

The Public Psychology of Intellectual Property Rights

Gregory N. Mandel*

ABSTRACT

Over 1700 U.S. adults took part in an experimental study designed to investigate the relationship between popular conceptions of what intellectual property rights should be and what they legally are. Respondents' views of what should be protected differed substantially from actual law, and popular conceptions of the basis for intellectual property rights are contrary to commonly accepted bases relied upon in legal and policy decision-making. The disconnect between public judgment and the law is problematic because such conflict can undermine the legitimacy and effectiveness of intellectual property law. The results also indicate that the behavioral model on which the intellectual property system is based cannot produce its desired effects concerning either the promotion of creative activity or compliance with intellectual property rights.

INTRODUCTION

Perhaps more than any other field, the success of intellectual property law depends on its ability to affect human behavior. Intellectual property law is built on the premise that providing creators with certain rights will induce them to create, commercialize, and distribute more creative works than they otherwise would. Intellectual property law also depends on behavioral influence for compliance. The ease of copying enabled by modern technological advance, combined with the high transaction costs of enforcement, makes widespread voluntary compliance necessary for the intellectual property system to function successfully.

Because intellectual property law operates based on producing a behavioral response, public awareness of intellectual property law has a critical effect upon the success or failure of the law in achieving its ends. Despite the central importance of human behavior to the success of intellectual property law, public understanding of intellectual property law and rights has barely been explored. This study presents the first investigation of the relationship between popular conceptions of what intellectual property rights *should be* and what intellectual property rights *legally are* across different types of creative works. The results have important implications for understanding how intellectual property law promotes the production of creative works and how intellectual property law is enforced.

Utilizing a series of intellectual property scenario experiments given to a national sample of over 1,700 adults, this study 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 across artistic versus technological creative endeavors; and (3) how the popular understanding of the basis for intellectual property rights compares to standard rationales applied in policy and legal decision-making. Answering these questions for the general population provides valuable insight into the perception of both creators and users of intellectual property. While some potential creators, in both artistic and inventive fields, will have sophisticated knowledge of intellectual property law, a substantial pool of creators will operate on the basis of general public knowledge.¹ In addition, the general public represents the dominant share of intellectual property users, the pertinent population for understanding intellectual property rights compliance.

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

The studies 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, lay people *understand* intellectual property law to be based upon the natural entitlement of authors and inventors. This disconnect between public judgment and intellectual property policy will affect human behavioral responses in both the production of creative works and compliance with intellectual property rights. Furthermore, the disconnect may undermine the legitimacy of intellectual property law, and consequently the law's effectiveness, likely further thwarting its objectives.

The results of these experiments can be used to shed light on contemporary high-profile intellectual property debates, such as battles concerning the Stop Online Piracy Act³ (SOPA) and Protect IP Act⁴ (PIPA), the six-year campaign concerning patent reform legislation, and numerous recent Supreme Court intellectual property cases. Regression

¹ *Infra* part III.A.

² See 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 H.R. 3261, 112th Cong. (2011).

⁴ S. 968, 112th Cong. (2011).

analysis of participant responses to the experiments reveal 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, women prefer weaker rights to men and minorities prefer stronger rights to non-minorities. These results have significant implications for the future of public discourse and legislation concerning intellectual property law.

Prior research has investigated a number of manners in which human decision-making concerning intellectual property is “boundedly rational.”⁵ 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,⁶ and cannot accurately evaluate whether inventions merit patent protection due to the hindsight bias.⁷

The studies reported here take these concerns a step further. Even if we could debias the cognitive heuristics that cloud intellectual property decision-making, humans 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 rights are based. Lacking full information will preclude such individuals from behaving as rational actors under intellectual property law. As a result, the intellectual property system will have a hard time functioning as designed. A behavioral system cannot operate properly if the people within the system function pursuant to a different set of behavioral determinants than the model on which the system is based.⁸

Part I of this article provides an introduction to patent and copyright law, and to the primary theories on which intellectual property law is based. The methods and results of the series of intellectual property scenario experiments are reported in Part II. Part III discusses the implications of the results for the existing behavioral model of intellectual property law and analyzes repercussions of these outcomes for current intellectual property debates. Part IV of the article places the current intellectual property studies within a broader literature on the psychology of ownership, a field which until now has largely focused on the ownership of physical property. The article concludes with recommendations for further avenues of research.

I. INTELLECTUAL PROPERTY LAW

⁵ See *infra* part IV.

⁶ Christopher Buccafusco & Christopher J. Sprigman, *The Creativity Effect*, 78 U. CHI. L. REV. 31 (2011).

⁷ Gregory N. Mandel, *Patently Non-Obvious: Empirical Demonstration that the Hindsight Bias Renders Patent Decisions Irrational*, 67 OHIO ST. L.J. 1391 (2006).

⁸ See Ori Friedman, *First Possession: An Assumption Guiding Inferences About Who Owns What*, 15 PSYCHONOMIC BULL. & REV. 290 (2008) (noting that “[o]wnership of property is an important determinant of behavior”).

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 to how the law is expected to function by affecting the behavior of both the creators and users of intellectual property. The section concludes with a discussion of several ongoing intellectual property debates.

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, promoting progress.⁹ Congress passed the first patent act early in its first term in 1790 and the first copyright act the following month.¹⁰ Despite these similar histories, there is a striking divergence between the rights accorded to authors and artists (protected by copyright) and rights accorded to inventors (protected by patent).

Copyright law protects original works of authorship, including literary, dramatic, musical, and artistic work.¹¹ Patent law protects product and process inventions.¹² 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.¹³ No formal application or review is required. 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.¹⁴ In order to secure a patent, a patentee must demonstrate, among other things, that an invention is new, useful, and non-obvious, as well as adequately disclose how to make and use the invention.¹⁵ In contrast, in order to merit a copyright, an author only need meet a *de minimis* originality standard.¹⁶

Copyright protection, though easier to obtain, is narrower in scope than patent protection. A copyright protects its owner against another person copying (either wholly

⁹ U.S. CONST. art. I, § 8, cl. 8 (“[The Congress shall have Power] To 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.”).

¹⁰ An Act to promote the progress of useful Arts, 1 Stat. 109 (Apr. 10, 1790); 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, 1 Stat. 124 (May 31, 1790).

¹¹ 17 U.S.C. § 102 (2006).

¹² 35 U.S.C. § 101 (2006).

¹³ 17 U.S.C. § 102.

¹⁴ John Gladstone Mills III et al., *Relation between Invention and Patents*, § 1.25 in, PATENT LAW BASICS (2011).

¹⁵ 35 U.S.C. §§ 101–03, 112.

