lerner, *The New New Financial Thing: The Origins of Financial Innovations*, 79 J. FIN. ECON. 223, 224 (2006).

84. See Tyler, *supra* note 2, at 224 (suggesting, based on experimental research, that gaining voluntary cooperation with the law will increase the effectiveness of intellectual property law).

85. Mike Masnick, *Samsung/Apple Jury Foreman’s Explanation for Verdict Shows He Doesn’t Understand Prior Art*, TECHDIRT (Aug. 30, 2012), <http://www.techdirt.com/articles/20120830/02063020214/samsungapple-jury-foremans-explanation-verdict-shows-he-doesnt-understand-prior-art.shtml>.

86. See THE STATISTICS DIV., ADMIN. OFFICE OF THE U.S. COURTS, 2011 ANNUAL REPORT OF

rights is therefore likely the best indicator of the perspectives of most jurors and many judges.

Fourth, the public psychology of intellectual property is also expected to influence and guide many lawmakers in determining their support for or opposition to particular intellectual property law proposals, such as SOPA and PIPA. This is true both on the individual preference level—i.e., it is the perception that many legislators are expected to possess as individuals—and also on the representative level because legislators will be affected by the opinions and public discourse surrounding intellectual property debates produced by the voting public, media, and general citizenry. These final effects bring the discussion full circle, as they indicate that the public psychology of intellectual property will guide even sophisticated intellectual property firms, which will recognize that they operate in an environment where legal decision-making, public policy, and their consumers are all influenced by the public psychology of intellectual property rights.

The public psychology of intellectual property is thus critical to the function of the intellectual property system.⁸⁷ People with different perspectives on intellectual property law and rights are expected to behave differently. Despite this crucial import, the public perception of intellectual property rights has barely been explored. Understanding this psychology can clarify the likelihood that intellectual property law will achieve its objectives, the propensity for people to obey intellectual property law, how judges and juries will decide intellectual property cases, and the probability that particular intellectual property laws will be enacted. In an effort to shed light on the psychological and behavioral issues that underscore the intellectual property system, the study reported here is designed to examine popular conceptions of intellectual property rights and the basis for these rights, how these popular conceptions map onto actual law, and variation in perceptions between copyright and patent protection. The answers to these questions will provide significant insight concerning how people actually respond to the psychological and behavioral assumptions of the intellectual property system, and potentially how the law may be modified to better

THE DIRECTOR: JUDICIAL BUSINESS OF THE UNITED STATES COURTS 128–30 (2012), <http://www.uscourts.gov/uscourts/Statistics/JudicialBusiness/2011/JudicialBusiness2011.pdf> (reporting that approximately 2% of district court judge caseloads involve copyright and patent cases). Congress recently enacted a pilot program that is investigating the potential benefits of funneling patent cases to judges who opt to hear more such cases. Press Release, Third Branch News: U.S. Courts, District Courts Selected for Patent Program (June 7, 2011), *available at* http://www.uscourts.gov/News/NewsView/11-06-07/District_Courts_Selected_for_Patent_Pilot_Program.aspx.

87. *See, e.g.*, MacCoun et al., *supra* note 5, at 347 (explaining that if people do not accurately understand marijuana prohibition laws, then such laws cannot have their designed effect with respect to deterrence).

serve society's ends.⁸⁸

II. EXPERIMENTAL STUDIES ON THE PSYCHOLOGY OF INTELLECTUAL PROPERTY

The current study utilizes a series of innovation scenarios to examine how popular conceptions of intellectual property rights comport with actual intellectual property law and how those popular conceptions vary across different types of creative endeavors. The study also investigates public perception of the basis for intellectual property rights.

A. Methodology

Four different innovation scenarios were developed involving hypothetical factual situations designed to test public perceptions of intellectual property rights, both in areas where patent and copyright law are harmonious and where they diverge. Each scenario concerns a creator, the creator's creative product, and the creator's potential intellectual property rights in the creative product. Each scenario has two conditions. One condition involves artistic creativity, such as the production of a new book, song, or sculpture. The second condition is worded nearly identically, except that instead of involving an artistic creation, the creator works on and achieves an inventive creation, such as a medical device, mechanical invention, or computer program. Participants received one condition for each of the four innovation scenarios, randomly selected and ordered, though controlled so that each participant received two artistic creation and two inventive creation scenarios.

Participants in each study condition were queried concerning whether they thought the creator should be entitled to intellectual property rights in the creative product, and answered by selecting a response on a seven-point scale ranging from "Definitely Not" to "Definitely Yes." Follow-up questions regarding the participants' basis for awarding or not awarding such rights were then asked. These questions were answered on a multiple choice selection that included brief written descriptions of natural rights, incentive, and expressive bases for intellectual property law, as well as an option to provide another explanation. Participants were also queried on a variety of demographic information, and asked whether they had any personal experience with intellectual property law, such as working as an attorney, paralegal, creator, or otherwise.

A national population of 1,719 United States adults took part in the

88. See, e.g., Cardi et al., *supra* note 1, at 567 (presenting experimental evidence concerning how subjects responded to the threat of potential tort liability in an effort to better understand the influence of the tort law system on human behavior).

study, produced via SurveyMonkey, an online survey instrument company.⁸⁹ The study participants were not paid for taking part in the survey, but they were entered into a weekly cash drawing and a donation was made to charity on their behalf for their participation. The study population was 47% female and ranged in age from eighteen to ninety-one, with an average age of forty-two. The study population was 86% white, 5% African-American, 3% Asian, and 7% classified themselves as having another racial makeup. Examples of the innovation scenarios, in both copyright and patent conditions, are provided in Appendix A.

B. Results

1. Scenario One: Infringement

The most fundamental right provided by intellectual property protection is the right to exclude others from copying copyrighted or patented work. A copyright generally protects its owner against another person copying, distributing, performing, or displaying the copyrighted work.⁹⁰ A patent prohibits anyone else from making, using, selling, offering for sale, or importing the patented subject matter.⁹¹

Scenario One tested participants' opinions concerning infringement liability for copying the creative works of others. This scenario involved a software programmer in the invention/patent condition and a musician in the artistic/copyright condition. In each case, the creator had recently completed a new, nonobvious work. The creator placed the new computer program or song on a website, permitting others to use it, but included a notice specifically stating that no one should download or copy the work without the creator's permission. A second party visited the website, downloaded the work without permission, and used it regularly. Participants were queried concerning whether they agreed or disagreed that the creator should be entitled to monetary damages for intellectual property rights infringement.

The scenarios in Scenario One were drafted such that the computer program and the new song would be entitled to patent and copyright protection, respectively, under the law. Both scenario conditions constitute infringement by the second party under patent and copyright law, and would entitle the creator to monetary damages.⁹²

Seventy percent of respondents in the patent condition answered that

89. See <http://www.surveymonkey.com/> for information about SurveyMonkey.

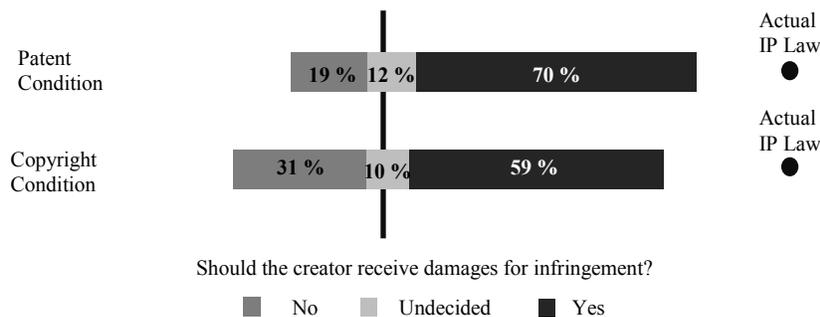
90. 17 U.S.C. § 106 (2006).

91. 35 U.S.C. § 271 (2006).

92. The copying party in the copyright scenario could raise a fair use defense to infringement, but the facts of the scenario make this argument weak. See 17 U.S.C. § 107 (defining statutory provisions of fair use).

the computer program developer should be entitled to monetary damages, a response consistent with intellectual property law, versus 19% who believed that the creator should not be so entitled. Fifty-nine percent of respondents in the copyright condition concluded that the songwriter was entitled to monetary damages, while 31% believed that the creator was not. Though this provides a majority response consistent with copyright law, it is a relatively weak majority, and a far smaller differential (28%) than the patent scenario (51%). Results are displayed in Figure 1.⁹³ Two-tailed binomial tests reveal that participants were significantly more likely to conclude that the creator was entitled to damages than to conclude that the creator was not entitled to damages in both the patent ($p < .001$) and copyright ($p < .001$) scenarios.

Figure 1. Infringement Scenario Responses



Patent condition participant responses: No—155; Undecided—96; Yes—587. Copyright condition participant responses: No—273; Undecided—84; Yes—516. Figure 1 displays these responses as percentages. The position of actual IP law is labeled with bullet points.

Comparing the mean responses on the seven-point scale on entitlement to monetary damages using an independent samples t-test confirms that participants were significantly more likely to conclude that infringing the patented invention ($M = 5.18, SD = 1.84$), versus the artistic creation ($M = 4.65, SD = 2.05$), entitled the creator to damages ($t(1701) = 5.62, p < .001$).⁹⁴ Respondents were more likely to award

93. For ease of comparison, Figures 1–4 group the seven-point intellectual property rights responses into three categories: those who opposed intellectual property rights in a given scenario (individuals who responded “Definitely Not,” “Probably Not,” or “Perhaps Not” to the intellectual property rights query), those who were at the mid-point (“Maybe”), and those who were opposed to intellectual property rights in the scenario (“Definitely Yes,” “Probably Yes,” or “Perhaps Yes”).

