

PROPERTY, INTELLECTUAL PROPERTY, AND SOCIAL
JUSTICE: MAPPING THE NEXT FRONTIER

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ABSTRACT

Professor Joseph Singer’s property scholarship explores the human, cultural, social, and distributive dimensions of property law. Using his body of work as a springboard, this Article explores the crosscurrents flowing between intellectual property and social justice. Part I examines the limitations of tangible property theory as a frame for understanding intellectual property policy. Part II distinguishes between the internal, largely utilitarian analysis of particular modes of intellectual property protection and the external interplay of intellectual property systems and broader social justice concerns. Part III explores the macro interplay of intellectual property and inequality, gender and racial inclusion, and global justice challenges, highlighting complexities, tensions, and paradoxes.

INTRODUCTION: PROPERTY, INTELLECTUAL PROPERTY, AND SOCIAL
JUSTICE—MAPPING THE NEXT FRONTIER 148

I. FRAMING IP/SOCIAL JUSTICE ANALYSIS 153

 A. *Property and Intellectual Property: Questioning the
 Carryover Hypothesis* 153

 B. *Framing the IP/Social Justice Interface: Internal
 Legitimacy and External Effects* 161

II. MODE-SPECIFIC ANALYSIS 162

 A. *Patent Protection* 162

 1. *Internal Validity* 162

 2. *External Perspectives* 166

 B. *Trade Secret Protection* 169

 1. *Internal Validity* 169

 2. *External Perspectives* 171

 C. *Copyright Protection* 173

 1. *Internal Validity* 173

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2. <i>External Perspectives</i>	177
D. <i>Trademark Protection</i>	182
1. <i>Internal Validity</i>	182
2. <i>External Perspectives</i>	184
III. THE MACRO SOCIAL JUSTICE PERSPECTIVE	186
A. <i>IP, Poverty, and Inequality</i>	186
B. <i>Gender and Racial Inequality</i>	190
C. <i>Global IP Justice</i>	193
CONCLUSION	194

INTRODUCTION: PROPERTY, INTELLECTUAL PROPERTY, AND SOCIAL JUSTICE—MAPPING THE NEXT FRONTIER

It is a great honor to participate in this conference celebrating Professor Joseph Singer's wide-ranging contributions to property law and policy.¹ And it is fitting that the Brigham-Kanner Property Rights Conference, now in its twelfth year, has chosen to bring intellectual property within its renowned property tent. Although Professor Singer's scholarship is firmly rooted in tangible resources, his focus on the human, cultural, social, and distributive dimensions of property law provides a springboard for thinking broadly and deeply about the interplay of intellectual property and social justice.

For a growing portion of our society, and especially younger generations, life increasingly revolves around intellectual creativity, entrepreneurship, and the digital domain. General Motors and other manufacturing companies are no longer the largest and most significant economic enterprises. Digital Age start-ups, such as Apple,

1. Representative scholarship includes: Joseph William Singer, *Justifying Regulatory Takings*, 41 OHIO N.U. L. REV. 601 (2015); Joseph William Singer, *Property as the Law of Democracy*, 63 DUKE L.J. 1287 (2014); Joseph William Singer, *Property Law Conflicts*, 54 WASHBURN L.J. 129 (2014); Joseph William Singer, *The Anti-Apartheid Principle in American Property Law*, 1 ALA. C.R.-C.L. L. REV. 91, 109 (2011); Joseph William Singer, *How Property Norms Construct the Externalities of Ownership*, in PROPERTY AND COMMUNITY (Gregory S. Alexander & Eduardo Peñalver eds., 2009); Gregory S. Alexander, Eduardo M. Peñalver, Joseph William Singer & Laura S. Underkuffler, *A Statement of Progressive Property*, 94 CORNELL L. REV. 743 (2009); Joseph William Singer, *After the Flood: Property and Equality in Property Regimes*, 52 LOY. L. REV. 243 (2006); JOSEPH WILLIAM SINGER, *THE EDGES OF THE FIELD: LESSONS ON THE OBLIGATIONS OF OWNERSHIP* (2000); Joseph William Singer, *No Right to Exclude: Public Accommodations and Private Property*, 90 NW. U. L. REV. 1283 (1996); Joseph William Singer, *Property and Coercion in Federal Indian Law: The Conflict Between Critical and Complacent Pragmatism*, 63 S. CAL. L. REV. 1821 (1990).

Google, Facebook, Amazon, and Netflix, provide the social and commerce platforms of daily life. They dominate the business news. Tesla is revitalizing the American automobile industry and revolutionizing automobile transportation. The balance sheets of these companies are not based on tangible resources but rather intangibles—intellectual property rights, information, and human capital. As President Obama emphasized in his final State of the Union Address,² technological innovation provides the greatest hope for addressing the most pressing human challenges—climate change, public health, food and fresh water supply, and world peace. Social interaction occurs more and more in cyberspace, a seemingly infinite, borderless “place.” And a growing proportion of the most salient “property” rights issues that concern netizens and the U.S. judiciary relate to information resources and digital technology.

The ascendancy of intangible resources profoundly affects social justice—from access to life-saving genetic information to the control of knowledge dissemination, creative freedom, group identity, and, increasingly, the distribution of wealth. Even the first-year property course is shifting increasingly to intangible resources. At law schools throughout the nation, and especially in California, intellectual property has become a *de facto* core subject. And many more of our graduates find law careers in the realm of intangible resources rather than land and other tangible resources.

While use of the term “property” to characterize rights in intangible resources traces back centuries,³ the digital revolution of the past few decades has elevated intellectual property rights and issues to a new and more prominent economic, social, and political pedestal. Policymakers increasingly discuss the importance of reforming education to better prepare new generations for the information age and bridging the digital divide.⁴ From grade schools to universities,

2. See President Barack Obama, State of the Union (Jan. 12, 2016), <https://www.whitehouse.gov/sotu>.

3. See generally Justin Hughes, *Copyright and Incomplete Historiographies: Of Piracy, Propertization, and Thomas Jefferson*, 79 S. CAL. L. REV. 993 (2006).

4. See Richard Pérez-Peña, *Facebook Founder to Donate \$100 Million to Help Remake Newark's Schools*, N.Y. TIMES, Sept. 23, 2010, at A27; DALE RUSSAKOFF, *THE PRIZE: WHO'S IN CHARGE OF AMERICA'S SCHOOLS?* (2015); Lyndsey Layton, *How Bill Gates Pulled off the Swift Common Core Revolution*, WASH. POST (June 7, 2014), https://www.washingtonpost.com/politics/how-bill-gates-pulled-off-the-swift-common-core-revolution/2014/06/07/a830e32e-ec34-11e3-9f5c-9075d5508f0a_story.html.

administrators and educators are striving to harness digital technology to improve and remake education.⁵

In expanding its tent to embrace intellectual property, the Brigham-Kanner Property Rights Conference can look to one of the greatest graduates of the College of William & Mary for inspiration. Thomas Jefferson took a deep interest in the contours of intellectual property rights and the development of intellectual property institutions in the early American republic.⁶ Jefferson had an insatiable appetite for knowledge, which extended to architecture, civil engineering, geography, mathematics, ethnology, anthropology, mechanics, and the sciences.⁷ He was a successful inventor.⁸ And among his responsibilities as the nation's first Secretary of State was the duty to serve—with the Secretary of the Department of War and the Attorney General—the nation's first patent institution (“Commissioners for the Promotion of Useful Arts”).⁹ His words still resonate in modern intellectual property philosophy, policy, and jurisprudence.¹⁰

Another great Virginian, George Washington, viewed intellectual property as a vital institution for a great nation. In advocating enactment of the nation's first intellectual property laws during

5. See, e.g., *Khan Academy*, WIKIPEDIA (Feb. 27, 2016, 4:43 PM), https://en.wikipedia.org/wiki/Khan_Academy (describing a free online academy comprising microlectures across a broad range of subjects).

6. See Adam Mossoff, *Who Cares What Thomas Jefferson Thought About Patents? Reevaluating the Patent “Privilege” in Historical Context*, 92 CORNELL L. REV. 953 (2007); Hughes, *supra* note 3, at 998–99, 1026–33.

7. See *Jefferson’s College Life*, WILLIAM & MARY, <http://www.wm.edu/about/history/tjcollege/tjcollegelife/>.

8. See *Graham v. John Deere Co.*, 383 U.S. 1, 7 (1966) (noting that “Jefferson was himself an inventor of great note. His unpatented improvements on plows, to mention but one line of his inventions, won acclaim and recognition on both sides of the Atlantic.”).

9. See Act of Apr. 10, 1790, ch. 7, 1 Stat. 109; Pasquale Joseph (P.J.) Federico, *Operation of the Patent Act of 1790*, 18 J. PAT. OFF. SOC’Y 237, 238 (1936) (characterizing Jefferson as the moving spirit of the patent board who might well be called “the first administrator of [the U.S.] patent system”); Edward C. Walterscheid, *The Hotchkiss Unobviousness Standard: Early Judicial Activism in the Patent Law*, 13 J. INTELL. PROP. L. 103, 107–08 (2005); Steve Mirsky, *Founding Father of Invention*, SCI. AM. 104 (Oct. 2000).

10. See Mossoff, *supra* note 6; Hughes, *supra* note 3; *Graham*, 383 U.S. 1, 7–11 (1966) (quoting Letter from Thomas Jefferson to Isaac McPherson (Aug. 13, 1813), in 13 THE WRITINGS OF THOMAS JEFFERSON 326, 334–35 (Andrew A. Lipscomb ed., 1903)); see also *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 147 (1989); *Diamond v. Chakrabarty*, 447 U.S. 303, 308–09 (1980).

the very first State of the Union Address,¹¹ President Washington presciently declared:

The advancement of agriculture, commerce, and manufactures by all proper means will not, I trust, need recommendation; but I can not forbear intimating to you the expediency of giving effectual encouragement as well to the introduction of new and useful inventions from abroad as to the exertions of skill and genius in producing them at home

Nor am I less persuaded that you will agree with me in opinion that there is nothing which can better deserve your patronage than the promotion of science and literature. Knowledge is, in every country, the surest basis of public happiness. In one in which the measures of government receive their impression so immediately from the sense of the community as in ours, it is proportionably essential.¹²

Adapting intellectual property laws in response to changing technological, social, and economic conditions remains an ongoing challenge. It has taken on greater moment as advances in digital technology have remade so much of modern life.

Professor Singer's contributions to property law invite broad thinking about the interplay of intellectual property and social justice. This Essay offers my own preliminary thoughts on framing this important scholarly frontier.¹³ I have realized that much of my earlier

11. See Laura Clark, *The First State of the Union Address: Way Shorter, Way Less Clapping*, SMITHSONIAN (Jan. 20, 2015), <http://www.smithsonianmag.com/smart-news/first-state-union-address-way-shorter-less-clapping-180953954/> (explaining how President Washington outlined the nation's most pressing needs).

12. George Washington, First Annual Message to Congress on the State of the Union (Jan. 8, 1790), <http://www.presidency.ucsb.edu/ws/?pid=29431>; THORVALD SOLBERG, LIBRARY OF CONG., COPYRIGHT IN CONGRESS 1789–1904, at 115 (Greenwood Press 1976) (1905).

13. I am certainly not the first to venture into this “critical”—in multiple senses of the word—terrain. I am fortunate to stand on the shoulders of other scholars. Of particular note, Professors Anupam Chander and Madhavi Sunder convened a path-breaking conference at UC Davis's King School of Law in 2006. See Rex R. Perschbacher, *Welcoming Remarks: Intellectual Property and Social Justice*, 40 U.C. DAVIS L. REV. 559 (2007); Anupam Chander & Madhavi Sunder, *Foreword: Is Nozick Kicking Rawls's Ass? Intellectual Property and Social Justice*, 40 U.C. DAVIS L. REV. 563 (2007). The wide-ranging papers from that conference are collected in an impressive conference volume. See *Intellectual Property and Social Justice*, 40 U.C. DAVIS L. REV. No. 3 (Mar. 2007). I also note the contributions of Professor Amy Kapczynski

work touched on these issues.¹⁴ Part I constructs a philosophical framework for thinking about the many crosscurrents between intellectual property and social justice. Part II uses this framework to explore a range of social justice questions that arise within particular modes of intellectual property protection. Part III examines the macro interplay of intellectual property and social justice, focusing on inequality, gender and racial inclusion, and global justice challenges.

to framing the interplay of IP, political mobilization, and inequality. See Amy Kapczynski, *The Cost of Price: Why and How to Get Beyond Intellectual Property Internalism*, 59 UCLA L. REV. 970 (2012) [hereinafter Kapczynski, *The Cost of Price*]; Amy Kapczynski, *The Access to Knowledge Mobilization and the New Politics of Intellectual Property*, 117 YALE L.J. 804 (2008) [hereinafter Kapczynski, *New Politics of IP*]. At an institutional level, Professors Lateef Mtima and Steven Jamar have shone a spotlight on the intersection of intellectual property and social justice. See Steven D. Jamar & Lateef Mtima, *The Centrality of Social Justice for an Academic Intellectual Property Institute*, 64 SMU L. REV. 1127 (2011); see also LATEEF MTIMA (ED.), INTELLECTUAL PROPERTY, ENTREPRENEURSHIP AND SOCIAL JUSTICE: FROM SWORDS TO PLOUGHSHARES (2015).

I have also benefitted from the work of and discussions with my colleagues. See, e.g., Chris Jay Hoofnagle & Jan Whittington, *Free: Accounting for the Costs of the Internet's Most Popular Price*, 61 UCLA L. REV. 606 (2014); Amy Kapczynski & Talha Syed, *The Continuum of Excludability and the Limits of Patents*, 122 YALE L.J. 1900 (2013); David R. Hansen, Kathryn Hashimoto, Gwen Hinze, Pamela Samuelson & Jennifer M. Urban, *Solving the Orphan Works Problem for the United States*, 37 COLUM. J.L. & ARTS 1 (2013); ROBERT P. MERGES, JUSTIFYING INTELLECTUAL PROPERTY (2011); Kristen A. Carpenter, Sonia K. Katyal & Angela R. Riley, *In Defense of Property*, 118 YALE L.J. 1022 (2009); Molly Shaffer Van Houweling, *Distributive Values in Copyright*, 83 TEX. L. REV. 1535 (2005); William W. Fisher & Talha Syed, *Global Justice in Healthcare: Developing Drugs for the Developing World*, 40 U.C. DAVIS L. REV. 581 (2007); SUZANNE SCOTCHMER, INNOVATION AND INCENTIVES (2004); ERIC RAKOWSKI, EQUAL JUSTICE (1991).

14. We each bring our own perspective to the enterprise. I was trained in science, technology, economics, and law and have enjoyed a front row seat to the digital revolution. I pursued a Ph.D. in economics at Stanford University and a J.D. at Harvard Law School just as the digital revolution was fomenting, which inspired my early work on the economics of legal protection for computer software. See, e.g., Peter S. Menell, *Tailoring Legal Protection for Computer Software*, 39 STAN. L. REV. 1329 (1987) [hereinafter Menell, *Tailoring Software Protection*]. I had the opportunity to work with Professor Paul Goldstein on one coast and Judge—now Justice—Stephen Breyer on the other. I also had direct exposure to the emerging microcomputer/software marketplace and the path-breaking network economics scholarship of Joe Farrell, Michael Katz, Garth Saloner, Carl Shapiro, and Hal Varian. Soon after joining the UC–Berkeley faculty in 1990, I laid the groundwork for the Berkeley Center for Law & Technology (BCLT), which launched in 1995. Over the past two decades, my colleagues and I have conducted a wide range of research, hosted numerous conferences, organized IP education programs for the Federal Judicial Center, and worked closely with federal agencies, much of the time focusing on the digital/information revolution. I have also had extensive experience advising Congress, government agencies, individuals, and technology and entertainment companies about intellectual property, antitrust, and technology policy issues over the past nearly three decades.

