

Forgetting History is Not an Option! Intellectual Property, Public Policy and Economic Development in Context

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Abstract

For over five hundred years, intellectual property has been an integral part of public policy and economic development. From its early beginnings in fifteenth century Venice (where privileges were used to maintain technological advantage), through its early development when the British awarded monopoly privileges to those who introduced new techniques into the kingdom, and onwards to American policy purposely discriminating against foreigners in order to foster domestic innovation, policy makers have used intellectual property policy as a tool for economic development. Our paper briefly traces parts of this history in order to highlight possibilities for autonomous intellectual property policies in the contemporary period. We stress that rather than a teleological history leading to the “perfection” of intellectual property rights in the Agreement on Trade-Related Intellectual Property (TRIPs), intellectual property’s history is patterned by a continuing argument over the balance between private rights and public benefits. This suggests a much wider range of possibilities for developing countries than merely the reproduction of TRIPs.

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Forgetting History is Not an Option!

Intellectual Property, Public Policy and Economic Development in Context

Recently two critics of the quest to reclaim the public domain stated that:

Until fairly recently, few questioned whether the nations of the world *should* promote intellectual property protection. For a long time, international discussions about intellectual property have been based on a premise that protecting intellectual property rights is beneficial to economic development and social good.¹

This statement epitomizes the dangers of a-historical thinking about important policy problems. Not only is such thinking misleading but it is utterly incorrect. The real story is that it has only been recently that strong intellectual property rights have been sold as an unambiguous social good; economically and politically necessary for all countries. Even the most ardent champions of high standards of protection, the US, only came around to this view in the early 1980s. Thus, the current debates have been unduly distorted by an historical myopia that we here (and elsewhere) have sought to correct.

The history of intellectual property protection reveals a complex yet identifiable relationship between three major factors. First, it reveals shifting ideas or conceptions of ownership, authorship, and invention. These ideas denote what “counts” as property, and who shall lay claim to it. Second, this history reflects changes in the organization of innovation and the production and distribution of technology. Third, it reflects institutional change with these shifting ideational and material forces. Institutionalization of these changes in law alters power relationships and inevitably privileges some at the expense of others. Property rights are both situated within broader historical structures of global capitalism, and serve to either reproduce or transform these structures. Particular historical structures privilege some agents over others, and these agents can appeal to institutions to increase their power. Depending on the world in which one lives, “piracy” may be construed as theft, or an important tool of social policy for the public interest. Whether one is talking about books or drugs, movies or software, definitions of what constitutes property depend upon time, place, geography, constellation of interests, degree of competition present, stage of economic development, and power. In so far as intellectual property is an instrument of public policy, all of these factors are relevant.

Historical change is not linear. It is contingent, rife with unintended consequences, path dependence, and awkward patches in which institutions no longer serve their original aims. Centrally, the history of intellectual property rights is a history of contestation, rather than some grand teleological narrative of refinement and improvement of private rights. Moreover, the inherent tensions in the idea of intellectual property recurrently resurface under philosophical, technological, or institutional pressure. This essay highlights some key moments in the development of intellectual property law, in which particular ideas and economic circumstances converged to privilege particular agents and alter institutions. It offers a sample of our

¹ Mark Schultz and David Walker, 2005. “How Intellectual Property Became Controversial: NGOs and the New International IP Agenda” *Engage* 6:2: 82.

critical history of intellectual property rights,² in order to (again) suggest that another world is possible.

Ideas about Property

The notion of intellectual property is informed by competing perspectives on balancing private and public goods. While there are numerous justifications for intellectual property,³ a central tension is that between romantic notions of authorship and invention⁴ on the one hand, and utilitarian conceptions of incentives for creation and diffusion on the other. The former notions endorse doctrines of natural rights in one's own creation, as private, subjective, expressive and perpetual, whereas the latter focus on promoting dissemination to the public, the objective nature of knowledge, competition and limits on rights. As Professor Hesse points out:

These two ideas emerged most fully in Europe in the 1700s as increasing literacy and the emergence of a large middle-class readership throughout Europe in the first half of the eighteenth century put unprecedented strains upon a system of publication that had been predicated on the notion that there was a fixed amount of divine or ancient knowledge to be known, transmitted, and interpreted.⁵

The huge demand for literature prompted many people to seek to earn their living as writers. To do so, they needed to obtain adequate remuneration for their products. This demand for books also prompted others to produce cheap reprints, or "pirate editions," who promoted themselves as "champions of the 'public interest,' against the monopolistic members of book guilds"⁶

In 1710 Daniel Defoe expressed a romantic notion of authorship by writing "A Book is the Author's Property, 'tis the Child of his Inventions, the Brat of his Brain."⁷ Later in the century British, French, and German commentators on the literary enterprise further developed the notion of an author's works as "unique, perpetual, and inviolable property."⁸ Influenced by Locke's "sweat of the brow" labor-desert theory of property, British poet Edward Young offered a secularized theory of knowledge.⁹ In his 1759 treatise, *Conjectures on Original Composition* "the individual personality supplanted God as the divine font of knowledge."¹⁰ Young's book was widely circulated and influential in continental Europe. While Young had argued that products of the mind deserved greater protection than mechanical

² For a much fuller historical narrative see: Christopher May and Susan Sell, 2005, *INTELLECTUAL PROPERTY RIGHTS: A CRITICAL HISTORY* Boulder: Lynne Rienner Publishers.

³ Peter Drahos, 1996. *A PHILOSOPHY OF INTELLECTUAL PROPERTY* Aldershot: Dartmouth Publishing Company; Christopher May, 2000. *A GLOBAL POLITICAL ECONOMY OF PROPERTY RIGHTS: THE NEW ENCLOSURES?* London: Routledge.

⁴ On the heroic image of the inventor, see Keith Aoki, "Authors, Inventors and Trademark Owners: Private Intellectual Property and the Public Domain" 18 *COLUM. -VLA J.L. & ARTS* 1 (1994): 191, 215-16. The inventor image is more rationalist than romantic, but both notions elevate the stature of the "creator."

⁵ Carla Hesse, 2002. "The Rise of Intellectual Property: 700 B.C. – A.D. 2000: An Idea in the Balance," *DAEDALUS* (Spring): 31-32.

⁶ Hesse, 2002: 32.

⁷ Quoted in Hesse, *Ibid.*

⁸ *Ibid.* 34.

⁹ *Ibid.*, 34.