¹⁶ *Bleistein v. Donaldson Lithographing Co.*, 188 U.S. 239, 251–52 (1903).

or to create a derivative work), distributing, or publicly performing or displaying the copyrighted work itself.¹⁷ A copyright does not provide protection against another person independently creating the same or a similar work and distributing or displaying that independently created work.¹⁸ 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.¹⁹ 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 this field is defined by the patent claims, an area that in almost every case is broader than an individual embodiment of the invention.²⁰ A copyright only protects against copying the particular work.²¹

Copyright protection lasts much longer than patent protection. A copyright, in general, lasts for the life of the author plus an additional seventy years.²² A patent term runs twenty years from the date of the patent application, providing an average of about seventeen years of protection from the time of the eventual patent grant.²³ Neither term can be renewed.²⁴

The broad differences between copyright and patent law are partially historically contingent, partially the result of differing subject matter, partially the outcome of differing political economies, and likely due to the effects of several other factors as well. 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 versus left-brain inventors, and that such socio-cultural creativity stereotypes have influenced patent and copyright doctrine.²⁵ 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 both the objectives of the copyright and patent systems and how the systems are supposed to function. Consistent with the Constitution's mandate that Congress is granted intellectual property authority in order to "promote the progress," the Supreme Court has repeatedly explained that intellectual property law exists to *incentivize* authors and inventors to

¹⁷ 17 U.S.C. § 106.

¹⁸ *Feist Publ'ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 361 (1991).

¹⁹ 35 U.S.C. § 271.

²⁰ 35 U.S.C. § 101; *Laitram Corp. v. Cambridge Wire Cloth Co.*, 863 F.2d 855, 865 (Fed. Cir. 1988); *Texas Instruments, Inc. v. U.S. Int'l Trade Comm'n*, 805 F.2d 1558, 1562–63 (Fed. Cir. 1986).

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

²² 17 U.S.C. § 302(a).

²³ 35 U.S.C. § 154(a)(2).

²⁴ 17 U.S.C. § 302 (2006); 35 U.S.C. § 154; 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).

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

produce and distribute creative works.²⁶ This utilitarian incentive theory of intellectual property law is shared by numerous experts in a variety of fields.²⁷

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.²⁸ This would occur because new inventions and artistic works are generally non-excludable and non-rivalrous.²⁹ Absent intellectual property protection, creators could not prevent the widespread copying and distribution of new inventions and works of authorship as soon as they were publically disclosed. Authors and inventors therefore could not profit from their intellectual creations, or could not profit to the full extent of their intellectual creation's use or social value. As a result, potential inventors and authors would be less inclined to put substantial effort and resources into creation in the first instance.³⁰ Too little innovation and artistic creation would occur.

Intellectual property protection solves this potential market failure, according to incentive theory, by granting the creator certain rights in his or her creative work, preventing others from copying it without permission. Intellectual property rights make creative works excludable, which allows a creator to capture greater profits from his or

²⁶ 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.’”); Harper & Row Publishers, Inc. v. Nation Enterprises, 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 are “intended to motivate the creative activity of authors and inventors”).

²⁷ Christopher Buccafusco & Christopher J. Sprigman, *Valuing Intellectual Property: An Experiment*, 96 CORNELL L. REV. 1, 3 (2010) (explaining that “IP, perhaps more than any other substantive area of law, is grounded in the rational actor model . . . [according to which] the monopolistic rights granted by copyrights and patents exist to provide economic incentives to creators”); WILLIAM LANDES & RICHARD POSNER, *THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY LAW*, 3–4 (2003) (“[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”).

²⁸ Harper & Row Publishers, Inc. v. Nation Enterprises, 471 U.S. 539, 558 (1985) (“[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.’”); ROBERT P. MERGES, PETER S. MENELL & MARK A. LEMLEY, *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.”).

²⁹ ROBERT P. MERGES, PETER S. MENELL & MARK A. LEMLEY, *INTELLECTUAL PROPERTY IN THE NEW TECHNOLOGICAL AGE* 12 (5th ed. 2010); Shyamkrishna Balganesh, *Symposium: The New Private Law; The Obligatory Structure of Copyright Law: Unbundling the Wrong of Copying*, 125 HARV. L. REV. 1664, 1670 (2012).

³⁰ ROBERT P. MERGES, PETER S. MENELL & MARK A. LEMLEY, *INTELLECTUAL PROPERTY IN THE NEW TECHNOLOGICAL AGE* 12–13 (5th ed. 2010) (“[Without intellectual property protection], authors may be expected to leave the profession in droves, since they cannot make any money at it.”). [MJ: additional cite, particularly as this focuses on copyright?].

her intellectual creation, and brings the private benefits of a creature work more in line with its social value.³¹ Intellectual property rights thus prove an economic incentive to induce potential authors and inventors to create, commercialize, and distribute more creative works than they would absent intellectual property protection.

Though the incentive basis for intellectual property law is conceptually dominant in the field, it is not universal. Other theories of intellectual property have been propounded. Some scholars rely on John Locke's labor theory of property rights or similar concepts to argue that authors and inventors should hold natural rights in their creative works.³² This equitable perspective views individuals as automatically entitled to the fruits of their efforts. 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 one's own labor and effort.³³

Other scholars contend, based on reasoning from Kant and Hegel, that intellectual property rights can serve an expressive function for creators, providing for greater human flourishing and should be protected for this reason.³⁴ Just as individuals use physical property, such as homes or clothing, to express their identity,³⁵ intellectual property may be used in a similar manner as well. Consistent with these alternative notions of intellectual property rights, several European countries endow authors with significant moral rights in their works, such as attribution rights requiring that an author of a work be identified or a right of integrity permitting the author to prevent others from distorting a work in a way that would injure the author's reputation.³⁶ These alternate bases for intellectual property law, however, tend to play less of a role than incentive-based rationales in most discourse in the United States concerning the actual operation and scope of intellectual property law.³⁷

³¹ [MJ: add cites].

³² 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).

³³ Gordon, *supra* note __, 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.”); Hughes, *supra* note __, 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.”).

³⁴ Gordon, *supra* note __, at 1535–1536; Margaret J. Radin, *Market-Inalienability*, 100 HARV. L. REV. 1849 (1987); see generally Hughes, *supra* note __, at 330–65 (discussing Hegel's personality justification for intellectual property rights).

³⁵ Nestor M. Davidson, *Property and Identity: Vulnerability and Insecurity in the Housing Crisis*, 47 HARV. C.R.-C.L. L. REV. 119, 119–21 (2012).

³⁶ Jane C. Ginsburg, “*European Copyright Code*” —Back to First Principles, 58 J. COPYRIGHT SOC'Y 265, 276–79 (2011).

³⁷ See, e.g., John Conley & Christopher 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) (“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.”).

C. Intellectual Property Debates

Considering their similar histories and objectives, as discussed above, it is striking how little patent law and copyright law cohere. The broad doctrinal differences are generally taken as a given in intellectual property law circles, likely as a result of having been 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 and the development and distribution of new types of creative works and new means for copying and disseminating them. This pressure has manifested itself in several recent high-profile debates concerning copyright infringement on the Internet, patent reform legislation, and a number of Supreme Court intellectual property cases.