I. FRAMING IP/SOCIAL JUSTICE ANALYSIS

At a basic level, it is difficult to doubt President Washington's declaration that the promotion of science and literature serves human and social flourishing. Yet the use of exclusive rights to inventions and writings introduces significant complications for a free and just society. Such protections can hinder competition, constrain cumulative innovation, and interfere with free expression. They reinforce market-based institutions, influence the development of culture, affect the allocation of resources and distribution of wealth, and privilege particular individuals and enterprises. Thus, the interplay of intellectual property and social justice depends on many premises and factors.

In view of the property basis for this conference, it is useful to start the inquiry from a tangible property foundation. Yet intellectual resources differ fundamentally from tangible resources in character and governance principles. The United States grounds patent and copyright protection in largely utilitarian purposes, as opposed to natural rights. Section A explores the carryover of tangible property concepts to the analysis of intellectual property rights. Building on the utilitarian grounding of intellectual property rights, Section B distinguishes between two levels of social justice ramifications—those internal to utilitarian purposes and those external to those purposes.

A. Property and Intellectual Property: Questioning the Carryover Hypothesis

It is tempting to view intellectual property through a tangible property lens.¹⁵ After all, intellectual property draws on tangible property concepts of first in time, exclusivity, and transferability, and scholars have explored the philosophy of tangible property rules and institutions for centuries. Yet as a young property law professor whose principal areas of interest were intangible resources—intellectual property and environmental protection—I quickly came to see that

15. See Richard Epstein, *The Disintegration of Intellectual Property? A Classical Liberal Response to a Premature Obituary*, 62 STAN. L. REV. 455 (2010); cf. Molly Van Houweling, *Intellectual Property as Property*, in RESEARCH HANDBOOK ON THE ECONOMICS OF INTELLECTUAL PROPERTY LAW (Peter S. Menell & Ben Depoorter eds., forthcoming 2016); MERGES, *supra* note 13, at 4–5, 237–69, 289–311.

Blackstonian conceptions of land and other tangible resources missed a lot of the most important economic and social concerns. Both the positive and normative analysis of resource governance depend on the characteristics of the resources, the characteristics of the communities in which the resources are situated, and the available governance institutions.¹⁶

Although intellectual property draws upon certain characteristics from the law relating to real and other tangible “property”—most notably, the concept of exclusive rights—and many parallels can be readily identified, the differences between tangible forms of “property” and “intellectual property” are profound and numerous. To take a few prominent examples—whereas the traditional bundle of rights associated with real and other tangible property involve perpetual ownership (the classic “fee simple absolute” of real property law)—two of the most prominent forms of intellectual property, patents and copyrights, protect rights for limited durations (although in the case of copyrights, the term is very long). Furthermore, exclusivity in the field of “intellectual property” is far less inviolate than it is in the traditional property domains. Intellectual property law comprises a system of policy levers that legislatures tailor and courts interpret to promote innovation and protect the integrity of markets.¹⁷

Patent protection, copyright protection, and the law of trade secrets are principally based on the utilitarian goal of promoting innovation and creativity. Trade secrecy law also brings in notions of commercial morality.¹⁸ Trademark protection, by contrast, focuses on safeguarding the integrity of markets.¹⁹ It is more of a consumer-protection regime. But by lowering consumer search costs, it also serves a commercial purpose and indirectly promotes investment in creating quality brands.

The very notion of exclusive rights over knowledge and commerce conflicts with one of America’s founding principles: freedom. The American Revolution was sparked by the Boston Tea Party, a citizen

16. See Peter S. Menell & John P. Dwyer, *Reunifying Property*, 46 ST. LOUIS U. L.J. 599 (2002); JOHN P. DWYER & PETER S. MENELL, *PROPERTY LAW AND POLICY: A COMPARATIVE INSTITUTIONAL PERSPECTIVE* (1998).

17. See Peter S. Menell & Suzanne Scotchmer, *Intellectual Property Law*, in 2 HANDBOOK OF LAW AND ECONOMICS 1474 (A. Mitchell Polinsky & Steven Shavell eds., 2007).

18. See ROBERT P. MERGES, PETER S. MENELL & MARK A. LEMLEY, *INTELLECTUAL PROPERTY IN THE NEW TECHNOLOGICAL AGE* ch. 1 (6th ed. 2012).

19. See Menell & Scotchmer, *supra* note 17, at 1536–37.

revolt against government-imposed monopolization of the tea trade. Yet the founders of the nation recognized the need to provide time-limited intellectual property to promote technological progress and expressive creativity. President Abraham Lincoln, an inventor himself,²⁰ eloquently and concisely captured the power of intellectual property protection: “the patent system . . . added the fuel of interest to the fire of genius, in the discovery and production of new and useful things.”²¹ The potential for exclusive rights attracts investors (“the fuel of interest”) and inventors (“the fire of genius”). As Justice Brennan noted, “[t]he patent laws attempt to reconcile th[e] Nation’s deep-seated antipathy to monopolies with the need to encourage progress.”²²

The contingent character of intellectual property protection contrasts with the default principle of private ordering of most tangible resources. While some tangible resources, such as water and air, reflect a mix of governance regimes, most land and other tangible resources fit relatively comfortably within a private-ownership framework. Standard economic models view comprehensive resource ownership in conjunction with freedom of contract to be an efficient and just resource allocation system.²³ It bears mentioning, however, the extensive scholarship identifying limits to this default.²⁴ Nonetheless, absolute, exclusive ownership in perpetuity subject to free transferability is a widely accepted starting point for land and tangible resource analysis.

20. See U.S. Patent No. 6,469 (Buoying Vessels Over Shoals); Owen Edwards, *Abraham Lincoln: The Ingenious Inventor*, SMITHSONIAN MAGAZINE (Oct. 2006), <http://www.smithsonianmag.com/history/inventive-abe-131184751/>.

21. See 3 R. BASLER, *THE COLLECTED WORKS OF ABRAHAM LINCOLN* 361 (1953) (President Lincoln made these remarks in a speech delivered at Jacksonville College on February 11, 1859). This quotation is engraved over the northwest entrance to the U.S. Department of Commerce at 15th and E Streets, N.W., Washington, D.C., which housed the Patent Office for many years.

22. See *Diamond v. Chakrabarty*, 447 U.S. 303, 319 (1980) (Brennan, J., dissenting).

23. See RICHARD A. POSNER, *ECONOMIC ANALYSIS OF LAW* 10–13 (1973); Garrett Hardin, *The Tragedy of the Commons*, 102 SCI. 1243 (1968).

24. See Joseph William Singer, *The Rule of Reason in Property Law*, 46 U.C. DAVIS L. REV. 1369 (2013); ELINOR OSTROM, *UNDERSTANDING INSTITUTIONAL DIVERSITY* (2005); Peter S. Menell, *Institutional Fantasylands: From Scientific Management to Free Market Environmentalism*, 15 HARV. J.L. & PUB. POL’Y 489 (1992); ELINOR OSTROM, *GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION* (1990); Carol Rose, *The Comedy of the Commons: Custom, Commerce, and Inherently Public Property*, 53 U. CHI. L. REV. 711 (1986); cf. Michael A. Carrier, *Cabining Intellectual Property Through a Property Paradigm*, 54 DUKE L.J. 1 (2004) (emphasizing property doctrines that diverge from the Blackstonian conception).

By contrast, intellectual property emerges as a limited exception to the free competition default. It is justified as bait to attract invention and creativity, with the recognition that overprotection of information resources or removal of knowledge from the public domain limits dissemination of knowledge and undermines the follow-on innovation and creativity that is critical to progress.²⁵ Standard economic analysis limits the scope and duration of such rights so as to reduce the deadweight loss of monopoly exploitation²⁶ and to encourage cumulative creativity.²⁷ A robust public domain helps to disseminate knowledge and fuel intellectual creativity.²⁸

Intellectual property seeks to balance the motivational pull of property rights with broad dissemination of knowledge and the cumulative creative push of building on the ideas and expression of others. The U.S. Supreme Court explained:

The monopoly privileges that Congress may authorize are neither unlimited nor primarily designed to provide a special private benefit. Rather, the limited grant is a means by which an important public purpose may be achieved. It is intended to motivate the creative activity of authors and inventors by the provision of a special reward and to allow the public access to the products of their genius after the limited period of exclusive control has expired.

The copyright law, like the patent statute, makes reward to the owner a secondary consideration. In *Fox Film Corp. v. Doyal*, 286 U.S. 123, 127 [1932], Chief Justice Hughes spoke as follows respecting the copyright monopoly granted by Congress, “The sole interest of the United States and the primary object in conferring the monopoly lie in the general benefits derived by the public from the labors of authors.” It is said that reward to the author or artist serves to induce release to the public of the products of his creative genius. (*United States v. Paramount Pictures*, 334 U.S. 131, 158 (1948)).²⁹

25. See Menell & Scotchmer, *supra* note 17, at 1476–78.

26. See WILLIAM D. NORDHAUS, *INVENTION, GROWTH, AND WELFARE: A THEORETICAL TREATMENT OF TECHNOLOGICAL CHANGE* (1969).

27. See Suzanne Scotchmer, *Standing on the Shoulders of Giants: Cumulative Research and the Patent Law*, 5 J. ECON. PERSP. 29 (1991).

28. See ERIC VON HIPPEL, *DEMOCRATIZING INNOVATION* (2005).

29. See *Sony Corp. of America v. Universal City Studios, Inc.*, 464 U.S. 417, 429 (1984).

Thus, tangible property and intellectual property begin from very different locations on the ownership spectrum. Tangible resources begin with a capacious default, viewing ownership as discouraging resource-use conflict and viewing contractual freedom as promoting efficient development. Intangible resources start with a parsimonious default—only so much as is necessary to bring about desired innovation and creativity.³⁰

This divergence in perspective derives from fundamental differences in the character of tangible and intangible resources. Tangible resources are, by the laws of physics, inherently rivalrous and excludable. They occupy physical space, and human rivalry for control of these resources undermines stability and progress. My enjoyment of an ice cream cone necessarily depletes the amount of ice cream for others.

This is not to say that such resources cannot be shared in constructive ways. Societies have long developed a wide range of strategies to share rivalrous tangible resources—from land and air to beachfront and roadways—in creative and just ways. Zoning, the public trust doctrine, and various other regimes seek to promote balanced resource use. Such rules and institutions are central to human civilization.

Information resources begin at the other end of the rivalry spectrum. They can inherently be enjoyed by everyone without rivalry or depletion. Thomas Jefferson eloquently captured this distinction:

Stable ownership is the gift of social law, and is given late in the progress of society. It would be curious then, if an idea, the fugitive fermentation of an individual brain, could, of natural right, be claimed in exclusive and stable property. If nature has made any one thing less susceptible than all others of exclusive property, it is the action of the thinking power called an idea, which an individual may exclusively possess as long as he keeps it to himself; but the moment it is divulged, it forces itself into the possession of every one, and the receiver cannot dispossess himself of it. Its peculiar character, too, is that no one possesses the less, because every other possesses the whole of it. He who receives an idea from me, receives instruction himself without lessening mine; as he who lights his taper at mine, receives light without darkening me. That ideas should freely spread from one

30. See Alan Devlin, *Patent Law's Parsimony Principle*, 25 BERKELEY TECH. L.J. 1693 (2010).

to another over the globe, for the moral and mutual instruction of man, and improvement of his condition, seems to have been peculiarly and benevolently designed by nature, when she made them, like fire, expansible over all space, without lessening their density in any point, and like the air in which we breathe, move, and have our physical being, incapable of confinement or exclusive appropriation. Inventions then cannot, in nature, be a subject of property. Society may give an exclusive right to the profits arising from them, as an encouragement to men to pursue ideas which may produce utility, but this may or may not be done, according to the will and convenience of the society, without claim or complaint from anybody.³¹

Jefferson ultimately came to see the need for the granting of limited exclusive rights to encourage inventions,³² but his parsimonious instinct proved prescient. Intangible resources significantly differ from tangible resources and merit distinctive treatment. Intellectual property rules create artificial scarcity as a means to encourage the development of inventions and creative expression.

When the nonrivalrous characteristic of information resources is combined with the economic feedback effects of network markets—such as telecommunications and computer software—the policy ramifications become more complex.³³ In conventional markets, consumers' utility functions are largely independent. My enjoyment of a good does not depend on others' enjoyment of that good. In network markets, by contrast, the demand functions (and hence, welfare) of consumers are interdependent. For example, the value of a telecommunications network depends critically on the number of other consumers that are part of that network because each person's utility depends on the number of other people with whom they can communicate. Such network externalities affect a variety of important information technology markets.³⁴ The design of intellectual property regimes for such technologies must consider the dynamics of these markets. Interoperability and compatibility of products take on great importance.

31. See VI WRITINGS OF THOMAS JEFFERSON 180–81 (Washington ed.).

32. See Hughes, *supra* note 3, at 1004–05, 1031–33.

33. See Menell, *Tailoring Software Protection*, *supra* note 14.

34. See generally CARL SHAPIRO & HAL VARIAN, INFORMATION RULES: A STRATEGIC GUIDE TO THE NETWORK ECONOMY (1998).

The difficulties of delineating the boundaries of intangible rights further complicate the puzzle. Tangible resources occupy physical space and hence can be observed and measured.³⁵ Land resources can typically be represented in two-dimensional grids. The boundaries of tangible resources are typically directly observable. Fugitive and subsurface resources, such as wild animals, oil, natural gas, and water, are more complex to map but nonetheless have definable boundaries when captured.

By contrast, information resources are often difficult to delineate.³⁶ Inventors claim their advances using words, which introduce interpretive challenges.³⁷ More significantly, inventors typically seek to claim the full range of embodiments that flow from an inventive concept. Patent specifications typically contain prophetic examples to illustrate the inventive concept, but the claims often go further. The law seeks to balance protecting inventors' supported claims with providing the public, including competitors and follow-on inventors, fair notice of the boundaries of the intellectual property rights.³⁸ This often results in unclear boundaries, which has ramifications for the optimal design of defenses, remedies, and other aspects of intellectual property rules and institutions.³⁹ We also see in the intangible realm much greater opportunism in claiming resources.⁴⁰

35. See Gary D. Libecap & Dean Lueck, *Land Demarcation Systems*, in RESEARCH HANDBOOK ON THE ECONOMICS OF PROPERTY LAW 257 (Kenneth Ayotte & Henry E. Smith eds. 2011).

36. See Peter S. Menell & Michael J. Meurer, *Notice Failure and Notice Externalities*, 5 J. LEG. ANAL. 1 (2013).

37. See *Nautilus, Inc. v. Biosig Instruments*, 134 S. Ct. 2120, 2128–29 (2014) (noting that the disclosure requirements of the Patent Act entail a “delicate balance” “tak[ing] into account the inherent limitations of language. Some modicum of uncertainty . . . ‘price of ensuring the appropriate incentives for innovation’”; “At the same time, a patent must be precise enough to afford clear notice of what is claimed, thereby ‘appris[ing] the public of what is still open to them.’” (citations omitted)).