¹⁰ *Ibid.*, 34.

inventions, the French encyclopedist Denis Diderot argued in 1763 that literary property is more uniquely the property of its creator than land acquired through cultivation.¹¹ The German Enlightenment writer Gotthold Lessing, in his 1772 essay, *Live and Let Live*, “challenged directly the traditional ban of profits received from writing” and subsequent German writers sought recognition for “their claims upon their writing as a form of unique, perpetual, and inviolable property.”¹² Johann Gottlieb Fichte grappled with the nature of immaterial property, and concluded that what gave such goods the imprimatur of “property” was not the ideas themselves but rather the distinguishing quality of the “unique ‘form’ in which an author chose to express these ideas.”¹³ Thus the ideas/expression dichotomy that has anchored copyright was born. Fichte had developed a “new theory of copyright based on the natural right to property in the unique expression of ideas, rather than in the ideas themselves.”¹⁴

Some analysts rejected this effort to secure authors’ copyrights as nothing more than an effort to preserve the book publishers’ monopolies. Responding to Diderot’s *Letter on the Book Trade*, in 1776 French mathematician and philosopher Marie Jean Condorcet rejected the notion of literary property as a right and instead argued that it was a privilege. He argued that “ideas are intrinsically social: they are not produced by individuals alone; they are the fruit of a collective process of experience.”¹⁵ This idea is well captured in Sir Isaac Newton’s famous quote: “If I have seen far, it is by standing on the shoulders of giants.”¹⁶ Condorcet also argued that granting exclusive property rights over literary property would have pernicious effects. He wrote: “privileges of this sort, like all others, are inconveniences that diminish activity by concentrating it in a small number of hands.... They are neither necessary nor useful, and ... they are unjust.”¹⁷ Condorcet developed a doctrine rooted in social utility, that “knowledge was objective and thus fundamentally social in character, belonging to all.”¹⁸

Social utilitarianism became a competing legal doctrine to the subjectivist notions of universal natural rights in one’s intellectual creations. These competing doctrines embodied the tensions inherent in then commodification of knowledge, and still inform the debates around intellectual property rights. As a matter of public policy, utilitarian notions are designed to reward creation and diffusion. Natural rights or romantic notions privilege the goal of stewardship, or the right to “manage” one’s property after it is created.

Professor Lemley usefully contrasts these conceptions as “ex ante”, in the case of the utilitarian/public goods justification, and “ex post” in the romantic/private

¹¹ Ibid.

¹² Ibid.

¹³ Ibid, 35.

¹⁴ Ibid.

¹⁵ Ibid, 36.

¹⁶ Sir Isaac Newton, quoted in Suzanne Scotchmer, 1991. “Standing on the Shoulders of Giants: Cumulative Research and the Patent Law”, *JOURNAL OF ECONOMIC PERSPECTIVES* 5:1 (Winter): 29.

¹⁷ Quoted in Hesse, 2002, 36.

¹⁸ Ibid.

reward justification.¹⁹ Under the incentive/public goods justification, “like other ‘monopolies,’ patents and copyrights were dangerous devices that should be deployed only when absolutely necessary to advance some clear public interest.”²⁰ Advocates of the romantic/private reward justification, have argued that “extended intellectual property rights were necessary to give existing copyright owners an incentive to preserve the [works] they had already created.”²¹ According to Professor Lemley, under this view “the optimal right would appear to be perpetual: if only ownership gives efficient incentives to use, the right of stewardship of a film or an invention should never end.”²² Therefore these apparently philosophical differences have obvious and sharp policy ramifications. Professor Lemley identifies the *ex post* justifications as being profoundly anti-market.²³

We stress that the protection of intellectual property has *always* been a form of public policy, an intervention in markets to transform their functioning. Such rights can serve particular developmental goals, or they can thwart them. In the 1300’s patents were grants of privilege awarded to those who brought new techniques into a sovereign’s territory. British kings awarded letters of protection to the Flemish weavers, and in 1440 to John Shiedame, who introduced a salt-making process.²⁴ Rulers sought to attract and retain talented artisans in their territory, inspired by the mercantilist goals of limiting imports and promoting exports. Working requirements, that a patentee work the invention or process in a territory granting the patent, are provisions designed to promote technology transfer and the diffusion of innovation (indeed terms of protection paralleled the period of apprenticeship to ensure protection allowed two cohorts of apprentices to gain the knowledge/techniques owned by their Master). Another mechanism established to promote technology transfer is compulsory licensing, that permits the government to seize a patentee’s product or process. The diversity of intellectual property policies between countries is in part a function of their different stages of development. All other things being equal (which they never are), a technological leader will prefer strong protection of its innovations, whereas a follower will favor access over protection: strong economies will be served by expanding the markets for their goods, while weak economies are best served by cheap or free access to the technologies of advancement and development.

The development of intellectual property legislation, firstly at the national and then at the international level, has been subject to the continued mobilization of interest to establish and reinforce positions of advantage, it has not been an organic non-political development. Indeed, the historical picture reveals a recurrent tension that has not always been resolved in favor of property holders. Even in the US, the most aggressive contemporary champion of expanded intellectual property rights, the

¹⁹ Mark A. Lemley, 2004. “Ex Ante versus Ex Post Justifications for Intellectual Property,” 71 U. Chi. L. Rev. 129.

²⁰ William W. Fisher III, 1997. “The Growth of Intellectual Property: A History of the Ownership of Ideas in the United States,” presentation at the Conference on Property Law, Personhood and Citizenship, Freie Universität Berlin, April. available at: <http://cyber.law.harvard.edu/ipcoop/97/fish1.html> p. 11.

²¹ Lemley, 2004: 134.

²² Lemley, 2004: 135.

²³ Lemley, 2004: 148-149.

²⁴ P.J. Federico, 1929. “The Origin of Patents”, JOURNAL OF THE PATENT OFFICE SOCIETY 11: 293.

public-regarding conception held sway for much of the twentieth century. A number of “swings of the pendulum” between public-regarding approaches and private protection reveal the fundamentally political nature of intellectual property regulation, and provide some historically based reflection on alternative possibilities for the future.

Given the distributional consequences of the ability to own (and control, even temporarily) technological innovations, intellectual property frequently has been an instrument of power and, once captured, the basis of further accumulation of power.²⁵ But, unlike power that comes from the control of scarce material resources, the holders of intellectual property have had to construct the scarcity of property through legal instruments.²⁶ The very process of defining what constitutes intellectual property effectively reinforces “particular perspectives that may benefit some at the expense of others,”²⁷ rendering some things as “property” while others remain “freely” available. Indeed, asymmetrical economic power goes a long way toward explaining why semiconductor chips are identified as intellectual property, whereas indigenous folklore is not.²⁸ In this sense, while other markets emerged prior to capitalistic models of organization and were slowly integrated into the modern capitalist system, with products entering markets through production processes organized in a multitude of ways, this is not true of intellectual property. For markets in knowledge, the property had to be constructed through law, so it could be allocated through market mechanisms, but those who sought this commodification were essentially nascent capitalists.²⁹ Thus, unlike other forms of productive relations that were re-configured through the emergence of capitalism, intellectual property relations are the product of the great transformation of the sixteenth and seventeenth centuries.

Our critical history of intellectual property is also explicitly an alternative to both realist and functionalist analyses of the global political economy of intellectual property. Realism in international political economy emphasizes state power and its distribution across the international system, as primary explanatory variables. Realism takes power seriously but it suffers from its statist orientation, treating the state as a unitary actor with well-defined interests. Realism too narrowly focuses on the state as legislator. Realism provides limited leverage in the intellectual property context because private actors, rather than states, frequently have prompted changes in intellectual property protection. Both realism³⁰ and functionalism provide

²⁵ This section substantially is drawn from Susan K. Sell and Christopher May, 2001 “Moments in Law: Contestation and Settlement in the History of Intellectual Property,” *REVIEW OF INTERNATIONAL POLITICAL ECONOMY* 8:3 (Autumn): 470-73.

²⁶ Christopher May, 1998. “Thinking, Buying, Selling: Intellectual Property Rights in Political Economy,” *NEW POLITICAL ECONOMY* 3(1): 69-70.

²⁷ A. Claire Cutler, Virginia Haufler and Tony Porter eds 1999. *PRIVATE AUTHORITY AND INTERNATIONAL AFFAIRS* (Albany: State University of New York Press): 347.

²⁸ Peter Drahos, 1997a. “Indigenous Knowledge and the Duties of Intellectual Property Owners,” *INTELLECTUAL PROPERTY JOURNAL* 11: 179-201.