94. Levene’s Test indicated unequal variances ($F = 36.271, p = .000$), so degrees of freedom were adjusted from 1709 to 1701. For background information on Levene’s Test, see *Levene Test for Equality of Variances*, NIST/SEMATECH E-HANDBOOK OF STATISTICAL METHODS, <http://www.itl.nist.gov/div898/handbook/eda/section3/eda35a.htm> (last visited Feb.

damages for infringement of an inventive creation than for infringement of an equivalent artistic creation.

2. Scenario Two: Creativity Threshold

One area where copyright law and patent law diverge sharply is the requisite level of creativity for a work to obtain intellectual property protection. As discussed above, copyright protection is available for any work of authorship fixed in a tangible medium, so long as the work is original with the author.⁹⁵ The threshold of originality for copyright protection is famously low, and does not require evaluation of how creative a work is, so long as it meets the *de minimis* originality standard.⁹⁶ Patent law, on the other hand, has an elevated creativity threshold. To merit patent protection, an invention must be nonobvious in comparison to prior technology from the perspective of a person having ordinary skill in the field of endeavor.⁹⁷ The rationale behind the nonobvious requirement in patent law is that obvious advances will be achieved without the necessity of a patent incentive, and that trivial advances do not benefit society enough to warrant imposing the costs of a patent monopoly on the public.⁹⁸

The second scenario investigated participants' perceptions of the appropriate level of creative achievement necessary to entitle a creator to copyright or patent protection. The invention/patent condition involved a scientist who achieved a mechanical invention. As described in the scenario, though the invention is new, both its development and the actual inventive accomplishment are somewhat predictable, and would be considered obvious to a person with ordinary skill and experience in the inventor's field. The artistic/copyright condition is worded essentially identically, except that the new work is a fictional book, rather than a mechanical invention.

Scenario Two is drafted such that the creative achievements in each condition are new, but not highly creative. These circumstances would entitle a creator to copyright protection under copyright law's originality standard, but would not entitle a creator to patent protection pursuant to patent law's requirement that the invention be nonobvious.

Contrary to intellectual property law, 60% of respondents in the patent condition concluded that the inventor was entitled to intellectual property protection. Consistent with the law, 75% of respondents in the copyright condition similarly concluded that the author was entitled to intellectual property protection. Two-tailed binomial tests demonstrate

3, 2014).

95. 17 U.S.C. § 102.

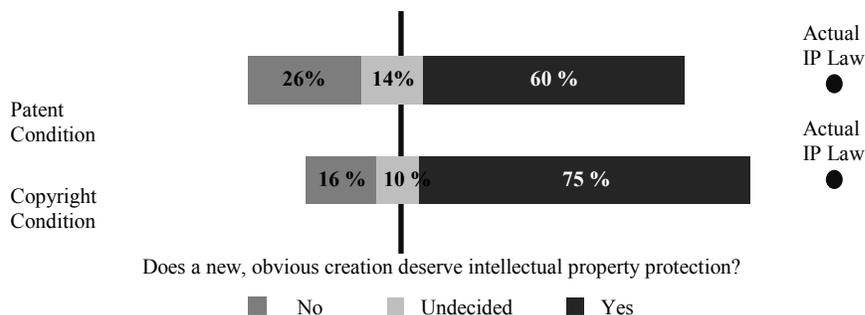
96. *See* Feist Publ'ns, Inc. v. Rural Tel. Serv. Co., 499 U.S. 340, 345 (1991).

97. 35 U.S.C. § 103 (2006); *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 419–20 (2007).

98. *See* *Graham v. John Deere Co.*, 383 U.S. 1, 8–10 (1966).

that participants were significantly more likely to grant intellectual property protection to a novel, obvious creation than to deny protection in both the patent ($p < .001$) and copyright ($p < .001$) scenarios.

Figure 2. Creativity Threshold Scenario Responses



Patent condition participant responses: No—218; Undecided—115; Yes—500. Copyright condition participant responses: No—136; Undecided—85; Yes—648. Figure 2 displays these responses as percentages. The position of actual IP law is labeled with bullet points.

An independent samples t-test of the responses found that respondents were significantly more likely to award intellectual property protection for an artistic creation ($M = 5.44$, $SD = 1.77$) than for an equally creative inventive work ($M = 4.72$, $SD = 1.85$, $t(1687) = 8.19$, $p < .001$).⁹⁹ Participants tended to prefer a higher creativity threshold for acquiring intellectual property rights to an inventive work than for an artistic creation, though not as high a standard in the former case as is dictated by actual patent law.

3. Scenario Three: Independent Creators

Copyright law and patent law also differ concerning the potential intellectual property rights of later, independent creators. Copyright doctrine provides that a subsequent author who independently produces a work that is similar to an earlier copyrighted work is entitled to a separate copyright in the later work and is not liable for copyright infringement for publishing or distributing the independent work.¹⁰⁰ Under copyright law, it is the work itself that is copyrighted, and protection only applies to copying of that particular work.¹⁰¹ A patent provides very different protection. A patent protects an area of subject matter from infringement, not just a particular invention.¹⁰² Thus, a

99. Levene’s Test indicated unequal variances ($F = 7.120$, $p = .008$), so degrees of freedom were adjusted from 1700 to 1687.

100. 17 U.S.C. § 102 (2010); *Feist Publ’ns*, 499 U.S. at 345.

101. 17 U.S.C. § 102.

102. 35 U.S.C. § 101 (2010); *Tex. Instruments, Inc. v. U.S. Int’l Trade Comm’n*, 805 F.2d

patent covers not only an innovator's particular embodiment of an invention, but also an area of technology surrounding the invention, as defined by the patent's descriptive claims.¹⁰³ A subsequent inventor cannot practice any invention that falls within the scope of the patented subject matter, regardless of whether the later invention was independently achieved.¹⁰⁴ A copyright owner must prove copying in order to establish infringement liability,¹⁰⁵ while a patent owner does not.¹⁰⁶

The third scenario concerned independent creators. In the artistic/copyright condition, a sculptor, after considerable effort, produced a new sculpture. Shortly thereafter, a second sculptor, who lived across the country and was entirely unaware of and not influenced by the first sculptor or the first sculptor's work, produced a substantially similar sculpture. The invention/patent condition is identical, except that it concerns a doctor's invention of a new medical device.

In each condition, the study participants were informed that the first creator was entitled to intellectual property rights in the initial sculpture or medical device. The participants were queried concerning whether the second creator should also be entitled to his or her own intellectual property rights. As explained above, under intellectual property law, the second sculptor would be entitled to an independent copyright in his or her sculpture under copyright law, while patent law would bar the second inventor from patenting the later medical invention in the corresponding patent scenario.

Consistent with copyright law, 60% of participants in the copyright condition concluded that the later, independent sculptor should be entitled to separate intellectual property rights in the second sculpture. Contrary to patent law, 55% of participants in the patent condition concluded that the later, independent inventor should be entitled to separate intellectual property rights in the second medical device. Two-tailed binomial tests indicate that participants were significantly more likely to award the later independent creator intellectual property rights than to deny rights in both the patent ($p < .001$) and copyright ($p < .001$) scenarios.

1558, 1562–63 (Fed. Cir. 1986).

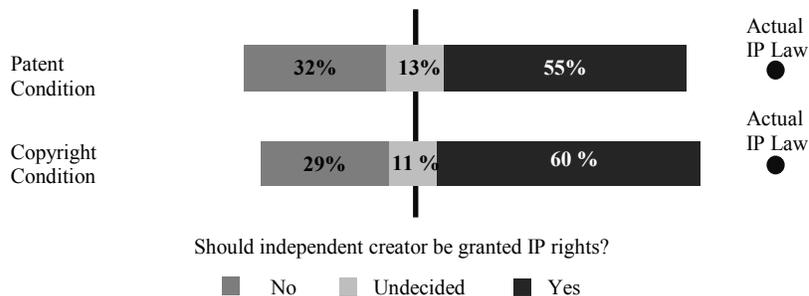
103. 35 U.S.C. § 112; *Tex. Instruments*, 805 F.2d at 1562–63.

104. 35 U.S.C. § 102; *Scanner Techs. Corp. v. ICOS Vision Sys. Corp.*, 528 F.3d 1365, 1379 (Fed. Cir. 2008).

105. *Feist Publ'ns*, 499 U.S. at 361.

106. *See Scanner Techs.*, 528 F.3d at 1379 (“[Patent infringement] claims can be met by slavish copying, or equally met by independent development of the accused products.”).

Figure 3. Independent Creator Scenario Responses



Patent condition participant responses: No—282; Undecided—114; Yes—476. Copyright condition participant responses: No—242; Undecided—89; Yes—501. Figure 3 displays these responses as percentages. The position of actual IP law is labeled with bullet points.

The mean values of the copyright ($M = 4.69$, $SD = 2.17$) and patent ($M = 4.53$, $SD = 2.09$) condition responses were not significantly different under an independent samples t-test ($t(1702) = 1.60$, $p > .1$). Thus, the study participants treated the invention and artistic scenarios similarly, in both cases tending to prefer awarding intellectual property protection to a later independent creator in addition to the rights held by the first creator.

4. Scenario Four: Joint Creators

Copyright and patent laws further differ in the requirements for, and rights of, joint creators. Joint creator law pertains to whether an individual, such as a collaborator, assistant, or supervisor, has contributed enough to an endeavor to be entitled to the status of joint author or joint inventor, and is consequently entitled to concomitant copyright or patent rights in the underlying intellectual property. Copyright law provides that individuals are only joint authors if each contributor intends to produce a joint work, each contributor intends to be a joint author, and each contributor makes an independently copyrightable contribution to the work.¹⁰⁷ Patent law is more lenient in this regard. Individuals are joint inventors if they make a not insignificant contribution to the conception of an invention, regardless of intent, even if they did not make an independently patentable contribution, and even if they only contributed to a subset of the patent claims.¹⁰⁸ Joint owners of intellectual property are, under both copyright and patent law, typically treated as tenants in common in their intellectual property rights, meaning that the joint owners possess equal

107. *Aalmuhammed v. Lee*, 202 F.3d 1227, 1233–35 (9th Cir. 2000); *Thomson v. Larson*, 147 F.3d 195, 200 (2d Cir. 1998).