38. See *id.*; *Graver Tank & Mfg. Co. v. Linde Air Products Co.*, 339 U.S. 605, 608 (1950) (explaining that the doctrine of equivalents allows a patentee to proceed against the producer of a device that does not literally infringe a patent claim “if it performs substantially the same function in substantially the same way to obtain the same result” (citation omitted)).

39. See Menell & Meurer, *supra* note 36.

40. See, e.g., JEFFREY G. SHELDON, HOW TO WRITE A PATENT APPLICATION § 6.5.19, at 6–114 (2005) (including a section entitled “Include Ambiguous Claims,” which offers numerous “strategies” for “intentionally writ[ing] ambiguous claims”); ROBERT D. FISH, STRATEGIC PATENTING 7–35 (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”).

Copyright protection introduces other notice challenges. Unlike land, the boundaries of expressive works cannot be mapped onto two-dimensional grids.⁴¹ Authors, artists, and musicians draw upon the works of others as well as unprotectable ideas and the public domain to create new works. Thus, their claim to copyright protection is less—and often, far less—than all of the elements (and the compilations of elements) that appear in their work.⁴² Furthermore, the fair use doctrine⁴³ and other limiting doctrines, such as the idea/expression dichotomy that channels protection for useful articles and functional aspects of works between the patent and copyright realms,⁴⁴ greatly complicate the notice of copyright boundaries.⁴⁵ And given the long duration of copyright, the problems posed by difficult-to-trace and true orphan works plague artistic creativity.⁴⁶

As a result of these fundamental differences between tangible and intangible resources, we must be especially cautious in extrapolating positive and normative precepts and ramifications from the realm of tangible resources to the analysis of intangible resources. Simple rules, such as full ownership and automatic injunctions, do not presumptively “carryover” to intangible resources.⁴⁷ Policy analysis must address the protection of intangible resources based upon the underlying economic, social, and human effects. More complex tangible property rules—such as nuisance, servitudes, and trespass to chattels—provide some useful models for intellectual property regimes. Conventional property rules and institutions provide insight and useful metaphors, but they cannot substitute for detailed analysis of the particular characteristics of the resources; the human, cultural,

41. See Peter S. Menell, *Economic Analysis of Copyright Notice: Tracing and Scope in the Digital Age*, 96 BOSTON UNIV. L. REV. (forthcoming 2016).

42. I refer to this as the “Swiss cheese” character of copyrights. 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. See *id.*

43. See 17 U.S.C. § 107.

44. See 17 U.S.C. § 102(b).

45. See Michael W. Carroll, *Fixing Fair Use*, 85 N.C. L. REV. 1087, 1092–120 (2007).

46. See Pamela Samuelson, *Notice Failures Arising from Copyright Duration Rules*, 96 BOSTON UNIV. L. REV. (forthcoming 2016); Maria A. Pallante, *Orphan Works & Mass Digitization: Obstacles & Opportunities*, 27 BERKELEY TECH. L.J. 1251 (2012); U.S. Copyright Office, REPORT ON ORPHAN WORKS (Jan. 2006), <http://www.copyright.gov/orphan/orphan-report.pdf>.

47. These issues sparked a contentious dialogue with a prior Brigham-Kanner honoree. See Peter S. Menell, *Governance of Intellectual Resources and Disintegration of Intellectual Property in the Digital Age*, 26 BERKELEY TECH. L.J. 1523 (2011); Epstein, *supra* note 15.

social, technological, and historical dimensions of the communities in which the resources are situated; and the attributes and limitations of the full range of available institutions.

B. Framing the IP/Social Justice Interface: Internal Legitimacy and External Effects

The utilitarian purposes undergirding intellectual property protection directly address multiple social justice goals. To the extent that intellectual property protections function effectively, they serve a variety of economic, human, cultural, and social goals. Advances in technological knowledge increase productivity, enhance the quality and reduce the costs of goods, and improve standards of living. Technological innovation can also address climate change, cure disease, and expand what societies can accomplish with limited resources. With regard to expressive creativity, well-functioning intellectual property systems can spur investment into the production of knowledge and can entertain and inspire.

Note, however, that these inferences are based on a critical assumption: “if” intellectual property regimes function effectively. They also presume that intellectual property protection is the most effective means of promoting innovation and creativity. Yet, intellectual property is but one of many approaches to promoting innovation and creativity. Direct procurement, prizes, secrecy, and various forms of indirect appropriation might be better or at least complementary mechanisms for addressing the appropriability problem that justifies intellectual property protection on utilitarian grounds.⁴⁸ Relatedly, the negative impacts of the granting of intellectual property rights might be weighed in the balance.⁴⁹ Thus, a critical primary question in assessing the interplay of intellectual property protection and social justice must focus on *internal legitimacy*: are intellectual property regimes the optimal mechanism for prompting innovation and creativity, and are they functioning effectively in pursuing their purported utilitarian mission?

48. See Jonathan H. Adler, *Eyes on a Climate Prize: Rewarding Energy Innovation to Achieve Climate Stabilization*, 35 HARV. ENVTL. L. REV. 1 (2011); Michael Abramowicz, *Perfecting Patent Prizes*, 56 VANDERBILT L. REV. 115 (2003); Brian D. Wright, *The Economics of Invention Incentives: Patents, Prizes, and Research Contracts*, 73 AMER. ECON. REV. 691 (1983).

49. See Kapczynski, *The Cost of the Price*, *supra* note 13.

When the policy landscape extends beyond promoting innovation and creativity within a conventional, capitalist economic setting, the challenges expand significantly. The cultural setting greatly complicates the design and functioning of both tangible and intangible resource regimes. As William Cronon discovered in his seminal study of ecology in pre-colonial and colonial New England,⁵⁰ different cultures can produce different, yet effective, resource governance regimes. The effects of those regimes on economic development and natural resource sustainability can vary widely.

Thus, the treatment of indigenous peoples and their traditional knowledge and folklore does not easily translate into conventional economic calculus. Furthermore, human and civil rights can be difficult to reconcile with economic/utilitarian goals as well as among themselves. In analyzing the interplay of intellectual property regimes and social justice, therefore, it is also critical to assess the *external effects* of utilitarian intellectual property regimes as well as interactions—conflicts and complementarities—among the array of social justice considerations: human rights, civil rights, cultural interests, and distributive justice.⁵¹

II. MODE-SPECIFIC ANALYSIS

Intellectual property and social justice interact on multiple levels. This section analyzes this interplay within patent, trade secret, copyright, and trademark law. It summarizes the principal trade-offs and tensions within the traditional utilitarian framing and then traces some of the larger external social conflicts. Part III then turns to macro aspects of the IP/social justice relationship.

A. Patent Protection

1. Internal Validity

The patent system is built upon a core economic premise that capital and talent will gravitate toward the highest bidder. In competitive markets, profits will be driven to zero, not accounting for

50. See WILLIAM CRONON, *CHANGES IN THE LAND: INDIANS, COLONISTS, AND THE ECOLOGY OF NEW ENGLAND* (1983).

51. See Kapczynski, *The Cost of the Price*, *supra* note 13, (emphasizing the internal/external dichotomy).

sunk costs such as research and development (R&D).⁵² From an ex ante perspective, most firms would not invest in developing new technologies if rivals could free-ride on their R&D, enter the market, and dissipate the inventors' profits. This produces a suboptimal level of investment in R&D, which reduces dynamic competition and innovation. The provision of time-limited exclusive rights to control a patented invention provides a mechanism for appropriating a return to R&D and commercialization.⁵³

Within the internal utilitarian frame, patent protection has two principal defects. First, it creates exclusive rights, which can raise prices above marginal cost, thereby resulting in deadweight loss to consumers.⁵⁴ Second, it can inhibit cumulative creativity to the extent that follow-on inventors face the risk of infringement (due, for example, to notice problems⁵⁵) as well as transaction costs from negotiating with blocking patent holders.

But intellectual property also has virtues. Every invention funded with intellectual property creates a Pareto improvement⁵⁶ relative to a baseline competitive market.⁵⁷ No one is taxed more than her willingness to pay for any unit she buys; otherwise she would not buy it. In contrast, funding out of general revenue runs the risk of imposing burdens on individual taxpayers greater than the benefits they receive.

A second virtue is decentralization. Probably the most important obstacle to effective public procurement is in finding the ideas for invention that are widely distributed among firms and inventors. The lure of intellectual property protection does that automatically.

52. See Menell & Scotchmer, *supra* note 17, at 1476–78.

53. See NORDHAUS, *supra* note 26.

54. The early, primitive economic models of patent protection vary the duration of patent protection so as to balance incentives to invent and deadweight loss. See NORDHAUS, *supra* note 26. This analysis, however, overlooks the complexities of cumulative innovation and the potential benefits of licensing markets. See Menell & Scotchmer, *supra* note 17; Robert P. Merges & Richard R. Nelson, *On the Complex Economics of Patent Scope*, 90 COLUM. L. REV. 839 (1990).

55. See Menell & Meurer, *supra* note 36.

56. The Pareto standard, named for the Italian engineer, social scientist, and philosopher Vilfredo Pareto, judges social welfare based on whether it is possible to make any one individual better off without making at least one individual worse off. See generally VILFREDO PARETO, *MANUAL OF POLITICAL ECONOMY: A CRITICAL AND VARIORUM EDITION* (Aldo Montesano, Alberto Zanni, Luigino Bruni, John S. Chipman & Michael McLure eds., 2014).

57. This proposition overlooks, however, the potential of other tools, such as prizes and government procurement. See *supra* note 48 and accompanying text.

Decentralization is especially important if private inventors are more likely than public sponsors to think of good ideas for innovations.

A third virtue is that intellectual property is an effective screening device.⁵⁸ Since the private value of the invention at least partially reflects social value, inventors should be willing to bear higher costs for inventions of higher value. The intellectual property mechanism encourages investors and inventors to weed out ideas for which the private costs exceed the private benefits.

These considerations, however, bear on only a subset of the institutions for promoting innovation. Public procurement, regulatory mandates (e.g., such as best available technology requirements for reducing pollution and targets for zero-emission vehicles), prize systems, trade secrecy, and ancillary means of appropriating a return on R&D can encourage innovation without deadweight loss.

Each of these other institutions, however, have limitations. As noted above, public procurement and centralized decision-making cannot easily prioritize projects and identify the best contractors. For example, in 1990, California mandated automakers to bring a specified percentage of zero-emission vehicles into their fleets,⁵⁹ yet little resulted.⁶⁰ It was the entrepreneurial efforts of the private sector, with government subsidies, that ultimately produced the major breakthroughs.⁶¹ Now many of the major automobile manufacturers are feverishly competing to advance electric and other alternative energy vehicle technologies.⁶²

The financial payoff of patent protection encourages the risk-taking that can surmount major technological challenges. While centrally planned economies, such as the former Soviet Union, were able to achieve some impressive large-scale innovation goals (such as space exploration) through direct procurement, they failed miserably at

58. See Clarisa Long, *Patent Signals*, 69 U. CHI. L. REV. 625 (2002).

59. See Leslie Harrison Reed, Jr., *California Low-Emission Vehicle Program: Forcing Technology and Dealing Effectively with the Uncertainties*, 24 B.C. ENVTL. AFF. L. REV. 695, 708–09 (1997).

60. See Gary E. Marchant, *Sustainable Energy Technologies: Ten Lessons from the History of Technology Regulation*, 18 WIDENER L.J. 831, 836–38 (2009).

61. See Bradley W. Lane, Natalie Messer-Betts, Devin Hartmann, Sanya Carley, Rachel M. Krause & John D. Graham, *Government Promotion of the Electric Car: Risk Management or Industrial Policy?*, 4 EUR. J. RISK REG. 227, 230–31 (2013).

62. See Agence France-Presse, *BMW, VW, Audi, Daimler Take on Tesla in Race of Electric Cars*, INDUSTRYWEEK (Sept. 15, 2015), <http://www.industryweek.com/technology/bmw-vw-audi-daimler-take-tesla-race-electric-cars>.

promoting the broad range of innovations that proliferate in capitalist nations with robust patent systems. Patent systems identify, nurture, and cultivate needles in the technological haystack that central planners fumble to find and develop.

But even in the United States, the patent system works in conjunction with other institutions. Military, space, biomedical, and basic research procurement, philanthropy, and prizes complement the patent system. The patent system plays a significant role in commercializing scientific advances. Trade secrecy can inhibit cumulative creativity by keeping unobservable knowledge from public view. Patent protection brings that unobservable knowledge into the open, even if its use is subject to time-limited exclusive rights.

In the end, the internal validity of the patent system can be assessed only through a comparative institutional lens. The patent system's efficacy depends in substantial part on a broad range of doctrinal and policy levers. The limitations of bureaucracies and discretion inevitably lead to excessive uniformity.⁶³ Furthermore, innovation systems can be complementary.

Nonetheless the parsimonious baseline remains useful in thinking about patent protection.⁶⁴ The patent system produces the highest social return in those areas of innovation requiring high capital cost and involving high technological risk—such as pharmaceutical research.⁶⁵ In areas such as business methods and software, the availability of alternative appropriation mechanisms—such as first mover advantage, trademark protection, copyright, trade secrecy, and ancillary means of appropriation (e.g., advertising)—suggests that we ought to be especially cautious about affording strong patent-type protection for such forms of innovation.⁶⁶

63. See Carroll, *supra* note 45; Menell, *Tailoring Software Protection*, *supra* note 14.

64. See Devlin, *supra* note 30.

65. See JAMES BESSEN & MICHAEL J. MEURER, PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK (2008); Peter S. Menell, *A Method for Reforming the Patent System*, 13 MICH. TELECOMM. & TECH. L. REV. 487, 493–501 (2007) [hereinafter Menell, *Reforming*]; Robert P. Merges, *Uncertainty and the Standard of Patentability*, 7 HIGH TECH. L.J. 1 (1992).

66. See Menell, *Reforming*, *supra* note 65; Peter S. Menell & Michael J. Meurer, *Nonpatentability of Business Methods: Legal and Economic Analysis* (Brief Amici Curiae of Professors Peter S. Menell & Michael J. Meurer in Support of Respondent at 30–32, 36–38, *Bilski v. Kappos*, 130 S. Ct. 3218 (2010) (No. 08-964)), UC Berkeley Public Law Research Paper No. 1482022, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1482022.

2. *External Perspectives*

Although the complexities of understanding and assessing the internal validity of the patent system have dominated academic discourse relating to the patent system, the search for the utilitarian holy grail tends to crowd out other important social justice considerations.

Some of the most important of such considerations relate to access to medicine.⁶⁷ The patent system is built upon the granting of exclusive rights. To the extent patent law achieves its utilitarian ends, it means that patent-induced technological advances—such as faster semiconductor chips and treatments for life-threatening diseases—will be available to those capable of paying and willing to pay the patent owner's market price during the life of the patent and will be available to all capable of paying and willing to pay marginal cost upon expiration of the patent. While this system may be justifiable to a strict utilitarian, it raises serious questions for those who use a broader justice framework.

Even if one is not troubled by the use of prices to ration access to faster computers, the rationing of access to treatments for life-threatening diseases amounts to a death sentence to those who cannot afford the patented treatment. The discoveries of such life-saving treatments might not have come about absent the patent incentive, but such a utilitarian position must be considered in conjunction with other important justice considerations. Other philosophical perspectives recognize an inalienable set of rights or entitlements for all citizens.⁶⁸

The answer to this philosophical bind is not necessarily binary—i.e., to reject the patent system or to emphasize the lives saved. Rather, this dilemma highlights the opportunity to recognize that other rules and institutions can potentially improve upon rigid exclusive rights. Just as governments can establish patent protection,

67. See Kapczynski, *New Politics of IP*, *supra* note 13; Fisher & Syed, *supra* note 13; MERGES, *supra* note 13, at 270–87.