²⁹ This argument is developed at length in Christopher May, 2006, ‘The hypocrisy of forgetfulness: The contemporary significance of early innovations in intellectual property’ *REVIEW OF INTERNATIONAL POLITICAL ECONOMY*, *forthcoming*

³⁰ Here Realist approaches refer to international political economy and not to Legal Realism. Prominent examples include Kenneth Waltz, 1979. *THEORY OF INTERNATIONAL POLITICS* (McGraw-Hill); John Mearsheimer, 2003. *THE TRAGEDY OF GREAT POWER POLITICS* (N.Y.: W.W. Norton & Company); and Stephen Krasner 1985. *STRUCTURAL CONFLICT: THE THIRD WORLD AGAINST GLOBAL LIBERALISM*. (Berkeley: University of California Press).

undifferentiated macro-level accounts that obscure significant variation; their explanations are indeterminate regarding *particular* settlements. Unlike Realism, our perspective is agnostic about the primary actors and suggests links between the micro and macro levels.

Functionalist histories of property suggest that property rights are established to promote efficiency in socio-economic relations. Many functional histories are based on the supposition that the institution of property emerged to respond to the need for clear signaling in market relations.³¹ Thus as conflicts arose over scarce resources, the costs of such conflicts outweighed the costs of establishing (and policing) some sort of property regime. With shared rules of property social actors may dispense with the duplication of effort required to constantly re-negotiate bilateral coordination. In such accounts the emergence of property serves a particular function - the efficient coordination of economic activities.

Functionalism assumes that the forces and interests that play out in the contest over intellectual property have produced a series of “rational” settlements or “improvements” that reflected the political economic context of the time, or fulfilled the needs of a particular stage of industrial development. As Professor Fisher suggests:

Viewed from this angle, law seems to be superstructural – its development driven by changes in the underlying mode of production and associated relations of production. But this is not the end of the story. To account fully for the development of intellectual property law, one must also take into account some cultural and ideological factors.³²

Indeed while at first glance functionalism offers a plausible approach to the evolution of intellectual property, functionalist theories beg the question of what constitutes efficiency and ignore the issue of who defines it – efficiency for what, and for whom? In other words, they (perhaps intentionally) hide the often highly contested politics of intellectual property.

Since all activities have costs and benefits attached to them, an important issue for a functionalist approach to property rights is the internalization of external costs and benefits. Property seeks to attach those costs and benefits to the “owner” of the property that produces them, relative to the non-owner.³³ Part of the continuing fluidity in the legal construction of property rights has been the widespread attempt by ‘owners’ to secure benefits while keeping costs externalized. Social efficiency might best be served by costs accruing to the property that delivers the benefit; but for individual owners it is more ‘efficient’ to have the costs met by others. However, social dynamics are more ambiguous than serving a single end (such as social efficiency) that can be achieved in a particular and efficient manner. Furthermore, power manifests itself by constituting whose definition of efficiency determines whose benefits are guarded or even expanded. For example, is it the book “pirate” who promotes the efficient distribution of printed matter, or is it the well-protected

³¹ See Douglass North 1990, *INSTITUTIONS, INSTITUTIONAL CHANGE AND ECONOMIC PERFORMANCE* Cambridge: Cambridge University Press, for a classic version of this story.

³² Fisher, 1997: 6.

³³ H. Demsetz, 1967. “Toward a Theory of Property Rights” *AMERICAN ECONOMIC REVIEW* 57(2): 348-350.

romantic author or “Yankee genius” for whom the promise of the security of her endeavor provides incentives to create and/or preserve?

In the context of intellectual property, the efficient solution for society may be the public-regarding approach of dissemination and competition; yet the efficient solution for an “owner” is likely to be protection, exclusion and the opportunity for private gain. Although efficiency may be valued in economic transactions, it is only one and not necessarily the most important aspect to the emergence of property as a social institution. While in abstract terms we can understand property rights in terms of gains from coordination, historically particular property rights emerged from far more diverse circumstances including the impact of technological change, the exercise of economic power, and shifts in ideas about ownership.

When the resources required for social existence are scarce then the distribution of the rights to their use (property rights) becomes a central issue of political economy.³⁴ However, for intellectual property such scarcity is neither uncontested nor self-evident: the role of intellectual property is to construct such scarcity in the realm of knowledge and to make it legitimate. The power of constructed scarcity lies in the power to withhold property. This power can have negative social consequences, and can deliver over-arching market power to the holder or owner of such rights.

For example, the history of steam-driven industrialization might have been very different without Britain’s intellectual property policies in the eighteenth century. When the British government awarded James Watt, innovator and creator of the steam engine, a patent for his invention in 1769, this did not encourage its widespread and immediate dissemination. Six years later the British Parliament renewed his patent for an additional 25 years during which time Watt continued to refuse to license his invention. By doing so he may have “held back the development of the metalworking industry for over a generation. Had his monopoly expired in 1783, England would have had railways much sooner.”³⁵ The imposed scarcity of this particular innovation halted its dissemination and ossified its development until others could build upon Watt’s original insights. The public benefit may have been served by “encouraging” Watt’s innovation in the first place (although it is difficult to argue that Watt would not have invented the steam engine had he been unable to patent it).³⁶ Yet the social benefit of swift use/deployment of such an innovation certainly was not served.³⁷

³⁴ Kurt Burch, 1998. ‘PROPERTY’ AND THE MAKING OF THE INTERNATIONAL SYSTEM
Boulder: Lynne Rienner Publishers.

³⁵ A. C. Renouard, 1987. *TRAITE DES BREVETS D’INVENTION*, 1844 reissued by CNAM, Paris.

³⁶ Barrington Moore’s analysis of the “tinkers and inventors” such as James Watt, and Richard Arkwright, counters Marxist and Weberian interpretations of these men as greedy capitalists, and instead argues that they were motivated “to make their inventions more reliable and efficient.”
Barrington Moore, Jr. 1998. *MORAL ASPECTS OF ECONOMIC GROWTH, AND OTHER ESSAYS* (Ithaca: Cornell University Press): 23. Watt’s fear of imitators led him to provide inadequate specifications in filing his patent applications. Watt did not pursue infringement cases for fear of losing his patents for being inadequately specified. Opaque specifications further retard the dissemination of patented technology. See, Moore, 19-21, and Christine MacLeod, 2004, “Would There Have Been No Industrial Revolution Without Patents?” ESRC Research Seminar Series, Intellectual Property Rights, Economic Development and Social Welfare: What Does History Tell Us? Monday, April 26. Ironbridge Gorge Museum, Coalbrookdale UK: 7.