108. *Ethicon, Inc. v. U.S. Surgical Corp.*, 135 F.3d 1456, 1460 (Fed. Cir. 1998).

rights to produce, distribute, and license the intellectual property.¹⁰⁹

The stark difference between joint author versus joint inventor doctrine is evident in the case law. In a seminal copyright case, the court held that a dramaturg who had contributed independently copyrightable material, which constituted one-sixth of the Pulitzer Prize and Tony Award-winning musical *Rent*, was not entitled to be a joint author because the lead author had not intended such.¹¹⁰ In the leading joint inventor case, on the other hand, the court held that an electronics technician who contributed to two claims out of dozens in a medical device invention, neither of which were even involved in the infringement at issue, was entitled to equal ownership of the entire patent, regardless of the lead inventor's intent.¹¹¹

Scenario Four concerned whether a party that provides assistance to a primary creator should be entitled to share intellectual property rights in the final work. The artistic/copyright condition concerned a songwriter who recently completed an initial version of a new song. The author of the song contacted a second songwriter, whom the author had heard about but had never worked with before, for feedback on the song. The initial author was particularly concerned with one section of the song that the author felt was not as strong as it could be. The second songwriter provided feedback to the original author, including on the particular portion of the song identified. The original author incorporated some of the second songwriter's suggestions into the final song. In total, the second songwriter's feedback was responsible for about 20% of the final song.

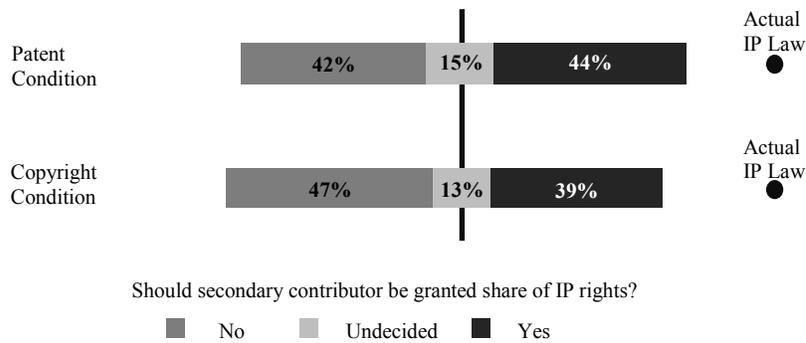
Study participants were informed that the original songwriter was entitled to intellectual property rights in the final song, and were queried concerning whether the secondary contributor should be entitled to share in those intellectual property rights. The participants were informed of some of the rights that joint ownership would provide under intellectual property law, but were not informed about the legal standard for becoming a joint owner. The invention/patent condition was identical, except that the creative subject matter was a new software program, not a new song.

Participants in both the patent and copyright conditions were relatively evenly split concerning whether intellectual property rights should be awarded to the secondary contributor, as shown in Figure 4. Two-tailed binomial tests revealed that participants were significantly less likely to grant a share of intellectual property rights to a secondary contributor in the copyright context ($p < .05$), but not in the patent context ($p > .05$).

109. See 17 U.S.C. § 201(a) (2006); 35 U.S.C. §§ 116, 262 (2006).

110. *Thompson*, 147 F.3d at 200–05.

111. *Ethicon*, 135 F.3d at 1460–64.

Figure 4. Joint Creator Scenario Responses

Patent condition participant responses: No—365; Undecided—127; Yes—379.

Copyright condition participant responses: No—395; Undecided—112; Yes—330.

Figure 4 displays these responses as percentages. The position of actual IP law is labeled with bullet points.

Participants in the patent condition were slightly more likely to conclude that the second creator was entitled to joint creator rights ($M = 3.97$, $SD = 1.95$) than participants in the copyright condition ($M = 3.74$, $SD = 1.95$) according to an independent samples t-test ($t(1706) = 2.45$, $p = .015$).

These results are modestly consistent with joint creator law, to the extent joint inventorship presents a lower hurdle to ownership than joint authorship. The magnitude of the difference in the study results, however, appears significantly less than would be expected considering the actual differences in legal doctrine, and the results indicate that public perceptions are likely stricter for inventors than actual patent law and looser for authors than actual copyright doctrine.

5. Basis for Intellectual Property Rights

All four scenarios also examined public perception concerning the basis for intellectual property rights. After participants answered the initial intellectual property rights questions for their two patent and two copyright scenarios, participants were queried concerning the basis for awarding or denying intellectual property rights in the final scenario considered. The intellectual property basis question was asked at the end of the scenarios so as not to bias answers to the individual scenario conditions. Each participant thus answered the question on the basis for intellectual property rights in only the last of the four scenario conditions received. The scenarios and conditions were ordered randomly so that approximately one-eighth of the full study population answered the intellectual property rights basis question for each of the four scenarios in the two different conditions.

The response options for the intellectual property basis question were modeled on the three most commonly propounded bases for intellectual property law, as discussed above: a natural rights basis, an incentive basis, and an expressive basis. The basis question queried respondents concerning whether the basis for their decision on intellectual property rights was (1) the best way to give people who accomplish something creative the intellectual property rights to which they are *entitled*; (2) the best way for intellectual property rights to *encourage* people to pursue creative accomplishments; (3) the best way for intellectual property rights to support the opportunity for people to *express* themselves creatively; or (4) some other explanation (with space provided for an open-ended answer by the respondent). Overall, respondents were substantially more likely to identify a natural rights entitlement basis for intellectual property rights (60%) than either an incentive (23%) or expressive (17%) basis.¹¹² These results run strongly contrary to the dominant theory of intellectual property law recognized in most intellectual property policy, economic, and legal analysis.¹¹³

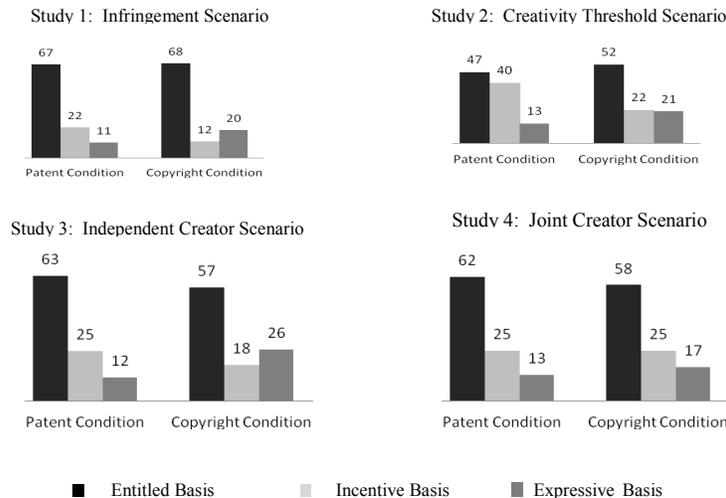
Figure 5 presents the percentage of participants selecting each of the identified bases for intellectual property rights, differentiated by scenario and condition. In every condition and every scenario, more participants perceived a natural rights foundation to intellectual property rights than any alternative basis, generally by a wide margin. Two-tailed binomial tests reveal that participants were significantly more likely to select a natural rights basis for intellectual property rights over either of the other bases in each of the conditions and scenarios ($p < .001$ for each case), except for the patent condition creativity threshold scenario, in which there was no significant difference between the entitlement and incentive responses ($p > .05$).¹¹⁴ In the public mind, intellectual property law exists to endow creators with natural rights to their intellectual creations, not to provide an incentive for creative activity in the first instance.

112. The reported results exclude participants who selected “Another explanation” from the percentage statistics.

113. *See supra* Section I.B.

114. In the patent condition creativity threshold scenario, participants preferred both the natural rights and incentive bases over the expressive basis ($p < .001$).

Figure 5. Basis for Intellectual Property Rights



Looking beyond the dominance of the natural rights basis, respondents were generally more likely to identify incentives as the basis for intellectual property rights in the patent conditions than in the copyright conditions. In Scenarios One and Two, twice as many participants selected an incentive basis in the patent condition, a difference that was narrower in Scenario Three and absent in Scenario Four. Note that Scenarios One and Two involved questions about the absolute existence of intellectual property rights (or not), while Scenarios Three and Four concerned how to potentially divide intellectual property rights among multiple creators.

Respondents were about twice as likely to identify an expressive basis for intellectual property rights for artistic as opposed to inventive creativity. While 17% to 26% of copyright condition respondents selected the expressive value as the basis for intellectual property rights across the four scenarios, only 11% to 13% of patent condition respondents reached the same conclusion in the scenarios.

That participant responses vary across the eight conditions reported here indicates that participants' views on the basis for intellectual property rights are contextual, depending on the particular factual scenarios and types of rights involved. In particular, despite an overall natural rights orientation, the results indicate that respondents appear to view the basis of copyright law slightly differently than the basis for patent law.

6. Preferences for the Strength of Intellectual Property Rights

The infringement and creativity threshold scenarios, as noted above, concern decisions about whether to award any intellectual property rights in a creative work or none at all. The responses to these scenarios therefore give an indication of whether an individual supports stronger or weaker intellectual property protection. Responses to these two scenarios were averaged for each respondent to produce an “IP Strength” variable, providing a Likert scale to indicate whether any particular participant tended to generally prefer stronger versus weaker intellectual property rights. The mean IP Strength rating across all study participants was 4.99 on the seven-point scale.

There was a significant relationship between participants’ responses concerning the basis for intellectual property rights and their IP Strength ratings. Respondents who perceived a natural rights basis for intellectual property had significantly higher IP Strength scores ($M = 5.27$, $SD = 1.36$) than those who supported an incentive basis ($M = 4.73$, $SD = 1.32$, $t(1041) = 5.80$, $p < .001$) or those who supported an expressive basis ($M = 4.69$, $SD = 1.38$, $t(953) = 5.35$, $p < .001$), each pursuant to independent samples t-tests. Those who perceived an expressive basis for intellectual property rights did not differ significantly from those who perceived an incentive basis ($t(500) = 0.30$, $p > .05$).