68. See JOHN RAWLS, *A THEORY OF JUSTICE* (1971) (postulating distribution of “primary goods”—“things which a rational man wants whatever else he wants”—such that they are of the greatest benefit to the least-advantaged members of society); Eleanor Kinney, *Recognition of the International Human Right to Health and Health Care in the United States*, 60 *RUTGERS L. REV.* 335 (2008); Universal Declaration of Human Rights, G.A. Res. 217(III) A, art. 25, U.N. Doc. A/RES/217(III) (Dec. 10, 1948) (“everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services”).

they can also provide health-care policies and remedial limits on rationing of life-saving technologies that avoid such stark choices. Thus, it is critical to think of the patent system within a broader frame of public health policy. The internal utilitarian frame lacks the breadth to address the full social justice ramifications of granting time-limited exclusive rights for biomedical discoveries.

Beyond the concern over access to life-saving treatments, the contemporary U.S. patent system has largely pushed moral and ethical questions aside.⁶⁹ Whereas absolute freedom of expression may well be good social policy for a host of political, pragmatic, and institutional reasons, it is not obvious that the patent system should lack any moral compass. After all, the government is needed to evaluate and enforce patent rights. The choice to limit patent protection to “technological” innovations—i.e., “useful Arts”—is one form of policy lever, although it is typically justified on internal validity (utilitarian) grounds.⁷⁰

Patent systems can integrate moral considerations. In an earlier era, the U.S. Patent Office screened out inventions relating to gambling technologies and deception on the ground that such devices were immoral.⁷¹ European nations today bar patents on “inventions the publication or exploitation of which would be contrary to *ordre public* or morality.”⁷² The America Invents Act of 2011, for the first time, expressly excludes patents on tax strategies and human organisms.⁷³

69. See *Juicy Whip, Inc. v. Orange Bang, Inc.*, 185 F.3d 1364 (Fed. Cir. 1999); *Ex parte Murphy*, 200 U.S.P.Q. (BNA) 801, 803 (Bd. Pat. App. & Int. 1977) (upholding claim for “one-armed bandit”); cf. *In re Watson*, 517 F.2d 465, 474–76, 186 U.S.P.Q. 11, 19 (CCPA 1975) (stating that it is not the province of the Patent Office to determine, under section 101, whether drugs are safe).

70. See Peter S. Menell, *Forty Years of Wondering in the Wilderness and No Closer to the Promised Land: Bilski’s Superficial Textualism and the Missed Opportunity to Return Patent Law to Its Technology Mooring*, 63 STAN. L. REV. 1289, 1292–95 (2011).

71. See *Schultz v. Holtz*, 82 F. 448 (N.D. Cal. 1897); *Meyer v. Buckley Mfg. Co.*, 15 F. Supp. 640, 641 (N.D. Ill. 1936).

72. See Convention on the Grant of European Patents, Oct. 5, 1973, 13 I.L.M. 268, art. 53(a); Laura A. Keay, *Morality’s Move Within U.S. Patent Law: From Moral Utility to Subject Matter*, 40 AIPLA Q.J. 409 (2012); Margo A. Bagley, *Patent First, Ask Questions Later: Morality and Biotechnology in Patent Law*, 45 WM. & MARY L. REV. 469 (2003); Thomas A. Magnani, *The Patentability of Human-Animal Chimeras*, 14 BERKELEY TECH. L.J. 443 (1999); Benjamin D. Enerson, *Protecting Society from Patently Offensive Inventions: The Risk of the Moral Utility Doctrine*, 89 CORNELL L. REV. 685 (2004); Cynthia M. Ho, *Splicing Morality and Patent Law: Issues Arising from Mixing Mice and Men*, 2 WASH. U. J.L. & POL’Y 247 (2000).

73. See Pub. L. 112-29, §§ 14, 33, 125 Stat. 284 (2011).

Even if the U.S. patent system does not engage these issues, other societal institutions should.⁷⁴ These issues can, however, be extremely divisive, as reflected in debates over stem cell research,⁷⁵ emergency contraception technologies,⁷⁶ genetically modified seeds,⁷⁷ and animal rights.⁷⁸

The patent system also interacts with other market failures with broader social justice ramifications, such as climate change.⁷⁹ While motivating the development of better environmental technologies, the patent system potentially constrains the diffusion of technological advances that seek to ameliorate environmental harms.⁸⁰ Energy technologies involve substantial infrastructure investments. Even if advances in wind turbine and solar technologies dramatically lowered the cost of producing electricity, distributing that energy to consumers depends critically upon a grid infrastructure that can move decentralized sources of electricity to market. Moreover, such energy must compete with harmful alternatives. Without fees to internalize those harmful effects, renewable sources of energy face a competitive disadvantage. Thus, government policies and industry coordination play critical roles in the development and diffusion of renewable energy technologies. Prizes, subsidies, and externality-internalizing fees on fossil fuels offer complementary tools for balancing the R&D appropriability problem, the environmental externalities of fossil fuel consumption, and the geopolitical distortions of reliance on oil.⁸¹

74. See *Webber v. Virginia*, 103 U.S. (13 Otto) 344, 347–48 (1880) (“Congress never intended that the patent laws should displace the police powers of the States, meaning by that term those powers by which the health, good order, peace and general welfare of the community are promoted.”).

75. See Edward A. Fallon, *Funding Stem Cell Research: The Convergence of Science, Religion & Politics in the Formation of Public Health Policy*, 12 MARQ. ELDER’S ADVISOR 247 (2011).

76. See HEATHER MUNRO PRESCOTT, *THE MORNING AFTER: A HISTORY OF EMERGENCY CONTRACEPTION IN THE UNITED STATES* (2011).

77. See Gary Gregory, *What’s Immoral About Monsanto: Strengthening the Roots of the Moral Utility Requirement by Amending the Patent Act*, 21 CARDOZO J. INT’L & COMP. L. 759 (2013).

78. See *Biotechnology in European Patents—Threat or Promise?*, EUROPEAN PATENT OFFICE, <http://legaltexts.arcdev.hu/news-issues/issues/biotechnology.html>; Deborah MacKenzie, *Activists Join Forces Against the Onco-Mouse*, NEWSIDENTIST (Jan. 16, 1993), <https://www.newscientist.com/article/mg13718560-900-activists-join-forces-against-the-onco-mouse/>.

79. See PETER S. MENELL & SARAH M. TRAN, *INTELLECTUAL PROPERTY, INNOVATION AND THE ENVIRONMENT* (2014).

80. See Peter S. Menell, *Sarah Tran’s Inspiring Optimism*, 67 SMU L. REV. 473, 476 (2014).

81. See THOMAS FRIEDMAN, *HOT, FLAT AND CROWDED* (2008).

Other important social justice ramifications of the patent system arise in global trade and economic development.⁸²

B. Trade Secret Protection

1. Internal Validity

Trade secret law also aims to promote innovation, although it accomplishes this objective in a very different manner than patent protection.⁸³ Notwithstanding the advantages of obtaining a patent—which secures the exclusive right to practice an invention for a designated period of time while disclosing technology to the public—many innovators prefer to protect their innovation through secrecy.⁸⁴ They may believe that the cost and delay of seeking a patent are too great or that secrecy better protects their investment and increases their profit. They might also believe that the invention can best be exploited over a longer period of time than a patent would allow. Without any special legal protection for trade secrets, however, the secretive inventor risks that an employee or contractor will disclose the proprietary information. Once the idea is released, it will be “free as the air” under the background norms of a free market economy.⁸⁵ Such a predicament would lead any inventor seeking to rely upon secrecy to spend an inordinate amount of resources building high and impervious fences around their research facilities and greatly limiting the number of people with access to the proprietary information.⁸⁶

82. See *infra* Part III.C.

83. See Menell & Scotchmer, *supra* note 17, at 1479.

84. See *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 482 (1974) (emphasizing “the importance of trade secret protection to the subsidization of research and development and to increased economic efficiency within large companies through the dispersion of responsibilities for creative developments”).

85. See JAMES POOLEY, TRADE SECRETS § 3.04[3] (2008) (noting that “the law relating to trade secrets reflects a balance of public and private interests in the encouragement of innovation, the preservation of ethics and the maintenance of a free marketplace of ideas and movement of labor”); RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 1, cmt a. (1993) (observing that “[t]he freedom to engage in business and to compete for the patronage of prospective customers is a fundamental premise of the free enterprise system. Competition in the marketing of goods and services creates incentives to offer quality products at reasonable prices and fosters the general welfare by promoting the efficient allocation of economic resources.”).

86. See David D. Friedman, William M. Landes & Richard A. Posner, *Some Economics of Trade Secret Law*, 5 J. ECON. PERSP. 61 (1991).

Under trade secret law, an inventor who takes reasonable steps to maintain secrecy obtains potentially strong remedies against individuals within the enterprise and individuals subject to contractual limitations who misappropriate proprietary information.⁸⁷ Although trade secret law does not limit the use of ideas once they have become publicly known,⁸⁸ it reduces the costs of protecting trade secrets.⁸⁹

Trade secrets are the most pervasive form of intellectual property in the modern economy.⁹⁰ Nearly every enterprise—whether for-profit or not—seeks to protect information about its operations, strategy, technology, funding, personnel, and customers. Employers of all types routinely require their employees and contractors to sign restrictive non-disclosure agreements (NDAs) and return confidential information upon their departure or completion of services. Without such restrictions, these enterprises would jeopardize trade secret protection and risk violating privacy and other laws.

Although early courts routinely characterized trade secrets as “property,”⁹¹ trade secret law, unlike patent protection, never conferred exclusive rights against the public-at-large.⁹² Rather, it

87. See NATIONAL CONFERENCE OF COMMISSIONERS ON UNIFORM STATE LAW, UNIFORM TRADE SECRETS ACT §§ 2–3 (1985) (as amended).

88. See *id.* § 1(2) (“misappropriation” of a “trade secret” limited to acquisition by improper means and breach of confidence); Elizabeth A. Rowe, *Trade Secret Litigation and Free Speech: Is It Time to Restrain the Plaintiffs?*, 50 BOSTON COLLEGE L. REV. 1425 (2009); Religious Technology Center v. Lerma, 897 F. Supp. 260 (E.D. Va. 1995) (finding public disclosure notwithstanding extraordinary efforts to maintain secrecy).

89. See Friedman, Landes & Posner, *supra* note 86.

90. See James Pooley, *Trade Secrets: The Other IP Right*, WIPO MAGAZINE 2 (Issue 3, June 2013), http://www.wipo.int/wipo_magazine/en/2013/03/article_0001.html.

91. See, e.g., *Tabor v. Hoffman*, 118 N.Y. 30, 23 N.E. 12 (1889) (holding that “independent of copyright or letters patent, an inventor or author has, by the common law, an exclusive property in his invention or composition, until by publication it becomes the property of the general public”); *Peabody v. Norfolk*, 98 Mass. 452, 458 (1868) (recognizing a “property right” in a trade secret).

92. See Robert G. Bone, *A New Look at Trade Secret Law: Doctrine in Search of Justification*, 86 CAL. L. REV. 241, 251–60 (1998); RESTATEMENT OF TORTS § 757, cmt. a (reporting that the property conception “has been frequently advanced and rejected,” concluding that the prevailing theory of liability rests on “a general duty of good faith”); *E.I. DuPont de Nemours Powder Co. v. Masland*, 244 U.S. 100, 102 (1917) (Holmes, J.) (“[t]he word ‘property’ as applied to . . . trade secrets is an unanalyzed expression of certain secondary consequences of the primary fact that the law makes some rudimentary requirements of good faith. Whether the plaintiffs have any valuable secret or not, the defendant knows the facts, whatever they are, through a special confidence that he accepted. The property may be denied, but the confidence cannot

constrains disclosure of information by contract and confidential relationship. For that reason, competitors may practice inventions that they independently develop or learn through reverse engineering or other legal means.

The internal validity of trade secret protection has long been widely accepted.⁹³ In any case, it would be difficult to override contractual arrangements to protect technological secrets without undermining general contractual freedom.

2. *External Perspectives*

Notwithstanding that trade secrets work relatively well as a means of promoting technological innovation, the widespread use of routine blanket non-disclosure agreements to cover *all* proprietary information within an enterprise—including information that goes beyond the competitive sphere—raises serious social justice concerns. For example, the tobacco industry's effort to prevent Dr. Jeffrey Wigand from disclosing the industry's deception about the dangers of its products illustrates the societal risks of overbroad protection for corporate secrets.⁹⁴ Dr. Wigand's employer, Brown & Williamson Tobacco Corporation, persuaded a Kentucky court to issue a temporary restraining order barring Dr. Wigand from disclosing any information relating to his work at Brown & Williamson in tort litigation. Although the restraining order was eventually lifted as part of a landmark national tobacco settlement, Dr. Wigand risked tremendous liability for reporting a serious public health threat. His courage led to much-needed, far-reaching changes in public health policy and compensation to states for tobacco-related health-care costs.

But for Dr. Wigand's coming forward, the grave dangers posed by the tobacco industry's machinations would have remained under wraps.⁹⁵ We now know that asbestos manufacturers knew the causal link between asbestos and lung disease well before the public, and

be. Therefore, the starting point for the present matter is not property or due process of law, but that the defendant stood in confidential relations with the plaintiffs.”).

93. See Pooley, *supra* note 90.

94. See Marie Brenner, *The Man Who Knew Too Much*, VANITY FAIR, May 1996, at 170, 176.

95. In fact, Dr. Wigand was reluctant to come forward, and the unraveling of the tobacco industry deception may have been delayed many more years if not decades without the persistence of Lowell Bergman, the *60 Minutes* producer who recognized the importance of bringing Wigand's story to light. See *id.*

regulatory officials became aware of the serious health risk.⁹⁶ Just last year, evidence emerged that Volkswagen had programmed software in its vehicles to mask pollution violations.⁹⁷ And the *New York Times* recently reported a massive environmental and public health threat associated with the manufacturing of Teflon® products that DuPont Corporation officials knew about for decades.⁹⁸

While robust trade secret protection makes economic sense in a contemporary business environment marked by high employee mobility, cybercrime, and international espionage, uncritical protection of all secret business information conflicts with effective law enforcement and protection of public health, safety, and welfare. Many companies use trade secrecy as a blanket tool for hiding illegal activity—from violations of civil rights, public health and workplace safety protections, securities markets regulations, and tax reporting to defrauding the government. Employees and contractors are often in the best position to know of illegal activity, yet typical NDAs and corporate onboarding practices⁹⁹ discourage activities that might be seen to subtract from the company's bottom-line. This concern has taken on greater significance as companies accused of illegal conduct have filed lawsuits against whistleblowers and their counsel.¹⁰⁰

The American civil and criminal justice systems rely on discovery and evidence-gathering models consistent with Fourth Amendment

96. See Morris Greenberg, *Knowledge of the Health Hazard of Asbestos Prior to the Merewether and Price Report of 1930*, 7 SOC. HIST. OF MED. 493, 501 (1994); Alan F. Westin, *Introduction to WHISTLE BLOWING! LOYALTY AND DISSENT IN THE CORPORATION* 1, 11–12 (Alan F. Westin et al. eds., 1981).

97. See *Volkswagen Emissions Scandal*, WIKIPEDIA (Feb. 23, 2016, 4:39 AM), https://en.wikipedia.org/wiki/Volkswagen_emissions_scandal.