³⁷ This perspective is at odds with economist Douglass North’s argument that sustained innovation only began in earnest after the establishment of intellectual property rights to raise the private return for

Restricted access to technological advancements in the cotton industry similarly delayed development and dissemination of industrial technology. During the ascendance of the British cotton industry in the eighteenth century,

The flow of technology within and among British firms was primarily managed by informal private arrangements and not the patent system.... In the eighteenth century only 44 percent of 174 key inventions in the textile industry were patented. Indeed a key upsurge in innovation occurred after the patents of the most famous innovator, Arkwright, were broken.³⁸

These examples underscore the danger that “the exclusive control of intellectual property rights grant to pioneers may stifle the invention of improvers.”³⁹

Arkwright and the Spinners

The case of Richard Arkwright, developer of commercially successful textile machinery and water-powered spinning technology, highlights the tension within intellectual property between private reward and the public good. It also demonstrates how property rights create winners and losers and reveals significant political and economic battle lines over what is at stake. Arkwright was very concerned about patent infringement. The administration of British patent law did not provide for stringent patent examinations; patents were only scrutinized when infringement cases reached the courts. Therefore inventors, concerned about infringement, often were tempted to draft their patent specifications in such a way that the invention would be impossible to duplicate. As Professor MacLeod states, “patentees tried to steer a course between the Scylla of exactness that risked allowing pirates to escape prosecution through a minor variation and the Charybdis of too general a claim that would lead to the patent’s invalidation.”⁴⁰

innovation. He attributes the delay in the dissemination and fuller exploitation of Watt’s invention to the inadequate development of companion technologies, rather than to the power of withholding property and the social inefficiencies generated by such withholding. Douglass North, 1981. *STRUCTURE AND CHANGE IN ECONOMIC HISTORY* (NY: W.W. Norton) : 162-166. However, the development of companion technologies was itself stifled by the relatively limited diffusion of engines utilizing Watt’s technology³⁷ A. C. Renouard, 1987. *TRAITE DES BREVETS D’INVENTION*, 1844 reissued by CNAM, Paris.

³⁷ Barrington Moore’s analysis of the “tinkers and inventors” such as James Watt, and Richard Arkwright, counters Marxist and Weberian interpretations of these men as greedy capitalists, and instead argues that they were motivated “to make their inventions more reliable and efficient.” Barrington Moore, Jr. 1998. *MORAL ASPECTS OF ECONOMIC GROWTH, AND OTHER ESSAYS* (Ithaca: Cornell University Press): 23. Watt’s fear of imitators led him to provide inadequate specifications in filing his patent applications. Watt did not pursue infringement cases for fear of losing his patents for being inadequately specified. Opaque specifications further retard the dissemination of patented technology. See, Moore, 19-21, and Christine MacLeod, 2004, “Would There Have Been No Industrial Revolution Without Patents?” ESRC Research Seminar Series, Intellectual Property Rights, Economic Development and Social Welfare: What Does History Tell Us? Monday, April 26. Ironbridge Gorge Museum, Coalbrookdale UK: 7.

³⁷ This perspective is at odds with economist Douglass North’s argument that sustained innovation only began in earnest after the establishment of companion technology.

³⁸ Tony Porter, 1999. “Hegemony and the Private Governance of International Industries”, in Cutler, Haufler, and Porter eds.: 263.

³⁹ Lemley, 2004: 131.

⁴⁰ MacLeod, 2004: 7.

In 1781 Arkwright pursued his first infringement case, but the court ruled that his patent was invalid because rather than disclosing his invention he “did all he could to hide and secret it.”⁴¹ He then sued a neighbor, Peter Nightingale, in 1785 over patent infringement. Nightingale’s defense focused on the patent specification, whether a competent person could build the machine based upon it, but the court ruled in Arkwright’s favor. Professor Moore argues that this victory actually made Arkwright’s situation worse because the Lancashire spinners now feared the prospect of paying Arkwright licensing fees to use his equipment. The spinners sought to get the verdict annulled that same year and ultimately prevailed. Arkwright lost his patent due to its ambiguous specification. According to Professor Moore:

The legal representative of the Lancashire spinners took the high moral ground of public and national interest. Arkwright’s patent represented a monopoly. Legal recognition of the patent would enable Arkwright, already a rich man, to choke off the livelihood of thousands of hard-working people. Moreover, it would in time destroy the flourishing British textile industry in which England already led the world.⁴²

Arkwright lost both of his patents and his two trials cost him 1,911 pounds.⁴³ As this case demonstrates, property holders did not automatically win, and courts did try to balance diverse public goals.

Historically, intellectual property rights were considered to be grants of privilege that were explicitly recognized as exceptions to the rules against monopolies.⁴⁴ To consider these to be privileges underscores their temporary and unstable nature. Thinking of intellectual property protection as a grant of privilege highlights the fact that what may be granted may be taken away when such grants conflict with other important social goals. The case of the Lancashire spinners pitted the right to labor and continued British economic hegemony against the right to monopoly.

The outcome of the case also set into motion another political dynamic that energized the activities of patentees. Significantly, Arkwright’s losses in court mobilized a broad quest for stronger patent rights. In 1785 after the court cancelled his second patent, a number of patentees and a “putative Patentee’s Association” met and resolved to “unite in defense of their respective rights and to agree upon a mode of application to Parliament for the better security of their inventions.”⁴⁵ Manufacturers were above all concerned with protecting their escalating investments in factory production. Professor MacLeod maintains that:

Their interests ...shaped the patent system in the two centuries before 1852 and arguably beyond.... Top of their agenda was the security of their intellectual property and the development of institutions that would decrease the risk and uncertainty of managing it – primarily a cheap and fast way to settle disputes over the ownership and infringement of patents.⁴⁶

⁴¹ Moore, 1998: 20.

⁴² Ibid, 21.

⁴³ David Jeremy, 2004. “Patents and Technology Transfer Between Nations: 1790-1851: Help, Hindrance, or Irrelevance: Lessons from History,” paper prepared for ERSC Research Seminar series: Intellectual Property Rights, Economic Development and Social Welfare: What Does History Tell Us?” Ironbridge Gorge Museum, Coalbrookdale, U.K. April 26: 6.

⁴⁴ Sell and May, 2001.

⁴⁵ MacLeod, 2004: 14.

⁴⁶ Ibid.

Indeed, the nineteenth century was marked by considerable fomentation and controversy about both copyright and particularly patent protection.

The Nineteenth Century: Diversity in Law

The intellectual property landscape of the nineteenth century was a patchwork of diverse national laws and approaches to intellectual property regulation. As a matter of public policy, most states had adopted intellectual property policies to encourage the migration of useful inventions to their territory and to facilitate the access of the reading public to an extensive range of published materials. These policies included introductory patents, compulsory licensing, “working” requirements, differential treatment for citizens versus foreigners, and by contemporary standards, weak or lax intellectual property protection. For instance the early British patent system was designed to introduce foreign technologies to the kingdom and it granted monopoly privileges not to inventors but rather to those who brought the invention to the knowledge of the public.⁴⁷ By contrast, the early US patent system was established to provide incentives for domestic innovation while denying protection for foreign technology. US copyright policy also was designed to promote learning, public access, and protection of the public domain.⁴⁸ In general innovators tended to seek higher levels of intellectual property protection whereas imitators and technological “latecomers” sought maximum access to intellectual property at minimal or no cost.⁴⁹

The British dominated the first industrial revolution (roughly the 1780s to the 1840s) with their mining and steam engine technology and the mechanization of the textile industry. Patents did not play a major role in the emergence of the cotton industry in part due to the way that the sector was initially organized. As Professor MacLeod points out:

The diffusion of a manufacture over a wide area, often in remote cottages, made enforcement very difficult... [After 1770] the removal of cotton and worsted spinning into the factories prompted an upsurge in patents in those sectors. Not only was a patent easier to police in a factory-based industry, but it was also potentially more valuable as these industries grew exponentially.⁵⁰

Also from a potential patentee’s point of view, the British administration of patent law up until 1852 left much to be desired. Patentees faced a cumbersome bureaucratic maze, high costs of securing and defending patents, and deep uncertainty that deterred many efforts to prosecute possible infringement.⁵¹

⁴⁷ Jeremy, 2004: 3

⁴⁸ Ray Patterson and Craig Joyce, 2003. “Copyright in 1791: An Essay Concerning the Founders’ View of the Copyright Power Granted to Congress in Article I, Section 8, Clause 8 of the U.S. Constitution”, *EMORY L. J.* 52:3 (Spring): 909-52.