The Stop Online Piracy Act³⁸ (“SOPA”) and Protect IP Act³⁹ (“PIPA”) are the House and Senate versions of bills designed to thwart the widespread availability of movies, music, and other media accessible on the Internet in violation of copyright law. 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 the United States Chamber of Commerce.⁴⁰ 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 copyright laws.⁴¹

Initially, SOPA and PIPA had widespread, bipartisan support in Congress, and appeared headed towards legislation. In December, 2011, however, a collection of technology and Internet companies came out strongly in opposition to the bills based on concerns about Internet censorship, the impact on free speech, and the potential for the legislation to stifle online innovation.⁴² Congressional leaders were taken aback by what quickly became a groundswell of public opposition to the bills, and postponed indefinitely votes and other action on the legislation.⁴³ Media piracy, however, remains a significant concern, and debates over how to address copyright infringement on the Internet continue to fester.

Patent legislation has also been a recent hot topic. In September 2011, Congress passed the America Invents Act (“AIA”),⁴⁴ 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. These debates pitted some of America’s largest industries against each other, as the software and information technology industries had begun to see the patent system as creating a drag on

³⁸ H.R. 3261, 112th Cong. (2011).

³⁹ S. 968, 112th Cong. (2011).

⁴⁰ *Copyrights and Internet Piracy (SOPA and PIPA Legislation)*, N.Y. TIMES, Feb. 8, 2012.

⁴¹ H.R. 3261, 112th Cong. (2011); S. 968, 112th Cong. (2011).

⁴² *Copyrights and Internet Piracy*, *supra* note ____.

⁴³ Jonathan Weisman, *After an Online Firestorm, Congress Shelves Antipiracy Bills*, N.Y. TIMES, Jan. 20, 2012.

⁴⁴ S. 23, 112th Cong. (2011); H.R. 1249, 112th Cong. (2011).

innovation, while the pharmaceutical and biotechnology industry feared that any weakening of patent laws could wreak havoc on innovation in their industries.⁴⁵ The debates over patent reform made 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. Recent, hotly-debated cases include copyright liability for peer-to-peer file sharing,⁴⁶ the types of subject matter eligible for patenting,⁴⁷ whether copyright protection can be extended to works already in the public domain,⁴⁸ reconsideration of the inventiveness standard for patent protection,⁴⁹ and the remedies for patent infringement.⁵⁰ 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.⁵¹

Each of these intellectual property debates focuses on the question of how well intellectual property law serves its traditional incentive function, and on what effects a result one way or the other would have on the creation and distribution of creative works. The debates, however, in general largely presuppose fully informed rational actors making decisions about how much time, energy, and resources to invest in creative efforts. Whether the assumptions underlying intellectual property debates are accurate depend, in part, on public perception and understanding concerning the basis for and manner of ownership of intellectual property.

In an effort to begin exploring these psychological and behavioral issues, the studies reported here are designed to examine popular conceptions of intellectual rights,

⁴⁵ DAN BURK & MARK LEMLEY, *THE PATENT CRISIS AND HOW THE COURTS CAN SOLVE IT* 4, 100-02 (2009).

⁴⁶ *MGM Studios, Inc. v. Grokster, Ltd.*, 545 U.S. 913 (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”).

⁴⁷ *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, No. 10-1150, (S. Ct. 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*, 561 U.S. ___ (2010) (holding that a method for hedging losses through investments was not patent eligible subject matter because it was an abstract idea).

⁴⁸ *Golan v. Holder*, 565 U.S. ___ (2012) (holding that Congress can take works out of the public domain).

⁴⁹ *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007) (effectively increasing the stringency of the nonobviousness patent requirement).

⁵⁰ *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388 (2006) (holding that patent owners are not necessarily entitled to injunctions for patent infringement).

⁵¹ *E.g.*, Brief for Sharmar Networks Ltd. as Amicus Curiae Supporting Respondents, *MGM Studios, Inc. v. Grokster, Ltd.*, 545 U.S. 913 (2005) (No. 04-480); Brief of Am. Intellectual Prop. Law Ass’n as Amicus Curiae Supporting Respondent, *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, No. 10-1150, (S. Ct. 2012) (No. 10-1150); Brief for Am. Bar Ass’n as Amicus Curiae Supporting Respondents, *Golan v. Holder*, 565 U.S. ___ (2012) (No. 10-545); Brief for Practicing Patent Attorneys as Amicus Curiae Supporting Respondents, *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007) (No. 04-1350); Brief for United States as Amicus Curiae Supporting Respondent, *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388 (2006) (No. 05-130).

how these popular conceptions map onto actual law, variation in perceptions across copyright and patent protection, and the basis for intellectual property law. The answers to these questions will provide significant insight concerning how people actually respond to the behavioral assumptions of the intellectual property system. General public perception concerning intellectual property rights will clearly have a direct effect on how many users of intellectual property interact and potentially comply with the intellectual property system. In addition, public perception provides meaningful insight concerning creator activity because a significant portion of creators are individual actors and an additional portion of creators, such as those in start-up and small companies, are not expected to have specialized knowledge of the intellectual property system. Public perception of the appropriate substance and purpose of intellectual property law thus sheds light on the likelihood of intellectual property law achieving its objectives, on the propensity for people to obey intellectual property rights, and on how judges and juries will decide intellectual property cases.

II. INTELLECTUAL PROPERTY RIGHTS AND POLICY STUDIES

The current series of studies utilize a series of innovation scenarios to test how popular conceptions comport with intellectual property law and how popular conceptions vary across different types of creative endeavor. The studies also examine 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 concerned a creator and the creator's potential intellectual property rights, and each had two conditions. One condition involved artistic creativity, such as the production of a book, song, or sculpture. The second condition was 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 designed so that each participant received two artistic and two inventive 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, answering based on a seven-point scale ranging from "Definitely Not" to "Definitely Yes." Follow-up questions concerned the participant's basis for awarding or not awarding such rights, 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 for a variety of demographic information and concerning their experience with intellectual property law, whether as an attorney, paralegal, creator, or otherwise.

1,719 United States adults took part in the studies, conducted with an online survey instrument via SurveyMonkey. The study population was provided by SurveyMonkey as part of their nationally developed pool of potential survey respondents. The study participants were not paid for taking part, but were entered into a weekly cash drawing and a donation to charity was made 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 other racial make-ups. Examples of the innovation scenarios are provided in Appendix A.

B. Results

1. *Study 1: Infringement*

The most fundamental rights provided by intellectual property protection are 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.⁵² A patent prohibits anyone else from making, using, selling, offering for sale, or importing the patented subject matter.⁵³

Study 1 tested participants' opinions concerning infringement liability for copying the creative works of others. The Study 1 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, non-obvious 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 answered on a seven-point scale concerning how strongly they agreed or disagreed that the creator should be entitled to monetary damages for intellectual property rights infringement.