98. See Nathaniel Rich, *Poisoned Ground*, N.Y. TIMES MAGAZINE, Jan. 10, 2016, at 36, 41–42 (reporting about the widespread release of the toxic chemical PFOA into drinking water).

99. See Peter S. Menell, *Tailoring a Public Policy Exception to Trade Secret Protection*, 105 CAL. L. REV. (forthcoming 2017), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2686565 [hereinafter Menell, *Trade Secret Public Policy Exception*].

100. See, e.g., *J-M Manufacturing Co. v. Phillips & Cohen, LLP, and John Hendrix*, Docket No. A-5867-13T2 N.J. App. Div. (affirming dismissal of trade secret complaint against whistleblower and its counsel on grounds that company should have pursued this matter in the pending California whistleblower qui tam proceeding); *Walsh et al. v. Amerisource Bergen Corp.*, 2014 WL 2738215 (E.D. Pa. June 17, 2014) (denying relator motion to dismiss counterclaim for breach of confidentiality agreement); see also Carlton Fields, *Employers Fight Back Against Whistleblowers*, LEXOLOGY (July 2, 2014) (noting that “[e]mployers may even have options against employees who have been successful in [false claims cases], but who have breached their employment agreements or who have stolen documents”).

protections against unreasonable searches and seizures. Without reporting of illegal activity and access to documentary evidence supporting investigation, the government and the courts are severely hampered in their ability to enforce the law and pursue the public good.¹⁰¹

C. Copyright Protection

1. Internal Validity

U.S. copyright protection derives from the same core economic premise and constitutional authorization as patent protection—to promote progress. The difference is that copyright protection focuses on expressive creativity. Although expressive works differ significantly from technology, they share a common economic problem: both can require significant up-front effort that competitors can easily copy or imitate. The Constitution authorizes Congress to address this market failure by “securing for limited Times to Authors . . . the exclusive Right to their . . . Writings.”¹⁰²

At the nation’s founding, the printing press served as the primary means of disseminating expressive works, and hence the Copyright Act of 1790 protected books, maps, and charts (nautical maps). Like England’s Statute of Anne,¹⁰³ the term of protection was relatively “limited”: fourteen years, plus an additional fourteen years if the author was still alive.¹⁰⁴

In contrast to patent protection, copyright protection does not confer monopoly power over ideas; rather it protects only the expression of ideas.¹⁰⁵ Patent law enables inventors to protect applications of inventive ideas. When an inventor applies laws of nature to improve

101. See Menell, *Trade Secret Public Policy Exception*, *supra* note 99 (proposing a sealed disclosure/trusted intermediary exception to trade secret protection that would safeguard trade secrets while promoting effective law enforcement); see also Peter S. Menell, *Deterring Corporate Fraud from the Inside: Encouraging Whistleblowing Without Jeopardizing Trade Secrecy*, THE CLS BLUE SKY BLOG (Jan. 12, 2016), <http://clsbluesky.law.columbia.edu/2016/01/12/deterring-corporate-fraud-from-the-inside-encouraging-whistleblowing-without-jeopardizing-trade-secrecy/>.

102. See U.S. CONST., art. I, § 8, cl. 8.

103. See Act for the Encouragement of Learning (Statute of Anne), 8 Ann., c. 19 (1710).

104. See Copyright Act of 1790, ch. 15, § 1, 1 Stat. 124 (1790).

105. See 17 U.S.C. § 102(b).

the functioning of a water pump, others may not practice that invention for the life of the patent. But when an author scripts a drama featuring young wizards, explores stories of intergalactic adventure, or develops a police drama series with multi-episode story arcs, others may write their own tales of wizardry,¹⁰⁶ produce their own space adventures,¹⁰⁷ or create their own television crime franchises.¹⁰⁸ As Professor Paul Goldstein has eloquently captured:

Science and technology are centripetal, conducting toward a single optimal result. One water pump can be better than another water pump, and the role of patent and trade secret law is to direct investment toward such improvements. Literature and the arts are centrifugal, aiming at a wide variety of audiences with different tastes. We cannot say that one novel treating the theme, say, of man's continuing struggle with nature is in any ultimate sense 'better' than another novel—or musical composition or painting—on the same subject. The aim of copyright is to direct investment toward abundant rather than efficient expression. Bradley Efron, of Stanford's Statistics Department, captured this difference wonderfully when he observed that, 'If Shakespeare had died as a child we should never have had *Hamlet*, but if Newton had died as a child we should certainly have calculus today. Of course, that is also the great advantage of science. Having seen the calculus, one can improve on it, but it is hard to imagine an improved *Hamlet*.'¹⁰⁹

By excluding ideas from the scope of protection, copyright permits other creators to learn from and build on both the ideas and the

106. See Amy Sachs, *10 Books for Adults That Are Just As Magical As the Harry Potter Series*, BUSTLE (Oct. 19, 2015), <http://www.bustle.com/articles/117092-10-books-for-adults-that-are-just-as-magical-as-the-harry-potter-series>; *62 Books to Read if You Love Harry Potter Books* (July 4, 2013), <http://literatureyoungadultfiction.com/books-to-read-if-you-love-harry-potter/>; cf. Dennis S. Karjala, *Harry Potter, Tanya Grotter, and the Copyright Derivative Work*, 38 ARIZ. ST. L.J. 17 (2006) (exploring the scope of the derivative work right).

107. See *Litchfield v. Spielberg*, 736 F.2d 1352 (9th Cir. 1984) (rejecting claim that the movie *E.T.* infringed a music play entitled *Lokey from Maldemar*); *Twentieth Century-Fox Film Corp. v. MCA, Inc.*, 715 F.2d 1327 (9th Cir. 1983) (analyzing differences between *Star Wars* and *Battlestar: Galactica* to identify plot similarities).

108. Steven Bochco's success with police dramas (*Hill Street Blues*, *NYPD Blue*) spawned others, such as Dick Wolf (*Law and Order*) and Jerry Bruckheimer (*C.S.I.*), to develop their own successful crime investigation television series.

109. Paul Goldstein, *Infringement of Copyright in Computer Programs*, 47 U. PITT. L. REV. 1119, 1123 (1986) (citing Stan. U. Campus Rep., May 2, 1984, at 5–6).

market response to works of authorship. As a result, copyright protection has been less controversial than patent protection over the centuries.¹¹⁰

There are important limits, however, to building on the works of copyright owners. The right to prepare derivative works enables copyright owners to control their particularized expression. This even extends to characters.¹¹¹ Thus, other authors may not develop sequels to the *Rocky* motion picture series or stories involving graphic characters, such as Spiderman or Mickey Mouse, during the life span of copyright protection without authorization. The fair use doctrine, however, provides leeway for parodies and commentary.

Notwithstanding these fundamental limits on copyright protection, a confluence of factors have tarnished copyright's internal validity, especially since the digital revolution. Advances in technology have vastly expanded the potential for cumulative creativity, from documentary projects to music mash-ups. Yet the extension of copyright duration (to life of the author plus seventy years) in conjunction with the dismantling of formalities makes the determination of copyright subsistence and tracing of ownership difficult.¹¹² The enlargement of copyrightable subject matter to all forms of expressive works, including architecture and computer programs, has strained the idea/expression doctrine.¹¹³ Further, the strengthening of infringement remedies to address concerns about Internet piracy¹¹⁴

110. See B. Zorina Khan, *Trolls and Other Patent Inventions: Economic History and the Patent Controversy in the Twenty-First Century*, 21 GEO. MASON L. REV. 825, 844–50 (2014) (discussing periods of patent abolition in Holland and Switzerland in the late nineteenth century and early twentieth century).

111. See *Anderson v. Stallone*, 11 U.S.P.Q.2d (BNA) 1161 (C.D. Cal. 1989).

112. See Peter S. Menell, *Economic Analysis of Copyright Notice: Tracing and Scope in the Digital Age*, 96 BOSTON UNIV. L. REV. (forthcoming 2016); Samuelson, *supra* note 46; Pallante, *supra* note 46; U.S. Copyright Office, REPORT ON ORPHAN WORKS (Jan. 2006), <http://www.copyright.gov/orphan/orphan-report.pdf>.

113. Courts have done a relatively good job of cabining copyright protection for computer software; see Peter S. Menell, *An Epitaph for Traditional Copyright Protection of Network Features of Computer Software*, 43 ANTITRUST BULL. 651 (1998); although concerns remain, see David W. Hansen, Stuart D. Levi, James F. Brelsford, Jose A. Esteves & Anthony J. Dreyer, *Federal Circuit Overturns Oracle v. Google and Potentially Widens Debate over Copyright Protections*, 9 INTELL. PROP. & TECH. L.J. 13 (2014).

114. See Digital Theft Deterrence and Copyright Damages Improvement Act of 1999, Pub. L. No. 106-160, 113 Stat. 1774 (raising the upper boundary for statutory damages to \$150,000 per work for willful infringement).

has instilled fear of crushing liability in technology developers, cumulative creators, and fans.¹¹⁵

As technology for reproducing, remixing, and disseminating expressive works has advanced, the tension between strong copyright protection to encourage creative expression on the one hand and technological progress, the ability to build cumulatively, and the free flow of information through digital social networks on the other, has mounted. New generations of creators find the traditional, permission-based system stifling. Thanks to the Internet, artists no longer need traditional publishers and media outlets, which has led to both a creativity explosion and consternation among traditional copyright owners about piracy and unauthorized derivative works.¹¹⁶ Compliance with copyright law has increasingly become optional. Unlike earlier eras, in which intermediary gatekeepers—book stores, movie theaters, television broadcasters, and record stores—were the only access points for copyrighted works, the Internet provides alternative means of gaining access, some legal and some not. Many netizens, especially younger generations, gain access to copyrighted works through torrent sites and other unauthorized channels, which has escalated enforcement efforts and created a vicious cycle that has undermined copyright law's public approval.

These forces have complicated the internal validity of the copyright system. Traditional media companies have increasingly looked to alternative revenue streams, such as embedded advertising, to appropriate a return on their investment. Scholars, policymakers, traditional content companies, technology companies, creative artists, consumer organizations, and civil libertarian groups see the need to reform copyright protection for the Internet age but are deeply divided on how to get there.¹¹⁷

115. See INTERNET POLICY TASK FORCE, U.S. DEP'T OF COMMERCE, WHITE PAPER ON REMIXES, FIRST SALE, AND STATUTORY DAMAGES: COPYRIGHT POLICY, CREATIVITY, AND INNOVATION IN THE DIGITAL ECONOMY 70–81 (Jan. 2016) [hereinafter DEPARTMENT OF COMMERCE WHITE PAPER]; 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, 250–52 (2014) [hereinafter Menell, *This American Copyright Life*].

116. See Menell, *This American Copyright Life*, *supra* note 115, at 271–98.

117. See Maria A. Pallante, *The Next Great Copyright Act*, 36 COLUM. J.L. & ARTS 315 (2013); DEPARTMENT OF COMMERCE WHITE PAPER, *supra* note 115; INTERNET POLICY TASK FORCE, U.S. DEP'T OF COMMERCE, COPYRIGHT POLICY, CREATIVITY, AND INNOVATION IN THE DIGITAL ECONOMY (2013); Peter S. Menell, *Envisioning Copyright Law's Digital Future*, 46 N.Y.L. SCH. L. REV. 63, 162–97 (2002–2003) (discussing the political economy of copyright reform).

2. *External Perspectives*

Adding to the growing dissatisfaction with copyright protection, various non-utilitarian perspectives further cloud the path forward. The rights and interests of authors and audiences clash in multiple non-utilitarian dimensions.

In Europe and other parts of the world, copyright protection is seen as a natural right of authors. This moral rights tradition traces back to Jean Le Chapelier, a member of the French National Convention and the reporter of the French Copyright Law of 1793, who proclaimed “fruit of a writer’s thoughts” to be “the most sacred, the most legitimate, the most unassailable, and . . . the most personal of all forms of all properties.”¹¹⁸ Yet even this tradition recognizes that ideas, as opposed to their expression, must not be private property.¹¹⁹

The protection of authors’ moral rights—encompassing dignitary interests and the integrity of works of authorship—conflicts with a broad conception of freedom of expression.¹²⁰ The United States, which belatedly acceded to the Berne Convention for the Protection of Literary and Artistic Works, has used the fair use doctrine to accommodate freedom of expression. This same freedom opens governmental protection for all manner of speech, including offensive and disparaging speech.¹²¹ Freedom of speech arguably extends beyond existing

118. See Jane C. Ginsburg, *A Tale of Two Copyrights: Literary Property in Revolutionary France and America*, 64 TULANE L. REV. 991, 1007 (1990). The great French author (*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).

119. 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, DISCOURS D’OUVERTURE DU CONGRÈS LITTÉRAIRE INTERNATIONAL DE 1878 (1878). The ALI was later renamed the Association littéraire et artistique internationale (ALAI) and played a key role in the establishment of the Berne Convention. See RICHARD R. BOWKER, COPYRIGHT: ITS HISTORY AND ITS LAW 314 (1914).

120. See ROBERTA KWALL, THE SOUL OF CREATIVITY: FORGING A MORAL RIGHTS LAW FOR THE UNITED STATES (2009); Geri J. Yonover, *The Precarious Balance: Moral Rights, Parody, and Fair Use*, 14 CARDOZO ARTS & ENT. L.J. 79 (1996); cf. Alexandra Couto, *Copyright and Freedom of Expression: A Philosophical Map*, in INTELLECTUAL PROPERTY AND THEORIES OF JUSTICE (Axel Gosseries, Alain Marciano & Alain Strowel eds., 2008); Neil Weinstock Netanel, *Locating Copyright Within the First Amendment Skein*, 54 STAN. L. REV. 1 (2001).

121. See Jed Rubenfeld, *The Freedom of Imagination: Copyright’s Constitutionality*, 112 YALE L.J. 1 (2002); Rebecca Tushnet, *Copyright as a Model for Free Speech Law: What Copyright*

fair use boundaries.¹²² The integrity and availability of works of authorship also implicates important public and cultural interests.¹²³

Copyright protection also affects distributive values, ranging from providing economic security for authors and their descendants to promoting education, access to knowledge, and career opportunities for the public-at-large and new generations of creators. The modern U.S. Copyright Act seeks to blunt the bargaining power of publishers by affording authors an inalienable right to terminate transfers of copyright interests thirty-five years after assignments.¹²⁴ This parentalistic limitation of freedom of contract aims to enable authors, their spouses, and their children to derive a larger return on works that retain their value.

As emphasized by President Washington, the promotion and diffusion of knowledge were recognized as essential to the American republic.¹²⁵ The Massachusetts Constitution stressed the importance of education, access to knowledge, and encouragement of literature and science as cornerstones for a democratic society and for social harmony:

Wisdom, and knowledge, as well as virtue, diffused generally among the body of the people, being necessary for the preservation of their rights and liberties; and as these depend on spreading the opportunities and advantages of education in the various parts of the country, and among the different orders of the people, it shall be the duty of legislatures and magistrates, in all future periods of this commonwealth, to cherish the interests of literature and the sciences, and all seminaries of them; especially the university at Cambridge, public schools and grammar schools in

Has in Common with Anti-Pornography Laws, Campaign Finance Reform, and Telecommunications Regulation, 42 B.C. L. REV. 1 (2000).

