
ECONOMIC ANALYSIS OF COPYRIGHT NOTICE: TRACING AND SCOPE IN THE DIGITAL AGE

PETER S. MENELL*

INTRODUCTION	968
I. TRACING COPYRIGHT OWNERSHIP	971
A. <i>An Economic Framework</i>	974
B. <i>Evolution of the Law and Technology of Copyright Notice and Registration</i>	978
1. The Analog Age	979
a. <i>From the Printing Press to the Dawn of the Internet</i>	979
b. <i>Formalities in Pre-Internet Industrial Context</i>	993
2. Recordable Media, Adaptable Art, and the Digital Revolution	994
a. <i>Technologies for Reusing, Adapting, and Disseminating Art</i>	995
b. <i>Technologies for Storing, Searching, Tracing, Tracking, and Updating Copyright Information</i>	996
C. <i>Optimizing Ownership Tracing in the Digital Age</i>	998
D. <i>Dealing with Unpublished Works</i>	1001
II. ASSESSING COPYRIGHT SCOPE	1003
A. <i>Characterizing Copyright Resources: The Swiss Cheese Problem</i>	1005
B. <i>Optimal Specificity</i>	1009
C. <i>Addressing Incomplete Specificity through Copyright System Adjustments</i>	1012
1. Preclearance Institutions	1013
2. Promoting Bargaining	1014
3. Voluntary and Compulsory License Regimes	1015
a. <i>Voluntary Regimes</i>	1016
b. <i>Statutory Licensing Regimes</i>	1018
4. Other Substantive Law Adjustments	1019
a. <i>Fair Use</i>	1019

* Koret Professor of Law, University of California at Berkeley School of Law. Thanks to Oren Bracha, Stacey Dogan, Jane Ginsburg, Wendy Gordon, Lydia Loren, Michael Meurer, Omri Rachum-Twaig, and Henry Smith for comments on an earlier draft presented at Boston University School of Law's Notice and Notice Failure in Intellectual Property Law Symposium.

b. Remedies	1020
i. Injunctive Relief	1020
ii. Monetary Damages	1021
A. Compensatory Damages and Disgorgement	1021
B. Statutory Damages and Attorneys' Fees	1022
CONCLUSION	1022

Notice of preexisting rights plays a critical role in resource planning. This article focuses on the history, role, institutions, costs, and efficacy of notice within the domain of expressive creativity. It distinguishes between two sets of copyright notice challenges: tracing of copyright ownership and assessing the scope of copyright protection. Tracing issues—linking copyrighted works to subsistence information about the works and contact information about their owners—are largely solvable through implementation of existing and developing technological means (such as digital content recognition), international standardization, and reform of obsolete legal rules, most notably Berne Convention limits on formalities. The inherent uncertainty surrounding copyright scope, however, stands in the way of copyright notice nirvana—a transparent database of fully specified copyright resources and reliable tools for determining liability exposure ex ante. Unlike tracing of subsistence and ownership information, current or foreseeable technology alone cannot solve the problem of forewarning the public of the precise boundaries of copyright interests. Nonetheless, other notice failure-based adjustments to the copyright system can ameliorate scope clarity concerns. Such reforms would enhance copyright notice, ensure copyright protection, and promote cumulative creativity.

INTRODUCTION

Notice of ownership, boundaries, scope of rights (and limitations), enforcement institutions, and remedial consequences play a central role in resource planning. Real estate provides the foundational resource notice regime.¹ Landowners record property interests with government registries,

¹ Article 9 of the Uniform Commercial Code provides the primary governance regime for protecting consensual security interests in personal property. *See generally* Peter S. Menell, *Bankruptcy Treatment of Intellectual Property Assets: An Economic Analysis*, 22 BERKELEY TECH. L.J. 733, 813-21 (2007). Every state has adopted this Code, which relies on recordation of security interests in personal property with state recording offices as a means of protecting secured creditors and affording notice to purchasers of the underlying assets. *Id.*

Although the Copyright Act does not expressly address security interests in copyrights, it establishes a system for recording transfers of copyright ownership at the Copyright Office and resolving priority disputes. *See* 17 U.S.C. § 101 (2012) (including within the definition

which inform the public of who owns particular land parcels. Prospective purchasers, neighbors, land developers, contractors, lenders, property tax collectors, zoning authorities, and other interested parties rely on these records to plan resource use. Although notice of real estate ownership entails some costs, it has long functioned as a critical governance institution and has become more reliable and efficient with the development of surveying technologies, geographical information systems, and publicly available computer databases.²

Legislatures, jurists, and intellectual property scholars have long looked to real property law and institutions as a model and toolbox for designing intellectual property rules and institutions.³ There is much to be gained from the real property analogy, especially regarding notice. Inventors and authors seeking to appropriate a return on their investments wish to attract users and consumers to markets for their creativity. Developers of new technologies and works of authorship need to determine whether their projects can be commercialized without running afoul of the rights of others. Notice of ownership and boundaries of intellectual resources plays an analogous role to land registries in the real estate domain.

Yet notice in the intellectual property realm introduces distinctive challenges. Although copyright law principally relies upon market mechanisms to promote a vibrant, creative culture, various technological, economic, social, and distributive factors require a nuanced mix of regulatory adjustments as well as government oversight and a larger public role in copyright

of “transfer of copyright ownership” any “assignment, mortgage, exclusive license, or any other conveyance, alienation, or hypothecation of a copyright or of any of the exclusive rights comprised in a copyright, whether or not it is limited in time or place of effect, but not including a nonexclusive license”); *id.* at § 205; *see also* U.S. Copyright Office, *Recordation of Transfers and Other Documents*, <http://copyright.gov/document.html> [<https://perma.cc/8H63-XZ2R>].

² *See* Gary D. Libecap & Dean Lueck, *The Demarcation of Land and the Role of Coordinating Property Institutions*, 119 J. POL. ECON. 426, 460 (2011); Gary D. Libecap & Dean Lueck, *Land Demarcation Systems*, in RESEARCH HANDBOOK ON THE ECONOMICS OF PROPERTY LAW 257, 279 (Kenneth Ayotte & Henry E. Smith eds., 2011).

³ The more recent cross-over scholarship includes: Richard A. Epstein, *The Disintegration of Intellectual Property? A Classical Liberal Response to a Premature Obituary*, 62 STAN. L. REV. 455, 456 (2010); Henry E. Smith, *Intellectual Property as Property: Delineating Entitlements in Information*, 116 YALE L.J. 1742, 1745 (2007); Christopher Sprigman, *Reform(aliz)ing Copyright*, 57 STAN. L. REV. 485, 500-01 (2004); Molly Shaffer Van Houweling, *Atomism and Automation*, 27 BERKELEY TECH. L.J. 1471, 1475 (2012) [hereinafter Van Houweling, *Atomism and Automation*]; Molly Shaffer Van Houweling, *Land Recording and Copyright Reform*, 28 BERKELEY TECH. L.J. 1497, 1499 (2013); Molly Shaffer Van Houweling, *Technology and Tracing Costs: Lessons from Real Property*, in INTELLECTUAL PROPERTY AND THE COMMON LAW 385, 385 (Shyamkrishna Balganesch ed., 2013); Molly Shaffer Van Houweling, *Touching and Concerning Copyright: Real Property Reasoning in MDY Industries, Inc. v. Blizzard Entertainment, Inc.*, 51 SANTA CLARA L. REV. 1063, 1065 (2011). Professor Sprigman’s article ignited interest in copyright formalities.

enforcement.⁴ Unlike land, intangible resources cannot be mapped onto two-dimensional grids. Inventors draft patent claim boundaries using words, which introduces inherent linguistic ambiguities.⁵ Authors, artists, and musicians draw upon the works of others as well as unprotectable ideas and the public domain in expressing their own creativity. Thus, their claim to copyright protection is less, and often far less, than all of the elements (and the compilations of elements) reflected in the expressive work. The scope of copyright protection can be quite narrow.

Beyond the technical aspects of copyright notice, the Berne Convention for the Protection of Literary and Artistic Works,⁶ a critical bulwark of the global copyright protection and enforcement regime, prohibits signatory nations from subjecting copyright protection “to any formality,” such as marking, registration, or deposit, on the “enjoyment and the exercise” of copyright.⁷ While the Berne Convention prohibition on formalities might have made sense in an earlier technological era in which the costs of registering copyrighted works and ensuring compliance with foreign laws were high, technological advances in recording and affording notice render these rationales obsolete. And with the long duration of copyright protection, the problems posed by difficult-to-trace and true orphan works plague artistic creativity.⁸

This article moves beyond the contentious debate surrounding the limits and reform of the Berne Convention⁹ and focuses squarely on the central normative question: How should a society unconstrained by international law and endowed with available digital technologies design a system of copyright notice to promote expressive creativity and free expression? Another way to

⁴ See Peter S. Menell, *Governance of Intellectual Resources and the Disintegration of Intellectual Property in the Digital Age*, 26 BERKELEY TECH. L.J. 1523 (2011); Peter S. Menell, *This American Copyright Life: Reflections on Re-Equilibrating Copyright for the Internet Age*, 61 J. COPYRIGHT SOC'Y U.S.A. 235, 317-35 (2014) [hereinafter Menell, *This American Copyright Life*].

⁵ See Peter S. Menell, Matthew D. Powers & Steven C. Carlson, *Patent Claim Construction: A Modern Synthesis and Structured Framework*, 25 BERKELEY TECH. L.J. 711, 716 (2010).

⁶ Berne Convention for the Protection of Literary and Artistic Works, Sept. 9, 1886, as last revised at Paris on July 24, 1971, and amended in 1979, 102 Stat. 2853, 828 U.N.T.S. 221.

⁷ *Id.* art. 5(2). Similar prohibitions exist in other multilateral conventions. See, e.g., Agreement on Trade-Related Aspects of Intellectual Property Rights art. 9(1), Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 108 Stat. 4809, 1869 U.N.T.S. 299.

⁸ See Maria A. Pallante, *Orphan Works & Mass Digitization: Obstacles & Opportunities*, 27 BERKELEY TECH. L.J. 1251 (2012); Pamela Samuelson, *Notice Failures Arising From Copyright Duration Rules*, 96 B.U. L. REV. 667 (2016); U.S. COPYRIGHT OFFICE, REPORT ON ORPHAN WORKS (2006), <http://www.copyright.gov/orphan/orphan-report.pdf> [https://perma.cc/2BCN-E2ES].

⁹ See *infra* Section I.B.1.i; see also Sprigman, *supra* note 3.

put the question is how would a brain trust of visionary technologists, creators, jurists, scholars, and policymakers—perhaps Sergey Brin, Larry Page, Jeff Bezos, Benjamin Kaplan, Ken Burns, Gregg Gillis (a/k/a Girl Talk), Barbara Ringer, Mr. Spock, Justice Joseph Story, Judge Pierre Leval, Jimmy Wales, and King Solomon—endowed with the available foreseeable information technologies design the notice regime for the next great Copyright Act?

To answer these questions, this article explores the distinctive economic challenges and limitations of copyright notice. It focuses on advances in digital technology that offer creative solutions to age-old problems and thereby alter the policy balance.

The article divides the copyright notice puzzle into two sets of issues: tracing of copyright ownership and assessing the scope of copyright protection. The key to addressing the tracing issues—linking copyrighted works to subsistence information about the works and their owners—turns on developing inexpensive, reliable, and unique identifiers for copyrighted works. As Part I shows, advances in digital recognition technologies, such as Content ID,¹⁰ provide a compelling solution.

As Part II shows, however, the inherent subjectivity of copyright scope stands in the way of full copyright notice nirvana—a transparent database of fully specified copyright resources and reliable tools for determining liability exposure *ex ante*. Unlike content recognition technologies for tracing of subsistence and ownership information, current or foreseeable technology alone cannot solve the problem of forewarning the public of the precise internal boundaries of copyrighted works. Copyright scope is far too multifaceted. Artificial intelligence might one day assist in reducing the uncertainty, but doctrines like the idea/expression dichotomy, substantial similarity, fair use, and remedies are well beyond even Watson's¹¹ remarkable capabilities. Other notice-failure-based adjustments to the copyright system can, nonetheless, ameliorate scope clarity concerns.

I. TRACING COPYRIGHT OWNERSHIP

Although many humans are naturally inclined to create expressive works, society is unlikely to achieve the optimal level of production and dissemination without some complement to the free market. Many desired expressive works are expensive to create and disseminate due to the costs of training, materials, equipment, production of copies, distribution, and time. The government can, and in some cases does, directly procure creativity through funding of the

¹⁰ See *How Content ID Works*, YOUTUBE, <https://support.google.com/youtube/answer/2797370?hl=en> [<https://perma.cc/NFY8-HV43>] (describing the Content ID system that YouTube uses to check uploaded files against copyrighted material in its database).

¹¹ “Watson” refers to IBM’s artificially intelligent “computer system capable of answering questions posed in natural language” that prevailed over top human Jeopardy! contestants in 2011. *Watson (computer)*, WIKIPEDIA, [https://en.wikipedia.org/wiki/Watson_\(computer\)](https://en.wikipedia.org/wiki/Watson_(computer)) [<https://perma.cc/V62L-3QEK>].

arts.¹² Public and private agencies can offer prizes that serve desired goals. The copyright system, like the patent system, uses another mechanism to spur creativity: the provision of limited exclusive rights so as to harness the power of markets in appropriating a return on creators' investments in producing new works. This mechanism has served as a primary engine of expressive creativity in exchange economies for much of the past three centuries.

Many economists applaud intellectual property systems for their distinctive ability to use market mechanisms, as opposed to political processes, to support an efficient level of innovation and creativity.¹³ By creating artificial scarcity, exclusive rights reveal supply and demand for creative goods. Such valuation provides a decentralized means for inventors and authors to appropriate a return on investments in research and development and creative expression that could otherwise be easily and cheaply imitated. Yet such exclusivity comes at a cost—it results in the deadweight loss of monopoly exploitation, interference with cumulative creativity, and, in the case of copyright, interference with free expression.

Expressive creativity, like technological innovation, depends critically upon building new works on those that have come before. Just as Isaac Newton would not have seen so far had he not stood on the shoulders of those who came before him,¹⁴ great authors, artists, musicians, and filmmakers draw on the works of others. Cumulative creativity is especially important to the development of a richer culture. Authors communicate about and to other authors. Relatedly, legal protection for expressive works must dovetail with the constitutionally protected freedom of expression.¹⁵

To function effectively, therefore, the copyright system must not only exclude those who would exploit copyright-protected works without authorization, but it must also facilitate cumulative creativity—the development of works that build upon and comment on the work of others. These concerns are especially important in the information age. New technologies provide the tools for greater creative enterprise and new generations of creators seek to build on the works of others. Especially in light of the challenges of protecting copyrights in the promiscuous Internet ecosystem, the copyright system must adapt to the needs and desires of future

¹² See Miriam Galston, *Lobbying and the Public Interest: Rethinking the Internal Revenue Code's Treatment of Legislative Activities*, 71 TEX. L. REV. 1269, 1320 n.171 (1993).

¹³ See Peter S. Menell & Suzanne Scotchmer, *Intellectual Property Law*, in 2 HANDBOOK OF LAW AND ECONOMICS 1473, 1476-77 (A. Mitchell Polinsky & Steven Shavell eds., 2007).

¹⁴ See Suzanne Scotchmer, *Standing on the Shoulders of Giants: Cumulative Research and the Patent Law*, 5 J. ECON. PERSPECTIVES 29 (1991); *Standing on the Shoulders of Giants*, WIKIPEDIA, https://en.wikipedia.org/wiki/Standing_on_the_shoulders_of_giants [<https://perma.cc/5PUH-EPVF>].

¹⁵ U.S. CONST. amend. I.

generations of creators and users of expressive works.¹⁶

In some cases, copyrighted works will need to be licensed. In others, as addressed in Part II, cumulative works may fall outside of liability, although such questions are clouded by the uncertain scope of copyright protection. In both contexts, a well-designed copyright system should provide effective and efficient tools for creators to determine whether copyright subsists in a particular work and to trace ownership so as to determine the party or parties with whom they might need to negotiate permission to build new works.

A few examples highlight modern challenges:

- A documentary filmmaker conducts extensive archival research and discovers photographs and other materials that she would like to include within her history of jazz music. It might not be apparent from these sources whether the old photographs were ever protected by copyright, whether copyright has expired or lapsed (for example, for failure to renew), or who owns any subsisting copyrights. The filmmaker faces a difficult set of choices—incur extraordinary forensic effort to determine subsistence and trace ownership, exclude illuminating material painstakingly gathered, or risk liability if the owner(s) emerge and obtain a large damage award and injunctive relief.¹⁷
- A DJ has mashed up several dozen sound recordings into his ultimate pastiche. Some of the recordings came from vinyl records, from which he has album covers and liner notes. Others came from CDs, with some meta-data encoded. And a few came from online sources. He now faces the daunting task of identifying the myriad composers, music publishers, recording artists, and record labels. Like the filmmaker, the mashup artist confronts difficult choices and risks if he wants to distribute the combined work.¹⁸

¹⁶ See generally Menell, *This American Copyright Life*, *supra* note 4 (exploring the shift from analog to digital technology in copyright law).

¹⁷ See Peter S. Menell & Ben Depoorter, *Using Fee Shifting to Promote Fair Use and Fair Licensing*, 102 CAL. L. REV. 53, 72-76 (2014).

¹⁸ Note that the DJ might also be liable for the very act of reproducing copyrighted musical compositions and sound recordings. See 17 U.S.C. § 106(1) (2012) (prohibiting anyone other than the copyright owner from “reproduc[ing] the copyrighted work in copies or phonorecords”). Section 1008 of the Audio Home Recording Act (“AHRA”) arguably provides immunity: “No action may be brought under this title alleging infringement of copyright based on the manufacture, importation, or distribution of a digital audio recording device . . . or based on the noncommercial use by a consumer of such a device or medium for making digital musical recordings or analog musical recordings.” Audio Home Recording Act of 1992, 17 U.S.C. §§ 1001-1010. The statute, however, limits this immunity to recordings made using a “digital audio recording device” or on a “digital audio recording medium,” which § 1001 defines to exclude general purpose computers and general storage media. *Id.* § 1001. Language in the Senate Report accompanying the AHRA, however, suggests a broader immunity. See S. REP. NO. 102-294, at 4 (1992) (discussing the identical

A recordation system for copyright interests is an obvious and essential starting point for supporting copyright protection and cumulative creativity. Yet it is difficult to imagine sifting through countless images to find the pertinent copyright information. A marking requirement mandating that copyright claimants annotate published copies of their photograph with the year, owner, and copyright claim would provide some valuable clues. But without a more precise identifier, the filmmaker would be adrift. The mashup artist faces comparable difficulties, especially with older songs and multiple owners. The same musical composition might have different sound recordings with different ownership.

This Part examines the economics of tracing copyright ownership. Section A sketches the basic economics of ownership tracing, highlighting the holy grail for copyright notice—a universally accessible system for uniquely, inexpensively, and reliably identifying copyright works and their owners. Section B examines the evolution of tracing law and technology. Section C contends that the technology for achieving efficient copyright notice is close at hand. The primary challenge lies in bringing government and private actors together to achieve the optimal regime. Such a regime poses a problem for protection of unpublished works. Section D proposes a dual protection regime that harkens back to state law protection for unpublished works that operated prior to the 1976 Act.

A. *An Economic Framework*

A resource notice regime allocates responsibility for disclosing information about the state of “title” governing the resource. In the copyright context, the public and cumulative creators would ideally like to know four types of information: (1) subsistence—whether a work of authorship is protected by copyright (and if so, the duration); (2) ownership—the owner(s) of the work and up-to-date contact information; (3) the scope of copyright protection—what aspects of the copyrighted work are protected and to what extent (i.e., rights, limitations, and defenses); and (4) remedies for copyright infringement.

If copyright does not subsist in the work, the cumulative creator is free to use it. If copyright subsists, then ownership information is needed to identify relevant counter-parties for negotiating permission. The scope of protection and potential remedies are needed to assess liability for non-literal copies, determine work-around options, and assess potential exposure. All of these latter factors affect bargaining with the owner(s). This Part focuses on the first two forms of information: subsistence and ownership. Part II examines scope

provision in a previous version of the bill that was eventually enacted as the Audio Home Recording Act of 1992). In yet another complex copyright twist, the DJ would likely be able to publicly (and commercially) perform the mashup in a club that has blanket performing rights licenses, but would not be able to distribute copies of a recorded version of the same work. See Peter S. Menell, *Adapting Copyright for the Mashup Generation*, 164 U. PA. L. REV. 447, 468-83 (2016).

and remedies issues.