The scenarios in Study 1 are drafted such that both the computer program and the new song would be entitled to patent or copyright protection, respectively, under the law. Both scenario conditions generally constitute infringement by the second party under patent and copyright law, and would entitle the creator to monetary damages.⁵⁴

Consistent with intellectual property law, 70% of respondents in the patent condition answered that the computer program developer should be entitled to monetary damages. 59% of respondents in the copyright condition similarly concluded that the song writer was entitled to monetary damages, providing a majority response consistent with copyright law, though not by as clear a margin as in the patent scenario. Results are

⁵² 17 U.S.C. § 106.

⁵³ 35 U.S.C. § 271.

⁵⁴ The copying party in the copyright scenario could raise a fair-use defense to infringement, but the facts of the scenarios make this argument weak. See 17 U.S.C. § 107 (statutory provisions for fair use).

displayed in Table 1. For ease of comparison, the tables 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"). 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.

| | Response | Patent % | Copyright % |
|--|-----------|----------|-------------|
| Should the creator receive damages for infringement? | No | 19 | 31 |
| | Undecided | 12 | 10 |
| | Yes | 70 | 59 |

Table 1. Infringement Scenario Responses.

Comparing the mean responses on the semi-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 ($t(1701) = 5.62$, $p < .001$).⁵⁵ Respondents were more likely to award damages for infringement of an inventive creation than for infringement of an equivalent artistic creation.

2. Study 2: Creativity Threshold

As discussed above, one area where copyright law and patent law differ significantly is in the requisite level of creativity in a work necessary to entitle a creator to intellectual property rights. Copyright protection is available for a work of authorship fixed in a tangible medium so long as the work is original with the author.⁵⁶ The threshold of originality for copyright protection is famously low, and does not require evaluation of how creative the work is so long as it meets a *de minimis* originality standard.⁵⁷ Patent law, on the other hand, has an elevated creativity threshold, requiring that an invention be non-obvious to a person with ordinary skill in the field in comparison to prior technology in order to merit patent protection.⁵⁸ The basis for the non-obvious requirement in patent law is that obvious advances will be achieved without the necessity of a patent incentive, and trivial advances do not benefit society enough to warrant imposing the costs of a patent monopoly on the public.⁵⁹

⁵⁵ Levene's test indicated unequal variances ($F = 36.271$, $p = .000$), so degrees of freedom were adjusted from 1709 to 1701.

⁵⁶ 17 U.S.C. § 102.

⁵⁷ *Feist Publ'ns, Inc. v. Rural Telephone Serv. Co.*, 499 U.S. 340, 364 (1991).

⁵⁸ 35 U.S.C. § 103; *KSR v. Teleflex*, 550 U.S. 398.

⁵⁹ *Graham v. John Deere*, 383 U.S. 1, 14–15 (1966).

The second scenario investigated participants' perceptions of the level of creative achievement necessary in order to entitle a creator to copyright or patent protection. The patent condition involved a scientist who achieved a mechanical invention. Per the scenario, though the invention is new, both the development and actual invention are somewhat predictable, and would be considered obvious by a person with ordinary skill and experience in the inventor's field. The copyright condition is essentially identical, except that the new work is a fictional book, not a mechanical invention.

Study 2 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 nonobviousness validity requirement.

Consistent with intellectual property law, 75% of respondents in the copyright condition concluded that the author was entitled to intellectual property protection. Contrary to intellectual property law, 60% of respondents in the patent condition similarly concluded that the inventor was entitled to intellectual property protection. Two-tailed binomial tests demonstrate that participants were significantly more likely to grant intellectual property protection to an obvious creation than to deny protection in both the patent ($p < .001$) and copyright ($p < .001$) scenarios.

| | Response | Patent % | Copyright % |
|--|-----------|----------|-------------|
| Does obvious creation deserve IP protection? | No | 26 | 16 |
| | Undecided | 14 | 10 |
| | Yes | 60 | 75 |

Table 2. Creativity Threshold Scenario Responses.

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 creation ($M = 4.72$, $SD = 1.85$, $t(1687) = 8.19$, $p < .001$).⁶⁰ Participants tended to prefer a higher creativity threshold for acquiring intellectual property rights to an inventive work than for an artistic creation.

3. Study 3: Independent Creators

Copyright law and patent law also differ concerning the potential intellectual property rights of later, independent creators. Under copyright law, a subsequent author who independently authors 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.⁶¹ In copyright, it is the work itself that is copyrighted, and protection only applies to copying of that particular

⁶⁰ Levene's test indicated unequal variances ($F = 7.120$, $p = .008$), so degrees of freedom were adjusted from 1700 to 1687.

⁶¹ 17 U.S.C. § 102; *Feist Publ'ns*, 499 U.S. at 345.

work.⁶² A patent provides very different protection. A patent protects an area of subject matter, not a particular invention, from infringement.⁶³ Thus, a patent covers not only an innovator's specific invention, but also an area of technology surrounding the invention, which will be defined by the patent's claims.⁶⁴ 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 or not.⁶⁵ A copyright owner must prove copying to establish infringement liability; a patent owner does not.⁶⁶

The third scenario concerned independent creators. In the copyright condition, a sculptor, after considerable effort, produces a new sculpture. Shortly thereafter, a second sculptor, who lives across the country and is entirely unaware of and not influenced by the first sculptor or the first sculptor's work, produces a substantially similar sculpture. The patent condition is identical, except that it concerns a doctor's invention of a new medical device. In each condition the study participants are informed that the first creator is entitled to intellectual property rights in the initial sculpture or medical device, respectively. 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.

| | Response | Patent % | Copyright % |
|---|-----------|----------|-------------|
| Should independent creator receive IP rights? | No | 32 | 29 |
| | Undecided | 13 | 11 |
| | Yes | 55 | 60 |

Table 3. Independent Creator Scenario Responses.

The means 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

⁶² 17 U.S.C. § 102.

⁶³ 35 U.S.C. § 101; *Texas Instruments, Inc. v. U.S. Int'l Trade Comm'n*, 805 F.2d 1558, 1562–63 (Fed. Cir. 1986).

⁶⁴ 35 U.S.C. § 112 (2006); *Texas Instruments*, 805 F.2d at 1562–63.

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

⁶⁶ *Feist Publ'ns*, 499 U.S. at 1296; *Scanner Techs.*, 528 F.3d at 1379.

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. Study 4: Joint Creators

Copyright and patent laws further differ in the requirements 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 inventor or joint author, and consequently entitled to concomitant patent or copyright 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.⁶⁷ 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.⁶⁸ 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 rights to produce, distribute, and license their intellectual property.⁶⁹

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.⁷⁰ 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.⁷¹

Study 4 concerned whether a party who provides assistance to a primary creator should be entitled to share intellectual property rights in the final work. The 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 possible. The second songwriter provided feedback to the original author, including on the particular portion of the song identified. The original author incorporated some of

⁶⁷ *Aalmuhammed v. Lee*, 202 F.3d 1227, 1233–35 (9th Cir. 2000); *Thompson v. Larson*, 147 F.3d 195, 200–05 (2d Cir. 1998).