⁴⁹ This was not the case in every instance. As Professor MacLeod writes: “In the wake of bitter resentment against Watt’s patent for the separate condenser, Cornish engineers turned their back on the patent system. Cornwall’s share of patents for steam-related inventions fell to under one percent of the national total in the period 1813-52. The start of this period saw Richard Trevithick and Arthur Woolf erecting (unpatented) high-pressure steam engines in Cornish tin and copper mines, where high coal prices made thermodynamic efficiency of particular concern. It also witnessed the launch of a monthly journal, Lean’s Engine Reporter, by a group of mine managers with the intention of discovering and disseminating best practice techniques. This publication was fundamental to the practice of collective invention in the Cornish mining industry, which approximately doubled the ‘duty’ of high-pressure engines in a quarter of a century.” p. 12.

⁵⁰ *Ibid*: 10.

⁵¹ *Ibid*: 6.

On the European continent, France had a well-developed patent system. The French established their system in 1791 and featured patents of introduction, restricted patent rights to France (French patentees could not patent abroad), and they included a working requirement in which all patents had to be worked in France within two years of the grant.⁵² Spain's first official patent law was imposed by the French in 1811 after the Napoleonic invasion. Not surprisingly it resembled French law. Spanish rulers modified it slightly in 1820 and 1826, but the basic contours remained the same. Spain's system was based on "the first French tradition, and in general, of follower and latecomer countries whose governments attempted to develop processes of innovation, modernization and economic growth over and above intellectual property rights."⁵³ In the mid-1830s, and between 1849 and 1878, the Spanish government actively blocked numerous invention and introduction patents that were not worked within the specified time frame.⁵⁴ Between 1826 and 1907 75 per cent of registered inventions lost their monopoly rights within three years, transferring that technical information into the public domain. Spain balanced intellectual property protection with an express commitment to public access.

The Netherlands, however, rebelled against intellectual property rights altogether. Notably, as a matter of public policy the majority of citizens did not see granting such rights to foreigners as being beneficial. In the Netherlands, between 1860 and 1865 the lion's share of patents granted each year covered inventions made abroad (at least 124 out of 140).⁵⁵ A Dutch pressure group representing small and medium-sized enterprises successfully lobbied for the abolition of the Patent Act as an "obstacle to the growth of industry and prejudicial to the national prosperity."⁵⁶ The Dutch abolished their patent system in 1869. The Dutch were followers in economic and technical fields. In the Netherlands, "the absence of patent legislation gave small companies, and those that were just starting up, protection from the disruption and expense of litigation and thus improved their chances of survival."⁵⁷ Without having to pay royalties the Dutch could produce goods equal in quality to foreign goods for much reduced costs. They did not reinstate their patent system until 1912. The Swiss had no patent law between 1850 and 1907. During this time they were free to imitate, copy or modify others' inventions.

The US patent laws of 1790 and 1793 offered strong rights to citizen inventors. Only inventors, not "introducers", could patent and using the system was inexpensive in order to encourage broad participation. US law also included working requirements up until 1908.⁵⁸ "Foreigners and foreign inventions were ineligible for US patents until 1836 and were burdened thereafter by higher patenting fees. The system sought explicitly to induce domestic invention."⁵⁹ Discrimination against

⁵² Edward Beatty, 2002. "Patents and Technological Change in Late Industrialization: Nineteenth-Century Mexico in Comparative Context," *HISTORY OF TECHNOLOGY* Vol. 24: 127.

⁵³ J. Patricio Saiz Gonzalez, 2002. "The Spanish Patent System (1770-1907). *HISTORY OF TECHNOLOGY*, 24: 51.

⁵⁴ Gonzalez, 2002: 67.

⁵⁵ Cullis, 2004: 39.

⁵⁶ Cullis, 2004: 39.

⁵⁷ Cullis, 2004: 40.

⁵⁸ Robert Merges, 2000. "One Hundred Years of Solicitude: Intellectual Property Law, 1900-2000" 88 *Calif. L. Rev.* 2187 (December): 2221.

⁵⁹ Beatty, 2002.: 126-7

foreigners served the public interest and was a common policy to encourage technology transfer. As Professor Jeremy notes, “if both citizens and aliens were denied the possibility of a patent for introducing a foreign invention, foreign inventions could be introduced to America without the additional cost of the inventor’s monopoly rights. The USA had access to the world’s technology at a lower cost than other nations.”⁶⁰ The asymmetry between British and American patent laws favored “inventors in the developing, follower, economy of the USA, rather than the more industrialized, leading, economy, Britain.”⁶¹

Britain and the US experienced considerable friction over copyright policy as well. British authors and publishers complained of widespread “piracy” of British books abroad. Reprinting foreign books was perfectly legal in many other countries; in fact reprinting texts by popular British authors such as Charles Dickens was a thriving industry in America. For example, in 1843 an American copy of Dickens’ *A Christmas Carol* cost six cents, whereas a British edition cost the equivalent of two dollars and fifty cents.⁶² The British book trade recognized that this was reducing potential profits and eliminating major export markets for legitimate British editions.⁶³ British and American authors unsuccessfully lobbied the US government to establish American recognition of foreign copyright claims. American authors were interested in such recognition because of US publishers’ predilection to publish British works that were not copyright protected, instead of American ones, which were.⁶⁴ American authors appealed to Congress “to encourage American letters by preventing cheap reprints of unauthorized British texts.”⁶⁵ American publishers prevailed, however, and employed the discourse of the public interest in defense of their position. A prominent Philadelphia publishing house sent the following appeal to Congress in 1842:

All the riches of English literature are ours. English authorship comes to us free as the vital air, untaxed, unhindered, even by the necessity of translation, into the country; and the question is, shall we tax it, and thus impose a barrier to the circulation of intellectual and moral light? Shall we build a dam to obstruct the flow of the rivers of knowledge?⁶⁶

US policy reflected the utilitarian justification of the public interest. As a developing country and an importer of “literary and scientific creations” the US sought to retain the right to appropriate the ideas, scientific inventions, and literary creations of the leading countries.⁶⁷ By contrast, net exporters such as France, England, and Germany invoked a “natural rights doctrine as a universal moral and economic right enabling authors to exercise control over their creations and inventions and to receive remuneration.”⁶⁸ By the early 1800s Europeans had negotiated an extensive network of bilateral copyright agreements leading to a growing demand for codification in an international treaty. Americans were reluctant to participate in such

⁶⁰ Jeremy, 2004: 3.

⁶¹ Jeremy, 2004: 4.

⁶² Hesse, 2002: 41.

⁶³ John Feather, 1994. PUBLISHING, PIRACY AND POLITICS: A HISTORICAL STUDY OF COPYRIGHT IN BRITAIN (London: Mansell Publishing Limited): 154.

⁶⁴ Thomas B. Nachbar, 2002, “Constructing Copyright’s Mythology” *The GREEN BAG: AN ENTERTAINING JOURNAL OF LAW* Vol. 6 (Autumn): 45.

⁶⁵ Hesse, 2002: 41.

⁶⁶ Sherman and Johnson publishing house, quoted in Hesse, 2004: 41.