Linear regression analysis was used to examine the relationship between IP Strength and a number of independent variables. The independent variables included gender (female=0; male=1), race (white=0; minority/non-white=1), age, political ideology (based on responses to a seven-point scale query running from Extremely Liberal=1 to Extremely Conservative=7), income (respondent’s annual income, grouped in five ranges), education (number of years of school), and past experience with intellectual property law. Past experience with intellectual property law considered in the survey included work as an intellectual property attorney or paralegal, being the creator of patented or copyrighted work,¹¹⁵ or any other self-identified experience in the field.

The regression model is statistically significant overall ($F_{7,1256} = 4.011$, $R^2 = .022$, $p < .001$). Being older, having lower income,

115. Doctrinally, everyone is the creator of copyrighted work (from the time one first draws as a child), as copyright protection attaches automatically as soon as original work of authorship is fixed in a tangible medium. 17 U.S.C. § 102 (2006). The intellectual property experience question was administered based on the reasoning that primarily individuals who depended to some significant extent on copyright protection for their work or as a hobby would self-identify as having created copyrighted work. Consistent with this reasoning, only 80 (4.7%) of the 1,719 person subject pool indicated that they had created copyrighted work.

being more educated, and having less intellectual property experience all correlate with a desire for stronger intellectual property protection across the scenarios. Results are shown in Table 1.

Table 1. IP Strength and Predictor Variables Regression

| | β coefficient |
|--------------------|---------------------|
| Gender | -.017 |
| Race | .025 |
| Age | .100** |
| Political Ideology | .034 |
| Income | -.071* |
| Education | .065* |
| IP Experience | -.059* |

* Result is significant at the .05 level. ** Result is significant at the .01 level.

Because the predictor variables could affect preferences related to artistic versus technological creation in different manners, separate regressions were run after segregating the cases into the patent and copyright conditions for the two scenarios used to produce the IP Strength scale. Both the patent condition ($F_{6,624} = 4.564$, $R^2 = .042$, $p < .001$) and the copyright condition ($F_{6,626} = 2.238$, $R^2 = .021$, $p < .05$) produced statistically significant models. Results are shown in Table 2.¹¹⁶

Table 2. IP Strength in Patent and Copyright Conditions

| | Patent Condition β coefficient | Copyright Condition β coefficient |
|--------------------|---|--|
| Gender | -.078 | .039 |
| Race | .049 | .011 |
| Age | .132** | .059 |
| Political Ideology | .113** | -.041 |
| Income | -.079* | -.067 |
| Education | .000 | .101* |

* Result is significant at the .05 level. ** Result is significant at the .01 level.

Different predictor variables explained the variation in the patent versus copyright conditions. Though being older and having lower income both correlated with a desire for stronger patent protection, neither correlated with copyright protection responses. Conversely,

116. The intellectual property experience variable was removed from these regressions to consider it in further detail below.

being more educated correlated with a desire for stronger copyright protection, but not with patent preferences. Being more conservative also correlates with a preference for stronger patent protection, a relationship that does not exist for the overall or the copyright populations.

Finally, because beliefs concerning the basis for intellectual property rights could affect preferences for the strength of intellectual property rights in different ways, regressions were run dividing the patent and copyright condition groups by their perceptions of the basis for intellectual property rights. Two models were significant overall: the model for patent condition respondents who believe in natural rights to intellectual property protection ($F_{6,267} = 4.178$, $R^2 = .086$, $p < .001$) and copyright condition respondents who believe in an expressive basis for intellectual property protection ($F_{6,70} = 2.276$, $R^2 = .163$, $p < .05$). Results are shown in Table 3.

Table 3. IP Strength and Basis for IP Protection

| | Patent Condition Natural Rights IP Basis β coefficient | Copyright Condition Expressive IP Basis β coefficient |
|--------------------|--|---|
| Gender | -.123* | .156 |
| Race | .036 | .279* |
| Age | .215** | .183 |
| Political Ideology | .128* | .187 |
| Income | -.100 | -.192 |
| Education | .015 | .000 |

* Result is significant at the .05 level. ** Result is significant at the .01 level.

Two relationships not identified in the earlier regressions emerge here. First, women tended to prefer stronger patent rights than men among those respondents who believe in a natural rights basis for intellectual property rights. Second, minorities tended to prefer stronger copyright protection than whites among those respondents who believe in an expressive basis for intellectual property rights.¹¹⁷

117. This analysis compares the 86% of survey respondents who self-identified as white with the combined 14% of survey respondents who self-identified as African-American, Asian, or having another racial makeup. It does not take into account responses to a separate question concerning whether the respondent self-identified as Hispanic. Further studies would be necessary to explore heterogeneity in intellectual property preferences within the minority/non-white populations.

III. DISCUSSION

The innovation scenario experiments reveal that public perceptions concerning both the substance of and basis for intellectual property rights differ substantially from actual intellectual property law. Consequently, the behavioral policy on which intellectual property law is based may not function in the manner intended.¹¹⁸ This disconnect between public understanding and legal rules may weaken public perception of the legitimacy of the intellectual property system and undermine its ability to achieve the desired goals. This Section discusses implications of the study results for intellectual property law and for ongoing intellectual property policy debates.

A. *Public Perception of Intellectual Property Rights and the Law*

Public perception concerning what copyright protection should be was partially consistent with actual copyright law. Across the infringement, creativity threshold, and independent creator scenarios, the majority of study participant responses concerning intellectual property rights were similar to what copyright law would dictate in each scenario. That said, in the last two of these three scenarios, the majority was relatively modest; in neither case did more than 60% of respondents agree with copyright law. The fourth scenario, concerning joint creator rights, presented more ambiguous results. Participants appeared more willing to grant a secondary contributor a share of intellectual property rights than actual copyright doctrine requires.¹¹⁹ Taken as a whole, a modest majority of the study population tended to agree with copyright law across the scenarios.

The patent law scenario results present an even more disparate contrast between public perception and the law. Participant responses to the innovation scenarios diverged significantly from patent doctrine,

118. In an attempt to better understand human behavioral response to the patent system, Professors Andrew Torrance and Bill Tomlinson developed an online computer game to simulate invention, patenting, and licensing. Andrew W. Torrance & Bill Tomlinson, *Patents and the Regress of Useful Arts*, 10 COLUM. SCI. & TECH. L. REV. 130, 134 (2009). Though the experiment involved a highly abstract model of the invention and patenting process, participants' behavior varied between the patent, commons, and mixed patent/open source conditions. *See id.* at 166–67.

119. Overall, the results of the copyright scenarios appear perhaps contrary to conclusions reached in prior qualitative studies that lay individuals are “largely ignorant” of copyright law’s rights and responsibilities. *E.g.*, John Palfrey et al., *Youth, Creativity, and Copyright in the Digital Age*, 1 INT’L J. LEARNING & MEDIA 79, 79–80 (2009) (concluding, based on a qualitative study, that youths are generally ignorant of copyright law). Although the instant study did not test participants’ knowledge of intellectual property law, the consistency between participant responses and the law could be interpreted to indicate that respondents would also answer with some accuracy if queried about actual law. These issues merit further investigation.

and differed in an inconsistent manner. Only 26% of study respondents in the creativity threshold scenario agreed with the patent law requirement that an invention must be nonobvious in order to deserve a patent; the majority instead would grant patent protection to an obvious mechanical invention. Similarly, though patent law prohibits a later independent inventor from obtaining patent protection on the same subject matter as an earlier inventor, a majority of respondents concluded that such an independent creator should receive intellectual property protection. The joint creator scenario results were also inconsistent with patent law; only a minority of respondents believed that a joint inventor deserved to share intellectual property rights in circumstances in which patent law would tend to award equal patent rights. The one scenario where public perception appeared consistent with actual law was the base infringement scenario, where a strong majority of participants reached a conclusion of infringement, consistent with patent doctrine.

The variation between public perception and intellectual property law did not display a consistent directional bias. Across the four scenarios, in both the copyright and patent conditions, participants sometimes preferred stronger, sometimes weaker, and sometimes similar intellectual property protection to actual law. This mix of relations has important implications for the intellectual property system. Inaccurate perceptions that are too strong or too weak do not have symmetric effects on incentives for potential intellectual property creators. If incentives to create are perceived as weaker than actual law, such misperception is expected to lead to the underinvestment of resources in creative activity, and consequently to less intellectual creation and commercialization than is socially optimal. If incentives are perceived as greater than actual law, however, such misperception is expected to lead to the overinvestment of resources in creative activity. Though the overinvestment of resources has a social cost because it is not the most efficient deployment of such resources, the extra creative innovation that is achieved is still socially beneficial: society gets the benefit of this additional creation that results from the private misallocation of resources due to misperceived excess incentives. This analysis reveals that (1) there is likely a greater social cost to public misperception that intellectual property protection is weaker than actual law versus misperception that protection is stronger than the law, and (2) public perception that intellectual property protection is stronger in some areas than actual law, and weaker in others, does not simply balance itself out to produce accurate behavioral incentives overall.