122. See Rebecca Tushnet, *Copy This Essay: How the Fair Use Doctrine Harms Free Speech and How Copying Serves It*, 114 YALE L.J. 535 (2004) (criticizing existing fair use doctrine for failing to recognize important self-expression, persuasion, and affirmation interests in unauthorized nontransformative reproduction of copyrighted works).

123. See JOSEPH L. SAX, *PLAYING DARTS WITH A REMBRANDT: PUBLIC AND PRIVATE RIGHTS IN CULTURAL TREASURES* (1999) (questioning the authority of private owners of great works of art or cultural treasures, such as historic papers, to destroy these works or to deny public access to them).

124. See Peter S. Menell & David Nimmer, *Pooh-Poohing Copyright Law's "Inalienable" Termination Rights*, 57 J. COPYRIGHT SOC'Y U.S.A. 799, 804–08 (2010) (tracing the history of copyright's recapture provisions).

125. See *supra* note 12.

the towns; to encourage private societies and public institutions, rewards and immunities, for the promotion of agriculture, arts, sciences, commerce, trades, manufactures, and a natural history of the country; to countenance and inculcate the principles of humanity and general benevolence, public and private charity, industry and frugality, honesty and punctuality in their dealings; sincerity, good humor, and all social affections, and generous sentiments among the people.¹²⁶

Thus, American copyright policy has long sought to promote access to knowledge and preserve cultural heritage.¹²⁷ The emergence and development of public libraries—through both philanthropy and copyright policy—have played a key role in educating the public and providing public access to knowledge repositories.¹²⁸

We can also see distributive values in the broadening of expressive opportunities for authors and artists.¹²⁹ Since expression often builds on and reacts to prior expressive works, such distributive values can run counter to the provision of exclusive rights. Limiting doctrines and the fair use privilege implicitly cross-subsidizes cumulative creators.¹³⁰ Such freedom to build on the work of others can, however, adversely affect authors' moral and dignitary interests.¹³¹

Copyright protection also promotes human flourishing as well as cross-cultural understanding, both of which are vital to a free, inclusive, respectful, harmonious, and democratic society. I have come to see these virtues as possibly the most important purposes served by a well-functioning copyright system. When I reflect on my own life, it is difficult to imagine becoming the person I am today without the creative and cultural influences of my formative years. I still vividly remember seeing my first episode of the original *Star Trek* series

126. See MASS. CONST. art. III, § 2.

127. See Peter S. Menell, *Knowledge Accessibility and Preservation Policy for the Digital Age*, 44 HOUS. L. REV. 1013, 1022–40 (2007) (tracing the development of access and preservation policies).

128. See ABIGAIL A. VAN SLYCK, *FREE TO ALL: CARNEGIE LIBRARIES & AMERICAN CULTURE, 1890–1920* (1995); JESSE HAUKE SHERA, *FOUNDATIONS OF THE PUBLIC LIBRARY: THE ORIGINS OF THE PUBLIC LIBRARY MOVEMENT IN NEW ENGLAND, 1629–1885* (1965); SIDNEY HERBERT DITZION, *ARSENALS OF A DEMOCRATIC CULTURE: A SOCIAL HISTORY OF THE AMERICAN PUBLIC LIBRARY MOVEMENT IN NEW ENGLAND AND THE MIDDLE STATES FROM 1850 TO 1900* (1947).

129. See Van Houweling, *supra* note 13; Peter S. Menell, *Adapting Copyright for the Mashup Generation*, 164 U. PA. L. REV. 441 (2016) [hereinafter Menell, *Adapting Copyright for the Mashup Generation*].

130. See Van Houweling, *supra* note 13, at 1540.

131. See Menell, *Adapting Copyright for the Mashup Generation*, *supra* note 129, at 506–10.

while at a sleep-over with my older cousins. Gene Roddenberry's extraordinary voyages of the Starship Enterprise—"to boldly go where no man [or woman] has gone before"—had a profound influence on my social values and interest in technology.¹³² Rebellious rock 'n roll and Bob Dylan's forthright poetry spoke to "My Generation"¹³³—fueling our innate adolescent desire to question authority and think independently.

The importance of adequately funded and well-produced film, art, music, and literature is inestimable. As much as lawyers emphasize the role of legal advocacy in shifting the law, the television series *Will and Grace* likely had more influence in shifting the nation's and Supreme Court's views on gay marriage than anything that lawyers argued. Similarly, works such as *To Kill a Mockingbird* and *The Help* powerfully communicated the indignity of the Jim Crow South. The public's gradual embrace of R&B, jazz, and gospel—what was once referred to as "race music"—played a critical role in building a more cohesive and inclusive nation.¹³⁴

But just as copyrighted works can educate and inspire, they can also inflame and provoke violence and subjugation of women. Copyright protects pornography,¹³⁵ violent video games,¹³⁶ and hate

132. I was not alone. Martin Luther King, Jr., was himself a Trekkie, and he approved of his daughters watching the show because of its diverse cast and harmonious portrayal of race and geopolitical relations. When Dr. King became aware that Nichelle Nichols, the African-American actress who played the third in command on the USS *Enterprise*, was leaving the show, he implored her to remain:

I am the biggest Trekkie on the planet, and I am Lieutenant Uhura's most ardent fan. . . . Do you not understand what God has given you? . . . You have the first important non-traditional role, non-stereotypical role. . . . You cannot abdicate your position. You are changing the minds of people across the world, because for the first time, through you, we see ourselves and what can be.

See Nichelle Nichols, *Pioneers of Television*, PBS KQED, <http://www.pbs.org/wnet/pioneers-of-television/pioneering-people/nichelle-nichols/>; see also Abby Ohlheiser, *How Martin Luther King Jr. Convinced 'Star Trek's' Lt. Uhura to Stay on the Show*, WASH. POST (July 31, 2015), <https://www.washingtonpost.com/news/arts-and-entertainment/wp/2015/07/31/how-martin-luther-king-jr-convinced-star-treks-uhura-to-stay-on-the-show/>.

133. See *My Generation*, WIKIPEDIA, http://en.wikipedia.org/wiki/My_Generation (referring to *The Who's* iconic song about finding one's place in society).

134. This is not to say that the process has been fair to African-American artists. See K.J. Greene, "Copynorms," *Black Cultural Production, and the Debate over African-American Reparations*, 25 CARDOZO ARTS & ENT. L.J. 1179, 1193 (2008) ("The fleecing of Black artists was the basis of the success of the American music industry.").

135. See Ann Bartow, *Copyright Law and Pornography*, 91 OR. L. REV. 1 (2012).

136. See Ned Snow, *The Regressing Progress Clause: Rethinking Constitutional Indifference to Harmful Content in Copyright*, 47 U.C. DAVIS L. REV. 1 (2013); Paul E. Salamanca, *Video Games as a Protected Form of Expression*, 40 GA. L. REV. 153 (2005).

speech.¹³⁷ First Amendment values obviously complicate these issues. As with the role of morality concerns in assessing patentability, the question arises whether these issues are best addressed within copyright law or through other public policies. As with patent protection, the government's imprimatur on these works through the granting of protection at least indirectly encourages such works. But drawing First Amendment distinctions between art and pornography or incitement of violence is especially challenging.¹³⁸

The economic models supporting content creation and dissemination also have important social justice ramifications. For a variety of technological and economic reasons, many content industries came to rely on indirect forms of appropriability to support artistic creativity.¹³⁹ As one economist cynically remarked, “[p]rograms are scheduled interruptions of marketing bulletins.”¹⁴⁰ Thus, major media channels and content producers worked symbiotically. But such a business model comes at a cost. Those who pay for the content shape its message. While consumer demand obviously drives content protection, advertising patrons influence artistic creativity. Glamorizing smoking cigarettes or drinking alcohol, both addictive products, generated high returns. Public officials eventually came to see the

137. See LaShel Shaw, *Hate Speech in Cyberspace: Bitterness Without Boundaries*, 25 NOTRE DAME J.L. ETHICS & PUB. POL'Y 279 (2011); cf. Lieutenant Colonel Eric M. Johnson, *Examining Blasphemy: International Law, National Security and the U.S. Foreign Policy Regarding Free Speech*, 71 A.F. L. REV. 25 (2014).

138. See Lindsay E. Wuller, *Losing the Game: An Analysis of the Brown v. Entertainment Merchants Association Decision and Its Ramifications in the Area of “Interactive” Video Games*, 57 ST. LOUIS U. L.J. 457 (2013) (discussing *Brown v. Entm't Merchs. Ass'n*, 131 S. Ct. 2729 (2011), which struck down a California law regulating the sale of violent video games to minors as violative of the First Amendment); Mark Tushnet, *Art and the First Amendment*, 35 COLUM. J.L. & ARTS 169 (2012); Ned Snow, *The Meaning of Science in the Copyright Clause*, 2013 BYU L. REV. 259, 263 (contending that the original meaning of “Science” in the Intellectual Property Clause of the Constitution is “a system of knowledge comprising distinct branches of study” that limits legislative power to grant copyright protection); Bartow, *supra* note 135 (arguing that pornography lies “beyond the scope of the Intellectual Property Clause” on the grounds that pornography is “non-progressive and non-useful”); cf. Ned Snow, *Content-Based Copyright Denial*, 90 IND. L.J. 1473 (2015) (contending that Congress could exclude some content areas from copyright protection without running afoul of the First Amendment).

139. Early broadcasting technology had no direct way of charging those who received radio and television signals. Advertising emerged as an indirect way of supporting these distribution outlets and those who produced the content.

140. See HAROLD L. VOGEL, *ENTERTAINMENT INDUSTRY ECONOMICS: A GUIDE FOR FINANCIAL ANALYSIS* 229 (6th ed. 2004).

adverse social effects of such advertising and regulated it.¹⁴¹ But the phenomenon remains. The advertising that supports content creation and dissemination had doubtlessly fueled rising obesity rates.¹⁴²

Technological advances have altered the influence of advertising in content markets in complex ways.¹⁴³ With the advent of digital video recording technology and commercial skipping, advertising has been integrated within the content we view. This is far more insidious than “scheduled interruptions of marketing bulletins.” The growing integration of advertising into mass media and Internet services in the Digital Age represents a subtle but real and present threat to expressive freedom, free will, and public well-being. What began as a largely innocuous means of subsidizing print media and a solution to funding broadcast media has increasingly distorted the integrity of news reporting and creative expression. We see similar phenomena in the social media space.¹⁴⁴ What we perceive as “free” comes at a significant human, cultural, public health and welfare cost.

D. Trademark Protection

1. Internal Validity

Trademark protection, like copyright, influences the flow of information to the public. In contrast to patent, trade secret, and copyright

141. See Sandra J. Teel, Jesse E. Teel & William O. Bearden, *Lessons Learned from the Broadcast Cigarette Advertising Ban*, 43 J. MARKETING 45, 45–46 (1979) (describing how the Public Health Cigarette Smoking Act of 1969 established a federal program dealing with cigarette package labeling and advertising); *but see* 44 *Liquormart, Inc. v. Rhode Island*, 517 U.S. 484, 507 n.12 (1996) (striking down a regulation prohibiting advertisement of alcohol prices on First Amendment grounds, in part because “[i]t is perfectly obvious that alternative forms of regulation that would not involve any restriction on speech would be more likely to achieve the State’s goal of promoting temperance,” including taxation, direct regulation establishing minimum prices or maximum per capita purchases, or education).

142. See *Product Placements Market Unhealthy Food to Children*, YALE NEWS (Aug. 2, 2011), <http://news.yale.edu/2011/08/02/product-placements-market-unhealthy-food-children-0> (“[T]he majority of exposure was for regular soft drinks from just one company, Coca-Cola, which accounted for 71% of product-placement appearances viewed by children and approximately 60% of adult and adolescent exposure.”); Mike Adams, *Soft Drink Company Marketing Tactics: The Experts Sound Off*, NATURAL NEWS (Jan. 8, 2005), http://www.naturalnews.com/003914_soft_drinks&uscore;food_politics.html (showing that Coca-Cola spent \$1.6 billion in the late 1990s for advertising purposes).

143. See Peter S. Menell, *2014: Brand Totalitarianism*, 47 U.C. DAVIS L. REV. 787 (2014).

144. See Hoofnagle & Whittington, *supra* note 13.

protection, which aim principally to promote innovation and creativity, trademark law seeks primarily to safeguard the integrity of the marketplace.¹⁴⁵ Trademark law prohibits activities that create a likelihood of confusion as to the source of goods and services. In so doing, it reduces consumer confusion and enhances incentives for firms to invest in activities (including R&D) that improve brand reputation.

The efficiency of the marketplace depends critically upon the quality of information available to consumers. Proliferation of unreliable information in the marketplace increases consumers' costs of search and distorts the provision of goods. Consumers will have to spend more time and effort inspecting goods, researching the product market, and actually testing products. Manufacturers will have less incentive to produce quality goods because others will be able to free-ride on such reputations. Like patent and copyright law, trademark law operates by protecting information—words, symbols, or other source-identifying indicia. Through such protection, product manufacturers, service providers, and collective and certification organizations can more easily police information in the marketplace. By supporting the reliability of source-identifying symbols, trademark protection is closely intertwined with marketing and advertising.

These functions are part of a larger framework of laws and institutions that regulate the quality of information in the marketplace. Just as institutions and policies other than patent and copyright law promote innovation and creativity, a variety of mechanisms in addition to trademark protection are available to provide and regulate market information: (1) common law causes of action protecting against deceit and fraud and consumer protection statutes; (2) public regulation and public enforcement of unfair competition laws; (3) false advertising and deceptive practices/unfair competition laws; (4) industry self-regulation and certification organizations; and (5) consumer information institutions. These alternative policies work in conjunction with trademark protection to facilitate and improve consumer decision-making.

At the level of internal validity, it is difficult to quarrel with trademark law's basic design and functioning. Unlike patent protection,

145. See *supra* note 19 and accompanying text.

it does not confer market power over products and services.¹⁴⁶ Like copyright protection, trademarks pose some risk of monopolizing communication, but various doctrines bar trademark protection for generic terms¹⁴⁷ and limit protection for descriptive terms.¹⁴⁸ The expansion of trademark law for famous marks beyond source identification—what is referred to as dilution protection¹⁴⁹—risks undue power of symbols,¹⁵⁰ but these areas of law have been significantly circumscribed.¹⁵¹

2. *External Perspectives*

Notwithstanding trademark law's general desirability, such protection can conflict with other social justice concerns. As with copyright law, trademark law can interfere with freedom of expression.¹⁵² Similarly, trademark protection can undermine moral, dignitary, and group interests. Creative artists, professional entertainers, and athletes can have service marks associated with their works and performances. Members of religious, ethnic, racial, and other communities

146. See *Traffix Devices, Inc. v. Mktg. Displays, Inc.*, 532 U.S. 23 (2001) (limiting trademark protection in a product's trade dress to the non-functional elements).

147. See *A.J. Canfield Co. v. Honickman*, 808 F.2d 291, 304 (3d Cir. 1986) ("Underlying the genericness doctrine is the principle that some terms so directly signify the nature of the product that interests of competition demand that other producers be able to use them even if terms have or might become identified with a source and so acquire 'de facto' secondary meaning."); *Am. Cyanamid Corp. v. Connaught Labs., Inc.*, 800 F.2d 306, 308 (2d Cir. 1986) ("Consumers will not benefit . . . if trademark law prevents competitors from using generic or descriptive terms to inform the public of the nature of their product.").

148. See *KP Permanent Make-Up, Inc. v. Lasting Impression I, Inc.*, 543 U.S. 111 (2004) (discussing the descriptiveness doctrine).