The economics of ownership tracing turns on the costs and benefits of notice regimes. These costs and benefits depend on notice technology and how notice responsibilities are allocated among rights owners, potential users, and public or private registries. Section B will explore the evolution of technologies applicable to copyright resources.

Real estate recordation provides a useful baseline for considering the economics of ownership tracing. The nature of real estate resources plays a critical role in the costs and benefits of providing notice. Real estate is the quintessential fixed asset. By its very nature, it is defined geographically. This fact ensures that real estate parcels are unique and can be represented in two-dimensional, or in some cases, three-dimensional maps.¹⁹

Notwithstanding the uniqueness of real estate parcels, the identification of particular parcels posed tracing problems before the development of reliable land marking and surveying techniques.²⁰ Nonetheless, physical inspection in combination with an exclusive recording office in proximity to the land provided a reasonably reliable and efficient way to record land ownership. In addition, several other economic and governance institutions reinforce land recordation accuracy. Land taxation motivates government officials to ensure that land records are up-to-date. Failure to pay taxes could result in forfeiture, which reinforces the reliability of land records. Title insurers, mortgage companies, and contractors also take a strong interest in ensuring accurate land title records. Placing primary responsibility on titleholders and lien creditors to record their interests has proven to be efficient. In addition, a public recording system further ensures the reliability of records and availability of the database to the public.²¹

Copyright resources share the uniqueness attribute of land resources.²² Their

¹⁹ Condominiums are stacked fee interests. See Benny L. Kass, *Condos vs. Co-ops: What's the Difference?*, WASH. POST: REAL ESTATE, Apr. 26, 2013, http://www.washingtonpost.com/realestate/condos-vs-co-ops-whats-the-difference/2013/04/25/f673e29c-a5e6-11e2-b029-8fb7e977ef71_story.html [https://perma.cc/3Z2L-56D7].

²⁰ See Libecap & Lueck, *supra* note 2, at 451.

²¹ Title insurance companies have developed private recording systems that parallel the public systems. See Charles Szypszak, *Public Registries and Private Solutions: An Evolving American Real Estate Conveyance Regime*, 24 WHITTIER L. REV. 663, 689-92 (2003) (discussing "title plant services" and consolidated title libraries maintained by title insurance companies "to determine the status of title quickly and reliably"). In some cases, these systems supplant the obsolete grantor-grantee indices with tract-based recording systems.

²² Both land and copyrighted works differ from patent resources in this critical respect. Patents do not protect works, but rather claimed inventions. Therefore, patents lack the uniqueness attribute. There need not be a unique patented work, although some claims, such as for chemical compositions, may be unique in practice. Claims to processes, articles of manufacture, and machines are likely to have multiple embodiments. Furthermore, since patent liability does not require proof of copying, independent invention is not a defense. By contrast, property trespassers must cross onto the protected land and copyright infringers

protection emanates from a particular work of authorship that can be inspected.²³ Unlike land resources, however, copyrighted works are neither geographically unique nor are they limited to a singular instantiation. Copyright in a painting governs both the original canvass as well as reproductions. Unlike trespass, which can occur only at the situs of the land resource, copyright infringement can manifest in distant locales as well as across international borders. The practical aspects of protecting copyrights across the globe led authors to eschew registration (recordation), marking, and other formalities as requirements for copyright protection.²⁴ Section B explores that rationale and how technological advancements have rendered the prohibition of formalities unnecessary and inefficient. For present purposes, it is enough to highlight that copyright resources are potentially mobile and reproducible, which complicates tracing subsistence and ownership information.

With the advent of the printing press, marking provided a relatively inexpensive and somewhat effective means of communicating tracing information. By marking protected works, the owner could directly communicate ownership status and tracing information at least as of the time of publication. Such marking has long been readily accomplished on books and other print material. It would also become available for musical compositions, motion pictures, and later sound recordings, as they came within copyright protection, through sheet music, record labels, film credits, and album covers. Changed circumstances, however, such as transfer of copyright, failure to renew (for 1909 Act works), or changes in copyright ownership and contact information, interfere with the reliability of marking as a source of subsistence and ownership information. Moreover, once a work becomes disengaged from

must copy the protected work.

²³ Computer software that is available only in object code is a limited exception. By distributing computer software only in object code form, the copyright claimant can maintain the software as a trade secret. See Victoria A. Cundiff, *Protecting Software as a Trade Secret*, 10 SOFTWARE L. BULL. 97, 109 (1997). Copyright Office regulations permit the software to be registered in such a way that a substantial portion of the human-readable source is unavailable to the public. See 37 C.F.R. § 202.20(c)(2)(vii)(A)(2) (2015) (prescribing the method by which a computer program that contains trade secrets may be submitted to the Copyright Office for review, which includes blocking a substantial portion of the text and requiring “at least an appreciable amount of original computer code”); U.S. COPYRIGHT OFFICE, COPYRIGHT OFFICE CIRCULAR NO. 61: COPYRIGHT REGISTRATION FOR COMPUTER PROGRAMS 3 (2012), <http://copyright.gov/circs/circ61.pdf> [<https://perma.cc/E8YY-76RX>] (providing that a copyright registrant applicant claiming trade secrecy can request to deposit only a portion of the source code).

²⁴ See Jane C. Ginsburg, “With Untired Spirits and Formal Constancy”: *Berne Compatibility of Formal Declaratory Measures to Enhance Copyright Title-Searching*, 28 BERKELEY TECH. L.J. 1583, 1588 (2013) (“From the outset of the mid-nineteenth century movement for international copyright, authors advocated the abolition or restriction of formalities.”).

marking information, the tracing value is lost.

Copyright registration provides an alternative and complementary notice mechanism. The 1909 Act, the U.S. copyright renewal system in place through enactment of the 1976 Act, required recordation. Failure to timely renew copyright protection resulted in copyright expiration at the end of the first term of copyright protection.²⁵ But without a unique identifier on the work, many third parties faced significant challenges in accessing copyright registration information.²⁶ Furthermore, if the ownership information is no longer up-to-date, the title searcher will need to look elsewhere to identify the owner(s). The copyright claimant is the most logical party to bear the principal costs of registration. The claimant knows the eligibility information. The copyright registry also bears some costs in ensuring the validity of the information and providing access to the registry.

The principal benefit of copyright registration is to assist copyright owners in establishing the basis for their copyright ownership and affording cumulative creators (and courts) with reliable evidence of copyright status and tracing information. The principal costs of the system are the efforts to record copyright claims and the costs of maintaining a copyright registry. During the early development of copyright law, those costs could be substantial.²⁷ Reproducing documents was costly²⁸ and therefore copyright registration information was not widely available. Furthermore, sifting through ever-expanding catalogs of recordation information exacted further costs.

The costs and benefits of copyright notice regimes depends on the larger creative ecosystem: the range of works eligible for protection, the range of participants and intermediaries in the creative marketplace, the tools available for integrating prior works into new works, and the costs of recording information. In its formative era, copyright protected books (and other printed

²⁵ See Copyright Act of 1909, 17 U.S.C. § 23 (repealed 1978) (providing that, absent renewal registration, the copyright in a work shall terminate at the expiration of twenty-eight years from the date copyright was originally secured); see also 3 MELVILLE B. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT § 9.05[A][1] (2015). Works published after 1964 benefit from automatic renewal. See Copyright Renewal Act of 1992, Pub. L. 102-307, § 102, 106 Stat. 264, 264 (June 26, 1992); see also NIMMER & NIMMER, *supra*, § 9.05[A][2].

²⁶ Inventors face an added problem. Whereas copyright enforcement requires proof of copying—and hence independent developers cannot be held liable for infringement—the Patent Act imposes liability upon all who make, use, or sell the patented technology, whether or not they independently invented the patented invention. 35 U.S.C. § 271 (2012).

²⁷ See generally BENJAMIN KAPLAN, STUDY NO. 17: THE REGISTRATION OF COPYRIGHT 43-45 (1958), reprinted in 1 OMNIBUS COPYRIGHT REVISION LEGISLATIVE HISTORY ix (George S. Grossman ed., 2001) (discussing the benefits, costs, and limits of copyright registration as an aid to title search).

²⁸ The photocopier was not invented until the 1940s and was not in widespread commercial use until the 1960s. See *Photocopier*, WIKIPEDIA, <https://en.wikipedia.org/wiki/Photocopier> [<https://perma.cc/J4BV-75XL>] (describing the history of and costs associated with the photocopier).

works such as maps and charts).²⁹ The printing industry was relatively limited geographically and in size.³⁰ Therefore, the process of notice and recordation was manageable. By contrast, the creative world today is characterized by a wide range of creators, seamless digital tools for integrating prior works, and dissemination platforms with nearly global reach. The next section examines how advances in notice technologies have affected costs and modalities over time.

B. *Evolution of the Law and Technology of Copyright Notice and Registration*

The principles that copyright claimants should mark their works with notice of copyright protection, record their claims with a public registry, and deposit copies of their works in a public repository date back to the early development of copyright protection.³¹ Notice, registration, and deposit were considered basic elements of a just and effective copyright system well into the development of the publishing industry. As copyright expanded internationally, however, notice and registration came to be seen as costly, only marginally useful, and as impeding cross-border protection. In essence, these copyright system features did not scale under the technological conditions of the analog age.

The technological means for providing copyright notice and registration have changed dramatically over the past quarter century. Thanks to the development and refinement of content recognition, scanning, database, and telecommunications technologies, it is now possible to create unique digital fingerprints for nearly all classes of copyrightable works. Furthermore, this information can be stored in vast, globally accessible databases that can be inexpensively scanned for matches. Low-cost, easily revised digital dossiers associated with these digital fingerprints can seamlessly provide reliable subsistence and ownership tracing information.

We are unfortunately trapped in a sub-optimal policy equilibrium as a result of well-meaning, but obsolete, treaty provisions and institutional inertia. For much of the history of copyright law, notice played a relatively modest role in the functioning of markets for creative expression. But the ability to trace

²⁹ See Act of May 31, 1790, ch. 15, § 1, 1 Stat. 124 (repealed 1802).

³⁰ ELIZABETH L. EISENSTEIN, *THE PRINTING REVOLUTION IN EARLY MODERN EUROPE* 17 (2d ed. 2005).

³¹ See VINCENT A. DOYLE ET AL., *STUDY NO. 7: NOTICE OF COPYRIGHT* 5 (1957), reprinted in 1 *OMNIBUS COPYRIGHT REVISION LEGISLATIVE HISTORY* 1 (George S. Grossman ed., 2001) (“Th[e] concept of notice as a condition of copyright has been embodied in U.S. law almost from the very beginning of Federal copyright legislation”); KAPLAN, *supra* note 27, at 1 (observing that registration and deposit “had become so far associated with book publication that a copyright statute drafted in the 1700s would quite naturally have had something to say about these devices”); Peter S. Menell, *Knowledge Accessibility and Preservation Policy for the Digital Age*, 44 *HOUS. L. REV.* 1013, 1019-29 (2007).

copyright subsistence and identify owners of copyrighted works has taken on tremendous importance to the flourishing of creativity and the functioning of markets for creative works. This is in part attributable to remarkable advances in technologies for acquiring, transforming, and remixing creative works as well as the opening of wide and diverse digital channels for reaching global audiences. To understand the forces that have led to the current creative market, Section 1 traces the political, legal, technological, institutional, economic, and international diplomacy forces that supported the establishment of and eventually led to the demise of mandatory copyright registration, notice, and deposit. Section 2 then describes the remarkable technological advances that have unfolded during the past quarter century that have vastly broadened the creative marketplace and hold the promise of reinvigorating formalities on sound economic and technological bases.

1. The Analog Age

Although notice has been a part of copyright protections from the very beginning of state protection for works of authorship, its significance has been constrained by technological and institutional constraints on creative markets. The effective function of notice during much of this history was modest. And although the United States had long embraced relatively strong notice rules and institutions, it largely abandoned that stance at the dawn of the Internet age so as to gain greater stature in the international trade and enforcement arenas.

a. *From the Printing Press to the Dawn of the Internet*

The development and diffusion of the printing press beginning in the late fifteenth century led to the emergence of exclusive printing privileges and eventually copyright protection for authors.³² The early printing privileges were driven principally by the government's and church's interests in controlling the dissemination of seditious information as well as supporting a new industry.³³ In 1557, the English Crown granted the Stationers' Company authority to regulate the publication and sale of books.³⁴ Thus, copyright registration grew out of the government's censorship interest rather than out of

³² See ELIZABETH L. EISENSTEIN, 1 *THE PRINTING PRESS AS AN AGENT OF CHANGE: COMMUNICATIONS AND CULTURAL TRANSFORMATIONS IN EARLY-MODERN EUROPE* (1979); EISENSTEIN, *supra* note 30, at 3; SAM RICKETSON & JANE C. GINSBURG, 2 *INTERNATIONAL COPYRIGHT AND NEIGHBOURING RIGHTS: THE BERNE CONVENTION AND BEYOND* ¶¶ 1.01-02 (2d ed. 2006); MARK ROSE, *AUTHORS AND OWNERS: THE INVENTION OF COPYRIGHT* 10 (1993).

³³ See STEF VAN GOMPEL, *FORMALITIES IN COPYRIGHT LAW: AN ANALYSIS OF THEIR HISTORY, RATIONALES AND POSSIBLE FUTURES* 55-62, 71-74 (2011); LYMAN RAY PATTERSON, *COPYRIGHT IN HISTORICAL PERSPECTIVE* 21-27 (1968); RICKETSON & GINSBURG, *supra* note 32, ¶ 1.01.

³⁴ See VAN GOMPEL, *supra* note 33, at 71-74; HENRY C. MITCHELL, *THE INTELLECTUAL COMMONS: TOWARD AN ECOLOGY OF INTELLECTUAL PROPERTY* 49 (2005).

a desire to provide notice of copyright ownership to cumulative creators.³⁵

Nonetheless, privilege systems incorporated several notice features that evolved into the principal copyright formalities of marking, registration, and deposit. Privilege systems typically required publishers to print the royal warrant or the phrase *cum privilegio regali*.³⁶ In addition, books had to include the name of the printer and author so as to facilitate prosecution if the books were later banned.³⁷ The imprinted privilege usually indicated the duration of the license. In this way, such marking served to signal to competing publishers that a book privilege had been secured.

In 1537, King Francis I, France's first Renaissance monarch who is credited with promoting great cultural advances, established the first law requiring the deposit of books and other cultural materials in a national library preserving and spreading knowledge.³⁸ This concept, which came to be known as "legal deposit," spread throughout the European states.³⁹ In 1610, Oxford University's Bodleian Library entered into a perpetual covenant with the Stationers' Company for the deposit of published works.⁴⁰ England formally established a library deposit system through the Licensing of the Press Act of 1662.⁴¹

Beginning in the late sixteenth century, several regions instituted registration systems, which provided the public with access to registries of licensed (authorized and protected) books.⁴² It is important to recognize, however, that notice during this primitive technological and authorial era served fairly limited regulatory purposes. This was not, for example, a period in which authors or publishers were looking to clear rights for the types of contemporary derivative works (such as documentary films and music mashups) highlighted above. Nonetheless, papal privileges did cover

³⁵ See VAN GOMPEL, *supra* note 33, at 55-75 ("Which of the two purposes [of formalities]—censorship or trade regulation—prevailed [during the privileges era] largely depend[ed] on the country and era."); RICKETSON & GINSBURG, *supra* note 32, ¶¶ 1.01-02.

³⁶ See VAN GOMPEL, *supra* note 33, at 63-65; Jane C. Ginsburg, *Proto-Property in Literary and Artistic Works: Sixteenth-Century Papal Printing Privileges*, 36 COLUM. J.L. & ARTS 345, 361-62 (2013).

³⁷ VAN GOMPEL, *supra* note 33, at 63.

³⁸ See ELIZABETH K. DUNNE, STUDY NO. 20: DEPOSIT OF COPYRIGHTED WORKS (1960), reprinted in 2 OMNIBUS COPYRIGHT REVISION LEGISLATIVE HISTORY ix (George S. Grossman ed., 2001); VAN GOMPEL, *supra* note 33, at 67-71; Menell, *supra* note 31, at 1020-22.

³⁹ DUNNE, *supra* note 38, at 2-3.

⁴⁰ See VAN GOMPEL, *supra* note 33, at 68; PATTERSON, *supra* note 33, at 138 n.94.

⁴¹ See Licensing of the Press Act, 1662, 14 Car. 2, c.33, § 3 (Eng.) (requiring that one copy of all printed books be deposited with the Licensor). As the statute's longer title—"An Act for preventing the frequent Abuses in printing seditious treasonable and unlicensed Book[s] and Pamphlets and for regulating of Printing and Printing Presses"—suggests, the Act focused on censorship. See *id.*

⁴² See VAN GOMPEL, *supra* note 33, at 65-67.

translations, abridgements, and expansions of pre-existing works.⁴³

The Statute of Anne (1710),⁴⁴ the first general copyright law, expressly granted authors the exclusive right to control copying of their books for fourteen years upon registration of their titles with the Stationers' Company.⁴⁵ Authors who survived expiration of statutory copyright automatically received an additional fourteen-year term.⁴⁶

A broader copyright notice function took root with statutory recognition of authors' interests, loosening of censorship, expanded literacy, growth of publishing and book-selling, and a shift away from patronage toward book sales as the primary source of authors' incomes. Registration served as one form of copyright notice.⁴⁷ Furthermore, the central registry provided a means for competing publishers to search copyright status.⁴⁸ With most English publishers operating in London at the time, the central registry provided a convenient resource for the publishing industry.

Nonetheless, the central registry proved unreliable for several reasons. First, many publishers chose not to register, in large part to avoid the heavy burden of depositing nine copies of the work.⁴⁹ They were willing to run the risk that they could still enforce their rights absent registration.⁵⁰ In *Beckford v. Hood*,⁵¹ the English court validated this risk-taking, holding that registration was only a condition for bringing a suit for the statutory infringement penalties, not a precondition for obtaining copyright protection.⁵² Publication served to secure copyright protection, and therefore the author could sue for common law damages from infringement, which were by then a more robust remedy, even if the work was not registered.⁵³ Second, as the number of publications rose, the

⁴³ See Ginsburg, *supra* note 36, at 358-61.

⁴⁴ Statute of Anne 1710, 8 Ann. c. 19 (Eng.).

⁴⁵ See *id.*; R. Anthony Reese, *Innocent Infringement in U.S. Copyright Law: A History*, 30 COLUM. J.L. & ARTS 133, 146-47 (2007).

⁴⁶ See Statute of Anne § 11.

⁴⁷ See Reese, *supra* note 45, at 147.

⁴⁸ See *id.*

⁴⁹ See KAPLAN, *supra* note 27, at 2; Reese, *supra* note 45, at 147 n.56; Catherine Seville, *The Statute of Anne: Rhetoric and Reception in the Nineteenth Century*, 47 HOUS. L. REV. 819, 827-28 (2010) (explaining that many print runs were under 250 copies and the cost of printing many plates was high).

⁵⁰ See KAPLAN, *supra* note 27, at 2.

⁵¹ (1782) 101 Eng. Rep. 1164 (KB).

⁵² *Id.* at 1167-68.

⁵³ See KAPLAN, *supra* note 27, at 4. The 1814 Copyright Act codified *Beckford v. Hood*. See Copyright Act 1814, 54 Geo. 3, c. 156, § 5 (Eng.). In 1842, the English Parliament made registration a prerequisite to suit, but publishers could (and typically did) delay registration until bringing suit. See KAPLAN, *supra* note 27, at 6. England eliminated registration in its 1911 Act. See *id.* at 6-7. By contrast, many nations in continental Europe considered formalities to be conditions for copyright protection. See VAN GOMPEL, *supra* note 33, at 82-83.

task of searching registration entries grew larger and more complex.⁵⁴ Third, as the publishing industry gradually expanded outside of London, the convenience of a central registry diminished.⁵⁵

Across the Atlantic, the newly liberated American States enacted copyright statutes modeled on the Statute of Anne.⁵⁶ Most of the states instituted registration and deposit requirements. Pennsylvania required that notice of copyright be placed on copies of copyrighted works.⁵⁷ Massachusetts, New Hampshire, and Rhode Island required that published works contain the name of their author(s) as a condition of copyright protection.⁵⁸

Following ratification of the U.S. Constitution, the first Congress enacted federal copyright legislation modeled on the Statute of Anne.⁵⁹ The 1790 Act featured three notice requirements: (1) registration and deposit of a printed copy of the work in the clerk's office of the district court where the author or proprietor resides prior to publication;⁶⁰ (2) newspaper advertising, requiring authors to publish a record of the registered work in a local newspaper for a month;⁶¹ and (3) preservation, requiring deposit of a copy of the work with the Secretary of State.⁶² Congress augmented these notice requirements in 1802 by requiring that notice of copyright and the author's name and residence be provided on copies of the work.⁶³

The requirement of registration in the district (state) where the author or proprietor resided meant that the United States did not initially provide a central copyright registry. Newspaper notice and marking of copyright notice

⁵⁴ See Reese, *supra* note 45, at 147.