Returning to the study results, why would lay perceptions of intellectual property rights be partially consistent with copyright law, but relatively disharmonious with patent doctrine? There are several

possible explanations for this divergence, depending in part on the causal relationship between these findings. The nature of the study does not permit identifying the existence or direction of any causal interaction between public perception and the law. That is, the correlation found in the study does not demonstrate whether public perceptions influence the law, whether intellectual property law influences public perceptions, or whether some third factor influences both public perception and the law.¹²⁰

It is possible, for example, that a greater portion of the public is aware of actual copyright law than patent law, and that knowledge of what the law actually is influences perceptions of what the law should be.¹²¹ This could occur because most members of the public interact with copyright law more regularly than with patent law, and may have derived greater knowledge of copyright law from this experience. For example, members of the public now have routine interaction with copyright law through copyright warnings on DVDs and streaming movies, shrink-wrap licenses, recording industry advertisements against copying, and a plethora of uses on the Internet. This type of interaction is much rarer with respect to patent protection.¹²²

It is also possible that a causal relationship operates in precisely the opposite direction, with public preferences having a greater influence on copyright law than on patent doctrine. Lay lawmakers may perceive that they have a greater understanding of the underlying subject matter of copyright law, due to their greater interaction with the law as noted above and the nontechnical accessibility of copyrighted works. Such lawmakers may consequently feel comfortable and interested in taking a greater role in drafting and shaping copyright law. Broad public perception could drive copyright law in other manners as well, as was demonstrated in the SOPA and PIPA debates.¹²³ As a result, public perceptions may have a greater influence on copyright law, via lawmakers and the general public, than they do on patent law, the subject matter of which is often viewed as more technical and obscure. Patent law drafting may, therefore, be left to “experts” to a greater

120. See Friedman, *supra* note 11, at 294 (discussing the unclear causal relationship between psychology and law where popular conceptions of ownership and property law coincide).

121. See Alex Geisinger, *A Belief Change Theory of Expressive Law*, 88 IOWA L. REV. 35, 37 (2002) (discussing how the law can affect social norms and individual preferences); see, e.g., Nora M. Findlay, *In-School Administrators’ Knowledge of Education Law*, 17 EDUC. & L.J. 177, 188 (2007) (suggesting that greater awareness of constitutional rights in a particular context resulted in increased sensitivity towards such rights).

122. But see Howard Latin, “Good” Warnings, *Bad Products, and Cognitive Limitations*, 41 UCLA L. REV. 1193, 1194–95 (1994) (examining the psychological limitations of the effectiveness of product warnings in the tort context).

123. See *supra* Section I.C.

extent. This has been the case historically for patent legislation. Drafting the Patent Act in 1952, the most substantial changes to statutory patent law within the last century, was famously assigned to a small committee of experts, and adopted by Congress without much debate.¹²⁴

Whatever the causal relationship between public perception and the law, the results of this study indicate that the dominant behavioral theory of intellectual property law may not be able to function as conceived.¹²⁵ Given the public's general lack of knowledge about intellectual property law,¹²⁶ public perception of what the law should be and of the basis for the law are expected to provide the dominant source for human behavioral response to the intellectual property system.¹²⁷ Authors that misunderstand their potential to obtain copyright protection, or to shield a copyrighted work from infringement, will make inefficient decisions under the law concerning their efforts to engage in creative endeavors and distribute creative work. Similarly, a potential inventor who misperceives the likelihood of obtaining patent protection, or the scope and extent of patent rights, will also engage in an inefficient level of innovative and commercializing behavior relative to the law.¹²⁸ Intellectual property users will fail to comply with

124. Giles S. Rich, *Congressional Intent—Or, Who Wrote the Patent Act of 1952?*, in *NONOBVIOUSNESS*, *supra* note 35, 1:1, 1:10–1:13; P.J. Federico, *Origins of Section 103*, in *NONOBVIOUSNESS*, *supra* note 35, 1:101, 1:101–1:109.

125. See Cardi, *supra* note 1, at 591–92 (reporting experimental study of tort law indicating that the widely accepted behavioral model of potential tort liability as deterring behavior appears unsupported); MacCoun et al., *supra* note 5, at 347 (recognizing that if public perception diverges from the laws concerning marijuana possession, then the prohibition laws cannot have their desired effect).

126. See, e.g., Michael A. Gollin, *Answering the Call: Public Interest Intellectual Property Advisors*, 17 WASH. U. J.L. & POL'Y 187, 213 (2005) (noting general lack of awareness about intellectual property law in developing countries); Palfrey et al., *supra* note 119, at 79 (finding that youths are generally ignorant of copyright law); see also Chris Hoofnagle et al., *How Different are Young Adults from Older Adults When It Comes to Information Privacy Attitudes and Policies*, FED. TRADE COMMISSION 1, 4 (Apr. 14, 2010), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1589864 (reporting survey results, in FTC-hosted public roundtable, that indicate a general lack of awareness of privacy law among adults); Paul H. Robinson & John M. Darley, *Does Criminal Law Deter? A Behavioral Science Investigation*, 24 OXFORD J. LEGAL STUD. 173, 174 (2004) (finding that people are largely ignorant of criminal law).

127. See Janis & Holbrook, *supra* note 2, at 78 (discussing how even if parties are unaware of the actual content of law, other mechanisms, such as background knowledge and norms, can provide indirect information about the law); Paul H. Robinson & John M. Darley, *The Utility of Desert*, 91 NW. U. L. REV. 453, 457 (1997) (explaining that people may comply with the law because they know the law, because the law may reflect widely shared beliefs, or because people may be concerned with how their social group will perceive them).

128. This is not to say that the disconnect between public perception and the law fully thwarts the law's ability to provide incentives, only that the disconnect will prevent the law from

intellectual property law, even in situations where they intend to do so, leading to a reduction in intellectual property compliance and a likely increase in enforcement costs. Jurors, as indicated in the *Apple v. Samsung* case discussed earlier,¹²⁹ and potentially judges and legislators, may make inappropriate decisions concerning the development and implementation of intellectual property law.

Because this study concerns lay perceptions of intellectual property law, the results should not be interpreted to indicate that all individuals acting under the intellectual property system suffer the same misperceptions. While the results likely reflect the perspectives of most intellectual property users, jurors, and voters and citizens, they presumably represent the views of only a smaller portion of legislators, judges, and potential intellectual property creators. Some legislators and judges are certainly more educated concerning the scope and basis of intellectual property law. In particular, a recent pilot program that directs patent cases to particular district court judges in certain districts will make some district court judges greater experts in intellectual property law.¹³⁰ Even sophisticated legislators and policymakers, however, will need to take public perceptions, whether accurate or not, into account in designing the intellectual property system in order to achieve the desired ends.

Similarly, there are also many potential intellectual property producers and investors, particularly at large, sophisticated firms, who are more familiar with intellectual property law than the average member of the public. For such producers, including individuals who may lack personal knowledge of intellectual property law but are employed in a firm designed to take advantage of the provisions of the law, the intellectual property system may come closer to inducing the desired behavioral response than the results of the present study indicate—or, to be more precise, the present study does not disprove such a possibility. For many other potential intellectual property producers, however, the information on general public perception revealed here likely represents an accurate description of their

providing the full incentives that it is designed to achieve. As discussed below, some actors under the intellectual property system will operate in a more sophisticated intellectual property environment, and some members of the population will perceive a more accurate set of intellectual property laws and agree with the bases for the law, as shown by the results in Figures 1–5.

129. See *supra* Section I.D.

130. See Patent Cases Pilot Program, Pub. L. No. 111-349, 124 Stat. 3674 (2011); Press Release, Third Branch News: U.S. Courts, District Courts Selected for Patent Program (June 7, 2011), http://www.uscourts.gov/News/NewsView/11-06-07/District_Courts_Selected_for_Patent_Pilot_Program.aspx (“Fourteen federal district courts have been selected to participate in a 10-year pilot project designed to enhance expertise in patent cases among U.S. district judges.”).

understanding of the intellectual property system. As described above, this latter group will include many individual producers and many producers working at start-up firms and small companies.¹³¹ These actors represent a significant portion of intellectual property producers, and they represent that portion that tends to provide the most significant advances.¹³²

While it is currently impossible to know how much creative behavior and attempted intellectual property compliance is misdirected as a result of the disconnect between public perception and intellectual property law, the results of this study indicate that there are likely problematic effects that merit attention.

B. *Public Perception of Artistic Versus Inventive Creativity*

Respondents provided statistically significant different responses across the patent versus copyright conditions in three of the four scenarios. There was no apparent consistency, however, in the manner of difference. Whereas respondents perceived that patent rights should be stronger than copyright protection in the infringement scenario, they concurrently thought that copyright protection should be stronger than patent protection in the creativity threshold scenario.

In the two scenarios that involved potentially dividing intellectual property rights across multiple creators or contributors, respondents were also split. In the joint creator rights scenario, respondents were more likely to support joint patent rights than joint copyright rights, in each case in comparison with awarding rights to a single creator. In the independent creator scenario, in contrast, there was no statistically significant difference between the patent and copyright conditions.

Respondents also differed in their identified basis for intellectual property rights in the copyright versus patent conditions. Participants did favor a natural rights basis in every scenario, but tended to prefer an incentive to an expressive basis in the patent conditions and the opposite relationship in the copyright conditions. Members of the public appear to view artistic creativity somewhat differently than inventive creativity, and appear to have varying perceptions concerning what level of intellectual property protection is appropriate based upon the underlying creative work. Understanding the contours of such differentiation requires further study.¹³³

131. *See supra* Section I.D.

132. MERGES, *supra* note 45, at 204 fig.7.1, 210–12; Allison et al., *supra* note 79, at 467; Lerner, *supra* note 83, at 224.

133. One complicating factor with the current results is that differences in participants' responses across conditions could be due either to differences in perception between artistic and inventive creativity or to different attitudes towards the protection of particular types of works. Stated another way, people could have different beliefs concerning the intellectual property

Although it is true that generally there was a statistically significant difference between the copyright and patent condition responses, the more striking result here may be the similarity of responses across conditions. Because of the large study population, even a small variation in responses will produce statistically different results. In comparison to actual law, however, there is actually relatively little variation across the copyright and patent conditions. For example, the largest variance across conditions was for the creativity threshold scenario, where 75% of copyright respondents would grant protection to obvious artistic creation, but only 60% of patent condition respondents would grant protection to obvious technological creation—a difference of 15%. But if participants had answered according to actual intellectual property law, 100% of copyright respondents versus 0% of patent respondents would grant protection.¹³⁴ Even greater harmonization is revealed in the independent creators scenario, where the law again would dictate a 100% variation between copyright and patent doctrine,¹³⁵ but participant responses varied by only 5% (60% of copyright participants versus 55% of patent participants would grant protection). The other two scenarios produced variations of 11% (infringement scenario) and 5% (joint creator scenario).