149. See Frank I. Schechter, *The Rational Basis of Trademark Protection*, 40 HARV. L. REV. 813 (1927) (articulating dilution of a well-known mark as a form of trademark harm); see also Jonathan Moskin, *Dilution or Delusion: The Rational Limits of Trademark Protection*, 83 TRADEMARK REP. 122 (1993).

150. See Robert N. Klieger, *Trademark Dilution: The Whittling Away of the Rational Basis for Trademark Protection*, 58 U. PITT. L. REV. 789 (1997).

151. See David S. Welkowitz, *Famous Marks Under TDRA*, 99 TRADEMARK REP. 983 (2009); Barton Beebe, *The Continuing Debacle of U.S. Antidilution Law: Evidence from the First Year of Trademark Dilution Revision Act Case Law*, 24 SANTA CLARA COMPUTER & HIGH TECH. L.J. 449 (2007–2008); Clarisa Long, *Dilution*, 106 COLUM. L. REV. 1029 (2006).

152. See Bruce P. Keller & Rebecca Tushnet, *Even More Parodic than the Real Thing: Parody Lawsuits Revisited*, 94 TRADEMARK REP. 979 (2004).

have dignitary interests in words and symbols associated with their faith, race, origin, and community.¹⁵³

Several recent controversies highlight inherent tensions between trademark protection, individual and group identity, and freedom of expression.¹⁵⁴ In contrast to patent¹⁵⁵ and copyright law,¹⁵⁶ federal trademark law bars registration of marks that consist of or comprise “immoral, deceptive, or scandalous matter; or matter which may disparage or falsely suggest a connection with persons, living or dead, institutions, beliefs, or national symbols, or bring them into contempt, or disrepute.”¹⁵⁷ In a long-running dispute, Native Americans have sought to cancel registration of the National Football League’s “Washington Redskins” trademark on the ground that it is an offensive and disparaging slur.¹⁵⁸ That decision is currently being appealed, with the American Civil Liberties Union—among others—raising First Amendment concerns.

In another recent decision, the TTAB denied registration of the mark “The Slants” by an Asian-American rock band.¹⁵⁹ The Federal Circuit overturned the TTAB’s decision on First Amendment grounds, invalidating the Lanham Act’s Section 2(a) disparagement provision as unconstitutional.¹⁶⁰ Applying strict scrutiny, the court rejected the statute’s regulation of important legal rights to private speech based on disapproval of the message content as violative of the First Amendment.¹⁶¹

153. See Jon Keith Parsley, *Regulation of Counterfeit Indian Arts and Crafts: An Analysis of the Indian Arts and Crafts Act of 1990*, 18 AM. INDIAN L. REV. 487 (1993).

154. See Rita Heimes, *Trademarks, Identity, and Justice*, 11 J. MARSHALL REV. INTELL. PROP. L. 133, 158–65 (2011); K.J. Greene, *Trademark Law and Racial Subordination: From Marketing of Stereotypes to Norms of Authorship*, 58 SYRACUSE L. REV. 431, 436, 444 (2008) (discussing the role of trademarks in reinforcing racial stereotyping (noting the “Aunt Jemima” logo) and pointing out how what is considered offensive and disparaging shifts over time).

155. See *supra* notes 69–78 and accompanying text.

156. See *supra* notes 134–36 and accompanying text.

157. See 15 U.S.C. § 1052(a); Lanham Act, § 2(a).

158. See *Pro-Football, Inc. v. Blackhorse*, 112 F. Supp.3d 439 (E.D. Va. 2015) (upholding cancellation of trademark); *Pro Football, Inc. v. Harjo*, 565 F.3d 880 (D.C. Cir. 2009) (ultimately dismissing challenge based on laches).

159. See *In re Simon Shiao Tam*, 108 U.S.P.Q.2d 1305 (Trademark Tr. & App. Bd.).

160. See *In re Tam*, 808 F.3d 1321 (Fed. Cir. 2015). The court noted that the PTO has also denied registration under Section 2(a) to “Stop the Islamisation of America,” “The Christian Prostitute,” “Mormon Whiskey,” “Have You Heard that Satan Is a Republican?,” “Ride Hard Retard,” “Abort the Republicans,” “Marriage is for Fags,” and “Squaw Valley,” among many others. See *id.* at 1330.

161. See *id.* at 1334–55. The court did not, however, resolve the constitutionality of the “immorality” and “scandalous” bars to registration. See *id.* at 1330 n.1.

Trademarks also have important cultural and geographic significance.¹⁶² European nations and particular wine and food-producing regions have long advocated protection of geographic designations as both an authentic indicator of source and of product quality as well as a form of regional identity.

Trademark law has taken on far greater significance in the Digital/Internet Age where trademarks serve as keyword triggers for advertising. Such advertising has enabled Google, Facebook, and other Internet companies to establish robust multi-sided markets. These portals provide “free” services, such as search, email, and social networking to consumers while auctioning advertising slots, based on consumer search terms and other communications. As noted earlier,¹⁶³ however, such services come at a real human cost. Advertisers, search engines, and other ad-driven services are seeking to influence and shape their audience. As political activist Eli Pariser recognized, “If you are not paying for the product, you are the product.”¹⁶⁴

III. THE MACRO SOCIAL JUSTICE PERSPECTIVE

As reflected in the prior discussion, much IP scholarship and policy focuses on the efficacy of particular IP modalities. Such modal analysis is unquestionably important to better understand the particularized operation of the different regimes. Expanding that analysis to incorporate the broad range of social justice concerns is increasingly important as intellectual property plays a growing role in the Digital Age. But even this broader, bi-focal frame misses important macro cross-modal issues, ranging from IP, poverty, and inequality to gender and racial inclusion and larger global justice issues.

A. IP, Poverty, and Inequality

As a result of the digital revolution, information resources now drive economic growth more than at any time in human history. Increasing the size of the economic pie, however, is only a part of social justice. As reflected in the scholarship of Professors Emmanuel

162. See Justin Hughes, *Champagne, Feta, and Bourbon: The Spirited Debate About Geographical Indications*, 58 HASTINGS L.J. 299 (2006).

163. See Part II.C.2.

164. See ELI PARISER, *THE FILTER BUBBLE: WHAT THE INTERNET IS HIDING FROM YOU* (2011).

Saez¹⁶⁵ and Thomas Piketty,¹⁶⁶ as well as in mounting political mobilization questioning economic inequality in the United States and other developed nations,¹⁶⁷ there are, however, much larger societal interests at stake.¹⁶⁸

The burgeoning economic literature on income equality reveals significant tilting of income distribution toward the wealthy during the past several decades. Many of the newest billionaires come from the technology sector. Network economics partially explains the tremendous wealth generated by a relatively few information industry enterprises.¹⁶⁹ And many of the wealthiest people in the world are technology entrepreneurs.¹⁷⁰ Bill Gates (Microsoft) still leads the way, with his colleagues Paul Allen and Steven Ballmer among the upper echelon. Others come from Oracle (Larry Ellison), Google (Sergey Brin, Larry Page, and Eric Schmidt), Facebook (Mark Zuckerberg), Apple (Laurene Powell Jobs), and Amazon (Jeff Bezos). The sports and entertainment professions, which depend critically upon copyright, trademark, and publicity right protections, also contribute to high wealth for a relatively small “superstar” class.¹⁷¹

The interplay among IP, poverty, and inequality more generally is beginning to emerge as IP theory advances and the digital revolution matures. At a basic level, the technological advance produces higher standards of living. It enables society to accomplish more with fewer resources and therefore increases productivity. Whether intellectual

165. See Emmanuel Saez & Gabriel Zucman, *Wealth Inequality in the United States Since 1913: Evidence from Capitalized Income Tax Data*, QUARTERLY J. ECON. (forthcoming 2016); Facundo Alvaredo, Tony Atkinson, Thomas Piketty & Emmanuel Saez, *The Top 1 Percent in International and Historical Perspective*, 27(3) J. ECON. PERSP. 3 (2013); Tony Atkinson, Thomas Piketty & Emmanuel Saez, *Top Incomes in the Long Run of History*, 49 J. ECON. LIT. 3 (2011).

166. See THOMAS PIKETTY, *CAPITAL IN THE TWENTY-FIRST CENTURY* (2013); Thomas Piketty & Emmanuel Saez, *Income Inequality in the United States, 1913–1998*, 118 QUARTERLY J. ECON. 1 (2003).

167. See *Bernie Sanders on Economic Inequality*, FEELTHEBERN.ORG, <http://feelthebern.org/bernie-sanders-on-economic-inequality/>.

168. See Joseph E. Stiglitz, *How Intellectual Property Reinforces Inequality*, N.Y. TIMES, July 14, 2013.

169. See Michael L. Katz & Carl Shapiro, *Systems Competition and Network Effects*, 8 J. ECON. PERSP. 93 (1994) (discussing the economics of network effects); Michael L. Katz & Carl Shapiro, *Network Externalities, Competition, and Compatibility*, 75 AM. ECON. REV. 424 (1985) (describing economic circumstances leading to increasing return to the scale of demand).

170. See *The World's Billionaires*, FORBES (2015), <http://www.forbes.com/billionaires/list/>.

171. See Sherwin Rosen, *The Economics of Superstars*, 71 AM. ECON. REV. 845 (1981).

property optimally promotes innovation and creativity is a more difficult question as addressed in the internal analysis of IP modes.¹⁷² But to the extent that it does, it is Pareto-improving¹⁷³ in at least a limited sense. No one is required to purchase IP-protected goods. Therefore, in an exchange economy, only those who value such goods more than their cost will purchase the goods. Furthermore, patent and copyright protection eventually expire (this framing, however, affords little solace to those who can't afford to purchase patented, life-saving medicines). At a coarse level of granularity, modern societies have the benefit of all manner of innovation and creativity—from sanitation technologies that support safe drinking water to telecommunications and modern medicines. As such, innovation tends to reduce poverty and raise standards of living in an absolute sense over the long run (but as John Maynard Keynes famously observed, “In the long run we are all dead”¹⁷⁴).

The digital revolution has provided especially rapid advance due to the scalability of information technologies. Fifty years ago, Intel co-founder Gordon Moore predicted that the number of transistors in an integrated circuit would double approximately every two years due to advances in semiconductor and related technologies.¹⁷⁵ This projection—which has come to be known as Moore's Law¹⁷⁶—has proven remarkably prescient and helps to explain important aspects of the digital revolution. Given the high cost and risk of semiconductor research, patents undoubtedly played a significant role in this remarkable trajectory. As a result, computer technology is now available to much of the population at relatively low and declining cost.

In some respects, patent and copyright protection parallel the Jubilee, an Old Testament commandment that Professor Singer uses to inject a broader conception of social justice into modern property theory.¹⁷⁷ According to the book of Leviticus, landowners are to keep the land fallow in the seventh year—a sabbatical year to revive

172. See *supra* Part II.

173. See *supra* note 56 (describing the Pareto standard).

174. See ROBERT SKIDELSKY, JOHN MAYNARD KEYNES: THE ECONOMIST AS SAVIOR, 1920–1937 62 (1992).

175. See Gordon W. Moore, *Cramming More Components onto Integrated Circuits*, ELECTRONICS 114 (2015).

176. See *Moore's Law*, WIKIPEDIA (Feb. 23, 2016, 4:50 PM), https://en.wikipedia.org/wiki/Moore%27s_law.

177. See JOSEPH WILLIAM SINGER, THE EDGES OF THE FIELD: LESSONS ON THE OBLIGATIONS OF OWNERSHIP 50–51 (2000).

the land's productivity. The Jubilee year occurs following seven cycles; it is the Sabbath's Sabbath. The Jubilee "fiftieth year is sacred; it is a time of freedom and of celebration when everyone will receive back their original property, and slaves will return home to their families."¹⁷⁸ Debts are forgiven, and society is returned to the pre-debt state.

Similarly, the limited duration of patent and copyright serves as a form of *tzedakah* (justice or righteousness) in sharing the bounty of intellectual creativity. One can question whether the duration of either regime is optimal,¹⁷⁹ but the major modes of intellectual property liberate the informational bounty at fixed intervals.

Focusing on the consumption side of social welfare only partially addresses poverty and inequality concerns. There is reason to worry that the growing importance of information resources in the economy adversely affects the distribution of income and wealth. Moreover, even as the total social pie expands, shifts in the sources of economic activity and employment patterns may well be worsening the plight of the least well-off in absolute as well as relative terms.

We are far from a complete understanding of these phenomena and patterns, but there are some telltale signs. As MIT Professor Erik Brynjolfsson and research center director Andrew McAfee have reported, we are in the midst of an unprecedented economic transformation in which productivity increases while wage rates stagnate.¹⁸⁰ According to their research, advances in artificial intelligence (AI) are profoundly restructuring the economy in ways that benefit a small inventive and creative class to the relative, and possibly absolute, detriment of the working class. Although the effects are complex and sectoral,¹⁸¹ there is good reason to believe that the digital

178. See Leviticus 25:10; cf. Michael Hudson, "Proclaim liberty throughout the land": *The Economic Roots of the Jubilee*, 15 BIBLE REVIEW 26 (1999); MICHAEL HUDSON, THE LOST TRADITION OF BIBLICAL DEBT CANCELLATIONS 28 (1993) (noting that the Rosetta Stone commemorated a debt cancellation).

179. See, e.g., Menell, *Tailoring Software Protection*, *supra* note 14, at 1354–67, 1371–72 (recommending a short duration for software protection, far less than the life of patents or copyrights); see also Brief of George A. Akerlof et al. as Amici Curiae in Support of Petitioners at 12, *Eldred v. Ashcroft*, 537 U.S. 186 (2003) (No. 01-618).

180. See ERIK BRYNJOLFSSON & ANDREW MCAFEE, RACE AGAINST THE MACHINE: HOW THE DIGITAL REVOLUTION IS ACCELERATING INNOVATION, DRIVING PRODUCTIVITY, AND IRREVERSIBLY TRANSFORMING EMPLOYMENT AND THE ECONOMY (2011); Steve Lohr, *More Jobs Predicted for Machines, Not People*, N.Y. TIMES (Oct. 23, 2011), <http://www.nytimes.com/2011/10/24/technology/economists-see-more-jobs-for-machines-not-people.html>.

181. See Timothy Aeppl, *Be Calm, Robots Aren't About to Take Your Job*, MIT Economist

revolution is increasingly decoupling productivity and employment.¹⁸² One only needs to look at automotive manufacturing or travel agencies to see stark shifts since the late 1990s. As Professor David Autor, who is more sanguine about the effects of AI than his MIT colleagues, notes, “[i]f we automate all the jobs, we’ll be rich—which means we’ll have a distribution problem, not an income problem,”¹⁸³—which is precisely the point. And given Moore’s Law, the effects can be rapid and intensify over time.

There may be some countervailing forces on the concentration of wealth among Information Age industrialists. The same competitive spirit that has driven Digital Age wealth has produced a new competitive philanthropic age.¹⁸⁴ Notwithstanding the benefits that can flow from such philanthropy, we increasingly live in a new Gilded Age in which a new breed of Information Age titans direct social policy¹⁸⁵ and distort the political process.

These profound societal changes open up a new set of policy challenges. Progressive taxation alone might not provide the best antidote against structural sources of poverty and inequality in the Information Age. More direct engagement with intellectual property and other substantive policy interventions might be advisable. Nonetheless, the need for rapid innovation to stem climate change and public health threats grows ever more apparent, creating a tradeoff for compromising IP policy. On the bright side, the increasing availability of widely accessible information platforms, tools, and training promise to expand opportunity. Yet the forces of wealth concentration—from network effects to advances in machine learning—raise concerns for the plight of future generations.