⁵⁵ *Id.* at 147 n.57.

⁵⁶ See VAN GOMPEL, *supra* note 33, at 78-79; L. Ray Patterson & Craig Joyce, *Copyright in 1791: An Essay Concerning the Founders' View of the Copyright Power Granted to Congress in Article I, Section 8, Clause 8 of the U.S. Constitution*, 52 EMORY L.J. 909, 931-33 (2003).

⁵⁷ See DOYLE ET AL., *supra* note 31, at 5.

⁵⁸ See *id.* at 6.

⁵⁹ See Act of May 31, 1790, ch. 15, § 1, 1 Stat. 124 (repealed 1802) (granting authors and purchasers from authors the sole right of publication for fourteen years).

⁶⁰ See *id.* § 3 (“[N]o person shall be entitled to the benefit of this act, in cases where any map, chart, book or books, hath or have been already printed and published, unless he shall first deposit, and in all other cases, unless he shall before publication deposit a printed copy of the title of such map, chart, book or books, in the clerk's office of the district court where the author or proprietor shall reside . . .”).

⁶¹ See *id.* (“And such author or proprietor shall, within two months from the date thereof, cause a copy of the said record to be published in one or more of the newspapers printed in the United States, for the space of four weeks.”).

⁶² See *id.* § 4 (“[T]he author or proprietor of any such map, chart, book or books, shall, within six months after the publishing thereof, deliver, or cause to be delivered to the Secretary of State a copy of the same, to be preserved in his office.”).

⁶³ See Act of Apr. 29, 1802, ch. 36, § 1, 2 Stat. 171; DOYLE ET AL., *supra* note 31, at 6; KAPLAN, *supra* note 27, at 9-10.

on published copies of a work, however, provided substantial notice to the public of copyright subsistence. The Act of 1831 doubled the initial term of copyright to twenty-eight years measured from the time of registering title in the office of the clerk of the district court prior to publication.⁶⁴ The renewal term remained fourteen years.⁶⁵ The 1831 Act removed the requirement of publishing initial notice of copyright subsistence in newspapers, but retained this requirement with regard to copyright renewal.⁶⁶ The Act of 1834 required deeds of transfer of copyright to be recorded.⁶⁷

Of perhaps greatest importance to the role of formalities in the U.S. copyright system, and in stark contrast with British copyright law, the U.S. Supreme Court held that compliance with registration, notice, and deposit was a prerequisite to copyright protection.⁶⁸ As a result, compliance with copyright formalities took on greater significance in the development of the U.S. copyright system.

The relatively young American nation embraced formalities as prerequisites to protection, as means of informing the public of copyright subsistence, and as a way of building a comprehensive national archive. In 1846, Congress established the Smithsonian Institution and sought to build its collection by requiring that one copy of each copyrighted work be delivered to the Librarian of the Smithsonian Institution within three months of publication.⁶⁹ Charles Jewett, the first librarian of the Smithsonian Institution, extolled the preservation, access, and scholarly virtues of copyright deposit, proclaiming the “importance, immediate and prospective, of having a central depot, where all the products of the American press may be gathered, year by year, and preserved for reference”⁷⁰ To facilitate building this archive, Jewett advocated that publishers be able to transmit deposit copies free of postage, a proposal that Congress enacted in 1855.⁷¹

Practical problems ensued in managing the national knowledge archive. The Smithsonian Institution was inundated with materials considered of relatively low archival value (textbooks, music, and prints) and that were difficult to store, whereas many publishers of substantial research works failed to comply with the deposit requirement.⁷² This problem was exacerbated by a judicial

⁶⁴ See Act of Feb. 3, 1831, ch. 16, § 1, 4 Stat. 436.

⁶⁵ *Id.* § 2.

⁶⁶ *Id.* § 3.

⁶⁷ See Act of June 30, 1834, ch. 157, 4 Stat. 728.

⁶⁸ See *Wheaton v. Peters*, 33 U.S. (8 Pet.) 591 (1834); KAPLAN, *supra* note 27, at 10-11.

⁶⁹ Act of Aug. 10, 1846, ch. 178, § 10, 9 Stat. 102, 106. The Act also provided for a copy to be provided to the Librarian of Congress. *Id.*

⁷⁰ See BD. OF REGENTS, THE SMITHSONIAN INST., FOURTH ANNUAL REPORT 35 (1850).

⁷¹ See Act of Mar. 3, 1855, ch. 201, § 5, 10 Stat. 683, 685 (pertaining to the Post Office Department).

⁷² See BD. OF REGENTS, THE SMITHSONIAN INST., ELEVENTH ANNUAL REPORT 40 (1857); see also DUNNE, *supra* note 38, at 13 (“Few except the leading publishers complied

decision holding that failure to deposit a work at the national repository, unlike failure to deposit a copy with the district court, had no effect on copyright protection.⁷³

In 1870, Congress centralized registration, deposit, and copyright administration within the Library of Congress.⁷⁴ The Copyright Act also required the Librarian of Congress to make an annual report to Congress and to prepare a catalog of entries.⁷⁵ The Catalog of Copyright Entries provided means for the public to research copyright registration records at over 300 depository libraries, although its notice value to the public, librarians, and publishers proved marginal.⁷⁶ The book industry, for example, developed better-organized catalogs for its needs.⁷⁷

By the mid- to late-nineteenth century in Europe, a different set of economic and political forces emerged that would ultimately prohibit formalities as prerequisites to copyright protection initially in key European nations and eventually throughout much of the world.⁷⁸ With the improvement, reduction in cost, and diffusion of printing technology, international counterfeiting and piracy became rampant.⁷⁹ Domestic publishers profited from unauthorized "reprints" of works by foreign authors, leading to the proliferation of low cost, low quality editions.⁸⁰

In 1852, France took the magnanimous initiative of extending copyright protection to foreign works,⁸¹ although other nations were initially reluctant to

automatically, although most deposited on demand.").

⁷³ See *Jollie v. Jacques*, 13 F. Cas. 910, 910, 912 (C.C.S.D.N.Y. 1850) (No. 7437) (basing interpretation on the fact that the national repository copy requirement was set forth in legislation establishing the Smithsonian Institution and not in the Copyright Act).

⁷⁴ Act of July 8, 1870, ch. 230, § 85, 16 Stat. 198, 212.

⁷⁵ CONG. GLOBE, 41st Cong., 2d Sess. 2684 (1870); see also Act of Mar. 3, 1891, ch. 565, § 4, 26 Stat. 1106, 1108.

⁷⁶ See Menell, *supra* note 31, at 1029-30, 1032-34.

⁷⁷ See ELIZABETH K. DUNNE & JOSEPH W. ROGERS, STUDY NO. 21: THE CATALOG OF COPYRIGHT ENTRIES (1960), reprinted in 2 OMNIBUS COPYRIGHT REVISION LEGISLATIVE HISTORY 51, 62-64 (George S. Grossman, ed., 2001).

⁷⁸ See VAN GOMPEL, *supra* note 33, at 85-94, 97-101, 118; STEPHEN P. LADAS, 1 THE INTERNATIONAL PROTECTION OF LITERARY AND ARTISTIC PROPERTY: INTERNATIONAL COPYRIGHT AND INTER-AMERICAN COPYRIGHT 12-67 (1938).

⁷⁹ See WILLIAM BRIGGS, THE LAW OF INTERNATIONAL COPYRIGHT: WITH SPECIAL SECTIONS ON THE COLONIES AND THE UNITED STATES OF AMERICA 44-56 (1906) (discussing the piracy of English, French, and German books); RICKETSON & GINSBURG, *supra* note 32, ¶ 1.20.

⁸⁰ See LADAS, *supra* note 78, at 24.

⁸¹ See Décret 1852-03-28 du 28 mars 1852 qui autorise la constitution d'une société de crédit foncier pour le ressort de la Cour d'appel de Paris [Decree 1852-03-28 of March 28, 1852 which authorizes the establishment of a building society to the jurisdiction of the Court of Appeal of Paris], BULLETIN DES LOIS [BULLETIN OF ACTS] DXVI, No. 3936; LADAS, *supra* note 78, at 27. The roots of French reverence for authors' rights trace back to Jean Le

follow.⁸² While supportive of domestic authors, many nations did not consider unauthorized publishing of foreign author works to be unjust.⁸³ Some nations saw the availability of lower cost books as a means to promote learning within their nation.⁸⁴ They also sought to support domestic publishers, who profited at the expense of foreign authors.⁸⁵ And they showed little concern with the exporting of those pirated volumes to other markets, including to foreign authors' home nations. The revenues from such economic activity boosted international balance of payments.

Authors came to see compliance with the formalities of multiple nations as an impediment to enforcing copyright protection in the international marketplace.⁸⁶ At a philosophical level, authors sought to establish basic moral and economic bases for international copyright protection. At a practical economic level, authors initially advocated for establishment of the principle that compliance with formalities in their home countries should be sufficient to enforce their rights abroad,⁸⁷ a view adopted in the 1886 and 1896 versions of

Chapelier, a member of the French National Convention and the reporter of the French Copyright Law of 1793, who proclaimed authors' rights to be "the most sacred, the most legitimate, the most unassailable, and . . . the most personal of all forms of all properties . . . the work which is the fruit of a writer's thoughts." Jane C. Ginsburg, *A Tale of Two Copyrights: Literary Property in Revolutionary France and America*, 64 TULANE L. REV. 991, 1007 (1990) (quoting Le Moniteur Universel, Jan. 15, 1791, reprinted in 7 RÉIMPRESSION DE L'ANCIEN MONITEUR 117 (1860)). The great French author of *les Misérables* and human rights activist Victor Hugo took up the cause of authors' rights and their relationship with the public domain, founding the Association Littéraire Internationale ("ALI") in 1878. See Daniel Gervais, *The 1909 Copyright Act in International Context*, 26 SANTA CLARA COMPUTER & HIGH TECH. L.J. 185, 187-88 (2010); Max M. Kampelman, *The United States and International Copyright*, 41 AM. J. INT'L L. 406, 410-11 (1947). At ALI's founding Congress, Hugo proclaimed that while a book belongs to its author, ideas expressed in the book belong to humankind. See VICTOR HUGO, CONGRÈS LITTÉRAIRE INTERNATIONAL DE PARIS (1878). The ALI, later renamed the Association Littéraire et Artistique Internationale, played a key role in the establishment of the Berne Convention. See RICHARD ROGERS BOWKER, COPYRIGHT: ITS HISTORY AND ITS LAW 314 (1912).

⁸² See LADAS, *supra* note 78, at 24-25. Nonetheless, France succeeded in concluding twenty-three treaties for reciprocal recognition of authors' rights. See *id.* at 28-29; Kampelman, *supra* note 81, at 410-11. Moreover, France's initiative accelerated an authors' movement for international recognition of copyright protection. See Barbara A. Ringer, *The Role of the United States in International Copyright—Past, Present, and Future*, 56 GEO. L.J. 1050, 1052 (1968).

⁸³ RICKETSON & GINSBURG, *supra* note 32, ¶ 1.20; see BRIGGS, *supra* note 79, at 36-38.

⁸⁴ RICKETSON & GINSBURG, *supra* note 32, ¶ 1.22.

⁸⁵ See, e.g., Edward G. Hudson, *Literary Piracy, Charles Dickens and the American Copyright Law*, 50 A.B.A. J. 1157, 1158 (1964) (describing the early American republic's disregard for foreign copyright protection).

⁸⁶ See VAN GOMPEL, *supra* note 33, at 123-24; Ginsburg, *supra* note 24, at 1588-89.

⁸⁷ See VAN GOMPEL, *supra* note 33, at 131-34.

the Berne Convention for the Protection of Literary and Artistic Works.⁸⁸ Nonetheless, proving compliance with formalities in the authors' home nations proved difficult.⁸⁹ As a result, the 1908 Berlin revision of the Berne Convention took the dramatic step of prohibiting signatory nations from subjecting the "enjoyment and the exercise of [copyright] . . . to any formality,"⁹⁰ an approach that remains in force today.

In conjunction with the Berlin revision, most continental European nations abrogated copyright formalities in the early twentieth century.⁹¹ The English Parliament jettisoned copyright registration and copyright notice in its 1911 Copyright Act.⁹²

Driven by trade protectionism and differences in its conception of copyright protection, the U.S. proceeded along a very different course—principally whether to recognize authors' moral rights.⁹³ American publishers and bookmaking labor unions stood in the way of the United States joining the Berne Convention.⁹⁴ The U.S. lacked copyright protection for foreign authors in 1886 and hence was ineligible to join the Berne Convention. Even after the U.S. extended copyright protection to foreign authors in 1891,⁹⁵ it did so in a way that erected a further barrier to Berne compliance: requiring that books be printed in the U.S. in order to be eligible for copyright protection.⁹⁶

Thus, as European nations were dismantling copyright formalities at the turn of the twentieth century, the U.S. Congress retained formalities as prerequisites to copyright protection with some modification. Since the implementation of the 1790 Act, U.S. copyright protection began upon registration. Under the 1909 Act, publication with proper notice established copyright protection.⁹⁷ Nonetheless, registration continued to play an important role in the full

⁸⁸ See *id.* at 138-39, 140-42.

⁸⁹ See *id.* at 144-46; RICKETSON & GINSBURG, *supra* note 32, ¶¶ 6.86-87.

⁹⁰ VAN GOMPEL, *supra* note 33, at 146-48.

⁹¹ See *id.* at 94.

⁹² Copyright Act 1911, 1 & 2 Geo. 5, c. 46, sch. 2 (Eng.).

⁹³ See Joseph S. Dubin, *The Universal Copyright Convention*, 42 CAL. L. REV. 89, 98 (1954).

⁹⁴ See Hudson, *supra* note 85, at 1160; Marshall Leaffer, *International Copyright from an American Perspective*, 43 ARK. L. REV. 373, 383 n.49 (1990). At the time that the Berne Convention was being established, the U.S. was importing far more books than it was exporting. See STUDY NO. 35: THE MANUFACTURING CLAUSE OF THE U.S. COPYRIGHT LAW, COPYRIGHT I (1963), reprinted in 2A OMNIBUS COPYRIGHT REVISION LEGISLATIVE HISTORY (George S. Grossman ed., 2001) ("In 1876 . . . America was importing from England \$940,000 worth of books and related items, whereas American exports to England amounted to only \$93,000."). Leading American publishers favored retention of high tariffs on imports. *Id.* at 5. The motivation for such protectionism was not merely to disadvantage foreign authors. U.S. authors sought to discourage entry of pirate editions of their works. *Id.*

⁹⁵ See International Copyright (Chace) Act of 1891, ch. 565, 26 Stat. 1106.

⁹⁶ See STUDY NO. 35: THE MANUFACTURING CLAUSE, *supra* note 94, at 4-5.

⁹⁷ See Act of Mar. 4, 1909, ch. 320, § 9, 35 Stat. 1075.

“enjoyment and the exercise.” Copyright enforcement could not be undertaken until a work was registered and deposited with the Copyright Office.⁹⁸ In addition, the 1909 Act expanded upon the domestic manufacturing requirement, another formality prohibited by the Berne Convention, by requiring that books had to be printed *and* bound in the U.S. to be eligible for copyright protection.⁹⁹

Thus, formalities continued to play a significant role in U.S. copyright law. Under the 1909 Act regime, publication without proper notice injected works into the public domain.¹⁰⁰ The potentially harsh consequences of failure to comply with these formalities led courts to distort the meaning of publication so as to avoid injustice.¹⁰¹

Over the first several decades of the twentieth century, the U.S. emerged as a leading producer and exporter of creative works,¹⁰² increasing the economic importance of international copyright enforcement for U.S. creative industries. The U.S. publishing industry grew substantially. More significantly, the U.S. led in the development of new information technologies—notably the phonogram, motion pictures, radio, and television—and the content industries that these technologies spawned.

By the mid-1920s, momentum for U.S. accession to the Berne Convention was building.¹⁰³ Several bills proposed U.S. entry into what was referred to as

⁹⁸ *Id.* § 12 (“No action or proceeding shall be maintained for infringement of copyright in any work until the provisions of this Act with respect to the deposit of copies and registration of such work shall have been complied with.”); see *Washingtonian Publ’g Co. v. Pearson*, 306 U.S. 30 (1939) (holding that failure to promptly deposit a copy of a work following publication with proper notice did not bar copyright protection); NIMMER & NIMMER, *supra* note 25, § 7.16[A][2][b].

⁹⁹ Act of Mar. 4, 1909, ch. 320, §§ 15-17, 22, 35 Stat. 1075. The 1909 Act exempted original works of authorship in languages others than English. *Id.* § 15.

¹⁰⁰ See *id.* § 9.

¹⁰¹ See *Am. Visuals Corp. v. Holland*, 239 F.2d 740, 744 (2d Cir. 1956) (debating the meaning of the “publication” requirement within the copyright statute and adopting a wide interpretation to allow for wider copyright protection); Benjamin Kaplan, *Publication in Copyright Law: The Question of Phonograph Records*, 103 U. PA. L. REV. 469, 488-89 (1955); Melville B. Nimmer, *Copyright Publication*, 56 COLUM. L. REV. 185, 185 (1956).

¹⁰² See H.R. REP. NO. 74-2514, at 2 (1936) (quoting Secretary of State Cordell Hull saying that over the 25 years since passage of the 1909 Copyright Act the U.S. had emerged as “probably the world’s largest producer of literary and artistic works These works are known throughout the world and are an important factor in domestic and foreign commerce”).

¹⁰³ See ABE GOLDMAN, STUDY NO. 1: THE HISTORY OF U.S.A. COPYRIGHT LAW REVISION FROM 1901 TO 1954, at 4-12 (1955), reprinted in 1 OMNIBUS COPYRIGHT REVISION LEGISLATIVE HISTORY ix (George S. Grossman ed., 2001); Peter Decherney, *Auterism on Trial: Moral Rights and Films on Television*, 2011 WIS. L. REV. 273, 281-84; Thorvald Solberg, *Copyright Law Reform*, 35 YALE L.J. 48, 66 (1926); Thorvald Solberg, *The International Copyright Union*, 35 YALE L.J. 68 (1926); Thorvald Solberg, *The Present Copyright Situation*, 40 YALE L.J. 184, 193, 209-10 (1930) [hereinafter Solberg, *The*

the International Copyright Union. By 1928, there were strong indications that the U.S. would make the adjustments needed to join the Berne Union. Representative Albert Henry Vestal, with the support of Hollywood Studios,¹⁰⁴ sponsored a bill to eliminate the registration requirement and make all eligible works automatically protected as of the time of creation,¹⁰⁵ harmonizing U.S. copyright law with the Berne Convention.¹⁰⁶

The legislative process was complicated, however, by revisions to the Berne Convention adopted in mid-1928. The Rome Revision of the Berne Convention added a provision requiring that signatory nations accord authors “the right to claim authorship of the work and to object to any distortion, mutilation or other modification of, or other derogatory action in relation to, the said work, which would be prejudicial to [the author’s] honor or reputation.”¹⁰⁷ Although the addition of moral rights created some apprehension, Hollywood Studios initially remained supportive of joining the Berne Convention as amended.¹⁰⁸ Representative Vestal introduced a revised bill later that year authorizing the President to effect and proclaim the adherence of the United States to the Convention signed at Rome on June 2, 1928.¹⁰⁹ Prospects for passage of the Vestal Bill faded, however, after Senator Clarence Dill denounced the legislation as un-American.¹¹⁰

President Franklin Roosevelt sought to revive interest in joining the Berne Union in the mid-1930s.¹¹¹ The Senate undertook studies and considered legislation proposed by Senator Duffy, but by then the political winds had shifted.¹¹² Between 1928 and 1934, many European nations adopted trade

Present Copyright Situation] (observing that the Register of Copyrights proclaimed that entry of the U.S. into the International Copyright Union was “supremely important,” and arguing that it was “undoubtedly the one most important forward step with respect to international copyright advancement which our country [could] take” and “would also mean much for the actual extension of world protection for intellectual productions”); Brander Matthews, *Thirty Years of International Copyright*, N.Y. TIMES, June 26, 1921, § III (Magazine), at 2.