⁶⁸ *Ethicon v. U.S. Surgical Corp.*, 135 F.3d 1456, 1460 (Fed. Cir. 1998).

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

⁷⁰ *Thompson*, 147 F.3d at 200–05.

⁷¹ *Ethicon*, 135 F.3d at 1461–64.

the second songwriter's suggestions into the final song. In total, the second songwriter's feedback was responsible for about twenty percent of the final song.

Study participants were informed that the original songwriter was entitled to intellectual property rights in the final song, and 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. The 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 Table 4. Two-tailed binomial tests revealed that participants were significantly more 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 ($p > .05$).

| | Response | Patent % | Copyright % |
|--|-----------|----------|-------------|
| Should 20% contributor share in IP rights? | No | 42 | 47 |
| | Undecided | 15 | 13 |
| | Yes | 44 | 39 |

Table 4. Joint Creator Scenario Responses.

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 copyright law.

5. Basis for Intellectual Property Rights

All four studies 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 basis for intellectual property rights question in only one of the four scenario conditions received. The scenarios and conditions were ordered randomly so that approximately one-eighth of the entire study population answered the intellectual property rights basis question for each of the four scenarios in the two different conditions.

The responses for the intellectual property basis question were modeled on the three bases for intellectual property identified above: natural rights, incentives, and expressive. 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.⁷² These results run strongly contrary to the dominant theories of intellectual property law recognized in most intellectual property policy, economic, and legal analysis.

Table 5 reports participant responses on the basis for intellectual property rights, differentiated by study and condition. In every condition and every scenario, more participants perceived a natural rights foundation for 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 ($p < .001$), except for the patent condition creativity threshold scenario, in which there was no significant difference between the entitlement and incentive responses ($p > .05$)⁷³. 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.

| Study | Basis for IP Rights | Patent Condition | Copyright Condition |
|---|---------------------|------------------|---------------------|
| Study 1: Infringement Scenario | Entitled | 67 | 68 |
| | Incentive | 22 | 12 |
| | Expressive | 11 | 20 |
| Study 2: Creativity Threshold Scenario | Entitled | 47 | 57 |
| | Incentive | 40 | 22 |
| | Expressive | 13 | 21 |
| Study 3: Independent Creator Scenario | Entitled | 63 | 57 |
| | Incentive | 25 | 18 |
| | Expressive | 12 | 26 |
| Study 4: Joint Creator Scenario | Entitled | 62 | 58 |
| | Incentive | 25 | 25 |

⁷² These reported results exclude participants who selected “Another explanation” from the percentage statistics.

⁷³ In the patent condition creativity threshold scenario, participants preferred both the natural rights and incentive bases to the expressive basis ($p < .001$).

| | | | |
|--|------------|----|----|
| | Expressive | 13 | 17 |
|--|------------|----|----|

Table 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 Studies 1 and 2 twice as many participants selected an incentive basis in the patent condition, a difference that was narrower in Study 3 and absent in Study 4. Note that Studies 1 and 2 involved scenarios concerning questions about the absolute existence of intellectual property rights or not, while Studies 3 and 4 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.

That participant responses vary across the eight conditions reported here indicates that participant views on the basis for intellectual property rights are contextual, depending on the particular factual scenarios and types of rights involved. In particular, 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 versus weaker intellectual property protection. Responses to these two scenarios were summed for each respondent to produce an “IP Strength” variable, providing a Likert scale to indicate whether each participant tended to generally prefer stronger or weaker intellectual property rights.

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 ($M = 10.53$, $SD = 2.73$) than those who supported an incentive basis ($M = 9.45$, $SD = 2.63$, $t(1041) = 5.80$, $p < .001$) or those who supported an expressive basis ($M = 9.38$, $SD = 2.77$, $t(953) = 5.35$, $p < .001$), each pursuant to independent samples t-tests. Those who perceived an expressive basis for intellectual property rights did not differ from those who perceived an incentive basis ($t(500) = 0.30$, $p > .5$).

Linear regression analysis was used to examine the relationship between IP Strength and a variety of independent variables, including respondent’s gender, race, age, political identity, income, education, and past experience with intellectual property law.

Participant political identity was based on responses to a seven-point liberal/conservative scale question. Experience with intellectual property law included work as an intellectual property attorney or paralegal, as the creator of patented or copyrighted work,⁷⁴ or any other self-identified experience in the field.

The regression model is significant overall ($F_{7,1256} = 4.011$, $R^2 = .022$, $p < .001$). Being older, having lower income, being more educated, and having less intellectual property experience all correlate with a desire for stronger intellectual property protection in the scenarios. Results are shown in Table 6.

Table 6. IP Strength and Predictor Variables Regression.

| | β coefficient |
|---------------------------------|---------------------|
| Gender ^a | -.017 |
| Race ^b | .025 |
| Age | .100** |
| Political Identity ^c | .034 |
| Income | -.071* |
| Education | .065* |
| IP Experience | -.059* |

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

^a 0 = female; 1 = male.

^b 0 = Caucasian; 1 = non-Caucasian.

^c Seven-point scale: 1 = extremely liberal; 7 = extremely conservative.

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 versus copyright conditions for the two studies 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 significant models. Results are shown in Table 7.⁷⁵

Table 7. 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 Identity | .113** | -.041 |

⁷⁴ Doctrinally, everyone is the creator of copyrighted work (from the first time one 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. 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.

⁷⁵ The intellectual property experience variable was removed from these regressions to consider it in further detail below.

| | | |
|-----------|--------|-------|
| 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, being more educated correlates 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, 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 ($F_{6,70} = 2.276$, $R^2 = .163$, $p < .05$). Two relationships not identified in the earlier regressions emerge here. First, women tend to prefer weaker patent rights than men for those who believe in a natural rights basis for intellectual property rights. Second, minorities tend to prefer stronger copyright protection than Caucasians among those who believe in an expressive basis for intellectual property rights. Results are shown in Table 8.

Table 8. IP Strength and Basis for IP Protection.

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

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

III. DISCUSSION

The innovation scenario studies reveal that public perceptions of 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.⁷⁶ In addition, the

⁷⁶ In an attempt to better understand human behavioral response to the patent system, 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 COL. SCI. & TECH. L.

disconnect between public judgment and the legal rules may weaken public perception of the legitimacy of the intellectual property system. This section discusses the 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 copyright rights 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 being said, in two of these three scenarios, the majority was relatively modest, with about one third of participants disagreeing with actual copyright law and an additional ten percent being in equipoise. 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 would provide.⁷⁷

The patent law scenarios present a starker contrast between public perception and the law. Participant responses to the innovation scenarios varied significantly from patent doctrine, and differed in an inconsistent manner. While patent law requires that an invention be non-obvious in order to secure a patent, only 26% of respondents in the creativity threshold scenario concluded that the obvious mechanical invention at issue was not patent worthy. 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 study results were also inconsistent with patent law: 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 study where public perception appeared consistent with actual law was the base infringement scenario of Study 1, where a strong majority of participants reached a conclusion of infringement, consistent with patent law.