Despite substantial variation in the copyright and patent systems, public perception of intellectual property rights across artistic versus technological domains is markedly similar. As with the earlier discussion concerning variance between public perception and law, the causal relationships underlying this correlation are intriguing and worthy of further study. It is possible that, for reasons discussed above, the general public is more familiar with, or has had greater influence on, copyright protection,¹³⁶ and assumes a similar level of protection for patent law as well. Alternatively, it is also possible that the public's general preferences for intellectual property protection happen to align more closely with copyright doctrine. The bottom line is that most members of the public appear to view copyright and patent law much more cohesively than the doctrine provides, and tend not to agree with the stark variation across these fields defined by intellectual property law.

protection of medical versus mechanical devices—both requiring inventive creativity—or between the protection of novels versus songs—both requiring artistic creativity. Distinguishing between attitudes across different types of creativity versus different creative domains would require investigating the same issues while varying the domains.

134. *See supra* Subsection II.B.2.

135. *See supra* Subsection II.B.3.

136. *See supra* Section III.A.

C. *The Basis for Intellectual Property Rights*

Given the widespread misunderstanding of intellectual property law among the public, the public perception of the basis for intellectual property rights is critically important as a determinant of human behavior concerning creative endeavors. Even if people do not know what intellectual property law is, they may still engage in behavior consistent with the objectives of the intellectual property system. If the public perception is in accord with the standard legal and policy basis for intellectual property law, then people may make inferences about intellectual property rights that are consistent with the law, and consequently act in a behavioral manner consistent with the law's objectives.¹³⁷

Popular opinion concerning the basis for intellectual property rights, however, is largely out of step with expert opinion in intellectual property law and policy. Those who focus on intellectual property law generally perceive the law as directed towards providing an incentive for authors and inventors to produce, disseminate, and commercialize creative achievements.¹³⁸ Conversely, the study results show that the public at large primarily views intellectual property rights as deriving from authors' and inventors' natural rights in their creative achievement.¹³⁹ This result was consistent across all conditions and all scenarios.¹⁴⁰ This general public perception comports with a collection of evidence compiled by Jeanne Fromer indicating that the creators of many artistic and scientific works believe in some form of natural rights to their works.¹⁴¹ Given that individuals with a natural rights perspective were found to prefer stronger intellectual property protection than individuals with other bases, this may lead to a public perception that intellectual property rights should be stronger than they currently are.

Note that this discussion is not intended to claim, or disclaim, that an incentive theory of intellectual property rights is the appropriate normative basis for intellectual property protection. If intellectual property law is going to be designed based on an incentive model of behavior, however, it can only succeed if people respond to the law in

137. See, e.g., Friedman, *supra* note 11, at 290 (noting that people make inferences about what can be owned and which rights are conferred by ownership when reasoning about physical property).

138. See *supra* Section I.B.

139. See *supra* Subsection I.B.5 and Figure 5.

140. The lone exception to this statement concerned the creativity threshold patent scenario, where there was not a statistically significant difference between the 47% of respondents who selected a natural rights basis and the 40% of respondents who selected an incentive basis. It is unclear why this scenario condition produced a different response, but it is possible that the focus on needing to achieve an invention of a certain level of creativity highlighted the potential push that intellectual property rights may provide.

141. Fromer, *supra* note 2, at 1764–78.

the anticipated behavioral manner. The lack of public understanding concerning intellectual property law and the mismatch between popular and expert conceptions of the basis for intellectual property rights raise strong questions concerning whether the model on which intellectual property law is based can succeed.¹⁴² Various studies indicate that law usually functions best when it is in accord with popular beliefs, and that there are limits on the extent to which legal rules can modify human behavior.¹⁴³ The divide between intellectual property law and public perception concerning both the content of, and basis for, the law runs contrary to these teachings and will undermine both the legitimacy and the effectiveness of intellectual property law.¹⁴⁴

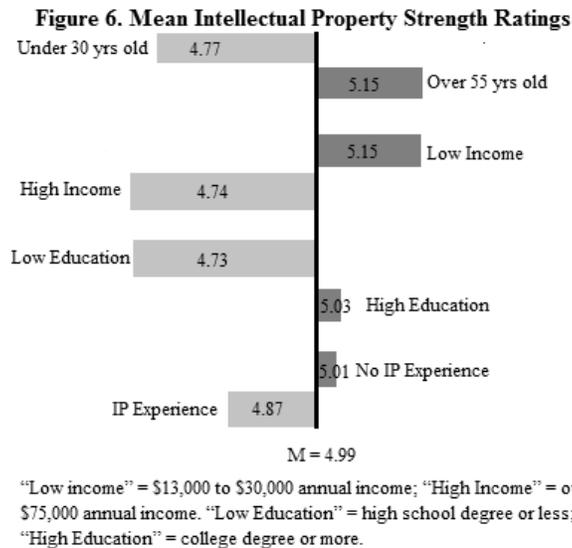
D. *Intellectual Property Demographics*

Some of the most important findings from this study concerned individuals' divergence of opinion on preferences for the strength of intellectual property rights. As reported above, being older, having lower income, being more educated, and having less intellectual property experience all correlate with a preference for stronger intellectual property protection. Figure 6 displays these effects graphically. This differentiation has important implications for several ongoing intellectual property debates.

142. See Janis & Holbrook, *supra* note 2, at 74–75 (discussing how a lack of awareness of patent law on the part of potential creators complicates the incentive theory of patent law).

143. *E.g.*, ROBERT C. ELLICKSON, ORDER WITHOUT LAW: HOW NEIGHBORS SETTLE DISPUTES 4–5, 10 (1991) (using anthropological and sociological studies to show how people tend to govern themselves based on social norms, not law).

144. See, *e.g.*, MacCoun et al., *supra* note 5, at 347 (explaining that marijuana prohibition laws cannot be effective deterrents if the public is unaware of them); Tyler, *supra* note 5, at 380–81 (explaining how widespread public consent is crucial to legitimacy of the legal system and that legitimacy is important for the legal system's ability to function properly); John M. Darley et al., *The Ex Ante Function of Criminal Law*, 35 LAW & SOC'Y REV. 165, 183 (2001) (explaining that the law's credibility can be undermined when it does not accord with public norms).



The finding that younger people prefer weaker intellectual property rights is consistent with past studies that have found similar results when examining attitudes toward file sharing on the Internet.¹⁴⁵ There does appear to be a generational divide concerning intellectual property protection. Interesting, here, is that most past research has focused on individual attitudes towards copyright protection, primarily in the context of the Internet, while the present study finds an age effect for the full population, across the patent and copyright conditions. This study appears to be the first to indicate that the generational divide concerning intellectual property rights cuts across intellectual property domains.

Perhaps more surprising, the regressions reveal that having lower income correlates with a desire for stronger intellectual property rights. One possible explanation for this result is that the popular notion of the small innovator hitting it big with a creative achievement may be particularly attractive to those with lower income.¹⁴⁶ For those with

145. Bootie Cosgrove-Mather, *Poll: Young Say File Sharing OK*, CBS NEWS (Feb. 11, 2009), <http://www.cbsnews.com/stories/2003/09/18/opinion/polls/main573990.shtml> (reporting survey results finding that 29% of adults under age thirty felt music sharing was always acceptable, while only 9% of those age thirty and older agreed); Press Release, Digital Life America, *Americans Divided Over File Sharing* (June 21, 2005), http://www.srgnet.com/wp-content/uploads/dla-release-june-21_051.pdf (reporting survey results finding that those under age thirty favored allowing file sharing services on average, while those over age thirty were opposed).

146. This view would be somewhat analogous to data indicating that some support for repeal of the estate tax by those who are less well-off (and unlikely to ever benefit from such repeal) is based on a statistically unrealistic perception about the likelihood that one is going to

higher income, intellectual property rights may be perceived as being more likely to interfere with established business operations. Consistent with this analysis, smaller companies tend to prefer stronger patent rights than larger companies, in part for these reasons.¹⁴⁷

The study also finds an overall effect on intellectual property strength preferences with respect to an individual's education: being more educated correlates with a preference for greater intellectual property protection. Though the causal explanation for this relationship is not necessarily clear, more educated individuals may tend to perceive a greater likelihood of being able to personally profit off of their own creativity or inventiveness. In addition, more educated individuals could place a higher value on creativity and innovation.

That people with greater intellectual property experience prefer weaker intellectual property protection may seem incongruous at first. It is entirely consistent, however, with such individuals tending to view intellectual property rights through more of an incentive lens, which correlates with a preference for weaker rights.¹⁴⁸ That is, as individuals gain experience with the intellectual property system, they likely become more familiar with (or indoctrinated into) the incentive theory on which intellectual property policy is based. Consistent with this analysis, Pearson's Correlation reveals a statistically significant relationship between experience with intellectual property and an individual's beliefs about the basis for intellectual property rights ($r = .108$, $n = 1719$, $p < .001$). In a similar vein, those who are experienced with intellectual property also may be more likely to realize that granting weaker intellectual property rights leads to greater access to creative achievements for those who want to use or improve upon earlier works. Intellectual property protection often presents a two-way street. This more nuanced understanding, requiring a balance of the

strike it rich and be subject to the tax. *But see* MICHAEL J. GRAETZ & IAN SHAPIRO, DEATH BY A THOUSAND CUTS: THE FIGHT OVER TAXING INHERITED WEALTH 124–25 (2005) (“[A]lthough people have unrealistic ideas about their prospects for upward mobility . . . , there is substantial evidence that this distortion does not account for their hostility to the [estate] tax, or at any rate not exclusively.”).