¹⁰⁴ See PETER DECHERNEY, HOLLYWOOD’S COPYRIGHT WARS: FROM EDISON TO THE INTERNET 114 (2013).

¹⁰⁵ The Vestal Bill also extended the duration of copyright protection to a unitary term of life of the author plus fifty years. H.R. 12549, 71st Cong. (2d Sess. 1931).

¹⁰⁶ H.R. 9586, 70th Cong. (1st Sess. 1928) (explaining that the Vestal Bill’s purpose was to amend the domestic copyright laws to align them with international protocol and allow the U.S. to enter the Berne Convention).

¹⁰⁷ Berne Convention for the Protection of Literary and Artistic Works, *supra* note 6, at art. 6bis.

¹⁰⁸ See Decherney, *supra* note 103, at 281-82.

¹⁰⁹ H.R. 15086, 70th Cong. (2d Sess. 1928); see Solberg, *The Present Copyright Situation*, *supra* note 103, at 194.

¹¹⁰ See DECHERNEY, *supra* note 104, at 114.

¹¹¹ *Id.*

¹¹² *Id.* at 114-15.

restrictions on U.S. film imports, which reduced the potential for increased exports. Moreover, the Duffy Bill would have exempted charitable organizations, broadcasters, and others from copyright liability. Furthermore, the Duffy Bill surfaced deep divisions between screenwriters and Hollywood Studios over moral rights.¹¹³ In addition, the Berne Convention no longer permitted reservations, which limited the opportunity for compromise.¹¹⁴ By the early 1940s, intractable divisions between the two sets of groups—authors and publishers versus users of copyrighted materials (broadcasters, motion picture producers, and record manufacturers)—stood in the way of the U.S. entering the Berne Union.¹¹⁵

Following World War II, the U.S. redirected its international copyright efforts toward development of an alternative international accord through the United National Educational, Scientific, and Cultural Organization (“UNESCO”). This initiative resulted in establishment of the Universal Copyright Convention (“UCC”) in 1952.¹¹⁶ Unlike the Berne Convention, the UCC eschewed establishment of substantive standards; rather it focused on harmonizing national copyright laws on a reciprocal national treatment basis.¹¹⁷ Forty nations, including the U.S., signed the accord. Adherence to the UCC required relatively modest adjustments to U.S. law—principally exempting English language works of foreign authors from UCC signatory nations from the domestic manufacturing requirement.¹¹⁸

In 1955, Congress authorized funds for a comprehensive set of studies in preparation for omnibus revision of the 1909 Act,¹¹⁹ triggering a two decade-long process that culminated in passage of the Copyright Act of 1976.¹²⁰ Those

¹¹³ *Id.* at 115; Orrin G. Hatch, *Better Late Than Never: Implementation of the 1886 Berne Convention*, 22 CORNELL INT’L L.J. 171, 175-76 (1989).

¹¹⁴ GOLDMAN, *supra* note 103, at 8.

¹¹⁵ *See id.* at 11-12. A subsequent Senate Report noted that:

[the United States] has found it impossible to subscribe to the [Berne] convention . . . because it embodied concepts at variance with principles of American copyright law. These concepts involved such matters as the automatic recognition of copyright without any formalities, the protection of ‘moral’ rights, and the retroactivity of copyright protections with respect to works which are already in the public domain in the United States.

S. EXEC. REP. NO. 83-5, at 1-2 (1954) (Report of Committee on Foreign Relations concerning Universal Copyright Convention of 1952).

¹¹⁶ Universal Copyright Convention of 1952, Sept. 6, 1952, 6 U.S.T. 2731, 216 U.N.T.S. 132.

¹¹⁷ *See* Paul J. Sherman, *The Universal Copyright Convention: Its Effect on United States Law*, 55 COLUM. L. REV. 1137, 1149-50 (1955).

¹¹⁸ Act of Aug. 31, 1954, ch. 1161, 68 Stat. 1030 (amending 17 U.S.C. §§ 9, 16, 19 (Supp. II 1955)); *see* Sherman, *supra* note 117, at 1151-74.

¹¹⁹ H.R. REP. NO. 94-1476, at 47 (1976).

¹²⁰ Copyright Act of 1976, Pub. L. No. 94-553, 90 Stat. 2541. Due to the long process in enacting omnibus reform, Congress passed the Sound Recording Amendment Act of 1971

studies included comprehensive reviews of formalities as well as other issues bearing on U.S. qualification to join the Berne Convention. The Berne Convention cast an omnipresent shadow over the deliberations.¹²¹ And although the ultimate bill did not bring the U.S. fully into line with Berne's minimum requirements, the 1976 Copyright Act substantially narrowed the gap.¹²² Notably, Congress shifted to a life plus fifty unitary term¹²³ and phased out the domestic manufacturing requirement.¹²⁴

Nonetheless, the 1976 Act retained, although with some relaxation, formalities as requirements for the "enjoyment and the exercise" of copyright protection. The 1976 Act established that copyright protection subsists in all "original works of authorship fixed in any tangible medium of expression," thereby removing publication with notice as a precondition to protection.¹²⁵ Nonetheless, the 1976 Act required proper notice upon publication, but provided five years to cure omission.¹²⁶ It also retained registration as a precondition to filing suit and eligibility for statutory damages.¹²⁷

Renewed interest in U.S. accession to the Berne Convention mounted in the 1980s as U.S. exports of copyrighted works expanded¹²⁸ and the U.S. sought to

as a stopgap to deal with record piracy. Act of Oct. 15, 1971, Pub. L. No. 92-140, 85 Stat. 391. That law was subsumed in the 1976 Act.

¹²¹ See Melville B. Nimmer, *Implications of the Prospective Revisions of the Berne Convention and the United States Copyright Law*, 19 STAN. L. REV. 499, 499-502 (1967) (lamenting "[t]he fact that the United States is not a party to the Berne Copyright Convention has for many years constituted a source of controversy and irritation among copyright specialists, authors, and others interested in literary and artistic works on both sides of the Atlantic," and discussing "the extent to which [the draft copyright reform bill] removes obstacles to United States accession to the Berne Convention"). *But cf.* Ringer, *supra* note 82, at 1076-79 (discussing new U.S. concerns about moving toward the Berne Union as a result of changes to the Berne Convention introduced at the 1967 Stockholm Conference).

¹²² See Leaffer, *supra* note 94, at 384.

¹²³ The 1948 Brussels Revision of the Berne Convention required that signatory nations provide a minimum term of protection of life of the author plus fifty years. See Berne Convention for the Protection of Literary and Artistic Works, as revised at Brussels on June 26, 1948, *supra* note 6, art. 7(1).

¹²⁴ See Act of July 13, 1982, Pub. L. No. 97-215, 96 Stat. 178 (codified at 17 U.S.C. § 601 (repealed 2010)); H.R. REP. NO. 94-1476, at 164-66 (1976). Recognizing that the domestic manufacturing requirement was both anachronistic and violative of authors' rights and principles of free trade, Congress phased the manufacturing clause out of U.S. copyright law by June 30, 1986.

¹²⁵ 17 U.S.C. § 102(a) (2012).

¹²⁶ *Id.* § 405.

¹²⁷ *Id.* §§ 411, 412. The 1976 Act also retained recordation of transfer as a precondition for filing suit by transferees and a penalty for failure to deposit a copy of the copyrighted work. See *id.* §§ 205(d), 407.

¹²⁸ See Remarks on Signing the Berne Convention Implementation Act of 1988, 24 WEEKLY COMP. PRES. DOC. 1405 (Oct. 31, 1988) (estimating that the American

increase its role in trade diplomacy and global IP policy.¹²⁹ Policymakers and trade negotiators believed that accession to the Berne Convention would strengthen U.S. influence in multi-lateral and bilateral trade agreements involving intellectual property.¹³⁰

Notwithstanding the long-standing differences between U.S. and Berne Union positions on copyright requirements and national policy autonomy, the U.S. government, aided by its State Department's domestic diplomacy,¹³¹ ultimately agreed to take the steps necessary to align its copyright law with Berne's precepts.¹³² The Berne Convention Implementation Act ("BCIA"),¹³³ passed in 1988, effected many of the changes required to bring U.S. copyright law into compliance with the Berne Convention. Subsequent legislation relating to architectural works¹³⁴ and moral rights¹³⁵ completed the

entertainment and computer software industries may have lost upwards of \$6 billion in revenue as a result of international piracy).

¹²⁹ See generally MICHAEL P. RYAN, *KNOWLEDGE DIPLOMACY: GLOBAL COMPETITION AND THE POLITICS OF INTELLECTUAL PROPERTY* (1998).

¹³⁰ See Ralph Oman, *The United States and the Berne Union: An Extended Courtship*, 3 J.L. & TECH. 71, 111 (1988). Relatedly, in 1984, the U.S. withdrew from UNESCO for political reasons, which diminished its influence over the UCC. See Leaffer, *supra* note 94, at 383; Michael J. Farley, Comment, *Conflicts over Government Control of Information—The United States and UNESCO*, 59 TUL. L. REV. 1071 (1985). Accession to the Berne Convention would afford the U.S. participation in the General Assembly and Executive Committee of the Berne Convention, which is administered by the World Intellectual Property Organization ("WIPO"). See Oman, *supra*, at 110-11. Like UNESCO, WIPO operates within the United Nations, but it is less politicized and more influential in setting international copyright policy.

¹³¹ See Jane C. Ginsburg & John M. Kernochan, *One Hundred and Two Years Later: The U.S. Joins the Berne Convention*, 13 COLUM.-VLA J.L. & ARTS 1, 4 (1989); FINAL REPORT OF THE AD HOC WORKING GROUP ON U.S. ADHERENCE TO THE BERNE CONVENTION, reprinted in 10 COLUM.-VLA J.L. & ARTS 513, 514 (1986).

¹³² See Ginsburg & Kernochan, *supra* note 131, at 4-8. The legislative history of the BCIA emphasizes "overwhelming consensus" that the U.S. "utilize a minimalist approach, amending the Copyright Act only where there is a clear conflict with the express provisions of the Berne Convention (Paris Act of 1971); and further, to amend only insofar as it is necessary to resolve the conflict in a manner compatible with the public interest, respecting the pre-existing balance of rights and limitations in the Copyright Act as a whole." H.R. REP. NO. 100-609, at 20 (1988).

¹³³ Berne Convention Implementation Act of 1988, Pub. L. No. 100-568, 102 Stat. 2853 (1988).

¹³⁴ See Architectural Works Copyright Protection Act, Pub. L. No. 101-650, § 704(a), 104 Stat. 5133 (1990) (codified at 17 U.S.C. §§ 101(5), 102(a)(8), 120).

¹³⁵ See Visual Artist Rights Act of 1990, Pub. L. No. 101-650, 104 Stat. 5089 (codified at 17 U.S.C. §§ 101, 106A, 107, 113, 301, 411, 412, 501, 506, 608-610). But cf. Dane S. Ciolino, *Rethinking the Compatibility of Moral Rights and Fair Use*, 54 WASH. & LEE L. REV. 33 (1997); Jane C. Ginsburg, *The Right to Claim Authorship in U.S. Copyright and Trademarks Law*, 41 HOUS. L. REV. 263 (2004); Robert J. Sherman, *The Visual Artists*

implementation package.

The BCIA did not, however, entirely jettison copyright formalities. Congress made copyright notice voluntary, but provided an incentive for copyright owners to continue providing notice on copies of works. By including proper notice upon publication, a copyright owner (whether U.S. or foreign) bars the defense of innocent infringement.¹³⁶ But consistent with Berne, copyright owners no longer risk forfeiture for failing to provide proper notice upon publication.

Similarly, Congress retained registration¹³⁷ and encouraged its use, but scaled back its importance for Berne works of non-U.S. origin. Under the BCIA, owners of non-U.S. Berne nation works are no longer required to register their works prior to instituting an infringement action.¹³⁸ Yet Congress retained the pre-suit registration requirement for works of U.S. origin.¹³⁹ Furthermore, Congress provided substantial incentives for owners of all works (including non-U.S. works) to register their works in the U.S.¹⁴⁰ Congress

Rights Act of 1990: American Artists Burned Again, 17 CARDOZO L. REV. 373, 380 n.45 (1995); Natalie C. Suhl, Note, *Moral Rights Protection in the United States Under the Berne Convention: A Fictional Work?*, 12 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 1203 (2002).

¹³⁶ See Berne Convention Implementation Act of 1988 § 7, 17 U.S.C. §§ 401(d), 402(d) (2012); see also S. REP. NO. 100-352, at 43 (1988) [hereinafter BCIA Senate Report] (explaining that the BCIA “creat[ed] a limited incentive for notice which is compatible with Berne”). The BCIA incentive to provide notice, however, is modest. See Ginsburg & Kernochan, *supra* note 131, at 10-12. When available, the innocent infringement defense reduces the lower bound of statutory damages from \$750 per work to \$200 per work. 17 U.S.C. § 504(c)(2). Nonetheless, the court retains discretion in setting the award. Section 402(d) further indicates that lack of notice can also mitigate an award of actual damages. *Id.* § 402(d). Note that the Copyright Act does not expressly link “innocent infringement” to lack of notice; rather, the defense is available when the defendant is “not aware and had no reason to believe his or her acts constituted an infringement of copyright.” *Id.* § 504(c)(2). Registration provides constructive notice that a work is protected. *Id.* § 410(c).

¹³⁷ As noted previously, the 1976 Act removed registration as a prerequisite for copyright subsistence. 17 U.S.C. § 408(a); see *supra* text accompanying note 125.

¹³⁸ 17 U.S.C. § 411(a); *id.* § 101 (defining “United States work”).

¹³⁹ *Id.* § 411. This requirement also applies to works from non-Berne UCC nations and non-Berne nations with which the U.S. has bilateral copyright arrangements. The Berne Convention permits members to discriminate against domestic works (as well as works from non-Berne nations). See Daniel Gervais & Dashiell Renaud, *The Future of United States Copyright Formalities: Why We Should Prioritize Recordation, and How To Do It*, 28 BERKELEY TECH. L.J. 1459, 1468 (2013). The Berne Convention’s prohibition of formalities only applies when a Berne author seeks protection in a Berne nation outside of the work’s country of origin.

¹⁴⁰ Registration within five years of publication establishes prima facie evidence of the identity of the author, the dates of creation and publication, and copyright validity. See 17 U.S.C. § 410(c). Registration within three months of first publication opens up recovery of statutory damages and attorneys’ fees. *Id.* § 412. Registration also allows the copyright

eliminated recordation of transfer as a prerequisite for bringing suit by a transferee.¹⁴¹ Congress retained the deposit “requirement,”¹⁴² but failure to comply does not affect copyright subsistence.¹⁴³

b. *Formalities in Pre-Internet Industrial Context*

Notwithstanding the vigorous debate over formalities throughout copyright law’s centuries-long, pre-Internet development, it is difficult to ascribe tremendous economic significance to the benefits of notice and registration policies. The history speaks far more to censorship, trade protectionism, and international enforcement than to deterring infringement or facilitating cumulative creativity. Nonetheless, the Statute of Anne required registration with the Stationers’ Company because otherwise “many persons may through Ignorance offend against this Act.”¹⁴⁴ Some Papal privileges required posting of the privilege in the neighborhood of the printers’ shops “so that no one may claim ignorance of the privilege.”¹⁴⁵

For much of the twentieth century, creative industries accomplished clearance through relatively concentrated, tight-knit industrial organization, norms, and endogenous clearance institutions (such as the copyright collectives).¹⁴⁶ During much of the analog age, technology severely

owner to record the registration with the U.S. Customs Service for protection against importation of infringing copies. *Id.* § 602.

¹⁴¹ Recordation of transfers continues to establish notice for purposes of resolving priority of transfer. *Id.* § 205(e).

¹⁴² Section 407(a) states that deposit is required “within three months after the date of . . . publication” within the United States. *Id.* § 407(a).

¹⁴³ Deposit becomes mandatory only after the Register of Copyrights makes a formal written demand for deposit. The statute provides penalties for failure to comply with such a demand. *Id.* § 407(d). This demand is not considered a formality barred by the Berne Convention. See BCIA Senate Report, *supra* note 136, at 12 n.1.

¹⁴⁴ See Statute of Anne 1710, 8 Ann. c. 19, § 2 (Eng.).

¹⁴⁵ See Ginsburg, *supra* note 36, at 361.

¹⁴⁶ See PATRICIA AUFDERHEIDE & PETER JASZI, UNTOLD STORIES: CREATIVE CONSEQUENCES OF THE RIGHTS CLEARANCE CULTURE FOR DOCUMENTARY FILMMAKERS 22 (2004), http://www.cmsimpact.org/sites/default/files/UNTOLDSTORIES_Report.pdf [<https://perma.cc/7PMF-QKPQ>] (defining the “clearance culture” as “the shared set of expectations that all rights must always be cleared”); MICHAEL C. DONALDSON, CLEARANCE AND COPYRIGHT 327-41 (3d ed. 2008) (discussing the norms and institutions for clearing film clips); Daniel Gervais, *The Economics of Collective Management*, in 1 RESEARCH HANDBOOK ON THE ECONOMICS OF INTELLECTUAL PROPERTY LAW (Ben Depoorter & Peter S. Menell eds., forthcoming 2016); Menell & Depoorter, *supra* note 17, at 57-58 (discussing how doctrinal uncertainty about the scope of copyright protection and remedies and lack of preclearance institutions breed clearance culture); Robert P. Merges, *Contracting into Liability Rules: Intellectual Property Rights and Collective Rights Organizations*, 84 CAL. L. REV. 1293, 1327-40 (1996) (discussing the economics performance rights organizations); Jennifer E. Rothman, *The Questionable Use of Custom in Intellectual Property*, 93 VA. L. REV. 1899, 1909-24, 1951-53 (2007).

constrained content industries and production practices. The media on which creative works were instantiated—paper, canvas, vinyl, and celluloid—significantly constrained reuse, reproduction, and adaptation. Musical performance was the most adaptable art form. It is not surprising that this field saw the most institutional innovation—notably collective licensing.¹⁴⁷

Copyright industries featured relatively high production and distribution costs. Several—notably radio and television—operated through regulated channels.

These factors led to a high level of economic and geographic concentration in the principal creative industries. New York City (for publishing, music, broadcasting, theater), Hollywood/Los Angeles (for film and television production, broadcasting, music), and Nashville (for country music) became hubs for the major enterprises. This supported formal and informal industry organizations. Thus, the traditional copyright industries have long been governed largely by networks of gatekeepers.

Most of the production in the analog age was substantially original. And where a film production studio, publisher, magazine, or record label used preexisting works, they typically knew whom to contact—the distributor of that work. Licensing norms developed around reciprocal arrangements and professional networks. All of the major publishers, film studios, music publishers, and record labels had legal departments that could relatively quickly trace the source of material of interest. The Copyright Office registration records were useful, but private institutions were often the quickest and easiest way of getting things done.

The gatekeepers—major publishers, motion picture studios, television networks, record labels, and theatrical producers—operated within a relatively well-understood set of customs and practices for seeking permission to reuse preexisting works. They also recognized that outright piracy was risky, harmful to their business reputation, and incongruous with their larger copyright interests.

2. Recordable Media, Adaptable Art, and the Digital Revolution

Developed initially in response to the printing press, copyright protection has expanded and evolved to encompass other methods of storing and reproducing works of authorship, such as photography, motion pictures, sound recordings, and computer software.¹⁴⁸ The physical characteristics of early media limited adaptation of preexisting works and served as a “natural” form of protection. While reducing the risk of piracy, the durability of such media inherently limited authors’ creative freedom. The advent of recordable and

¹⁴⁷ See generally AL KOHN & BOB KOHN, KOHN ON MUSIC LICENSING (3d ed. 2002) (tracing the history and exploring the institutions of music licensing).

¹⁴⁸ See generally PAUL GOLDSTEIN, COPYRIGHT’S HIGHWAY: FROM GUTENBERG TO THE CELESTIAL JUKEBOX (1994); Peter S. Menell, *Envisioning Copyright Law’s Digital Future*, 46 N.Y.L. SCH. L. REV. 63 (2003).

editable media dramatically lowered production costs, increased creative options, and expanded the creative community.