Why would lay perceptions of intellectual property rights be somewhat 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 studies do not demonstrate whether public perceptions influence the law, whether intellectual property law influences public perceptions,

REV. 130 (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. *Id.*

⁷⁷ 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. John Palfrey, Urs Gasser, Miriam Simun & Rosalie Fay Barnes, *Youth, Creativity, and Copyright in the Digital Age*, 2009 INT'L J. LEARNING & MEDIA 79 (concluding, based on qualitative study, that youths are generally ignorant of copyright law). Although the instant study did not test participant 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.

whether some third factor influences both public perception and the law, or whether there is no causal relationship.⁷⁸

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.⁷⁹ This could occur because, particularly given the rise of the Internet, most members of the public interact with copyright law more often than patent law on a regular basis, and may have derived greater knowledge of copyright law from this experience. It is also possible, however, that lay lawmakers perceive that they have a greater understanding of the underlying subject matter of copyright law, for similar reasons to those just noted, and that lawmakers consequently take a greater role in drafting and shaping copyright law. Similarly, broad public perception can also drive copyright law, as demonstrated in the SOPA and PIPA debates.⁸⁰ 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, whose subject matter is often viewed as more technical and obscure, and whose drafting may therefore be left to “experts” to a greater extent. This has been the case historically, at least for patent law. Revisions to The Patent Act in 1952, the most substantial changes to statutory patent law within the last century, were famously parceled off to a small committee of experts to draft the legislation.⁸¹

A potentially intriguing causal relationship is revealed by revisiting the relationship between the patent versus copyright results. Although it is true that there was a statistically significant difference across the conditions, the large study population produces statistical significance even with small variation. In comparison to actual law, there is actually relatively little variation across the copyright versus 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. Even greater harmonization is revealed in the independent creators scenario, where the law would again dictate a variation of 100% assigning rights for copyright versus 0% for patent, but participant responses varied by only 5% (60% of copyright participants versus 55% of patent participants would grant protection). The other two scenarios produced variation of 11% (infringement scenario) and 5% (joint creator scenario). Despite substantial variation in copyright and patent systems, the general public tends to have similar preference for intellectual property

⁷⁸ See Friedman, *supra* note __, at 294 (discussing the unclear causal relationship between psychology and law where popular conceptions of ownership and property law coincide).

⁷⁹ [MJ: find law review cite for proposition that knowledge of law can affect belief about what the law should be].

⁸⁰ See *supra* part I.C.

⁸¹ Giles S. Rich, *Congressional Intent, Or Who Wrote the Patent Act of 1952*, in NONOBVIOUSNESS—THE ULTIMATE CONDITION OF PATENTABILITY 1:1 (J. Witherspoon ed. 1980); P.J. Federico, *Origins of Section 103*, in NONOBVIOUSNESS—THE ULTIMATE CONDITION OF PATENTABILITY 1:101 (J. Witherspoon ed. 1980).

rights across artistic and technological domains. It is possible that, for reasons discussed above, the general public is more familiar with, or has had greater influence on, copyright protection, and assumes similar protection for patent law as well. Or it is 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 consistently than the actual doctrine, and tend not to agree with stark variation between these fields in intellectual property law.

Whatever the causal relationship between public perception and the law, the results of the studies indicate that the dominant behavioral theory of intellectual property law may not be able to function as conceived. Given the public's general lack of knowledge about intellectual property law,⁸² public perception of what the law should be and the basis for the law are expected to provide the dominant source for human behavioral response to the intellectual property system. An author who misunderstands his or her potential to obtain copyright protection, or to shield a copyrighted work from infringement, will make inefficient decisions under the law concerning his or her 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.⁸³ Intellectual property users will also fail to comply with intellectual property law, even in situations where they intend to do so, leading to a reduction in intellectual property compliance and an increase in enforcement costs.

These studies concern lay perceptions of intellectual property law. The results, therefore, do not demonstrate that all individuals acting under the intellectual property system suffer the same misperceptions. There will be many potential intellectual property creators, particularly at large, sophisticated firms, who are more familiar with intellectual property law than the average member of the public. For such creators, the intellectual property system may induce the desired behavioral response. For many other potential creators, however, the data on general public perception presented here likely represents an accurate picture of their understanding of the intellectual property system. For example, substantial portions of valuable copyright activity are engaged in by individuals or entities that likely are not sophisticated concerning intellectual property law, and an important portion of innovation activity is still conducted by individuals as well.⁸⁴ In addition, it is likely that many decisions at smaller firms, including start-up entities, are made by individuals lacking significant expertise in intellectual property law. This is critical, as research indicates that smaller firms are responsible for more

⁸² See, e.g., John Palfrey, Urs Gasser, Miriam Simun & Rosalie Fay Barnes, *Youth, Creativity, and Copyright in the Digital Age*, 2009 INT'L J. LEARNING & MEDIA 79 (finding that youths are generally ignorant of copyright law) [MJ: add cites].

⁸³ This is not to say that the law cannot provide any incentives given the disconnect between public perception and the law, only that the disconnect will prevent the law from providing the full incentives that it is designed to achieve.

⁸⁴ JAMES BESSEN & MICHAEL MEURER, PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK 19 (2008); [MJ: add copyright cite].

significant innovation than larger firms.⁸⁵ In addition to providing insight into the psychology of intellectual property for many intellectual property creators, general public perception also illuminates the likely state of mind for most intellectual property users. 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 these studies indicate that there are likely noteworthy problematic effects.

B. Public Perception of Artistic versus Inventive Creativity

Although respondents provided statistically significant different responses across the patent versus copyright scenarios in three of the four studies, there was not an apparent consistency in the manner of difference. Whereas respondents perceived that patent rights should be stronger than copyright protection in the infringement scenario, respondents simultaneously 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 to 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.

As discussed above, the most surprising finding in comparing patent and copyright responses may be their substantial similarity to each other [check this edit]. That being said, there are some differences in how members of the public appear to view artistic versus inventive creativity and different perceptions concerning what intellectual property protection should be depending on the underlying creative work. Understanding the contours of such differentiation requires further study.

C. The Basis for Intellectual Property Rights

Given that there is widespread misunderstanding concerning 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, people may still engage in behavior consistent with the objectives of the intellectual property system if public perception of the basis for intellectual property rights is in accord with the objectives of the system. If people recognize an accurate basis for intellectual property law, then people may make inferences about intellectual property rights that are consistent with the law, and consequently take behavioral action consistent with the laws' goals.⁸⁶

⁸⁵ Josh Lerner, *The New New Financial Thing: The Origins of Financial Innovations*, 79 J. OF FINANCIAL ECON. 223, 224 (2006).

⁸⁶ See Friedman, *supra* note __, at 290 (noting that people make inferences about what can be owned and which rights are conferred by ownership when reasoning about physical property).