⁶⁷ Hesse, 2002: 40.

⁶⁸ Hesse, 2002: 40.

an undertaking because they did not share the European perspective on copyright until the late 1880s.

A Multilateral Settlement

This important shift in ideas about intellectual property was accompanied by economic and technological changes that together drove the establishment of multilateral institutions governing intellectual property. Intellectual property, both patents and copyright, became the basis for a new business model for investment and production. During this period, economic and technological leadership was shifting from Britain to the US and Germany. The first industrial revolution had been driven by the invention of the steam engine, the spinning jenny, machine tools and the development of the textile, iron, and shipbuilding industries.

The second industrial revolution, roughly from 1870-1914, was driven by chemicals, steel, oil, and electricity. This period witnessed the swift expansion of world commerce facilitated by the transportation revolution and telegraphy. In the United States the development of railways created a huge domestic market and facilitated mass production that fueled US economic growth. The new leading sectors favored the United States with its abundant raw materials, and Germany with its stress on scientific education. During this time, large business enterprises with international marketing aspirations emerged. In many cases “myth-making” inventors, such as Thomas Edison and Werner Siemens, were at the helm. Significantly, these business leaders pressed for higher standards of patent protection and also sought protection for the results of corporate research and development. An 1871 US Supreme Court decision⁶⁹ amended the 1791 Patent Act to permit employment contracts to include a clause requiring employees to assign patents or other invention rights to the employer. “Without this change in the effective law, the R&D of in-house research laboratories and workshops, such as Edison’s at Menlo Park, would have been impossible to finance.”⁷⁰ In Germany, Werner Siemens went into politics and became a member of the German Parliament in order to get the 1877 German Patent Act passed.⁷¹ Needing large numbers of employed inventors in its research labs, Siemens wanted to ensure that their patents would belong to the firm and not to the individual company inventors. As in the US, the 1877 German law created this option.⁷²

In 1873 the Austro-Hungarian Empire hosted a World Exposition in Vienna. American inventors refused to take part out of concern that their inventions would not adequately be protected.⁷³ German inventors shared this reluctance. In 1873 the

⁶⁹ United States v. Burns 79 U.S. (12 Wall.) 246 (1871)

⁷⁰ William Kingston, 2004. “Schumpeter and Institutions: Do his ‘Business Cycles’ Give Enough Weight to Legislation?” paper prepared for International Joseph A. Schumpeter Society, 10th ISS Conference, Innovation, Industrial Dynamics and Structural Transformation: Schumpeterian Legacies, June 9-12, Università Bicconi, Milan, Italy: 4.

⁷¹ Ibid.

⁷² For an excellent account of the development of the work-for-hire doctrine in copyright, see Catherine Fisk, 2003. “Authors at Work: The Origins of the Work-for-Hire Doctrine.” 15 YALE J.L. & HUMAN. 1.

⁷³ Roger Cullis, 2004. “Fiat Lex: The Role of Law in the Early Development of the Electric Light Industry,” paper prepared for ESRC Research Seminar Series, Intellectual Property Rights, Economic

empire adopted a temporary law providing for protection for foreigners in order to encourage foreign inventors' participation; this protection would last for the duration of the exposition. As a result of German and Austrian patent attorneys' and engineers' intense lobbying efforts, the government held the 1873 Vienna Congress to address inventors' concerns.⁷⁴ William Siemens, brother of Werner Siemens, founder of the Siemens corporation, chaired the Congress. German participants predominated, and 13 of the 158 participants represented states.⁷⁵ The Vienna Congress endorsed international patent protection, but retained support for compulsory licensing. The overriding objective was to establish a system in which states would recognize and protect the rights of foreign inventors and artists within states' own domestic borders.⁷⁶ Several follow-up Congresses in 1878 and 1880 further developed the details of an agreement and prepared a draft convention which became the basis for the 1883 Paris Convention for the Protection of Industrial Property (covering patents, trademarks, and industrial designs)⁷⁷ and member countries constituted an International Union for the Protection of Industrial Property.

States also adopted the Berne Convention of 1886 (for copyright). The underlying principles of these agreements were non-discrimination, national treatment, and the right of priority. Under this system, states were free to pass legislation of their own design, but were obligated to extend their legislative protection to foreigners of member states. These conventions neither created new substantive law nor imposed new laws on member states; rather, they reflected a consensus among member states that was legitimated by domestic laws already in place.

Private sector actors (including forty-eight Chambers of Commerce) played a prominent role at the 1878 Paris Conference, indicating "the degree to which states were being asked to provide a regime within which a new level of negotiated private arrangements could be brought about."⁷⁸ Additionally, the role of American and German interests in these deliberations represented a change in intellectual property preferences from those of followers to those of leaders seeking enhanced protection.⁷⁹ The anti-patent mood of Europe vanished as it retreated from free trade. The

Development and Social Welfare: What Does History Tell Us? Ironbridge Gorge Museum, Coalbrookdale: 29.

⁷⁴ Graham Dutfield, 2003. *INTELLECTUAL PROPERTY RIGHTS AND THE LIFE SCIENCES INDUSTRIES: A TWENTIETH CENTURY HISTORY* (Aldershot, UK: Ashgate Publishing Limited): 55.

⁷⁵ Porter, 1999: 265.

⁷⁶ Ruth Gana, 1995. "Has Creativity Died in the Third World? Some Implications of the Internationalization of Intellectual Property," *DENVER JOURNAL OF INTERNATIONAL LAW & POLICY* 24:1; 137.

⁷⁷ World Intellectual Property Organization, 1988. *BACKGROUND READING MATERIAL ON INTELLECTUAL PROPERTY* WIPO Publication No. 40. (Geneva: World Intellectual Property Organization): 49-50.

⁷⁸ Porter, 1999: 266.

⁷⁹ For a fascinating discussion of the evolution of the German position see Heinrich Kronstein and Irene Till, 1947. "A Re-evaluation of the International Patent Convention," *LAW AND CONTEMPORARY PROBLEMS*, 12: 765-81.

Netherlands had abolished its patent system in 1869 but reinstated it in 1910, while Switzerland enacted its first patent law, under German pressure, in 1887.⁸⁰

In copyright, fierce competition between French, Belgian and Swiss publishers and a dense network of bilateral treaties throughout Europe inspired a quest for a broader multilateral agreement that would incorporate the doctrine of national treatment. Victor Hugo convened a Congress of Authors and Artists in Brussels in 1858 that affirmed the principle of national treatment. By 1886 ten European nations agreed to sign the Berne Convention. The US was excluded from Berne because it retained a provision in its copyright laws requiring authors to register their work in Washington and send a copy to the Library of Congress. These terms were inconsistent with the Berne Convention that made the acquisition of copyright automatic upon authorized publication in any member state. Berne signatories could not require registration as a precondition for granting copyright.