Advances in technologies for reproducing, acquiring, and adapting preexisting works have substantially increased the need for copyright notice information. Advances in distribution technologies—notably the Internet, self-publishing platforms, and user-generated content web portals—have vastly expanded the ability for any author or artist to reach vast audiences. The traditional media gatekeepers no longer screen content. A new and substantially different set of actors—Internet service providers (“ISPs”)—plays a far different gatekeeper role. Just as technological advances have spurred the demand for copyright notice, powerful database and content identification technologies have revolutionized tracking and tracing copyright ownership and rights information.

a. *Technologies for Reusing, Adapting, and Disseminating Art*

As reuse and adaptation of preexisting works became more feasible in the mid- to late- twentieth century, the demand to trace and clear use of those works increased concomitantly. During this same time period, the duration of copyright protection expanded significantly, further increasing the costs of tracing copyright ownership and the need for better notice institutions.¹⁴⁹ The concept of orphan works—copyrights that are very costly or impossible to trace¹⁵⁰—emerged as a central challenge for promoting progress in the expressive arts.¹⁵¹

The advent, rapid advance, and diffusion of digital technologies over the past quarter century have revolutionized the creation and dissemination of expressive creativity.¹⁵² The shift from analog to digital storage media transforms the creative process. Authors and artists can costlessly and instantaneously reproduce preexisting works and seamlessly manipulate and edit digital sound tracks and video images. These features have generated new

¹⁴⁹ See Samuelson, *supra* note 8, at 669.

¹⁵⁰ See generally U.S. COPYRIGHT OFFICE, ORPHAN WORKS AND MASS DIGITIZATION (2015), <http://copyright.gov/orphan/reports/orphan-works2015.pdf> [<https://perma.cc/P7ER-WFR7>]; U.S. COPYRIGHT OFFICE, REPORT ON ORPHAN WORKS (2006), <http://copyright.gov/orphan/orphan-report-full.pdf> [<https://perma.cc/5YJK-9PJ4>].

¹⁵¹ See *Preservation and Reuse of Copyrighted Works: Hearing Before the Subcomm. on Courts, Intellectual Prop., & the Internet of the H. Comm. on the Judiciary*, 113th Cong. 81 (2014) (statement of Michael C. Donaldson, Int’l Documentary Ass’n and Film Independent) (referring to orphan works as “perhaps the single greatest impediment to creating new works”); IAN HARGREAVES, DIGITAL OPPORTUNITY: A REVIEW OF INTELLECTUAL PROPERTY AND GROWTH 38 (2011), https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/32563/ipreview-finalreport.pdf [<https://perma.cc/PHS3-9JGY>] (describing orphan works as “the starkest failure of the copyright framework to adapt”).

¹⁵² See Menell, *supra* note 148, at 108-29.

art forms, such as mashup music,¹⁵³ and have greatly expanded the creative community¹⁵⁴ in ways that vastly expand cumulative creativity.

The development of computer network technology, leading to the Internet, revolutionized cumulative creativity in other ways. With the diffusion of powerful search engines—beginning with text and leading to images, music, and video—authors and artists obtained the ability to find all manner of preexisting works and combine them in novel, creative ways.

The Internet revolutionized the creative industries in an even more profound way: by enabling creators to reach vast audiences without working through traditional media companies. Anyone with access to the Internet can now post works for the world to see, hear, and copy. Authors can self-publish books and anyone can inexpensively develop their own web portal. More significantly, a new industry of ISPs and crowd-sourced web portals has emerged to regulate dissemination of all manner of information goods.

This shift in content gatekeeping has fundamentally changed the need for and modalities of copyright notice. Whereas traditional media companies relied upon tight-knit, insular, professional networks to clear works prior to release and used a conservative screen (“if in doubt, leave it out”), the new breed of gatekeepers (ISPs) rely on different methods (notice and takedown procedures and, in the case of large portals like YouTube, content identification pre-screening technologies) for regulating what reaches the vast and growing Internet community. The next section explores this new and rapidly developing domain.

b. *Technologies for Storing, Searching, Tracing, Tracking, and Updating Copyright Information*

Advances in digital technology have not only expanded the need for better tracking of and greater access to up-to-date copyright information, they have revolutionized tracing, tracking, and updating such information. Had such tools been available at the turn of the twentieth century, the Berne Union would likely not have prohibited formalities as prerequisites to the “enjoyment and the exercise” of copyright.¹⁵⁵ To the contrary, such technology could have improved international copyright enforcement and promoted progress in the expressive arts.

The arrival of the Internet initially created tremendous, unprecedented

¹⁵³ See ARAM SINNREICH, MASHED UP: MUSIC, TECHNOLOGY AND THE RISE OF CONFIGURABLE CULTURE 194-95, 208 (2010) (arguing that the rise of configurable culture, typified by mashups, suggests a “paradigmatic change” in cultural production); Menell, *supra* note 18, at 452-64.

¹⁵⁴ See Edward Lee, *Warming Up to User-Generated Content*, 2008 U. ILL. L. REV. 1459, 1459-60.

¹⁵⁵ See *supra* text accompanying notes 87-90 (explaining that the Berne Union banned formalities only after authors encountered difficulties in proving to foreign tribunals that they had complied with formalities in their home nations).

copyright enforcement challenges.¹⁵⁶ The first decade of the World Wide Web can be characterized as a new Wild West, in which the rule of (copyright) law barely operated. Napster largely ignored the rampant copyright infringement on its service.¹⁵⁷ YouTube initially operated in a cavalier manner.¹⁵⁸ MegaUpload turned a blind eye to rampant infringement.¹⁵⁹ The Pirate Bay operated in open defiance of copyright protection.¹⁶⁰ Grooveshark employees were instructed to upload infringing material.¹⁶¹ Several waves of enforcement litigation brought down the more egregious operators.¹⁶² More importantly for copyright notice, the chaos of the Wild West inspired remarkable technological innovation.¹⁶³

Advances in digital identification technologies over the past decade have created promising means for tracking, tracing, and updating copyright information. These technologies have the ability to identify audio, textual, and visual works at low cost and with high precision. Audible Magic Corporation was among the first to develop sophisticated acoustic fingerprinting technologies.¹⁶⁴ It now provides audio and content identification tools to companies seeking to track digital media and identify and block infringing content.¹⁶⁵ Shazam offers an application that allows a mobile phone to identify

¹⁵⁶ See generally Menell, *supra* note 148, at 192-93 (foreseeing the dawning of copyright law's enforcement age); Menell, *This American Copyright Life*, *supra* note 4, at 291-98 (outlining the "Copyright/Internet paradox" whereby the Internet has broken down many of the traditional content-distribution barriers to market entry but has also made it much harder for artists to profit from their works).

¹⁵⁷ See *A&M Records, Inc. v. Napster, Inc.*, 239 F.3d 1004 (9th Cir. 2001).

¹⁵⁸ See Peter S. Menell, *Judicial Regulation of Digital Copyright Windfalls: Making Interpretive and Policy Sense of Viacom v. YouTube and UMG Recordings v. Shelter Capital Partners*, MEDIA INST. (May 3, 2012), <http://www.mediainstitute.org/IPI/2012/050212.php> [<https://perma.cc/S2L6-HY8R>].

¹⁵⁹ See Benton Martin & Jeremiah Newhall, *Criminal Copyright Enforcement Against Filesharing Services*, 15 N.C. J.L. & TECH. 101 (2013).

¹⁶⁰ See *id.*

¹⁶¹ See Peter S. Menell, *Jumping the Grooveshark: A Case Study in DMCA Safe Harbor Abuse*, MEDIA INST. (Dec. 21, 2011), <http://www.mediainstitute.org/IPI/2011/122111.php> [<https://perma.cc/8VM6-CD7H>]; Brittany Spanos, *Grooveshark Shuts Down After Eight Years*, ROLLING STONE (May 1, 2015), <http://www.rollingstone.com/music/news/grooveshark-shuts-down-after-eight-years-20150501> [<https://perma.cc/QGS5-H6KE>].

¹⁶² See Menell, *This American Copyright Life*, *supra* note 4, at 252-69.

¹⁶³ See Lital Helman & Gideon Parchomovsky, *The Best Available Technology Standard*, 111 COLUM. L. REV. 1194 (2011); Peter S. Menell, *Design for Symbiosis: Promoting More Harmonious Paths for Technological Innovators and Expressive Creators in the Internet Age*, 55 COMM. OF THE ACM 30, 30-32 (2012).

¹⁶⁴ *About Audible Magic*, AUDIBLE MAGIC, <https://www.audiblemagic.com/about/> [<https://perma.cc/35H2-Y6B7>].

¹⁶⁵ *Media Identification*, AUDIBLE MAGIC, <http://www.audiblemagic.com/media-identification/> [<https://perma.cc/4PVP-GKPJ>].

almost any sound recording.¹⁶⁶ Gracenote developed innovative, versatile, and standardized audio databases.¹⁶⁷ YouTube's Content ID (Audio ID and Video ID) system enables content owners to block, monetize, and track usage of their works within YouTube's expanding online ecosystem.¹⁶⁸

These technologies provide the framework for an inexpensive, universal copyright notification system. Furthermore, by tying notice information to a work's unique digital fingerprint¹⁶⁹ rather than copies of the work, third parties can independently determine whether a work that they have encountered is governed by copyright, the duration and terms of its protection, who owns it, and how to contact the owner. With a modest legal requirement, such information could be updated by the owner. If all copyrighted works were digitized and registered, potential users of copyrighted works could employ relatively inexpensive and now commonplace optical scanning and audio devices to identify the copyright status of any registered work.

C. *Optimizing Ownership Tracing in the Digital Age*

The technological advances of the past quarter century provide the foundation for instituting an effective and efficient system of notice and recordation for promoting expressive creativity and free expression. We now have the tools for creating unique digital fingerprints for nearly all types of copyrighted works using widely available and reliable digital technologies. And unlike traditional marking, which can become obsolete or disengaged from a copyrighted work, a digitized version of the work would serve as the digital fingerprint and could be linked to an official, updateable, universally accessible registry. Copyright owners would be able to embed standardized meta-tags or other digital dossiers containing subsistence information and ownership information and linking to an official registry. User-based systems would allow copyright owners to update this information easily through secure systems as ownership information changes.

A digital registration requirement could also serve to build a universal digital library. Nearly all copyrighted works—from visual art to sound recordings and three-dimensional objects—can be effectively digitized. Such digital works would serve as both the basis for digital fingerprinting and digital deposits. A modern Copyright Office would be built around server farms as opposed to dusty and costly physical libraries and warehouses.

¹⁶⁶ *About Shazam*, SHAZAM, <http://www.shazam.com/company> [https://perma.cc/B4X4-HYAX].

¹⁶⁷ *About Us*, GRACENOTE, <http://www.gracenote.com/company/about-us/> [https://perma.cc/H8MR-ERZA].

¹⁶⁸ *How Content ID Works*, YOUTUBE, <https://support.google.com/youtube/answer/2797370?hl=en> [https://perma.cc/NFY8-HV43].

¹⁶⁹ Bobbie Johnson, *How Will YouTube's Video Fingerprinting Work?*, GUARDIAN TECH. BLOG (June 18, 2007, 6:19 EDT), <http://www.theguardian.com/technology/blog/2007/jun/18/howwillyoutub> [https://perma.cc/F4EB-7MNR].

Once such a system was available, any person could scan a copy of a work, such as a photograph or sound recording file, into a standard computer system and conduct a search of the global database. And just as YouTube's Content ID system is able to run uploaded videos against countless audiovisual works in its archive to find a match and determine whether to allow the video to be publicly available and how to distribute advertising revenue, the Copyright Office could, with sustainable funding, provide pertinent subsistence and tracing information.

The next steps in developing a modern copyright notice system are technical, institutional, and political. Many of the elements of an ideal system are already in use in the private sector. Audible Magic and Google have implemented highly sophisticated systems for digitizing works and searching for matches.

International standard setting organizations have developed systems for recording various classes of copyrightable works.¹⁷⁰ For example, the sound recording industry in conjunction with the International Organization for Standardization ("ISO")¹⁷¹ has developed the International Standard Recording Code ("ISRC") for uniquely identifying sound recordings and music video recordings.¹⁷² Other standardized unique identification number systems exist for books, audiovisual works, and musical works.¹⁷³ Such identifiers can be assigned to digitized works of authorship and associated digital dossiers in meta-data or other formats.¹⁷⁴ The Copyright Office, or another designated entity, could host these materials on secure servers. Copyright registrants could

¹⁷⁰ See U.S. COPYRIGHT OFFICE, COPYRIGHT AND THE MUSIC MARKETPLACE 183-86 (2015), <http://copyright.gov/policy/musiclicensingstudy/copyright-and-the-music-marketplace.pdf> [hereinafter COPYRIGHT OFFICE MUSIC LICENSING STUDY] [<https://perma.cc/8VPN-MRSA>]; INTERNET POLICY TASK FORCE, DEP'T OF COMMERCE, COPYRIGHT POLICY, CREATIVITY, AND INNOVATION IN THE DIGITAL ECONOMY 89-98 (2013) [hereinafter INTERNET POLICY TASK FORCE GREEN PAPER ON COPYRIGHT POLICY], <http://www.uspto.gov/sites/default/files/news/publications/copyrightgreenpaper.pdf> [<https://perma.cc/TC8X-VLGB>].

¹⁷¹ The ISO is an international standard-setting body composed of representatives from various national standards organizations. See *About ISO*, INT'L ORG. FOR STANDARDIZATION, <http://www.iso.org/iso/home/about.htm> [<https://perma.cc/WWF8-RHVQ>].

¹⁷² See *Resources & Learning: Technical Standards*, RECORDING INDUSTRY ASS'N, <http://www.riaa.com/resources-learning/technical-standards/> [<https://perma.cc/K8DR-X4LD>].

¹⁷³ See, e.g., *What is an ISBN?*, INT'L ISBN AGENCY, <https://www.isbn-international.org/content/what-isbn> [<https://perma.cc/XC4T-SQX8>].

¹⁷⁴ See Van Houweling, *Atomism and Automation*, *supra* note 3, at 1481-87 (discussing the work of industry consortia, such as the Metadata Working Group and Stock Artists Alliance, on standardizing metadata); see also METADATA WORKING GROUP, <http://www.metadataworkinggroup.org/> [<https://perma.cc/JJ8D-D9FR>] (focusing on "[p]reservation and seamless interoperability of digital image metadata" and "[i]nteroperability and availability to all applications, devices, and services").

have supervised ability to maintain and update identifying information.

The principal obstacles are political. There would be start-up costs to developing such a system and inputting the data. Most major copyright industry participants in the U.S. already register their works, and a growing number of these companies are working with Google, Audible Magic, and other services for identification, monetization, and policing their works. The larger challenge would be at the international level, where formalities have not been used for over a century. As online licensing grows, the advantages of participation in a standardized, well-functioning global registration system will increase.

There would also be a significant transition issue. A fully digitized registration and notice system can be implemented relatively easily for new works of authorship. Ideally, however, the system would also capture prior works still subject to copyright. Part of the challenge lies in motivating the copyright owners to come forward and input their works into the universal database. The Copyright Office could also work with Google, the Internet Archive,¹⁷⁵ or other digitization projects to pull in such works. For example, Google's Book Search project has already scanned a large portion of library materials.¹⁷⁶

A mandatory copyright registration and digital deposit system would provide the foundation for a robust digital clearance system for copyright owners and users.¹⁷⁷ Suppose, for example, that a documentary filmmaker was seeking to use photographic works of unknown provenance. Under a decentralized safe harbor regime (and assuming no actual knowledge of the photograph's copyright status and ownership), the filmmaker would scan the work using approved technology. If the scan did not produce a match, then she would be able to use the work without fear of injunctive relief.¹⁷⁸ Furthermore, the scan would reduce costs in locating true owners if a universal registration system were in place. As with other orphan work proposals, various forms of liability rules could be developed (ranging from zero to fair market value) to address any legitimate copyright holder who comes forward.¹⁷⁹

¹⁷⁵ The Internet Archive is a non-profit library of millions of free books, movies, software, music, and other works. See INTERNET ARCHIVE, <https://archive.org/index.php> [<https://perma.cc/C69A-S84G>].

¹⁷⁶ See *Authors Guild v. Google, Inc.*, 804 F.3d 202, 208-11 (2d Cir. 2015); Menell, *supra* note 31, at 1014-15; *Google Books Library Project*, GOOGLE BOOKS, <https://www.google.com/googlebooks/library/> [<https://perma.cc/7LSV-RZDC>].

¹⁷⁷ See Peter S. Menell & Michael J. Meurer, *Notice Failure and Notice Externalities*, 5 J. LEGAL ANALYSIS 1, 50-51 (2013).

¹⁷⁸ This system could create some problems for low-resolution copies of works, but such concerns are likely to be manageable. Documentary filmmakers (and other users) have an incentive to obtain high quality versions of whatever they use. Although this system would not resolve fair use and bargaining breakdowns, it does resolve the problem of using untraceable works.

¹⁷⁹ See Orphan Works Act of 2006, H.R. 5439, 109th Cong. § 2(a) (2006) (limiting

Aspects of this system have been discussed and are in limited use. Audible Magic's Automatic Content Recognition ("ACR") technology and Google's Content ID screening and monetization system show that effective digital fingerprints can be implemented and scaled. The Google Books Library Project has successfully scanned a substantial portion of published books. Digital tags are increasingly embedded into photographs and other works.¹⁸⁰ The Creative Commons provides standardized ex ante licenses and tools for authors and artists seeking to grant permissions to their works.¹⁸¹

What I am proposing would rebuild the copyright notice infrastructure from the ground up based on copyright law's founding principles and the technological breakthroughs in digital and network technology, content identification, high resolution imaging, and databases of the past few decades. As the tracing of Berne's history illustrates,¹⁸² the Berne Union was not built on prohibiting formalities. The Berne founders were concerned with effective enforcement. The original convention permitted formalities. The 1886 and 1896 versions of the Berne Convention established the principle that compliance with formalities in authors' home countries should be sufficient to enforce their rights abroad. It was only after compliance with formalities in authors' home nations proved difficult that the Berne Union took the extreme step of prohibiting formalities.

We live in an entirely different technological age. The very act of reproducing documents was extremely difficult a century ago. The modern photocopier was not invented until decades after the Berlin Conference of 1908.¹⁸³ International enforcement institutions were in their infancy—in fact, the Berne Union was one of the earliest and most successful experiments in "world law."¹⁸⁴ The United Nations, the World Intellectual Property Organization ("WIPO"), and the World Trade Organization ("WTO") were decades from formation. Technological advances provide the tools for a stronger and more effective copyright infrastructure.

D. *Dealing with Unpublished Works*

Instituting a mandatory digital notice system poses a problem for unpublished works—everything from personal letters or photographs to trade

remedies against users who "performed and documented a reasonably diligent search in good faith to locate the owner of the infringed copyright"); Joshua O. Mausner, *Copyright Orphan Works: A Multi-Pronged Solution to Solve a Harmful Market Inefficiency*, 12 J. TECH. L. & POL'Y 395, 398 (2007).

¹⁸⁰ See Van Houweling, *Atomism and Automation*, *supra* note 3, at 1472, 1476-78.

¹⁸¹ See *About the Licenses*, CREATIVE COMMONS, [https://creativecommons.org/licenses/\[https://perma.cc/F5DP-FU5Q\]](https://creativecommons.org/licenses/[https://perma.cc/F5DP-FU5Q]).

¹⁸² See *supra* Section I.B.1.a.

¹⁸³ See *Photocopier*, WIKIPEDIA, [https://en.wikipedia.org/wiki/Photocopier\[https://perma.cc/D5ZY-MZD6\]](https://en.wikipedia.org/wiki/Photocopier[https://perma.cc/D5ZY-MZD6]).

¹⁸⁴ See Nimmer, *supra* note 121, at 499.

secret manuals and object code. Demanding that such works be registered and included within searchable digital databases for clearance matches would impose new costs and jeopardize the privacy of these materials.

This issue highlights fundamental aspects of copyright protection: To what extent is it a public system? Should its protections come with responsibilities? In the real property system, we require owners to provide means for the public to know whether land is encumbered. Should copyright protection demand similar requirements? And can those interests be balanced with protections for personal privacy or trade secrecy?

Copyright protection in the United States dealt with this issue prior to passage of the 1976 Act by enabling unpublished works to be protected by state and common law. The public act of publication triggered the notice responsibility. Infringement of unpublished works could be enforced under state and common law regimes.