Popular opinion, however, is largely out of step with experts in intellectual property law and policy concerning the basis for intellectual property rights. While those who focus in intellectual property law generally perceive the law to be directed towards providing an incentive for authors and inventors to create and disseminate creative achievements, the public at large primarily views intellectual property rights as deriving from an author's or inventor's natural rights in his or her work. 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 actually be stronger than they currently are. Furthermore, the divide between intellectual property law and public judgment about both the content and basis for the law will undermine the legitimacy of the law, and consequently its effectiveness.⁸⁷

Note that this discussion is not intended to claim, or disclaim, that an incentive theory of intellectual property rights should be the 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 humans respond to the law in 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.

D. Implications for Intellectual Property Debates

Some of the most important findings from these studies concern the 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 desire for stronger intellectual property protection. This differentiation has important implications for several ongoing intellectual property debates.

The finding that younger people prefer weaker intellectual property protection is consistent with past studies which have found similar results when examining attitudes towards file-sharing on the Internet.⁸⁸ There does appear to be a generational divide concerning intellectual property rights. Interesting here is that most past research has focused on individual attitudes towards copyright protection, primarily in the content of the Internet, while the present studies find an age effect both for the population overall

⁸⁷ Tom Tyler, *Psychological Perspectives on Legitimacy and Legitimation*, 57 ANN. REV. PSYCH 375, 380-82 (2006) (explaining how wide-spread public consent is crucial to legitimacy of the legal system and that legitimacy is important for the legal system's ability to function properly).

⁸⁸ Bootie Cosgrove-Mather, CBS News, *Poll: Young Say File Sharing OK* (Feb. 11, 2009), available at <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); Digital Life America, *Americans Divided Over File-Sharing* (June 21, 2005) (reporting survey results finding that those under age thirty favored allowing file-sharing services on average, while those over age thirty were opposed).

and for responses to the patent condition questions. This study appears to be the first to indicate that the generational divide concerning intellectual property rights cuts across intellectual property domains.

That people with greater intellectual property experience prefer weaker intellectual property protection may seem incongruous at first, but it is entirely harmonious with such individuals tending to view intellectual property rights through more of an incentive lens, which correlates with preferences for weaker rights.⁸⁹ 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 significant relationship between experience with intellectual property and individual's beliefs about the basis for intellectual property rights ($r = .108$, $n = 1719$, $p < .001$). These results are partially counter to other research which has found that individuals with "serious involvement" in art tend to prefer stronger intellectual property rights in art in certain regards.⁹⁰ This disparity is likely explained by differences between subjects with any intellectual property experience and subjects limited to those with serious involvement in art.

For the patent conditions, having lower income correlates with a desire for stronger patent rights. One possible explanation for this result is that the popular notion of the small inventor hitting it big may be particularly attractive to those with lower income.⁹¹ For those with higher income, patent rights may be perceived as being more likely to interfere with established business operations. In practice, smaller companies do tend to prefer stronger patent rights than larger companies, in part for these reasons.⁹²

The studies also found that being more conservative correlates with a preference for stronger patent protection, a result that may not be consistent with the explanation hypothesized above. This result could arise from a greater propensity for conservatives to desire to protect property rights in general.⁹³ Future studies that compare individual

⁸⁹ Participants responding that they had experience 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 lawyer or paralegal in the participant pool. Of the 1,719 participants who took part in the studies, 221 (12.9%) identified some experience with intellectual property. 80 (4.7%) had copyrighted a work, [insert #/%] as an intellectual property attorney, 13 (.8%) as an intellectual property paralegal, and 122 (7.1%) identified other experience. As can be seen from the results, respondents could identify multiple types of experience.

⁹⁰ Barbara A. Spellman & Frederick Schauer, *Artists' Moral Rights and Psychology of Ownership*, 83 TUL. L. REV. 661, 671-72 (2009).

⁹¹ 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 factually unrealistic perception about the likelihood that one is going to strike it rich be subject to the tax. See MICHAEL GRAETZ & IAN SHAPIRO, DEATH BY A THOUSAND CUTS: THE FIGHT OVER TAXING INHERITED WEALTH 123-24 (2005).

⁹² Stuart Graham, Robert Merges, Pamela Samuelson, & Ted Sichelman, *High Technology Entrepreneurs and the Patent System: Results of the 2008 Berkeley Patent Survey*, 24 BERK. TECH. L.J. 1255 (2009).

⁹³ Lino A. Graglia, *The Myth of a Conservative Supreme Court: The October 2000 Term*, 26 HARV. J.L. & PUB. POL'Y 281, 298 (2003); Richard H. Fallon, *The "Conservative" Paths of the Rehnquist Court's Federalism Decisions*, 69 U. CHI. L. REV. 429, 493 (2002). See also Matthew Sag et al., *Ideology and*

attitudes towards real property versus intellectual property rights would be beneficial for understanding these relationships.⁹⁴

While age, income, and political identity were all significant predictors of preferences concerning the strength of patent rights, none were significant predictors in the copyright conditions. Education, however, was: being more educated correlates with a desire for greater copyright protection. As with the other significant results, the causal explanation for this relationship is not necessarily clear. One possibility is that more educated individuals may perceive a greater likelihood of being able to personally profit off of their own creativity or copyrighted expression.

Finally, for those who believe in a natural rights basis for intellectual property rights, women tend to prefer weaker 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.⁹⁵ The experimental results here could provide support for some of these contentions, indicating greater concern among woman regarding the grant of stronger intellectual property rights.

The collection of results from the regression analysis further indicates that different factors are more likely to influence people's evaluation of similar artistic versus inventive creative activity. This divergence in public perception about types of creativity continues despite the fact that research on the psychology of creativity tends to indicate that the cognitive faculties which drive inventive and artistic creativity are not so disparate.⁹⁶ To the extent popular perceptions of creativity are misfounded, it may have a

Exceptionalism in Intellectual Property: An Empirical Study, 97 CAL. L. REV. 801, 811 (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).

⁹⁴ There are limited studies concerning public attitudes towards 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 UNIVERSITY, THE POWER OF EMINENT DOMAIN (October 2005); NEW JERSEY ASSOCIATION OF REALTORS GOVERNMENTAL RESEARCH FOUNDATION, SMART GROWTH SURVEY (Dec. 2008). While homeownership (versus renting) is expected to correlate with greater 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 (Michael Freeman and 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 Amoral of Infringement*, 2006 STAN. TECH. L. REV. 5 (positing that cognitive concepts of intellectual property are distinct from those of property).

⁹⁵ Schlomit 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."); 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 and profit from copyrightable work).