B. Gender and Racial Inequality

The concentration of wealth and economic leverage that intellectual property produces places vast power in the hands of a relatively

Says, WALL ST. J. (Feb. 25, 2015), <http://blogs.wsj.com/economics/2015/02/25/be-calm-robots-arent-about-to-take-your-job-mit-economist-says/?mod=ST1>.

182. See David Rotman, *How Technology Is Destroying Jobs*, TECH REVIEW (June 12, 2013), <http://www.technologyreview.com/featuredstory/515926/how-technology-is-destroying-jobs/>.

183. See Aepfel, *supra* note 181.

184. See Fred Barbash, *Zuckerberg, Gates, Buffett and the Triumph of Competitive Philanthropy*, WASH. POST (Dec. 2, 2014), <https://www.washingtonpost.com/news/morning-mix/wp/2015/12/02/mark-zuckerberg-bill-gates-warren-buffett-and-triumph-of-competitive-philanthropy/>.

185. See RUSSAKOFF, *supra* note 4 (presenting a cautionary tale about the squandering of Mark Zuckerberg’s \$100 million gift to transform failing Newark public schools).

small group of entrepreneurs and their representatives. The class of venture capitalists, corporate titans, Hollywood moguls, and technology and entertainment lawyers reflect historical gender and race biases. These patterns persist in the Information Age.

To some extent, these issues reflect long-standing problems in the workplace, such as gender/race discrimination and the difficulties of achieving work/family balance.¹⁸⁶ While cultural familiarity can promote teamwork and productivity, it also reinforces bias and limits access by under-represented groups.¹⁸⁷ These problems are compounded in the technology sector, where the “STEM” fields of science, technology, engineering, and mathematics have long been dominated by white males.¹⁸⁸ The so-called “brogrammer” culture in Silicon Valley discourages greater integration across gender and racial lines.¹⁸⁹ The issue is gaining salience,¹⁹⁰ but progress has been slow. Similar patterns in the business and legal professions reinforce these patterns.¹⁹¹

186. See ANNE-MARIE SLAUGHTER, *UNFINISHED BUSINESS: WOMEN MEN WORK FAMILY* (2015); JOAN C. WILLIAMS & RACHEL DEMPSEY, *WHAT WORKS FOR WOMEN AT WORK: FOUR PATTERNS WORKING WOMEN NEED TO KNOW* (2014); JOAN C. WILLIAMS, *UNBENDING GENDER: WHY FAMILY AND WORK CONFLICT AND WHAT TO DO ABOUT IT* (2001).

187. See Bonnie Marcus, *The Lack Of Diversity In Tech Is A Cultural Issue*, FORBES (Aug. 12, 2015), <http://www.forbes.com/sites/bonniemarcus/2015/08/12/the-lack-of-diversity-in-tech-is-a-cultural-issue/#429274483577> (citing a study reporting that top universities graduate black and Hispanic computer science and computer engineering students at twice the rate that leading technology companies hire them, indicating that the talent pool is not the primary problem).

188. See JOAN C. WILLIAMS, KATHERINE W. PHILLIPS & ERIKA V. HALL, *DOUBLE JEOPARDY? GENDER BIAS AGAINST WOMEN OF COLOR IN SCIENCE* (2014), <http://www.uchastings.edu/news/articles/2015/01/double-jeopardy-report.pdf>; Jordan Weissmann, *The Brogrammer Effect: Women Are a Small (and Shrinking) Share of Computer Workers*, THE ATLANTIC (Sept. 12, 2013), <http://www.theatlantic.com/business/archive/2013/09/the-brogrammer-effect-women-are-a-small-and-shrinking-share-of-computer-workers/279611/>.

189. See Kieran Snyder, *Why Women Leave Tech: It's the Culture, Not Because 'Math Is Hard'*, FORTUNE (Oct. 2, 2014), <http://fortune.com/2014/10/02/women-leave-tech-culture/> (reporting on a survey of 716 women who left technology positions; finding that 27% of women cited workplace culture as a reason for leaving jobs in the technology industry, whereas 68% cited motherhood as a reason); Weissmann, *supra* note 188.

190. See Joan C. Williams, *Hacking Tech's Diversity Problem*, HARV. BUS. REV. (Oct. 2014), <https://hbr.org/2014/10/hacking-techs-diversity-problem>; SHERYL SANDBERG, *LEAN IN: WOMEN, WORK, AND THE WILL TO LEAD* (2013).

191. See Deborah L. Rhode, *Law Is the Least Diverse Profession in the Nation. And Lawyers Aren't Doing Enough to Change That. Lawyers Are Leading the Push for Equality. But They Need to Focus on Their Own Profession.*, WASH. POST (May 27, 2015), <https://www.washingtonpost.com/posteverything/wp/2015/05/27/law-is-the-least-diverse-profession-in-the-nation-and-lawyers-arent-doing-enough-to-change-that/>; DEBORAH L. RHODE, *THE UNFINISHED AGENDA: WOMEN AND THE LEGAL PROFESSION* (2001), <http://womenlaw.stanford.edu/pdf/aba.unfinished.agenda.pdf>.

Inequality and under-representation can distort scientific research and public health policy.¹⁹²

Hollywood has long been prone to gender and racial bias as reflected in its products,¹⁹³ employment practices,¹⁹⁴ and awards.¹⁹⁵ Beyond the injustice of biased employment practices, these patterns have far-reaching effects on cultural diversity and freedom of expression.

192. See Anita Holdcroft, *Gender Bias in Research: How Does It Affect Evidence Based Medicine?*, 100 J. ROYAL SOC. MED. 2 (Jan. 2007); NIH Guidelines on the Inclusion of Women and Minorities as Subjects in Clinical Research 59 FED. REG. 14508-14513 (1994).

193. On bias in music, see REEBEE GAROFALO & STEVE WAKSMAN, *ROCKIN' OUT: POPULAR MUSIC IN THE U.S.A.* (6th ed. 2013) (tracing the history of music and social history); K.J. Greene, *Intellectual Property at the Intersection of Race and Gender: Lady Sings the Blues*, 16 AM. U. J. GENDER, SOC. POL'Y & L. 365 (2008); Greene, *supra* note 134; SIVA VAIDHYANATHAN, *COPYRIGHTS AND COPYWRONGS: THE RISE OF INTELLECTUAL PROPERTY AND HOW IT THREATENS CREATIVITY* 117–48 (2001) (tracing the appropriation of blues by rock 'n roll artists over time); K.J. Greene, *Copyright Culture & Black Music: A Legacy of Unequal Protection*, 21 HASTINGS COMM. & ENT. L.J. 339 (1999); On bias in film, see BRIAN LOCKE, *RACIAL STIGMA ON THE HOLLYWOOD SCREEN: THE ORIENTALIST BUDDY FILM* (2009); DANIEL BERNARDI (ED.), *THE PERSISTENCE OF WHITENESS: RACE AND CONTEMPORARY HOLLYWOOD CINEMA* (2007); VINCENT F. ROCCHIO, *REEL RACISM: CONFRONTING HOLLYWOOD'S CONSTRUCTION OF AFRO-AMERICAN CULTURE* (2000); CLINT C. WILSON II, FELIX GUTIERREZ & LENA CHAO, *RACISM, SEXISM, AND THE MEDIA: THE RISE OF CLASS COMMUNICATION IN MULTICULTURAL AMERICA* (3rd ed. 2003); Denise B. Bielby & William T. Bielby, *Women and Men in Film: Gender Equality Among Writers in a Culture Industry*, 10 GENDER & SOCIETY 248 (1996); EDWARD GUERRERO, *FRAMING BLACKNESS: THE AFRICAN AMERICAN IMAGE IN FILM* (1993).

194. See Rebecca Keegan, *The Hollywood Gender Discrimination Investigation Is On: EEOC Contacts Women Directors*, L.A. TIMES (Oct. 2, 2015), <http://www.latimes.com/entertainment/movies/moviesnow/la-et-mn-women-directors-discrimination-investigation-20151002-story.html> (citing a USC study finding that only 1.9% of directors of the top-grossing 100 films of 2013 and 2014 were women and a Directors Guild of America study finding that women represented just 14% of television directors in 2013 and 2014); Eithne Quinn, *Closing Doors: Hollywood, Affirmative Action, and the Revitalization of Conservative Racial Politics*, 99 J. AM. HIST. 466 (2012).

195. See Tim Gray, *Academy Nominates All White Actors for Second Year in Row*, VARIETY (Jan. 14, 2016), <http://variety.com/2016/biz/news/oscar-nominations-2016-diversity-white-1201674903/>; Michael Cieply & Brooks Barnes, *Diversifying Film Academy Is a Tall Order*, N.Y. TIMES, Feb. 5, 2016, at A1 (reporting that the Academy of Motion Picture Arts, which picks the Oscar nominees and winners, is 87% white and 58% male; and two-thirds of the members are at least sixty years old). The numbers were more skewed just a few years earlier. See John Horn, Nicole Sperling & Doug Smith, *Unmasking Oscar: Academy Voters Are Overwhelmingly White and Male*, L.A. TIMES (Feb. 19, 2012), <http://www.latimes.com/entertainment/envelope/oscars/la-et-unmasking-oscar-academy-project-20120219-story.html> (reporting that the members of the Academy of Motion Picture Arts and Sciences are 94% white, 2% African American, and less than 2% Latino; and 77% male); Esther Breger, *The "Hollywood Blackout" at the 1996 Academy Awards*, NEW REPUBLIC (Jan. 26, 2016), <https://newrepublic.com/article/128584/hollywood-blackout-1996-academy-awards> (reporting that when *People* magazine took aim at the lack of diversity among the nominees, celebrities were unwilling to join the protest).

Creative industries play a vital role in human development, cultural understanding, and democracy.¹⁹⁶

C. Global IP Justice

With the rise of information resources and global trade, intellectual property has emerged as a central battleground in trade policy. The current controversy over intellectual property rights unfolding in the Trans-Pacific Partnership process¹⁹⁷ is the latest in a struggle dating back well over a century.¹⁹⁸ With advances in global transportation infrastructure, policymakers and trade negotiators increasingly focus on the protection of intangible resources.¹⁹⁹ The Internet has opened up a vast new frontier in information data flows and services. Intellectual property is a growing part of the larger international development picture.

Multi-national corporations promote strengthening IP rights in the developing world as a means for encouraging foreign direct investment. They advocate such development as essential to developing new local industries that can lift these nations out of poverty and nurture the creative arts.²⁰⁰ Skeptics see sweatshops, strip-mining,

196. See *supra* Part II.C.2.

197. See Sean M. Flynn, Brook Baker, Margot Kaminski & Jimmy Koo, *The U.S. Proposal for an Intellectual Property Chapter in the Trans-Pacific Partnership Agreement*, 28 AM. U. INT'L L. REV. 105 (2012).

198. See Marshall Leaffer, *International Copyright from an American Perspective*, 43 ARK. L. REV. 373, 383 n. 49 (1990); Gerhard Joseph, *Charles Dickens, International Copyright, and the Discretionary Silence of Martin Chuzzlewit*, 10 CARDOZO ARTS & ENT. L.J. 523 (1992); Edward G. Hudon, *Literary Piracy, Charles Dickens and the American Copyright Law*, 50 AM. BAR. ASS'N J. 1157 (1964). At the time that the Berne Convention was being established, the United States imported far more books than it exported. See *The Manufacturing Clause*, 4 (Study No. 35), *reprinted in 2A OMNIBUS COPYRIGHT REVISION LEGISLATIVE HISTORY* (George S. Grossman ed., 2001). Leading American publishers favored retention of high tariffs on imports. See *id.* at 5. Thus, the motivation for such protectionism was not merely to disadvantage foreign authors.

199. See generally MICHAEL P. RYAN, *KNOWLEDGE DIPLOMACY: GLOBAL COMPETITION AND THE POLITICS OF INTELLECTUAL PROPERTY* (1998) (chronicling and analyzing how the information revolution intensified efforts by multi-national corporations and developed nations to establish stronger international IP protection).

200. See Keith E. Maskus, *Economic Development and Intellectual Property Rights: Key Analytical Results from Economics*, in *THE ECONOMICS OF INTELLECTUAL PROPERTY LAW: VOLUME II ANALYTICAL METHODS* (Peter S. Menell & David Schwartz eds., forthcoming 2016); Jean Raymond Homere, *Intellectual Property Rights Can Help Stimulate the Economic Development of Least Developed Countries*, 27 COLUM.-VLA J. L. & ARTS 277 (2004); Keith E. Maskus,

deforestation, pollution, threats to indigenous peoples, child labor, and political corruption. They also see liberalization of trade with nations lacking safe working conditions, environmental standards, and fair wages as a threat to wage and employment levels in the developed nations. Like advances in AI and robotics, globalization has contributed to stagnant wages in industrialized economies through the loss of manufacturing jobs.

There is little question that shoring up of IP rights and trade liberalization affects human and cultural rights, economic inequality, labor conditions, environmental protection, and a host of other critical issues. The issues range from providing life-saving drugs to the poorest people in the world to addressing environmental degradation, protecting the global environment, combating unsafe working conditions, and eradicating abusive child labor practices. As with the interplay of IP and inequality more generally, the policy matrix is replete with paradoxes and inherent conflicts. Innovation and expressive creativity promise to help developing nations to address the often dire plight of their citizens. Yet this vision conflicts with various non-utilitarian perspectives as well as the distorting influences of corporate interests and geopolitics.

CONCLUSION

Professor Singer's scholarship emphasizes the need to view property and property institutions through a broader lens that integrates social justice dimensions. Given the growing importance of intangible resources in the economic, the social, and the political spheres, intellectual property scholars must widen our lens as well. Several IP scholars have pointed the way.²⁰¹ This Article has sought to sketch a more capacious framework.

Within each mode of intellectual property protection, we need to use a bi-focal lens. In addition to the conventional issues involved

Intellectual Property Challenges for Developing Countries: An Economic Perspective, 2001 U. ILL. L. REV. 457; Sean A. Pager, *Accentuating the Positive: Building Capacity for Creative Industries into the Development Agenda for Global Intellectual Property Law*, 28 AM. U. INT'L L. REV. 223 (2012); see also Laura Bradford, *A Closer Look at the Public Domain*, 13 GREEN BAG 2d 343, 344–45 (2010) (reporting that despite Ghana's vibrant musical tradition, many of the country's artists operate from outside the country due to the lack of enforceable copyright protections, and indigenous music is being displaced by non-native, principally American, pop music).

201. See *supra* note 13 and accompanying text.

in assessing the internal validity of intellectual property regimes (for example, does patent law, trade secret law, and copyright promote progress as judged by the conventional utilitarian lens? Does trademark law effectively safeguard the integrity of the consumer marketplace?), scholars must also explore the broader range of social justice concerns bearing on the particular intellectual property modality: human rights, moral rights, cultural and group interests, indigenous people's rights, distributive concerns, and other externalities, such as environmental degradation and climate change.

Beyond this dual mode-specific focus, intellectual property has important ramifications for larger questions of income, wealth, power, race, and gender inequality as well as global justice. Any legal and policy regime that concentrates economic power and wealth to the extent that intellectual property protection does has far-reaching effects on economic and social justice. The technology and culture industries, grounded in intellectual property, are especially important in driving economic growth, providing telecommunication infrastructure and filling the airwaves, influencing the functioning of political institutions, educating future generations, and addressing public health, food supply, and climate-change challenges on a global scale.