The 1976 Act brought unpublished works within the federal copyright system by shifting the trigger for federal protection from publication with proper notice to creation of a work of authorship.¹⁸⁵ While this approach served to unify copyright protection, it implicitly resolved the fundamental questions in a way that deprives the public of knowledge of protected works and removes responsibility of copyright owners to inform the public of their claims. While such choices are less significant than removing such responsibilities for real estate owners,¹⁸⁶ they nonetheless create risks for cumulative creators.

A personal letter or trade secret document could leak onto the Internet, and an unwitting copier of such information might have no way to determine its provenance. While current copyright law provides a cause of action and remedies for such acts, it is not at all clear that the copyright system is well-attuned to the real sources of harm, which sound more in privacy violations and possibly hacking of computer systems. There is little reason to believe that copyright's market-based remedies are well-suited to compensating authors who do not intend to publish their works. Moreover, exempting authors of unpublished letters and trade secret documents from responsibility to inform the public of their copyright claims undermines a public copyright system.

It is useful to distinguish between unpublished works that are intended for publication (such as books, films, or sound recordings in production) and those that are not intended for publication (such as personal letters and trade secrets). The copyright system is designed for the former. And, in fact, Congress has established a preregistration process to deal with the growing risk of works

¹⁸⁵ See *supra* text accompanying note 125.

¹⁸⁶ Trespass involves a physical transgression. Whereas tangible resources are unique in three-dimensional space, intangible resources, such as works of authorship, can exist simultaneously without infringement. Although unlikely, two poets can independently create the same poem. Thus, copyright law requires copying for infringement to occur.

intended for publication being leaked to the public.¹⁸⁷ Such preregistration systems, as well as liability for purloined materials that interfere with planned publication, fit well within a public-regarding copyright system. Using copyright remedies for this narrow, but important, set of works makes sense. We are typically not dealing with cumulative creators so much as pirates—individuals or entities that seek to undermine the public release of costly and highly anticipated works of authorship.

Unpublished works that are not intended for publication could be better addressed through legal protections and remedies other than copyright law. The harms associated with accessing (and potentially copying) unpublished works that the author intends to keep private sound more in privacy law than copyright law. Rather than undermine the increasingly important notice function of copyright protection, Congress could better address the problem of accessing and copying unpublished works through privacy protections and remedies. State trade secrecy and privacy laws provide causes of action for these purposes.

The constitutional basis for the copyright system emphasizes its public nature. The Founders authorized Congress to establish copyright laws for the express purpose of promoting progress in knowledge and the expressive arts.¹⁸⁸ The social and economic rationale for protection of unpublished works that are not intended for public dissemination falls outside of that authorization and would be better addressed through laws focused on the distinctive harms involved.

II. ASSESSING COPYRIGHT SCOPE

The nature of copyright protection introduces a second set of notice challenges that is far less amenable to technological fixes than tracing issues. The scope of copyright protection is inherently uncertain due to copyright law's many balancing doctrines—including limiting doctrines, infringement standards, fair use privilege, and remedies.¹⁸⁹ Hence, even when ownership of copyrighted works can be successfully traced, developers of many expressive works that draw upon, or are similar to, protected works encounter great difficulties in determining freedom to operate. Expressive creativity often occurs within time, budgetary, and financing constraints that do not allow each potential exposure to be cleared, and the copyright system lacks effective preclearance institutions for resolving potential disputes efficiently. As a result, many cumulative creators confront a stark choice: seek a license or risk legal exposure.¹⁹⁰ This dilemma gives rise to a familiar norm in professional creative

¹⁸⁷ See Family Entertainment and Copyright Act of 2005, Pub. L. No. 109-9, § 104(b), 119 Stat. 218, 222 (amending 17 U.S.C. § 411(a)).

¹⁸⁸ U.S. CONST. art. 1, § 8, cl. 8.

¹⁸⁹ See generally Michael W. Carroll, *Fixing Fair Use*, 85 N.C. L. REV. 1087, 1092-1120 (2007).

¹⁹⁰ See Menell & Depoorter, *supra* note 17, at 56-58.

communities: “if in doubt, leave it out.”

Legal reporters are replete with close cases that make copyright scope difficult to navigate. Columbia Pictures knew of Saul Steinberg’s iconic “View of the World from 9th Avenue,” which adorned the March 29, 1976 edition of *The New Yorker*¹⁹¹ when it chose to fashion a similar poster for its 1985 film *Moscow on the Hudson*.¹⁹² Robin Thicke and Pharrell Williams were similarly aware of Marvin Gaye’s 1970s hit song “Got to Give it Up” when they set out to create “Blurred Lines.”¹⁹³ Dorling Kindersley Ltd. (“DK”), publisher of *Grateful Dead: The Illustrated Trip*, was well aware that several concert posters that they sought to include within the anthology were protected by copyrights owned by Bill Graham Archives.¹⁹⁴ Tracing ownership was not a problem, but licensing negotiations broke down and DK decided to proceed with publication. Although the courts ultimately ruled in its favor,¹⁹⁵ DK endured several years of costly litigation and risked substantial liability.

Copyright law comprises a complex set of relatively subjective standards governing the scope of protection. While the low thresholds for copyright subsistence—originality and fixation—open copyright’s protection regime widely, its limiting doctrines, infringement standards, and fair use defense

¹⁹¹ See *View of the World from 9th Avenue*, WIKIPEDIA, https://en.wikipedia.org/wiki/View_of_the_World_from_9th_Avenue [https://perma.cc/X9SJ-G9MZ].

¹⁹² See *Steinberg v. Columbia Pictures Indus., Inc.*, 663 F. Supp. 706, 708-09 (S.D.N.Y. 1987) (holding Columbia Pictures liable for copyright infringement).

¹⁹³ See *Blurred Lines*, WIKIPEDIA, https://en.wikipedia.org/wiki/Blurred_Lines [https://perma.cc/NLG5-TUHR]. Robin Thicke acknowledged that:

Pharrell and I were in the studio and I told him that one of my favorite songs of all time was Marvin Gaye’s “Got to Give It Up.” I was like, “Damn, we should make something like that, something with that groove.” Then he started playing a little something and we literally wrote the song in about a half hour and recorded it.

See Stelios Phili, *Robin Thicke on That Banned Video, Collaborating with 2 Chainz and Kendrick Lamar, and His New Film*, GQ (May 6, 2013), <http://www.gq.com/story/robin-thicke-interview-blurred-lines-music-video-collaborating-with-2-chainz-and-kendrick-lamar-mercy> [https://perma.cc/Z8JT-6QSS]. The jury in the lawsuit between the creators of “Blurred Lines” and Marvin Gaye’s estate found infringement and awarded the Gaye family over \$7 million and an interest in future income from “Blurred Lines.” See Eriq Gardner, *‘Blurred Lines’ Jury Orders Robin Thicke and Pharrell Williams to Pay \$7.4 Million*, HOLLYWOOD REP. (Mar. 10, 2015), <http://www.hollywoodreporter.com/thr-esq/blurred-lines-jury-orders-robin-779445> [https://perma.cc/XU5G-4FNS]. On post-trial motions, the judge largely upheld the decision, but reduced the damage award. See Eriq Gardner, *Judge Rejects New “Blurred Lines” Trial, Trims Damages to \$5.3 Million*, HOLLYWOOD REP. (July 14, 2015), <http://www.hollywoodreporter.com/thr-esq/judge-rejects-new-blurred-lines-808725> [https://perma.cc/T6EC-3KZ2].

¹⁹⁴ See *Bill Graham Archives, LLC v. Dorling Kindersley Ltd.*, 386 F. Supp. 2d 324, 325-26 (S.D.N.Y. 2005), *aff’d* 448 F.3d 605 (2d Cir. 2006) (finding that Dorling Kindersley had contacted Bill Graham Archives to seek permission).

¹⁹⁵ *Id.* at 333.

significantly constrain the scope of protection. Moreover, the ultimate judgment can rest in the hands of judges and juries, which introduces additional uncertainty as to the scope of protection. In high profile copyright cases involving celebrity performing artists and iconic works, the outcome of the case can be very difficult to predict.¹⁹⁶

This Part analyzes the notice challenges posed by copyright's complex scope doctrines. Section A explores the distinctive characteristics of copyright resources, highlighting how they differ from tangible and patent resources. Section B analyzes the costs and benefits of specifying the scope of copyright resources and why it is neither feasible nor desirable to require anywhere near complete specification of the scope of copyrighted works at the registration stage. The inability to specify the scope of copyrighted works *ex ante*, however, does not end the policy analysis. Section C sets out the myriad ways in which other adjustments to copyright institutions, court-made doctrines, and substantive rules can ameliorate the notice challenges posed by copyright law's uncertain scope.

A. *Characterizing Copyright Resources: The Swiss Cheese Problem*

Notwithstanding their fixation in tangible works of authorship, copyright resources present distinctive notice issues due to the inherent complexities in defining their scope. Comparing copyright resources with real estate and patent resources highlights these distinctive features.

Most real estate resources exist within borders that can be specified with a high degree of precision. Trained surveyors can provide survey markers that inform landowners and others interested in project planning with clearly defined peripheral borders by using established, scientific, reproducible methods. Everything within the parcel boundaries is owned by the titleholder. Anyone considering building a project that overlaps that space risks liability absent prior agreements among neighbors.¹⁹⁷ Non-trespassory invasions can present scope issues, but zoning laws and institutions provide mechanisms for anticipating many potential problems. The key point here is that resource scope is rarely a significant issue in real estate notice and planning.

Patents present a host of scope and notice issues, but they operate according to the same peripheral boundary principle as real estate. Although patent resources are intangible, their boundaries are set forth in patent claims drafted by the patentee and patent prosecutor and examined by the Patent Office. Once the patent issues, the claims provide notice to the public-at-large of the

¹⁹⁶ See, e.g., *Three Boys Music Corp. v. Bolton*, 212 F.3d 477, 482-85 (9th Cir. 2000) (upholding a questionable jury verdict based on weak circumstantial evidence of factual copying and "a combination of five unprotectable elements: (1) the title hook phrase (including the lyric, rhythm, and pitch); (2) the shifted cadence; (3) the instrumental figures; (4) the verse/chorus relationship; and (5) the fade ending").

¹⁹⁷ Property law provides modest leeway for good faith improvers. See, e.g., *Raab v. Casper*, 124 Cal. Rptr. 590 (Ct. App. 1975).

intangible resource domain that the patentee purports to control.

In some fields of invention, the nature of the claims is relatively unambiguous, and competitors can easily grasp the scope of coverage. For example, chemical compounds are typically claimed in specific form with the periodic table serving as a measuring stick. Inventions in most other technological fields are far more subjective. U.S. patents are typically claimed using a “peripheral” format whereby the drafter delineates the outer boundaries of the claimed invention. As an example, U.S. Patent No. 5,205,473 claims an insulated recyclable beverage container sleeve as:

A recyclable, insulating beverage container holder, comprising a corrugated tubular member comprising cellulosic material and at least a first opening therein for receiving and retaining a beverage container, said corrugated tubular member comprising fluting means for containing insulating air; said fluting means comprising fluting adhesively attached to a liner with a recyclable adhesive.¹⁹⁸

Like other peripheral claims, this claim begins with a preamble (“A recyclable, insulating beverage container holder”) followed by a transitional phrase (“comprising”) and the claim body setting forth the claim restrictions (or elements). The open transitional phrase “comprising” signifies that the patentee claims all structures containing the claim restrictions and anything else.¹⁹⁹ By contrast, the closed transitional phrase “consisting of” limits the claim to structures containing the claim restrictions and nothing else.²⁰⁰

By tracing peripheral boundaries, the patent claim operates like a real estate deed in a multi-dimensional idea domain. The patent grants exclusive rights over all devices that have the elements set forth in the body of the claim. Like a real estate deed, the patentee’s rights are supreme within the peripheral boundaries of the claimed invention.

Patent rights are typically far more uncertain than conventional real estate deeds due to the imprecision of claim language,²⁰¹ opportunism in claim drafting,²⁰² doctrines that potentially expand patent scope,²⁰³ the difficulty of

¹⁹⁸ U.S. Patent No. 5,205,473 col. 4-5 (filed Apr. 27, 1993).

¹⁹⁹ See Menell, Powers & Carlson, *supra* note 5, at 759-60.

²⁰⁰ See *id.* at 761.

²⁰¹ See J. Jonas Anderson & Peter S. Menell, *Informal Deference: A Historical, Empirical, and Normative Analysis of Patent Claim Construction*, 108 NW. U. L. REV. 1, 5 (2013); Menell, Powers & Carlson, *supra* note 5, at 720; Kristen Osenga, *Linguistics and Patent Claim Construction*, 38 RUTGERS L.J. 61, 83-84 (2006) (proposing a linguistic-based approach to claim construction).

²⁰² See ROBERT D. FISH, STRATEGIC PATENTING 253 (2007) (advising drafters to “[a]void . . . like the plague” claim language that clearly identifies the “gist of the invention” or the “factor” that makes it “unique”); JEFFREY G. SHELDON, HOW TO WRITE A PATENT APPLICATION § 6.5.19 (2005) (including a section entitled “Include Ambiguous Claims,” which offers numerous “strategies” for “intentionally writ[ing] ambiguous claims”); Stephen M. McJohn, *Patents: Hiding from History*, 24 SANTA CLARA COMPUTER & HIGH TECH. L.J.

assessing patent validity, and complexity of patent law doctrines.²⁰⁴ Nonetheless, they operate under the same principle as real estate resources—once the peripheral boundaries are established (and the patent is deemed valid), any “invasion” within the periphery of the boundaries exposes the competitor to liability, subject to various defenses.²⁰⁵

By contrast, copyright resources operate within a conceptually distinct scope regime. Somewhat like real estate and different from patents, copyrighted works exist in a tangible form. Most works of authorship—whether books, paintings, musical compositions, or sculptures—can be directly observed.²⁰⁶ Unlike patent applications, copyright registration points to a specific work of authorship.²⁰⁷ The deposit provisions of the Copyright Act seek to collect

961, 971 (2008) (stating that “experts in claim drafting offer the following advice to inventors and patent drafters: Do not define the terms used in your claims; do not identify the category of invention in the preamble to the claims; do not identify features of the invention as ‘important’ . . .” and “[s]uch claim drafting has been described as a trend toward ‘intentional obscurity’” (footnotes omitted)); Menell & Meurer, *supra* note 177, at 1-4, 7-9, 13-15 (exploring the divergence between private and social interest in patent claiming); Michael Risch, *The Failure of Public Notice in Patent Prosecution*, 21 HARV. J.L. & TECH. 179, 188 (2007) (“Patent applicants have an incentive to allow claims to remain vague so that they can mold the claims to fit the future product of a currently unknown, potential infringer or to avoid invalidation if previously undiscovered prior art comes to light.”).

²⁰³ See *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605, 608 (1950) (discussing the doctrine of equivalents); *RF Del., Inc. v. Pac. Keystone Techs., Inc.*, 326 F.3d 1255, 1263 (Fed. Cir. 2003) (discussing the doctrine of claim differentiation).

²⁰⁴ See Mark A. Lemley & Carl Shapiro, *Probabilistic Patents*, 19 J. ECON. PERSP. 75 (2005); Jason Rantanen, *The Malleability of Patent Rights*, 2015 MICH. ST. L. REV. 895.

²⁰⁵ See 35 U.S.C. § 271(d) (2012); *Motion Picture Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502, 505-06 (1917) (discussing patent misuse).

²⁰⁶ Cf. Douglas Lichtman, *Copyright as a Rule of Evidence*, 52 DUKE L.J. 683, 716-30 (2003) (discussing the role of fixation in copyright subsistence). Sound recordings and computer software code are not typically perceptible without the aid of machines.

²⁰⁷ The patent claim uses words to describe the invention in the conceptual multi-dimensional space of ideas. Claim elements restrict that domain down to the patentee’s claimed invention. In evaluating patent infringement, courts look to the claim language as opposed to the patentee’s device or process. As the Federal Circuit explained in *Phillips v. AWH Corp.*, “the claims made in the patent are the sole measure of the grant.” 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 365 U.S. 336, 339 (1961)). Nonetheless, courts must also read patent claims “in light of [the] specification.” *Id.* at 1316 (quoting *Schriber-Schroth Co. v. Cleveland Trust Co.*, 311 U.S. 211, 217 (1940)); see also *Andersen Corp. v. Fiber Composites, LLC*, 474 F.3d 1361, 1373 (Fed. Cir. 2007). And patent claims should generally be construed to encompass the preferred embodiments described in the specification. It is generally error to adopt a construction that excludes them. See *On-Line Techs. Inc. v. Bodenseewerk Perkin-Elmer*, 386 F.3d 1133, 1138 (Fed. Cir. 2004) (“[A] claim interpretation that excludes a preferred embodiment from the scope of the claim ‘is rarely, if ever, correct.’” (quoting *Globetrotter Software, Inc. v. Elan Comput. Grp., Inc.*,

copyrighted works for evidentiary and preservation purposes. Yet, unlike a real estate parcel, a copyrighted work does not exclude other authors and artists from copying elements from within the work.²⁰⁸ And unlike patent law, which protects the claimed combination of elements, copyright law allows for even the full combinations of elements to be used by others under various circumstances.

Copyright owners cannot exclude subsequent creators from “any idea, procedure, process, system, method of operation, concept, principle, or discovery.”²⁰⁹ Nor can they control elements of their own work that lack originality. Nor can they bar any similarity or overlap, only those resulting in “substantial similarity” of protected expression. And even where another work is substantially similar to protected expression, the copyright owner cannot prevent others from commenting on, parodying, or sufficiently transforming their protected work. The bounds of these limitations can be murky. Furthermore, the litigation process adds further uncertainty. Outcomes can depend on how a jury or judge perceives the parties as well as the works.

Thus, even though the public-at-large is on notice that a work is protected by copyright law, cumulative creators, such as Columbia Pictures (*Moscow on the Hudson* poster) and Robin Thicke and Pharrell Williams (“Blurred Lines”), cannot readily determine from registration materials or the underlying work which particular elements or compilations of elements are protected and to what extent. Moreover, anthology creators, such as DK (*Grateful Dead: The Illustrated Trip*), and filmmakers, such as the producers of *Selma*,²¹⁰ cannot easily assess when using a preexisting work is permissible under the fair use doctrine.

Whereas a real estate deed or patent claim can be analogized to a bounded parcel from which interlopers are excluded, the copyright claim is more like a wedge, or in some cases a thin slice, of Swiss cheese.²¹¹ Cumulative creators

362 F.3d 1367, 1381 (Fed. Cir. 2004))). Nonetheless, the patentee’s commercial device does not necessarily read on (i.e., fall within) its patent claims. Composition claims, however, can be tangible, where represented as a specific chemical composition or where accompanied by a biological deposit. See USPTO, MPEP §§ 2401-03 (9th ed. Rev. 7, Oct. 2015), <http://www.uspto.gov/web/offices/pac/mpep/s2401.html> [<https://perma.cc/U9PT-KS7T>].

²⁰⁸ See Michael A. Carrier, *Cabining Intellectual Property through a Property Paradigm*, 54 DUKE L.J. 1, 65-73 (2004) (discussing necessity doctrines within property law).

²⁰⁹ 17 U.S.C. § 102(b) (2012).

²¹⁰ See Tim Appelo & Stephen Galloway, *It Costs How Much To Quote MLK?!*, HOLLYWOOD REP. (Dec. 16, 2014) (reporting that the children of Martin Luther King, Jr., assert copyright in the civil rights leader’s speeches and “never have been able to unite on any film project” and that “[r]ights to King’s speeches are controlled by Intellectual Properties Management, which charged \$761,160 to use the pastor’s words and images on the MLK monument in D.C., in addition to a \$71,000 ‘management fee’ for the family”).

²¹¹ See Nicola Twilley, *How Does Swiss Cheese Get Its Holes?*, NEW YORKER (Jun. 15, 2015), <http://www.newyorker.com/tech/elements/how-does-swiss-cheese-get-its-holes> [<https://perma.cc/ZT6C-XX7F>].

have a clear understanding of the block or narrow slice as a whole. They are on notice that reproducing the entirety of the block or slice risks infringement, although subject to a fair use claim—which can vary in strength. But what the cumulative creator often cannot easily evaluate are the fermentation holes in the wedge or slice of cheese. They may freely operate within those holes. And even some compilations of those holes can be fair game to the extent that the holes lack originality.²¹² Nonetheless, uncertainty about the scope of what is *not* protected within a copyrighted work creates a minefield for cumulative creators.