⁹⁶ JOHN DACEY & KATHLEEN LENNON, UNDERSTANDING CREATIVITY: THE INTERPLAY OF BIOLOGICAL, PSYCHOLOGICAL, AND SOCIAL FACTORS 203–06 (1998); THERESA AMABILE, CREATIVITY IN CONTEXT 3, 124–27 (1996).

deleterious effect on intellectual property law. As discussed above, popular perceptions may influence the law, both through popular political pressure and through lawmakers possessing such perceptions themselves.⁹⁷ Misunderstandings concerning the creative process, or concerning the relationships between artistic and inventive creativity, could therefore result in intellectual property law that is not well suited to achieving its desired ends.

IV. THE PSYCHOLOGY OF OWNERSHIP

The psychology of ownership is a branch of psychology that investigates human cognition concerning the concept of ownership. 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.⁹⁸ The psychological discernment surrounding the perception of ownership of physical property emerges at an extremely early age, having been found in children as young as three-years-old.⁹⁹

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.¹⁰⁰ It appears that the concept of owning ideas develops later than concepts of ownership of physical property. Six-year-old children, but not four-year-olds, make negative moral evaluations of those who plagiarize the work of others versus those who produce unique works.¹⁰¹ 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 peoples' ideas.¹⁰² Further studies have found that children value the contribution of ideas to an artistic endeavor more than the contribution of labor.¹⁰³ Comparable studies of adult perception surrounding the ownership of ideas do not yet exist.

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

⁹⁷ Deborah Denno, *The Perils of Public Opinion*, 28 HOFSTRA L. REV. 741 (2001).

⁹⁸ Ori Friedman, *Necessary for Possession: How People Reason About the Acquisition of Ownership*, 36 PERSONALITY & SOC. PSYCHOL. BULL. 1161 (2010).

⁹⁹ Karen Neary, Ori Friedman, & C. Burnstein, *Preschoolers Infer Ownership from "Control of Permission"*, 45 DEVELOPMENTAL PSYCHOL. 873 (2009); Nicholas S. Noles & Frank C. Keil, *Exploring Ownership in a Developmental Context*, in ORIGINS OF OWNERSHIP OF PROPERTY 91 (H. Ross & O. Friedman Eds. 2011).

¹⁰⁰ Kristina R. Olson & Alex Shaw, *"No fair, copycat!": what children's response to plagiarism tells us about their understanding of ideas*, 14 DEVELOPMENTAL SCI. 431, 432 (2011).

¹⁰¹ *Id.* at 434–37.

¹⁰² *Id.* at 435–38.

¹⁰³ Vivian Li, Alex Shaw, & Kristina R. Olson, *Children Value Ideas over Labor* (2012) (manuscript available from author). Studies have not yet examined whether this effect exists, or for inventive as well as artistic creation.

in physical property.¹⁰⁴ Adults were inclined to conclude that a person who manipulated clay into a figure was entitled to the figure, rather than the original owner of the clay.¹⁰⁵ 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.¹⁰⁶ Concepts of owning intellectual property and acquiring ownership of intellectual property thus begin to emerge at a young age.

Intriguingly, these concepts of intellectual property ownership appear rooted in a natural rights basis for intellectual property rights. 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 rooted 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 as the basis for the transfer of ownership rights.¹⁰⁷ 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-studied phenomena that individuals tend to value goods they own more highly than identical goods owned by another.¹⁰⁸ Christopher Buccafusco and Christopher Sprigman conducted a series of experiments which indicate that the endowment effect occurs for intellectual property as well as physical property, finding that owners of poems and of paintings valued the works more than potential buyers.¹⁰⁹ Separate from this endowment effect, creators also are influenced by a "creativity effect."¹¹⁰ Individuals who painted paintings believed that the paintings were worth more than individuals placed in the position of owning the paintings.¹¹¹ 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.¹¹² This creativity effect again appears more aligned with a natural rights or expressive basis for intellectual property rights, as opposed to an incentive one.

CONCLUSION

¹⁰⁴ Patricia Kanngiesser, Nathalia Gjersoe, & Bruce M. Hood, *The Effect of Creative Labor on Property-Ownership Transfer by Preschool Children and Adults*, 21 PSYCHOL. SCI. 1236 (2010).

¹⁰⁵ *Id.* at 1238.

¹⁰⁶ *Id.* at 1240.

¹⁰⁷ *Id.* at 1238.

¹⁰⁸ Russell Korobkin, *The Endowment Effect and Legal Analysis*, 97 NW. U. L. REV. 1227, 1229–42 (2003); Richard Thaler, *Towards a Positive Theory of Consumer Choice*, 1 J. ECON. BEHAV. & ORG. 39 (1980).

¹⁰⁹ Buccafusco & Sprigman, *supra* note __, at 30; Buccafusco & Sprigman, *supra* note __, at 39–40.

¹¹⁰ Buccafusco & Sprigman, *supra* note __, at 39–40.

¹¹¹ Buccafusco & Sprigman, *supra* note __, at 39–40.

¹¹² Buccafusco & Sprigman, *supra* note __, at 41–42.

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. These studies have significant implications for intellectual property law and policy, as the intellectual property system is premised on producing a certain set of behaviors. The results of the studies indicate that the model of behavior on which the intellectual property system is based cannot function optimally because popular conceptions of intellectual property rights are not in accord with the actual law. This discord is expected to further destabilize the legitimacy and effectiveness of the law.

For intellectual property law to operate properly, people must either know the law or accurately perceive it from a common basis.¹¹³ Because there is a broad lack of understanding about intellectual property law, and a wide chasm between public and expert conceptions of the basis for the law, intellectual property is unable to affect human behavior in the manner on which the law is modeled. The variance found here between public perception and intellectual property law means that potential creators 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. In addition, intellectual property users likely do not receive appropriate signals concerning compliance with intellectual property rights. The intellectual property system will remain hard-pressed to achieve its objectives if it cannot send accurate behavioral signals.

¹¹³ People may comply with laws for a variety of reasons. They may know the law and desire to obey (or profit from) it, the law may reflect widely shared beliefs about what is right that people seek to respect, or people may be concerned with how their social group will perceive them. Paul H. Robinson & John M. Darley, *The Utility of Desert*, 91 NW. L. REV. 453 (1997). All of these bases require knowledge of the law or shared perception of it.

APPENDIX A

Scenario 2: Creativity Threshold

[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 | 2 | 3 | 4 | 5 | 6 | 7 |
| Definitely Not | Probably Not | Perhaps Not | Maybe | Perhaps Yes | Probably Yes | Definitely Yes |

[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 | 2 | 3 | 4 | 5 | 6 | 7 |
| Definitely | Probably | Perhaps | Maybe | Perhaps | Probably | Definitely |

Not

Not

Not

Yes

Yes

Yes

Scenario 4: Joint Creator

[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 | 2 | 3 | 4 | 5 | 6 | 7 |
| Definitely Not | Probably Not | Perhaps Not | Maybe | Perhaps Yes | Probably Yes | Definitely Yes |

[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 | 2 | 3 | 4 | 5 | 6 | 7 |
| Definitely | Probably | Perhaps | Maybe | Perhaps | Probably | Definitely |
| Not | Not | Not | | Yes | Yes | Yes |