A robust American battle in copyright exemplified a compromise between competition and security. The copyright battles of the 1800s between the British and the Americans increasingly pitted two American factions against each other. According to Hesse, “trade protectionists, printers’ unions and publishing houses, whose fortunes were rooted in pirating British literature argued against any international agreement. On the other side, advocates of indigenous authors allied themselves with partisans of free trade and international copyright, claiming universal rights of authorship.”⁸¹ It was not until the 1880s, in the face of ruinous competition from new “penny-press” publishing houses in the Midwest, that the older East Coast publishing interests changed their tune. They altered their business strategies and their arguments about intellectual property because:

They realized that they would be better positioned than the new generation of publishers to sign exclusive copyright agreements with foreign authors that would be enforceable in the United States. The ... Berne Convention ... added further momentum to a shift in ... views. ... American theologians, including the Reverend Isaac Funk, now denounced the ‘national sin of literary piracy’ (which had allowed him to make his fortune on his pirated *Life of Jesus*) as a violation of the seventh commandment.⁸²

A group of publishers formed the American Copyright League in 1884 to press for copyright reform. The exclusion from Berne prompted the League to push for changes in US law to conform to the Berne Convention. Southern Democrats bitterly opposed any effort to open American markets to foreign competition. To appease the printing workers’ unions, the final compromise of 1891, the Chase Act, provided that foreign authors could obtain copyright protection only if their work was published in the United States not later than it was published in its country of origin, and foreigners’ works had to be printed in the United States, or printed from type set in the United States.⁸³ This so-called “manufacturing clause” went directly against the Berne Convention, and the United States remained outside the agreement until 1986

⁸⁰ MacLeod, 2004: 5. As Kingston, 2004, points out: “The German chemical industry financed three referenda in Switzerland until it got the patent legislation it wanted there to prevent free-riding on its inventions by local firms,” p. 5.

⁸¹ Hesse, 2002: 41.

⁸² Hesse, 2002: 42.

⁸³ Feather, 1994: 168.

when the clause was allowed to expire. However, in 1891 Congress signed an international agreement with England for reciprocal copyright protection.⁸⁴

Thomas Edison: Patents as a Business Strategy

Just as ruinous competition in the late 1880s had prompted a redefinition of the established American publishers' interests in intellectual property protection, a similar dynamic animated a major shift toward stronger patent protection. In the new business model of the second industrial revolution patents played a starring role. For example, in the United States alone, "between 1840 and 1910 the annual number of patents increased more than fifty-fold."⁸⁵ The rise of large managerial firms in the chemical and electrical industries, such as Siemens in Germany and Edison in the United States, introduced a new way of organizing innovation and attracting finance capital. Patents were integral to this process.

The story of Thomas Edison's transformation from "Yankee genius" to predatory businessman illustrates this larger trend. Edison became famous for his inventions in telegraphy. Popular mythology notwithstanding, Edison was a latecomer to electric lighting.⁸⁶ Well-known in the telegraph industry, Edison approached successful telegraph entrepreneurs to help him to establish the Edison Electric Light Company. General Counsel of Western Union, Grosvenor P. Lowrey, advised Edison to set up a corporation to finance research and to take out patents.⁸⁷ Western Union had pioneered a strategy of patenting and cross-licensing inventions with competitors in order to secure market shares.⁸⁸ The President of Western Union, a major stockholder in the Gold and Stock Telegraph Company, and a partner in J.P. Morgan backed Edison and his company was set up to "own and license all Edison's electrical inventions other than those concerned with telegraphy."⁸⁹ Edison's mentors at Western Union, William Orton (1826-1878) and Marshall Lefferts (1821-1876), promoted a business strategy of market dominance by controlling the fruits of innovation through control of existing patents and of future patented inventions. The idea was to maintain control over innovation, manage patents so as to create barriers to entry, and to prepare patents with broad claims.⁹⁰ "Lefferts taught Edison the business importance of patents and of 'covering the field' with patents and with broad claims within patents."⁹¹ He introduced Edison to a patent attorney, Lemuel Serrell (1829-1899) who taught Edison to keep scrupulous records for the Patent Office and for litigation.

The establishment of corporate research laboratories, such as Edison's in Menlo Park, New Jersey, and the adoption of patent amendments in US law in 1871 to

⁸⁴ Hesse, 2002: 42.

⁸⁵ Reese V. Jenkins, 2004. "Patents, Market Dominance, Western Union, Edison-GE, and Eastman Kodak" paper prepared for ESRC Research Seminar Series, Intellectual Property Rights, Economic Development and Social Welfare: What Does History Tell Us? Ironbridge Gorge Museum, Coalbrookdale, UK, Monday, April 26: 1.

⁸⁶ Cullis, 2004: 15.

⁸⁷ Cullis, 2004: 15.

⁸⁸ Jenkins, 2004: 12-14.

⁸⁹ Cullis, 2004: 15.

⁹⁰ Jenkins, 2004: 32.

⁹¹ Jenkins, 2004: 14.

allow employers to require employees to sign over any patent rights in their work-related innovations, spurred the development of a new way to organize research and development. Patent attorneys were central to this model, and they played a key role as agents of the industrial research system and as campaigners for heightened patent protection.⁹² Litigation was a sport for the rich. During the last quarter of the nineteenth century “a successful barrister could earn 15,000 pounds per annum, equivalent to 600,000 pounds today.”⁹³ Edison was extremely litigious and used predatory patenting strategies to good effect. For example, even though the British inventor James Swan invented and exhibited the incandescent filament lamp, Edison beat him to the patenting punch by filing a British patent with extremely broad claims. When Swan established a company in Britain to manufacture his lamps, Edison immediately filed an injunction to stop Swan from infringing his patents. Ultimately Edison was able to wield his patent power to get Swan to agree to amalgamate the two companies as The Edison and Swan United Electric Light Company Ltd.⁹⁴ Even though Swan had contributed most to the actual invention; Edison’s patent enabled him to maintain a monopoly position.

Responding to growing competition in the sector, between 1885 and 1901 Edison initiated over two hundred infringement lawsuits, spending about \$2,000,000 on litigation.⁹⁵ Even when Edison technically lost, the costs of litigation ran many small competitors out of business. After this spate of aggressive lawsuits, competition virtually disappeared. By 1893 Great Britain had only seven producers in the lamp business, not all of which actually produced lamps.⁹⁶ The ruling in the Edison and Swan Electric Light Company v. Holland [1888] RPC 459 strengthened Edison’s monopoly position. Edison was accused of “unfair exploitation of the rules of legal etiquette and avaricious patent claims” to “gain ascendancy over competitors.”⁹⁷

In 1886 at the height of a high-profile Edison case one outraged commentator, James Swinburne, decried Edison’s tactics and highlighted the unfortunate consequences of Edison’s monopoly:

The first effect of a lamp monopoly will be that prices of lamps will remain high or go higher, and will be no stimulus to improvement in their quality because there will be no competition. People often grumble at the price of lamps. Prices have to be high because it takes a long time to get a factory into working order, as the making of lamps is new to all the hands, an enormous amount of experimenting, and that on a commercial scale, is needed before lamps can be made cheap and well. A factory takes about two years to get into swing, but after that lamps can be made very cheaply. The actual labor and material in practice comes to about fivepence halfpenny per lamp sent out when made on a small scale. These are the actual figures. On the scale of manufacture of a large company the lamps should be sold at a shilling or eighteen pence.⁹⁸

⁹² See Peter Drahos and John Braithwaite, 2002a. INFORMATION FEUDALISM: WHO OWNS THE KNOWLEDGE ECONOMY? (London: Earthscan Publications Ltd.): 43-8.

⁹³ Cullis, 2004: 2.

⁹⁴ Cullis, 2004: 30.

⁹⁵ Cullis, 2004: 36.

⁹⁶ Cullis, 2004: 34.

⁹⁷ Cullis, 2004: 33.

⁹⁸ James Swinburne, 1886. “The Edison Filament Case” THE TELEGRAPHIC JOURNAL AND ELECTRICAL REVIEW 6 August: 129-132: quote at 132.