A principal goal of resource notice is to apprise would-be developers or creators of which resources or portions of resources are off-limits without authorization and where they may freely operate. Such information enables those seeking to develop resources of the constraints on their activities and with whom they need to negotiate. Part I highlighted the obsolescence of international treaty impediments to mandatory registration of copyright interests and advocated use of digital technologies for identifying copyright subsistence and tracing ownership of copyrighted works. Expanding on that framework, the most straightforward solution to the problems posed by uncertain copyright scope would be to require copyright claimants to fully specify not just the outer boundaries of the copyright claim, but also what is not claimed.²¹³ The notion of greater claim clarity is gaining salience in the patent field.²¹⁴ The next section explains why such an approach is unlikely to be worth the candle in the copyright domain.

B. *Optimal Specificity*

The optimal specificity of copyright registration depends on the relative costs and benefits. Copyright registration has never required anywhere near full specification of what is excluded from the copyright claim—i.e., the Swiss cheese holes—and the costs of doing so fall well below any realizable benefit.

Current U.S. copyright registration procedures do not require the registrant to identify sources of inspiration or influence for a work unless the work falls

²¹² See *Feist Publ'ns, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 345 (1991).

²¹³ See, e.g., JULES L. COLEMAN, *RISKS AND WRONGS* 80 (1992) (“A fully specified contract is one in which the contracting parties imagine and respond to all potential contingencies. When a contract is fully specified, . . . nothing can happen that is not explicitly accounted for by the terms of the contract. A fully specified contract is both complete and efficient.”)

²¹⁴ See Menell & Meurer, *supra* note 177, at 22, 32-34; EXEC. OFFICE OF THE PRESIDENT, PATENT ASSERTION AND U.S. INNOVATION, 7-8 (2013) (discussing claim clarity initiative), https://www.whitehouse.gov/sites/default/files/docs/patent_report.pdf [<https://perma.cc/9XBG-X7BP>]; Peter Menell, *It's Time to Make Vague Software Patents More Clear*, WIRED (Feb. 7, 2013), <http://www.wired.com/2013/02/its-time-to-make-vague-software-patents-more-clear/> [<https://perma.cc/4WFH-VXRJ>].

within the definition of a “derivative work.”²¹⁵ If the work being registered qualifies as a “derivative work,” then the registrant must identify the preexisting material from which the work is derived and briefly explain the original material added to the work for which copyright is claimed.²¹⁶ Drawing on the Copyright Act’s definition,²¹⁷ the registration form states that a “derivative work” is “a work based upon one or more preexisting works.”²¹⁸ Examples include reproductions of works of art, sculptures based on drawings, lithographs based on paintings, maps based on previously published sources, or “any other form in which a work may be recast, transformed, or adapted.”²¹⁹ Derivative works also include works “consisting of editorial revisions, annotations, elaborations, or other modifications which, as a whole, represent an original work of authorship.”²²⁰

As Professor Nimmer explains, the term derivative work in a technical sense does not refer to all works that borrow in any degree from pre-existing works.²²¹ A work is not derivative unless it has substantially copied from a prior work. If that which is borrowed consists merely of ideas and not the expression of ideas, then, although the work may have in part been derived from prior works, it is not a derivative work. Put another way, a work will be considered a derivative work only if the material that it derived from a pre-existing work had been taken without the consent of a copyright proprietor of such pre-existing work.²²²

Thus, the Copyright Office does not expect registrants to identify aspects of a claimed work that are not protected by copyright. Essentially all works reflect prior ideas and concepts. These factors merely affect whether a work can be registered at all, not how copyright in the art is claimed. Thus, if a work is literally copied from a prior work, then it would be improper to seek registration. But so long as the artist meets copyright law’s relatively low originality threshold,²²³ the registrant need only identify pre-existing works to the extent that the registered work falls within the specialized definition of a “derivative work.”

Just as “[f]ully specifying a contract is not ordinarily possible” and “[t]he benefits of nailing down a particular allocation of risk to cover most extremely

²¹⁵ See 17 U.S.C. § 101 (2012) (defining “derivative work”).

²¹⁶ See *Form VA*, U.S. COPYRIGHT OFFICE, U.S. GOV’T PRINTING OFFICE, <http://copyright.gov/forms/formva.pdf> [<https://perma.cc/EKB8-XXXB>].

²¹⁷ See 17 U.S.C. § 101.

²¹⁸ *Id.*

²¹⁹ *Id.*

²²⁰ See *Form VA*, *supra* note 216.

²²¹ See MELVILLE B. NIMMER & DAVID NIMMER, 1 NIMMER ON COPYRIGHT § 3.01 (1963).

²²² See *id.*

²²³ See *Feist Publ’ns Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340, 345 (1991) (“[T]he requisite level of creativity is extremely low; even a slight amount will suffice.”).

unlikely events will often not be worth the costs,”²²⁴ the effort to specify ex ante all of the elements (and compilations of elements) of a copyrighted work that are free for others to use would be unduly costly. Doing so would require a near endless list of disclaimed material or boilerplate disclaimers that would be of little use in providing useful notice to cumulative creators of where they are free to operate. Thus, copyright registration presents a case in which it is rational to forgo specificity as to what is not claimed.

In a related vein, Professor Mark Lemley contended that it is rational for the Patent Office to remain relatively ignorant of the full merits of patent validity due to the small number of patents that are litigated.²²⁵ His analysis, however, overlooked the many non-litigation costs of dubious and overbroad patents.²²⁶ At around the same time that Professor Lemley’s article appeared, the dot-com bubble burst,²²⁷ sending thousands of dubious patents into the hands of patent assertion entities and resulting in a costly patent litigation explosion.²²⁸ This wave of litigation wreaked havoc in the technology marketplace,²²⁹ indicating that spending more resources at the Patent Office to screen bad patents and ensure clearer claims would have been a wise social investment.

By contrast, the benefits of ex ante specification of copyright scope beyond disclosure of the work of authorship do not justify the costs. Fundamental differences between patent and copyright protection support a difference in approach. Patents protect functionality—the inventive aspects of processes, devices, articles of manufacture, and compositions of matter—and hence can exclude competitors from potentially valuable markets. Patents protect not just embodiments, but also the conceptual basis for the claimed inventions. Potential competitors incur substantial costs evaluating patents to determine freedom to operate.

Copyright law protects expressions of ideas, not the ideas themselves.

²²⁴ See COLEMAN, *supra* note 213, at 81.

²²⁵ See Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495, 1497 (2001).

²²⁶ See Shubha Ghosh & Jay Kesan, *What Do Patents Purchase? In Search of Optimal Ignorance in the Patent Office*, 40 HOUS. L. REV. 1219, 1221 (2004) (criticizing Professor Lemley’s failure to account for the full social costs of invalid patents beyond litigation costs); Menell & Meurer, *supra* note 177, at 1-4, 7-9, 13-15, 32-24 (discussing opportunistic claiming and the value of investing more at the Patent Office in enhancing patent searchability); Menell, *supra* note 214 (promoting the virtues of improving claim clarity).

²²⁷ See ADAM B. JAFFE & JOSH LERNER, *INNOVATION AND ITS DISCONTENTS: HOW OUR BROKEN PATENT SYSTEM IS ENDANGERING INNOVATION AND PROGRESS, AND WHAT TO DO ABOUT IT* 174-75 (2004); *The Dot-Com Bubble Bursts*, N.Y. TIMES, Dec. 24, 2000, at WK8.

²²⁸ See FED. TRADE COMM’N, *TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY* 7 (2003); NAT’L RESEARCH COUNCIL, NAT’L ACAD. OF SCI., *A PATENT SYSTEM FOR THE 21ST CENTURY* 117 (Stephen A. Merrill, Richard C. Levin & Mark B. Myers eds., 2004).

²²⁹ See JAMES BESSEN & MICHAEL J. MEURER, *PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK* 68-70 (2008).

Therefore, a successful television series about police investigations (such as *Hill Street Blues*) can inspire many other creators (such as Dick Wolf, creator of *Law and Order*) to enter that entertainment marketplace. The competitors cannot reproduce the entirety of an episode or detailed plot elements,²³⁰ but that leaves ample room for competition. Thus, the market power conferred by copyrights is much more limited than pioneering patents. Others are free to use ideas so long as they do not appropriate the expression. Similarly, fair use doctrine permits even the expression to be used in a range of circumstances.

While it would be useful to know the freedom to operate surrounding a copyrighted work based on ex ante disclosure, the ambiguity surrounding copyright doctrines and the myriad possible uses make such specification highly speculative. Thus, requiring copyright claimants to specify all or even many of the non-protected elements and compilations of elements would be both excessively burdensome and of relatively little practical utility. Disclosure of the registered work and the general limiting principles and doctrines of copyright law are close to the optimal ex ante level. Rather than expend significant resources on the ex ante specification of the Swiss cheese holes, copyright law can better address the scope notice problem through other adjustments to the copyright system.

C. Addressing Incomplete Specificity through Copyright System Adjustments

Notwithstanding the impracticality of providing reliable ex ante notice of the interior exclusions of copyright scope, copyright law can adjust other doctrines to address the scope notice problem.²³¹ This section examines four sets of institutional and doctrinal adjustments that address the copyright scope problem in economically efficient ways. Several of these reforms have been proposed in prior scholarship. The analysis presented here consolidates, broadens, and strengthens the support for and framing of those proposals. Several of the proposals go beyond the extant literature.

These adjustments address the problems that cumulative creators face in developing new works amidst the minefield of potential copyright impediments posed by pre-existing works. These proposals seek to optimize information burdens on administrative processes and minimize transaction

²³⁰ Even this statement should be qualified. Subsequent creators can recreate television drama to the extent that the first work lacks originality—such as where it is based on actual incidents—and relate the story in a chronological or other unoriginal manner. *See, e.g.,* *Hoehling v. Universal City Studios, Inc.*, 618 F.2d 972 (2d Cir. 1980).

²³¹ *See* Menell & Meurer, *supra* note 177, at 29-51 (developing a framework for adjusting copyright (and patent) rights and remedies based on notice failure problems); Stewart E. Sterk, *Intellectualizing Property: The Tenuous Connections Between Land and Copyright*, 83 WASH. U.L.Q. 417, 455-62 (2005) (contending that the fuzziness of copyright boundaries caution against injunctive relief in non-piracy cases); *cf.* Herbert Hovenkamp, *Notice and Patent Remedies*, 88 TEX. L. REV. SEE ALSO 221, 227-31 (2011) (arguing that ambiguity as the scope of patent claim should play a role in the substantive analysis of remedies).

costs. They further aim to provide effective mechanisms for integrating notice costs and behavior into other aspects of the copyright system.

1. Preclearance Institutions

The principal economic rationale for resource notice is to provide resource developers with an ability to plan their investments. When ownership information and resource boundaries can be recorded in an easily accessible and transparent database, it makes sense to allocate the burden to the resource claimant. Subsequent developers can then make their decisions sequentially. They can build outside of the claimed resource or negotiate with resource owners. A key concern is to avoid large investments in unproductive resource development, notably projects that encroach or infringe on rights of others.

Where *ex ante* specification is not feasible or effective in providing notice to the world at large, it may nonetheless be possible and efficient to provide for targeted testing of freedom to operate prior to large outlays. For example, the Internal Revenue Service's opinion letter and the Securities and Exchange Commission's "no-action" letter processes provide mechanisms for testing tax treatment prior to important planning decisions. Various scholars have proposed comparable preclearance mechanisms for copyright resources.²³²

Such proposals could significantly reduce the risk posed by uncertain copyright scope and potentially massive liability. Nonetheless, preclearance institutions entail substantial administrative costs and would need to be aligned with copyright protection and due process concerns²³³ as well as cumulative creators' temporal constraints.

In a related vein, the procedural rules (including fee shifting rules) and remedies for infringement can be re-equilibrated to make declaratory relief more prompt and effective. Given the attorneys' fees, injury to reputation, and distraction of defending a copyright lawsuit as well as the risks to the project and financial exposure for liability, many cumulative creators take a cautious approach to using other works without authorization.²³⁴ Yet, cumulative

²³² See, e.g., Carroll, *supra* note 189, at 1123-27; Jason Mazzone, *Administering Fair Use*, 51 WM. & MARY L. REV. 395, 415-21 (2009) (proposing two models of administrative regulation of fair use); David Nimmer, *A Modest Proposal to Streamline Fair Use Determinations*, 24 CARDOZO ARTS & ENT. L.J. 11, 12 (2006) (proposing a panel of "Fair Use Arbiters" appointed by the Register of Copyright); David A. Simon, *Teaching Without Infringement: A New Model for Educational Fair Use*, 20 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 453, 527-50 (2010) (proposing a more limited institution focused on evaluating fair education uses of copyrighted works); see also Menell & Meurer, *supra* note 177, at 38 (arguing that trademark law's intent to use process provides a preclearance mechanism in the trademark field, and endorsing consideration of administrative processes for clearing rights).

²³³ See Carroll, *supra* note 189, at 1130-36.

²³⁴ See PATRICIA AUFDERHEIDE & PETER JASZI, CTR. FOR SOC. MEDIA, SCH. OF COMM'C'N & PROGRAM ON INTELL. PROP. & THE PUB. INTEREST, WASH. COLL. OF L., AM. UNIV., *UNTOLD STORIES: CREATIVE CONSEQUENCES OF THE RIGHTS CLEARANCE CULTURE FOR*

creators often have little leverage to bring copyright holdouts to the table. Witness the reluctance of filmmakers, Hollywood studios, restaurants, and other businesses to challenge Warner/Chappell Music's long-doubted claim to copyright protection for the song "Happy Birthday."²³⁵ Many filmmakers and recording artists over the years have agreed to significant license fees rather than challenge the basis of the copyright claim. The availability of class action status in such cases could potentially motivate greater efforts to invalidate dubious copyright claims.

2. Promoting Bargaining

In many if not most circumstances, cumulative creators care principally about getting the project completed consistent with their artistic vision, not vindicating a particular interpretation of copyright law. For example, Luther Campbell's record label reached out to Roy Orbison's record label to license "Oh, Pretty Woman" for 2 Live Crew's "Pretty Woman."²³⁶ Google sought a license to Java code in developing the Android platform.²³⁷ Many mashup

DOCUMENTARY FILMMAKERS 29 (2004) (exploring the copyright-clearance challenges faced by documentary filmmakers); MICHAEL C. DONALDSON, CLEARANCE AND COPYRIGHT: EVERYTHING YOU NEED TO KNOW FOR FILM AND TELEVISION 29, 363-67 (3d ed. 2008) (advising that "[e]ven documentaries, which are usually in the public interest, should not cavalierly incorporate uncleared footage from the films of others. Clear your film clips with a license or solid fair-use opinion from an attorney approved by the E&O [Errors and Omissions] insurance companies in advance because lawsuits are expensive. It can be even more expensive to remove a section of your film at some point in the future if a court rules against you," and reporting that prior to 2007, standard insurance policies for film projects specifically excluded coverage for the use of any copyrighted material for which the insured did not have a written release); James Gibson, *Risk Aversion and Rights Accretion in Intellectual Property Law*, 116 YALE L.J. 882, 887-95 (2007) (explaining that risk aversion and user caution create licensing customs that reduce the perceived scope of permissible uses); Menell & Depoorter, *supra* note 17, at 56-58; Molly Shaffer Van Houweling, *Distributive Values in Copyright*, 83 TEX. L. REV. 1535, 1569 (2005) (discussing disproportionate impact of copyright remedies on independent artists).

²³⁵ See Robert Brauneis, *Copyright and the World's Most Popular Song*, 56 J. COPYRIGHT SOC'Y U.S.A. 335 (2009); Eriq Gardner, "Happy Birthday" Copyright Ruled to Be Invalid, HOLLYWOOD REP. (Sept. 22, 2015), <http://www.hollywoodreporter.com/thr-esq/happy-birthday-copyright-ruled-be-826528> [<https://perma.cc/8ZQF-82EY>]. Licensing of "Happy Birthday" reportedly brought in as much as \$2 million per year. See Joe Mullin, *Documentarian Wipes out Warner's \$2M "Happy Birthday" Copyright*, ARSTECHNICA (Sept. 22, 2015), <http://arstechnica.com/tech-policy/2015/09/judge-warners-2m-happy-birthday-copyright-is-bogus/> [<https://perma.cc/J9MN-RDWC>].

²³⁶ See *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569 (1994).

²³⁷ Judge Alsup found that:

In late 2005, Google began discussing with Sun the possibility of taking a license to use and to adapt the entire Java platform for mobile devices. They also discussed a possible co-development partnership deal with Sun under which Java technology would become an open-source part of the Android platform, adapted for mobile

artists would be pleased to share a significant percentage of the value derived from their use of samples with the original composers and recording artists.²³⁸ They recognize that they have non-infringement or fair use arguments, but they are pragmatic. The challenge is in getting the deal done.

Various aspects of copyright resources and copyright law frustrate these efforts. Some copyright holders withhold permission for non-copyright reasons, such as protecting moral concerns, squelching speech, or competitive advantage.²³⁹ Especially in light of the Supreme Court's decision in *eBay Inc. v. MercExchange, LLC*,²⁴⁰ such refusals to grant permission unfairly disadvantage cumulative creators who either have a plausible, although probabilistic, basis for using a copyrighted work or who would be able to use the work subject to payment of a court-determined license. Courts can potentially encourage fair bargaining by awarding fees for unreasonable refusals to bargain, such as where a plausible fair use claim can be made.²⁴¹

3. Voluntary and Compulsory License Regimes

Addressing the uncertainty surrounding copyright scope on a case-by-case basis generates tremendous transaction costs, which can discourage both cumulative creativity and licensed dissemination of works. These costs can be greatly reduced through wholesale licensing solutions, such as industry-based private ordering and compulsory license provisions. Such systems mimic the market through off-the-shelf terms and blanket licenses that meter usage based

devices. Google and Sun negotiated over several months, but they were unable to reach a deal.

See *Oracle Am., Inc. v. Google Inc.*, 872 F. Supp. 2d 974, 978 (N.D. Cal. 2012), *rev'd*, 750 F.3d 1339 (Fed. Cir. 2014); see also Jon Brodtkin, *Sun Wanted Up to \$50 Million from Google for Java License, Schmidt Says*, ARSTECHNICA (Apr. 24, 2012), <http://arstechnica.com/tech-policy/2012/04/sun-wanted-up-to-50-million-from-google-for-java-license-schmidt-says/> [<https://perma.cc/3B6M-VYS9>].

²³⁸ See KEMBREW MCLEOD & PETER DiCOLA, CREATIVE LICENSE: THE LAW AND CULTURE OF DIGITAL SAMPLING 227 (2011) (quoting Philo Farnsworth, operator of the Illegal Art website that distributes Girl Talk's music: "I think it would be great if there was a compulsory license similar to recording a cover song . . . [t]hat would at least give artists more options. . . . Artists could still claim fair use, but that would at least provide safer avenues since fair use is a very grey area."); Menell, *supra* note 17, at 511 n.354.

²³⁹ See John Tehranian, *The New ©ensorship*, 101 IOWA L. REV. 245, 258-62 (2015); Mike Masnick, *Jimi Hendrix Biopic Opens Today . . . Without Any Jimi Hendrix Music, Thanks To Copyright*, TECHDIRT (Sept. 26, 2014), <https://www.techdirt.com/articles/20140926/12251828651/jimi-hendrix-biopic-opens-today-without-any-jimi-hendrix-music-thanks-to-copyright.shtml> [<https://perma.cc/MZ5L-WWQZ>] ("[T]he Jimi Hendrix Estate denied any and all attempts to license his music unless they could have some control over the production . . .").

²⁴⁰ 547 U.S. 388 (2006).

²⁴¹ See Menell & Depoorter, *supra* note 17, at 76-81; cf. Alex Kozinski & Christopher Newman, *What's So Fair About Fair Use?*, 46 J. COPYRIGHT SOC'Y U.S.A. 513 (1999).

on a simple set of criteria. These approaches need not be perfect to be socially and economically productive as their value lies in promoting commerce at substantially discounted transaction costs.

a. *Voluntary Regimes*

Several music industry organizations have resolved important classes of bargaining through collective licensing systems. The American Society of Composers, Authors, and Publishers (“ASCAP”) pioneered the development of blanket licensing that greatly facilitated authorized public performance of copyrighted works.²⁴² The Harry Fox Agency, established by the National Music Publishers’ Association, has long served as an efficient clearinghouse for mechanical licenses of musical compositions for sound recordings.²⁴³ These institutions have greatly facilitated commerce in and dissemination of musical works and sound recordings. ASCAP and Broadcast Music, Inc. (“BMI”), competing performance rights consortia, operate within consent decrees supervised by the United States District Court for the Southern District of New York.²⁴⁴

These arrangements are coming under increasing strain as major record labels and music publishers have sought to withdraw some of their works from these collective licenses in an effort to extract greater value from distribution outlets.²⁴⁵ Such withdrawals fragment already tenuous music platforms at a time when attracting more paid subscribers is vital to persuading music fans to join authorized services as opposed to pirate channels.²⁴⁶

²⁴² See RUSSELL SANJEK & DAVID SANJEK, *PENNIES FROM HEAVEN: THE AMERICAN POPULAR MUSIC BUSINESS IN THE TWENTIETH CENTURY* 38-41 (1996); Merges, *supra* note 146, at 1329.