147. See MERGES, *supra* note 45, at 212; Stuart J.H. Graham et al., *High Technology Entrepreneurs and the Patent System: Results of the 2008 Berkeley Patent Survey*, 24 BERK. TECH. L.J. 1255, 1288 (2009).

148. Participants who responded that they had experience with intellectual property were dominated by those who answered that they had copyrighted a work or who selected “other” in response to the experience question. Unsurprisingly, there were few people who had worked as an intellectual property attorney or paralegal in the participant pool. Of the 1,719 participants who took part in the study, 221 (12.9%) identified some experience with intellectual property. Eighty (4.7%) of the participants reported that they had copyrighted a work, 35 (2.0%) had patented a work, 12 (.7%) had worked as an intellectual property attorney, 13 (0.8%) as an intellectual property paralegal, and 122 (7.1%) identified other experience. As can be seen from summing the results, respondents could identify multiple types of experience.

rights of creators against the rights of users and improvers, could lead to a desire for weaker rights when compared with individuals who lack experience with intellectual property law, and who consequently are less cognizant of the cost of this access tradeoff.

The results that those with greater experience prefer weaker intellectual property rights may appear partially inconsistent with a finding from prior research indicating that individuals with “serious involvement” in art tend to prefer stronger intellectual property rights in art in certain regards.¹⁴⁹ However, this disparity is likely explained by differences in the study populations: Whereas the current study utilized a national population, the prior research involved only subjects with serious involvement in art.

For the patent conditions, the results indicate that being more conservative correlates with a preference for stronger patent protection. This result could arise from a greater propensity for conservatives to desire to protect private property rights in general.¹⁵⁰ That said, we would also need to understand why political ideology tends to cause individuals to view intellectual property rights as similar to private property rights, rather than viewing intellectual property rights as government interference in the free market. The latter perspective would produce the opposite effect to that found in the study, with conservatives generally opposing, and liberals supporting, intellectual property rights. Future studies that compare individual attitudes toward real property versus intellectual property rights would be beneficial for understanding these relationships.¹⁵¹

149. See Barbara A. Spellman & Frederick Schauer, *Artists' Moral Rights and Psychology of Ownership*, 83 TUL. L. REV. 661, 671–72 (2009).

150. See Richard H. Fallon, Jr., *The “Conservative” Paths of the Rehnquist Court’s Federalism Decisions*, 69 U. CHI. L. REV. 429, 493 (2002); Lino A. Graglia, *The Myth of a Conservative Supreme Court: The October 2000 Term*, 26 HARV. J.L. & PUB. POL’Y 281, 297–98 (2003); see also Matthew Sag et al., *Ideology and Exceptionalism in Intellectual Property: An Empirical Study*, 97 CALIF. L. REV. 801, 811–15 (2009) (hypothesizing that conservatives might support intellectual property rights based on their support of property rights generally, but also suggesting that intellectual property rights may be in conflict with conservative dislike of government intervention in the market).

151. There are limited studies concerning public attitudes toward property rights in general. Some studies have found that homeowners are more opposed to eminent domain activities by governmental entities than renters. *E.g.*, MONMOUTH UNIV., *THE POWER OF EMINENT DOMAIN: ACCEPTABLE USES ARE FEW SAY GARDEN STATE RESIDENTS* 4 (2005); N.J. ASS’N OF REALTORS, *SMART GROWTH SURVEY* (2008). While homeownership (versus renting) is expected to correlate with wealth and income, questions on eminent domain are too closely linked to homeownership to be able to extend these results to wealth or income effects more generally. See also Oliver R. Goodenough & Gregory Decker, *Why Do Good People Steal Intellectual Property?*, in *LAW, MIND AND BRAIN* 345, 345 (Michael Freeman & Oliver R. Goodenough eds., 2009) (arguing that norms around property rights operate differently than norms around intellectual property rights); Mohsen Manesh, *The Immorality of Theft, the Amorality of Infringement*, 2006 STAN. TECH. L. REV. 5, ¶ 41 (positing that cognitive concepts

Finally, among those who believe in a natural rights basis for intellectual property rights, women tend to prefer stronger patent rights than men. A growing body of scholarship has begun to explore the relationship between gender and intellectual property law, some of which argues that intellectual property law displays a male-gendered bias in certain regards.¹⁵² The results of this study could provide support for some of these contentions, indicating differences among men and women in their preferences for the strength of intellectual property protection. In a similar vein, among those who believe in an expressive basis for intellectual property rights, minorities tend to prefer stronger copyright protection than do whites.

The relative lack of predictive power of the independent variables in the copyright context, both in terms of the overall strength of the regression model and the more limited number of significant interactions, compared to the patent context, is intriguing. There are a number of possible explanations for this, one of which may be that patent protection feels more similar to real property to some, whereas people are less sure about how to characterize or conceptualize copyright protection. This explanation would be consistent with the finding that more conservative participants tended to favor stronger rights in the patent conditions, just as conservatives tend to favor stronger rights in the real property context.¹⁵³ Further investigation would be valuable to better understand the contours of these interactions, and also to explore some of the causal relationships that are hypothesized above.

The results from the regression analyses indicate that different factors likely influence people's evaluation of similar artistic versus inventive creativity. This divergence in public perception about types of creativity continues despite the fact that research on the psychology of creativity indicates that the cognitive faculties that drive inventive and artistic creativity are not so disparate.¹⁵⁴ To the extent popular perceptions of creativity are misfounded, such misunderstanding may have a deleterious effect on intellectual property law. As discussed above, public perceptions may influence the law, both through popular

of intellectual property are distinct from those of tangible property).

152. Ann Bartow, *Fair Use and the Fairer Sex: Gender, Feminism, and Copyright Law*, 14 AM. U.J. GENDER SOC. POL'Y & L. 551, 552 (2006) (discussing gender bias in the development of and profit from copyrightable work); 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, 857 (2011) (“Accordingly, the law of invention is neither objective nor neutral but contains a built-in gender bias.”).

153. See Fallon, *supra* note 150, at 493; Graglia, *supra* note 150, at 297–98.

154. See JOHN S. DACEY & KATHLEEN H. LENNON, UNDERSTANDING CREATIVITY: THE INTERPLAY OF BIOLOGICAL, PSYCHOLOGICAL, AND SOCIAL FACTORS 203–06 (1998); THERESA AMABILE, CREATIVITY IN CONTEXT 124–27 (1996).

political pressure and through lawmakers' personal perceptions.¹⁵⁵ Misunderstandings concerning the creative process, or concerning the relationships between artistic and inventive creativity, could therefore result in intellectual property law that is poorly suited to achieving its desired ends.

The findings from the regression analyses also have significant implications concerning ongoing intellectual property debates, such as the continuing SOPA/PIPA conflict, disputes over the patent eligibility of human genes that played out in the Myriad Genetics litigation,¹⁵⁶ and recent Supreme Court intellectual property cases.¹⁵⁷ The analyses reveal certain cultural divides over intellectual property rights that have not previously been identified, but that could have significant influence on the discourse and outcomes of these and future intellectual property disputes.

IV. THE PSYCHOLOGY OF OWNERSHIP

The psychology of ownership is a branch of psychology that investigates human cognition concerning the concept of ownership.¹⁵⁸ Most work in this area to date has concerned the ownership of physical property. For example, psychologists have found that people make judgments about who should own a physical object based on who has done the work necessary to capture the object and bring it into possession.¹⁵⁹ Psychological discernment of ownership of physical property emerges at an extremely early age; it has been found in children as young as three years old.¹⁶⁰ While we now know a

155. Deborah W. Denno, *The Perils of Public Opinion*, 28 HOFSTRA L. REV. 741, 761–62 (2000).

156. *Ass'n for Molecular Pathology v. Myriad Genetics, Inc.*, 133 S. Ct. 2107, 2116–19 (2013) (holding that isolated DNA is not patent-eligible because it is naturally occurring, but that synthetically created or modified DNA could be patent-eligible).

157. *E.g.*, *Monsanto Co. v. Bowman*, 657 F.3d 1341 (Fed. Cir. 2011), *aff'd*, 133 S. Ct. 1761, 1764 (2013) (holding that the patent exhaustion doctrine does not apply to the offspring of patented seeds); *John Wiley & Sons, Inc. v. Kirtsaeng*, 654 F.3d 210 (2d Cir. 2011), *rev'd*, 133 S. Ct. 1351, 1355–56 (2013) (applying the “first sale” doctrine of the Copyright Act of 1976 to works manufactured overseas and imported and resold in the United States); *Already, L.L.C. v. Nike, Inc.*, 133 S. Ct. 721 (2013) (holding that the federal district court is divested of Article III jurisdiction over a federal trademark case where the registrant promised not to assert its mark against the underlying commercial activities); *FTC v. Actavis, Inc.*, 133 S. Ct. 2223, 2227 (2013) (holding that a reverse settlement agreement between brand name and generic pharmaceutical companies that resulted in delay of generic commercialization may be anticompetitive).

158. See Ori Friedman, *Necessary for Possession: How People Reason About the Acquisition of Ownership*, 36 PERSONALITY & SOC. PSYCHOL. BULL. 1161, 1161 (2010).

159. *Id.* at 1166.

160. Karen R. Neary et al., *Preschoolers Infer Ownership from “Control of Permission,”* 45 DEV. PSYCHOL. 873, 875 (2009); Nicholas S. Noles & Frank C. Keil, *Exploring Ownership*

significant amount about public perception concerning the ownership of real and physical personal property, our knowledge of the public perception of intangible or intellectual property is in its infancy.

A limited number of psychology studies have begun to explore the psychological conception of ownership for intellectual property. Adults in many cultures recognize the ownership of ideas and believe that plagiarizing others' ideas is wrong.¹⁶¹ It appears that this concept of the ownership of ideas develops later than concepts of ownership of physical property. Six-year-old, but not four-year-old, children make negative moral evaluations of those who plagiarize the work of others versus those who produce unique works.¹⁶² These judgments indicate an understanding that others have differentiated ideas and that copying those ideas is problematic, at least in certain contexts. Children at this age, however, evaluate stealing physical property much more negatively than stealing other people's ideas.¹⁶³ Further studies have found that children value the contribution of ideas to an artistic endeavor more than the contribution of labor.¹⁶⁴ Comparable studies of adult perception surrounding the ownership of ideas have not been reported.¹⁶⁵

In a related vein, some studies have found that there can be a perception of a transfer of ownership rights over physical property due to the investment of creative labor in physical property.¹⁶⁶ Adults were inclined to conclude that a person who manipulated clay into a figure was entitled to the work product, rather than the original owner of the clay.¹⁶⁷ While three-year-old children never recognized creative labor as a basis for transferring ownership, some four-year-old children began to justify ownership transfer based on creative investment.¹⁶⁸ This indicates that concepts of owning intellectual property and acquiring ownership of intellectual property begin to emerge at a young age.

in a Developmental Context, in *ORIGINS OF OWNERSHIP OF PROPERTY* 100–01 (Hildy Ross & Ori Friedman eds., 2011).

161. Kristina R. Olson & Alex Shaw, "No Fair, Copycat!": What Children's Response to Plagiarism Tells Us About Their Understanding of Ideas, 14 *DEV. SCI.* 431, 432 (2011).

162. *Id.* at 434–37.

163. *See id.* at 435–38.

164. Vivian Li et al., *Ideas Versus Labor: What Do Children Value in Artistic Creation?*, 127 *COGNITION* 38, 42–43 (2013). Studies have not yet examined whether this effect exists for inventive as well as artistic creation.

165. Note that these studies concern a form of ownership rights in ideas, rights that would not be protected by intellectual property law. Both copyright and patent law preclude intellectual property rights for ideas per se; intellectual property protection exists only for manners of expressing or instantiating ideas. *Harper & Row Publishers, Inc. v. Nation Enters.*, 471 U.S. 539, 556 (1985); *Bilski v. Kappos*, 130 S. Ct. 3218, 3225 (2010).

166. Patricia Kanngiesser et al., *The Effect of Creative Labor on Property-Ownership Transfer by Preschool Children and Adults*, 21 *PSYCHOL. SCI.* 1236, 1240–41 (2010).

167. *Id.* at 1237–38.

168. *Id.* at 1240.

Intriguingly, these concepts of intellectual property ownership appear rooted in a natural rights basis for intellectual property protection. Though the psychology experiments discussed above were not designed to test this issue, the results indicate that children's and adults' recognition of the ownership of creative works is based in the investment of creative labor. In the study testing the transfer of ownership via the investment of creative labor, 67% of adults referred to concepts of creative investment in explaining the basis for the transfer of ownership rights.¹⁶⁹ These results are consistent with the findings of the present study—that people understand intellectual property rights based on the natural rights of creators rather than based on a system designed to incentivize the creation and dissemination of intellectual works.

The psychology of ownership also implicates the cognitive heuristic of the “endowment effect.” The endowment effect refers to the well-established phenomenon that individuals tend to value goods that they own more highly than identical goods owned by others.¹⁷⁰ Professors Christopher Buccafusco and Christopher Sprigman have conducted a series of experiments that indicate the endowment effect occurs for intellectual property as well as for physical property, finding that owners of poems and of paintings valued the works more than potential buyers.¹⁷¹ Separate from this endowment effect, creators also are influenced by a “creativity effect.”¹⁷² Individuals who painted paintings believed that the paintings were worth more than individuals placed in the position of owning the paintings.¹⁷³ The creativity effect appears to be based on an overly optimistic assessment of the quality of the work, rather than an emotional attachment to the work or the amount of time and energy invested in the work.¹⁷⁴ This creativity effect again appears more aligned with a natural rights or expressive basis for intellectual property rights, as opposed to an incentive basis. The present study enhances our understanding of the psychology of intellectual property, providing significantly more detail concerning the contours of public perception and preferences in this area than was previously available.

169. *Id.* at 1238.

170. Russell Korobkin, *The Endowment Effect and Legal Analysis*, 97 NW. U. L. REV. 1227, 1228 (2003); Richard Thaler, *Towards a Positive Theory of Consumer Choice*, 1 J. ECON. BEHAV. & ORG. 39, 44 (1980).

171. See Buccafusco & Sprigman, *supra* note 9, at 32; Buccafusco & Sprigman, *supra* note 37, at 4, 39–40.

172. Buccafusco & Sprigman, *supra* note 9, at 32.

173. *Id.* at 39–40.

174. See *id.* at 41–42.

CONCLUSION

In a world where intellectual property rights have become significantly more prevalent, important, and contentious, the experiments reported here shed new light on the popular understanding of intellectual property law and intellectual property rights. This study has significant implications for intellectual property law and policy, as the intellectual property system is premised on producing a certain set of behavioral effects. The results of this study indicate that the behavioral model of incentives on which the intellectual property system is based cannot function optimally because popular conceptions of intellectual property rights are not in accord with actual intellectual property law. This discord can destabilize the legitimacy and the effectiveness of intellectual property law.

The variance found here between public perception and intellectual property law indicates that potential intellectual property producers likely do not receive appropriate incentives to engage in creative endeavors, to work with others on creative projects, or to commercialize and distribute their intellectual work. Likewise, intellectual property users likely do not receive appropriate signals concerning compliance with intellectual property rights. These public perceptions are also highly likely to influence juror, as well as some judicial and legislative, decision-making concerning intellectual property rights. The intellectual property system will remain hard-pressed to achieve its objectives given the widespread disconnect between the public psychology of intellectual property and the reality of intellectual property law.

APPENDIX A

Scenario Two: Creativity Threshold

[creativity threshold scenario: copyright condition]

Alex is a writer who has just completed a new fictional book. Though Alex's story is new, both the writing style and story are somewhat predictable. Stated another way, the book would be considered obvious in comparison to existing works from the perspective of someone with ordinary skill and experience in Alex's field.

The following question concerns whether Alex should be entitled to Intellectual Property protection for the book. Intellectual Property protection would give Alex the exclusive rights to make and sell copies of the book. Anyone who wanted a copy of Alex's book would have to obtain permission from Alex, and Alex could charge a fee for that permission.

Should Alex be entitled to Intellectual Property protection for the book? Please answer by selecting a number on the following scale ranging from "Definitely Not" to "Definitely Yes."

- 1 – Definitely Not
- 2 – Probably Not
- 3 – Perhaps Not
- 4 – Maybe
- 5 – Perhaps Yes
- 6 – Probably Yes
- 7 – Definitely Yes

[creativity threshold scenario: patent condition]

Alex is a scientist who has just completed a new mechanical invention. Though Alex's invention is new, both the development and invention are somewhat predictable. Stated another way, the invention would be considered obvious in comparison to existing works from the perspective of someone with ordinary skill and experience in Alex's field.

The following question concerns whether Alex should be entitled to Intellectual Property protection for the invention. Intellectual Property protection would give Alex the exclusive rights to make and sell copies of the invention. Anyone who wanted a copy of Alex's invention would have to obtain permission from Alex, and Alex could charge a fee for that permission.

Should Alex be entitled to Intellectual Property protection for the invention? Please answer by selecting a number on the following scale ranging from "Definitely Not" to "Definitely Yes."

- 1 – Definitely Not
- 2 – Probably Not
- 3 – Perhaps Not
- 4 – Maybe
- 5 – Perhaps Yes
- 6 – Probably Yes
- 7 – Definitely Yes

Scenario Four: Joint Creator

[joint creator scenario: copyright condition]

Blair is a songwriter who recently completed an initial version of a new song. Blair contacts Cary, another songwriter who Blair has heard about but never worked with before, and asks Cary for feedback on the song, particularly concerning one section of the song that Blair feels does not really work well. Cary considers the song and gives feedback to Blair, including on the portion that Blair identified. Blair decides that Cary's recommendations solve Blair's earlier concerns and incorporates some of them into the final song. In total, Cary's feedback was responsible for about twenty percent, or one-fifth, of the final song.

Assume that Blair is entitled to Intellectual Property rights in the final song. The following question concerns whether Cary should be entitled to share Intellectual Property rights in the final song with Blair. Sharing Intellectual Property rights would give Cary equal rights to distribute and sell copies of the song, and to grant other people rights to copy the song.

Should Cary be entitled to share Intellectual Property rights in the final song? Please answer by selecting a number on the following scale ranging from "Definitely Not" to "Definitely Yes."

- 1 – Definitely Not
- 2 – Probably Not
- 3 – Perhaps Not
- 4 – Maybe
- 5 – Perhaps Yes
- 6 – Probably Yes
- 7 – Definitely Yes

[joint creator scenario: patent condition]

Blair is a software writer who recently completed an initial version of a new program. Blair contacts Cary, another software writer who Blair has heard about but never worked with before, and asks Cary for feedback on the program, particularly concerning one section of the program that Blair feels does not really work well. Cary considers the program and gives feedback to Blair, including on the portion that Blair identified. Blair decides that Cary's recommendations solve Blair's earlier concerns and incorporates some of them into the final program. In total, Cary's feedback was responsible for about twenty percent, or one-fifth, of the final software program.

Assume that Blair is entitled to Intellectual Property rights in the final program. The following question concerns whether Cary should be entitled to share Intellectual Property rights in the final program with Blair. Sharing Intellectual Property rights would give Cary equal rights to distribute and sell copies of the program, and to grant other people rights to copy the program.

Should Cary be entitled to share Intellectual Property rights in the final software program? Please answer by selecting a number on the following scale ranging from "Definitely Not" to "Definitely Yes."

- 1 – Definitely Not
- 2 – Probably Not
- 3 – Perhaps Not
- 4 – Maybe
- 5 – Perhaps Yes
- 6 – Probably Yes
- 7 – Definitely Yes