²⁴³ This arrangement operates in the shadow of an important compulsory license, *see* 17 U.S.C. § 115 (2012), but nonetheless has provided further transaction cost savings.

²⁴⁴ See Second Amended Final Judgment at 8-9, *United States v. Am. Soc’y of Composers, Authors, and Publishers* (S.D.N.Y. 2001), Civ. Action No. 41-1395 (WCC); Final Judgment at 2-3, *United States v. Broadcast Music, Inc.* (S.D.N.Y. 1994), Civ. Action No. 64-3787 (LSS); *Antitrust Consent Decree Review—ASCAP and BMI 2014*, U.S. DEP’T OF JUSTICE, <http://www.justice.gov/atr/ascap-bmi-decree-review> [https://perma.cc/7FPN-BJW2].

²⁴⁵ See *Pandora Media, Inc. v. Am. Soc’y of Composers, Authors, and Publishers*, 785 F.3d 73 (2d Cir. 2015) (affirming decision barring ASCAP members from partially withdrawing rights as violative of the ASCAP consent decree); COPYRIGHT OFFICE MUSIC LICENSING STUDY, *supra* note 170, at 162-64; INTERNET POLICY TASK FORCE GREEN PAPER ON COPYRIGHT POLICY, *supra* note 170, at 80-98.

²⁴⁶ See Menell, *This American Copyright Life*, *supra* note 4, at 292-97 (exploring industry forces fragmenting streaming music platforms); Molly Shaffer Van Houweling, *Author Autonomy and Atomism in Copyright Law*, 96 VA. L. REV. 549, 561-64 (2010); cf. MICHAEL HELLER, *THE GRIDLOCK ECONOMY: HOW TOO MUCH OWNERSHIP WRECKS MARKETS, STOPS INNOVATION, AND COSTS LIVES* 1-22 (2008) (exploring varying examples of deleterious ownership fragmentation); Michael A. Heller, *The Tragedy of the*

In addition to collective licensing within creator communities, technology companies have developed platforms that enable users to upload content for widespread distribution. Google's YouTube platform is a prime example. As discussed previously,²⁴⁷ YouTube has developed a sophisticated pre-screening process to prevent unauthorized distribution of copyrighted works. The Content ID system works most productively when it screens exact copies of copyrighted works that merely substitute for the original. The copyright owner has the choice of blocking the upload or permitting the work to be uploaded subject to a claim to the advertising revenue.

The Content ID screening/monetization system is more controversial, however, when the uploader is a true cumulative creator—someone who is reworking, augmenting, or commenting on the underlying work. The Content ID screen is effectively conducting an infringement and fair use analysis, which, for the reasons previously canvassed, is unlikely to be reliable. When the owner of the sampled copyrighted work(s) agrees to the work being uploaded and monetized, the cumulative work reaches a broad audience—but potentially at the cost of losing the revenue that might rightfully be attributable to a fair use. The cumulative creator would, of course, have the option of posting the work elsewhere, but would not gain access to YouTube extensive network of users.

The most serious concern arises where the copyright owner of the sampled work blocks the cumulative work.²⁴⁸ If the cumulative work is a fair use, then the Content ID screening algorithm has interfered with cumulative creativity and free expression. Although the Copyright Act provides a mechanism to penalize copyright owners who “knowingly materially misrepresent[] . . . that material or activity is infringing,”²⁴⁹ this deterrent has proven ineffective as a practical matter. In the leading case addressing remedies under § 512(f), the litigation costs and modest remedies discourage those individuals unfairly accused of infringing copyright law from pursuing a misrepresentation

Anticommons: Property in the Transition from Marx to Markets, 111 HARV. L. REV. 621, 624 (1998) (highlighting that “[w]hen there are too many owners holding rights of exclusion, the resource is prone to underuse—a tragedy of the anticommons”).

²⁴⁷ See *supra* text accompanying note 168.

²⁴⁸ See Michael S. Sawyer, *Filters, Fair Use & Feedback: User-Generated Content Principles and the DMCA*, 24 BERKELEY TECH. L.J. 363, 366 (2009); Richard Koman, *EFF's von Lohmann: YouTube Worse than DMCA for Fair Use*, ZDNET: GOV'T (Apr. 7, 2009, 10:09 PDT), <http://www.zdnet.com/article/effs-von-lohmann-youtube-worse-than-dmca-for-fair-use/> [<https://perma.cc/H7X7-J2V6>]; Fred von Lohmann, *YouTube's Content ID (C)ensorship Problem Illustrated*, ELEC. FRONTIER FOUND.: DEEPLINKS BLOG (Mar. 2, 2010), <https://www.eff.org/deeplinks/2010/03/youtubes-content-id-c-ensorship-problem> [<https://perma.cc/A6YZ-P98G>]; Fred von Lohmann, *YouTube's January Fair Use Massacre*, ELEC. FRONTIER FOUND.: DEEPLINKS BLOG (Feb. 3, 2009, 9:26 AM), <https://www.eff.org/deeplinks/2009/01/youtubes-january-fair-use-massacre> [<https://perma.cc/KLS9-476P>].

²⁴⁹ 17 U.S.C. § 512(f) (2012).

claim.²⁵⁰ In view of the uncertainties attendant to copyright scope and the ease of issuing takedown requests, copyright law should afford enhanced damages for improper takedown notices so as to encourage greater care and bargaining as opposed to costly litigation.²⁵¹

b. *Statutory Licensing Regimes*

The Copyright Act provides several compulsory licenses that have substantially relieved pressure on the uncertain scope of copyrighted works. Over a century ago, Congress established the nation's first compulsory license as part of the 1909 Copyright Act.²⁵² The provision authorized anyone to sell piano rolls of musical compositions that had been released for a statutory fee of two cents per copy. With the emergence of the sound recording industry over the next several years, the compulsory mechanical license morphed into a mechanism for recording artists to record their own versions of previously released musical compositions—what we call a “cover”—for a prescribed statutory fee. As updated by the omnibus Copyright Act of 1976, the “compulsory license includes the privilege of making a musical arrangement of the work to the extent necessary to conform it to the style or manner of interpretation of the performance involved, but the arrangement shall not change the basic melody or fundamental character of the work.”²⁵³ The statutory rate for the “cover” license has gradually risen over the past century. It now stands at 9.1 cents or 1.75 cents per minute of playing time or fraction thereof, whichever is greater.²⁵⁴

As a result of the “cover” license, recording artists have enjoyed substantial freedom to record and distribute their own versions of musical compositions, resulting in many of the more memorable sound recordings. The cover license has produced a vast number of remarkable sound recordings,²⁵⁵ as well as some truly regrettable, but innocuous, releases.²⁵⁶ Whether or not a particular

²⁵⁰ See *Lenz v. Universal Music Corp.*, 572 F. Supp. 2d 1150 (N.D. Cal. 2008), *aff'd*, 801 F.3d 1126 (9th Cir. 2015).

²⁵¹ See Menell, *This American Copyright Life*, *supra* note 4, at 358.

²⁵² See Act to Amend and Consolidate the Acts Respecting Copyright, ch. 320, § 1(e), 35 Stat. 1075 (1909); Howard B. Abrams, *Copyright's First Compulsory License*, 26 SANTA CLARA COMPUTER & HIGH TECH. L.J. 215, 215 (2010).

²⁵³ 17 U.S.C. § 115(a)(2) (2012). The compulsory license applies only to nondramatic musical works.

²⁵⁴ See *Mechanical License Royalty Rates*, U.S. COPYRIGHT OFFICE, <http://www.copyright.gov/licensing/m200a.pdf> [<https://perma.cc/GC5Z-V98P>].

²⁵⁵ See, e.g., Menell, *supra* note 18, at 496-97 (highlighting the success of the “cover” compulsory license in promoting musical experimentation, free expression, and providing compensation for artists); *All Along the Watchtower*, WIKIPEDIA, http://en.wikipedia.org/wiki/All_Along_the_Watchtower [<https://perma.cc/QJ87-VZDP>] (discussing Jimi Hendrix's iconic rendition of Bob Dylan's composition).

²⁵⁶ See, e.g., *Hung for the Holidays*, WIKIPEDIA, https://en.wikipedia.org/wiki/Hung_for_the_Holidays [<https://perma.cc/N59F-QMM2>].

cover qualifies as fair use—for example, as a parody—never comes into play. The cover license sidesteps these complex issues at low transaction costs. The statutory default provides a convenient mechanism for facilitating cumulative creativity and free expression while dividing the resulting revenue.²⁵⁷

The compulsory license issue has emerged recently as a result of salient controversy over mashup art.²⁵⁸ A new generation of disc jockeys (or mashup artists) using digital sampling technology have developed a vibrant new musical genre based on slicing, dicing, and mashing previously released sound recordings into musical mosaics. Many of the samples are relatively short, and the resultant works reflect innovative soundscapes. There is wide division in scholarship on whether these types of works qualify as fair use.²⁵⁹ The current market equilibrium is far from ideal, with much of this work circulating outside of authorized channels. This has alienated new generations of artists and fans from the copyright system. I have proposed bringing order to this chaos through a new compulsory license.²⁶⁰ Such an approach directly responds to the uncertain scope of copyright protection and promotes free expression by sidestepping the inherent uncertainty of litigation through a balanced authorized distribution channel.

4. Other Substantive Law Adjustments

Copyright law can also ameliorate the adverse effects of uncertain scope through adjustments to substantive rights and remedies.

a. *Fair Use*

The open-ended quality and subjective nature of the fair use doctrine contributes to scope uncertainty. At the same time, the flexibility afforded by fair use provides a means to harmonize copyright's uncertain scope of protection with the goals of promoting creativity and free expression.²⁶¹ In particular, courts should promote ex ante bargaining over cumulative creativity by encouraging fair bargaining.²⁶² That appears to be a substantial factor in how the district court and the Second Circuit in *Bill Graham Archives v.*

(showcasing a remarkably off-key American Idol contestant); *William Hung*, WIKIPEDIA, http://en.wikipedia.org/wiki/William_Hung [<https://perma.cc/LAW4-JBE9>].

²⁵⁷ Cf. Jane C. Ginsburg, *Fair Use for Free, or Permitted-but-Paid?*, 29 BERKELEY TECH L.J. 1383 (2014); Kozinski & Newman, *supra* note 241; Menell, *supra* note 18, at 516-17.

²⁵⁸ See generally Menell, *supra* note 18.

²⁵⁹ See *id.* at 473-79.

²⁶⁰ See *id.* at 495-511.

²⁶¹ See Wendy J. Gordon, *Fair Use as Market Failure: A Structural and Economic Analysis of the Betamax Case and its Predecessors*, 82 COLUM. L. REV. 1600, 1637 (1982).

²⁶² See Yafit Lev-Aretz, *The Subtle Incentive Theory of Copyright Licensing*, 80 BROOK. L. REV. 1357, 1389-1402 (2015) (advocating consideration of licensing opportunities in fair use analysis); Menell & Depoorter, *supra* note 17, at 71-85 (proposing a mechanism for encouraging ex ante bargaining).

*Dorling Kindersley Ltd.*²⁶³ resolved whether using entire concert posters as small illustrative components of a comprehensive anthology about the life and times of the Grateful Dead constituted fair use. Both courts went out of their way to discuss the copyright owner's stinginess in the bargaining process, even though such facts do not play an express role in the fair use statutory analysis.²⁶⁴ In essence, the courts were signaling that fair bargaining is a part of fair use.

By making this consideration explicit, courts can effectively reduce copyright's scope uncertainty by promoting fair bargaining. Uses that do not directly compete or result in lost sales ought to be resolved through ex ante accommodation rather than litigation. Relatedly, outright refusals to bargain for non-copyright market purposes, such as political commentary, censorship, and reputational harm, should be strongly disfavored. The case law on this later point is mixed, as some jurists have been loath to permit musical works and sound recordings strongly associated with their authors to be used as theme songs for politicians with opposing viewpoints.

b. *Remedies*

Tailoring copyright remedies can significantly ameliorate the chilling effects of uncertain copyright scope. Even a small risk of crushing liability can deter cumulative creativity and free expression.²⁶⁵ Equitable and monetary relief can be better tailored to reduce the adverse effects of uncertain copyright scope.

i. *Injunctive Relief*

The Supreme Court's *eBay* decision increased the uncertainty of copyright remedies, although the increased discretion available to district courts was generally beneficial.²⁶⁶ It essentially provided trial judges with discretion to balance various considerations, including the uncertainty surrounding copyright's scope, to promote creativity and free expression.²⁶⁷ Courts are now more likely to split the baby, so to speak, where a cumulative creator has significantly added to the expressive works of others. By withholding injunctive relief in these situations, courts can enable more works to propagate while still affording compensation to the owner of the infringed work. The uncertainty created by the *eBay* framework, however, can be reduced by expressly recognizing that injunctions should be rare outside of the piracy context.²⁶⁸

²⁶³ 448 F.3d 605 (2d Cir. 2006).

²⁶⁴ 17 U.S.C. § 107 (2012).

²⁶⁵ See Gibson, *supra* note 234, at 887; cf. John E. Calfee & Richard Craswell, *Some Effects of Uncertainty on Compliance with Legal Standards*, 70 VA. L. REV. 965, 967-74 (1984) (discussing the distortions introduced by uncertainty).

²⁶⁶ *eBay, Inc. v. MercExchange*, 547 U.S. 388 (2006).

²⁶⁷ See *id.* at 394.

²⁶⁸ See Sterk, *supra* note 231, at 455-62.

ii. Monetary Damages

Liability rules are a particularly supple device for balancing competing considerations and thus can be especially effective in dealing with the uncertainty surrounding copyright scope. Current liability standards are too open-ended, thereby contributing to larger potential exposure than is appropriate.

A. Compensatory Damages and Disgorgement

Section 504(a) of the Copyright Act provides that the copyright owner can elect between “the copyright owner’s actual damages and any additional profits of the infringer” and statutory damages where the prerequisite for statutory damages (registration) has been satisfied.²⁶⁹ In setting the non-statutory damage monetary awards, the copyright owner may not, however, double count.²⁷⁰ As Judge Posner has explained, “[a] copyright owner can sue for his losses or for the infringer’s profits, but not for the sum of the two amounts.”²⁷¹ Thus, if the copyright owner proves that she would have made 1,000 additional sales of her novel absent the infringement and that the defendant made 1,000 sales, then the copyright owner is only entitled to the profit on 1,000 units (assuming that per unit profit is the same for both). But if the copyright owner proves that she lost 1,000 sales and that the defendant made 1,500 sales, then she is entitled to the profits on the 1,500 sales under this damage measure.

This analysis makes perfect sense in the case of piratical copies. But if the defendant significantly altered the protected work (even though the copies were deemed infringements) and achieved increased sales, enabling the infringer to capture the increased value would promote expressive creativity while restoring the copyright owner to their status quo ante if the copyright owner was not pursuing or licensing the derivative work marketplace.²⁷² Copyright law could require copyright owners to meet a working requirement,

²⁶⁹ 17 U.S.C. § 504(a) (2012).

²⁷⁰ *Id.* § 504(b).

²⁷¹ *Bucklew v. Hawkins, Ash, Baptie & Co.*, 329 F.3d 923, 931 (7th Cir. 2003); *see also* *Taylor v. Meirick*, 712 F.2d 1112, 1120 (7th Cir. 1983) (“If the profits the owner would have made but for the infringement are equal to the profits the infringer made by selling the copyrighted item, and the owner proves up his lost profits, the ‘not taken into account’ clause . . . bars the owner from receiving an additional award of damages based on the infringer’s profits.” (citation omitted)).

²⁷² *Cf.* Mark A. Lemley, *The Economics of Improvement in Intellectual Property Law*, 75 TEX. L. REV. 989, 1021, 1074-77 (1997) (advocating a blocking copyright rule); Kelly Casey Mullally, *Blocking Copyrights Revisited*, 37 COLUM. J.L. & ARTS 57, 80-92 (2013) (arguing that “courts can and should effectuate the doctrine of blocking copyrights through the remedies they grant”).

analogous to the patent working requirement used in Europe,²⁷³ in order to pursue disgorgement or injunctive relief for non-piratical infringement.

Limiting disgorgement to piracy cases would remove some of the sting of the uncertain legal standard. It might also avoid the costs of litigation by encouraging ex ante negotiation. The infringing party has something valuable to offer the owner of the infringed work and the consuming public.

B. Statutory Damages and Attorneys' Fees

Copyright law already considers notice by barring statutory damages and attorneys' fees where the copyright owner has not registered the work prior to the infringing activity.²⁷⁴ More should be done to prevent over-deterrence of activities that fall into copyright law's substantial scope uncertainty. Statutory damages ought not be available outside of piratical activity. Where an author undertakes efforts to transform prior works by adding substantial independent creative elements, ordinary compensatory damages should apply if the resulting work is found to be infringing. Moreover, copyright law ought to cabin or eliminate statutory damages with respect to non-commercial educational and experimental uses of copyrighted works. Often the best way to learn a musical instrument or develop artistic or creative writing skill is to imitate the works of others. Yet these acts, if publicly performed or recorded and uploaded to a social media website, create risk of copyright liability. The past decade indicates that copyright owners need not worry about these uses. Fan fiction has enriched their coffers. More importantly, there is no better way to promote progress than to nurture artistic, musical, and literary skills among the next generation of creators.

CONCLUSION

Copyright notice has ridden a roller coaster over the past century and a half. As with other resource development and allocation systems, copyright law began with the notion that rights that can affect the public ought to be registered and knowable to the public. As publishing spread across the globe, formal requirements for protection came to be seen as impediments to

²⁷³ See Paris Convention for the Protection of Industrial Property art. 5(A)(2), July 14, 1967, 21 U.S.T. 1629, 828 U.N.T.S. 305 ("Each country of the Union shall have the right to take legislative measures providing for the grant of compulsory licenses to prevent the abuses which might result from the exercise of the exclusive rights conferred by the patent, for example, failure to work."); Harold C. Wegner, *Injunctive Relief: A Charming Betsy Boomerang*, 4 NW. J. TECH. & INTELL. PROP. 156, 158-61 (2006) (tracing the history of the patent working requirement in Europe); cf. Maayan Perel, *From Non-Practicing Entities (NPEs) to Non-Practiced Patents (NPPs): A Proposal for a Patent Working Requirement*, 83 U. CIN. L. REV. 747, 793-805 (2015) (advocating a patent working requirement to deal with non-practicing entities in the patent field).

²⁷⁴ See 17 U.S.C. § 504(c) (2012).

international enforcement. In an age when the technology for cataloguing information and reproducing documents was primitive, the Berne Union prohibited signatory nations from imposing any “formality,” such as marking, registration, or deposit, that could interfere with the “enjoyment and the exercise” of copyright. The decision was driven not by philosophical opposition to the idea of notice, but rather expediency and practicality. Ironically, the major hold-out to that regime, the United States, capitulated in effectively removing formalities from its copyright system just as the need for copyright notice was mounting.

Notice can play an especially constructive role in the design of copyright for the digital age. The ease with which pre-existing works can be found and integrated into valuable new works has never been greater. Yet the risks of doing so remain significant. Cumulative creators need not face such an uncomfortable and potentially costly predicament. Advances in technology for identifying, tracking, and searching for copyrighted works and fostering ex ante bargaining make copyright notice both practical and worthwhile today in ways that were beyond the imagination of science fiction authors at the time that the Berne Union chose to ban formalities.

While the solution to tracing copyright subsistence and ownership is within reach, copyright notice will remain a challenge for future generations. Notice of the full contours of copyright protection remains unattainable due to the complexity and subjectivity of copyright law’s limiting doctrines, infringement standards, fair use doctrine, and remedies. Nonetheless, various adjustments to copyright enforcement and substantive doctrines can ameliorate the adverse effects of such inherent uncertainty on creativity and free expression. Such adjustments are particularly important in making copyright protection work for future generations of creators and consumers of expressive works and technologists seeking to expand markets and tools for expressive creativity.