Today, advocates of access to generic medicines to address the HIV/AIDS pandemic are making the very same arguments.⁹⁹

The Ascendance of the German Chemical Industry and a New Business Model

The development of the German dyestuff industry in the 1860s introduced a new business model, eclipsing the “inventor-entrepreneur” with professional research and development departments.¹⁰⁰ German industrial policy supported the development of industry by protecting German companies from foreign competition, and permitting “cooperative inter-firm alliances to fix prices and rationalize sales networks.”¹⁰¹ Beginning in the mid-1860s German interest groups representing the chemical industry lobbied hard for patent laws.¹⁰² While eager for domestic patent protection, Werner Siemens worried that British and American firms would take out patents and then fail to work them in Germany. The German Patent Law of 1877 included a working requirement whereby if a patent was not worked in Germany within three years, the government could withdraw the patent. The chemical industry was divided over whether patents should cover processes or products or both. The final bill covered processes not products, in line with the wishes of the Chemical Association. To enable firms to claim patent rights in employees’ innovations, German patent law excluded the term “inventor” in favor of “applicant.” German law reflected the chemical industry’s commitment to a research strategy of process innovation and a marketing strategy of product diversity. German firms’ process patents and tacit knowledge strengthened their position in the industry. As in the case of the Edison firms, strong patent positions (massive holdings) could help block research by rivals and facilitate market domination. Despite having no provisions for patenting chemical substances (versus processes), German firms took advantage of such provisions in other countries such as the United States and Britain. They also took advantage of foreign laws that did not include working requirements, such as in the United States (after 1908). In 1912 98 per cent of chemical patent applications in the US were assigned to German firms and were never worked in the United States.¹⁰³ Americans, outraged by this asymmetry, proposed the abolition of product protection but were outflanked by leading industrialists such as Edison, their bankers such as J.P. Morgan, and their patent attorneys.

The Germans came to dominate the pharmaceutical industry before World War I. The dyestuff producers Bayer and Hoechst moved into pharmaceutical production, and their huge dyestuff profits were invested into R&D. The German model of the business firm organized to conduct industrial research spread rapidly in the first ten years of the 20th century. In the United States, General Electric, Westinghouse, AT & T, International Harvester, Parke Davis, and E.R. Squibb, just to

⁹⁹ See for example, remarks of James Love, in Mark Warner (facilitator), 2002. “Global Intellectual Property Rights: Boundaries of Access and Enforcement: Panel I: AIDS Drugs and the Developing World: The Role of Patents in the Access of Medicines” *FORDHAM INTELLECTUAL PROPERTY, MEDIA AND ENTERTAINMENT LAW JOURNAL* 12 (Spring): 675-751.

¹⁰⁰ Dutfield, 2003: 75.

¹⁰¹ Dutfield, 2003: 76.

¹⁰² Paragraph based on Dutfield, 2003: 77-79.

¹⁰³ Dutfield, 2003: 82.

name a few, set up research labs.¹⁰⁴ Eastman Kodak set up its industrial research lab in 1912.¹⁰⁵

Firms also established patent departments that became central players in firms' strategies. Firms came to regard patents as strategic business assets that could be used not just to protect inventions, but also to raise capital and to force cross-licensing with rival firms.¹⁰⁶ Corporate patent departments policed patenting activity, and DuPont earned a reputation for being particularly stingy by preventing its employees from publishing scientific papers.¹⁰⁷

Between 1870 and 1911 the number of U.S. patent grants shot up from 120,573 to 1,002,478.¹⁰⁸ While in the early days most patents were granted to individuals, by the beginning of the twentieth century most patents went to firms. In follower states, such as Spain, between 1878 and 1907 the bulk of patents granted went to foreign, non-resident firms.¹⁰⁹ As Professor Beatty points out, the dramatic expansion of trade and foreign investment in the last quarter of the nineteenth century, coupled with the 1883 Paris Convention, sparked "patent law reforms [that] yielded an increasingly homogenous landscape in a process that was not complete until the eve of World War I."¹¹⁰

Most nations that found themselves increasingly part of the globalizing economy of the late nineteenth century could not avoid international pressures to offer patent protection to foreign inventors. Moreover, domestic elites around the world ... had also largely adopted the liberal arguments that linked property rights with incentives to invest.¹¹¹

The discourse eliminating the tension between free trade and intellectual property rights had triumphed.

Early in the twentieth century, patent-based cartels emerged. Just as Edison had bought up, absorbed, or merged with rivals under predatory patent litigation, numerous firms consolidated and set up cross-licensing, price-fixing and market dividing arrangements. For instance in the electrical industry, in 1897 General Electric formed a cartel, the Incandescent Lamp Manufacturers Association, to control prices and market shares.¹¹² Very few firms remained outside of this group, which made a price-fixing agreement with Westinghouse. Lamp prices rose about 30 per cent.¹¹³ The US bank panic and depression of 1893 left General Electric surrounded by weakened competitors, which it proceeded to acquire under the rubric of the National Electric Lamp Company – a clever stratagem designed to create the appearance of independence.¹¹⁴ General Electric used its patent licensing power to acquire relevant patents, charge higher royalty rates, prohibit others from exporting without General

¹⁰⁴ John Braithwaite and Peter Drahos, 2002b. "Intellectual Property, Corporate Strategy, Globalisation: TRIPS in Context" 20 WIS. INT'L L.J. 451 (2002): 454.

¹⁰⁵ Jenkins, 2004: 42.

¹⁰⁶ Merges, 2000: 2220.

¹⁰⁷ Braithwaite and Drahos, 2002a: 45.

¹⁰⁸ Braithwaite and Drahos, 2002b: 460.

¹⁰⁹ Gonzales, 2002: 73.

¹¹⁰ Beatty, 2002: 143.

¹¹¹ Beatty, 2002: 132.

¹¹² Cullis, 2004: 37-38.

¹¹³ Jenkins, 2004: 26.

¹¹⁴ Jenkins, 2004: 26-7.

Electric's permission, and lead European cartels. As Professor Jenkins points out, "the company's strong patent position gave an initial near monopoly position from which it then exercised its financial and market power to maintain a dominant American and world position until after World War II, decades after its key patents had expired."¹¹⁵

In Britain, British Thomson-Houston, Siemens and the General Electric Company pooled their patents and collectively controlled the industry.¹¹⁶ In 1912 they formed the Tungsten Lamp Association that included most all of the significant producers in England. In 1915 Robin Electric mounted a public interest challenge to the price-fixing of the Tungsten Lamp Association. The judge ruled in favor of the Tungsten Lamp Association, stating that "although poor families could not afford electric lighting, there was no evidence that the price was so high as to be a serious burden to the consumers."¹¹⁷

Faced with potentially ruinous competition and dumping just after World War I, the leading European and British electric lamp producers negotiated an international agreement to rationalize competition in 1925. The Phoebus Agreement, a private multilateral agreement administered in Geneva, was designed to divide markets and to exchange technical information and patents. Patent ownership was used to induce independent companies "to enter into similar contracts involving quota restrictions and observance of agreed prices."¹¹⁸ This agreement remained in force up until the outbreak of World War II.

Similar arrangements flourished across sectors in the interwar period. The patent system was a central mechanism facilitating cartel solidarity. This was not limited to industrial sectors, but included minerals and agriculture too (American Cotton Oil, Corn Products, and National Lead also had research labs).¹¹⁹ In 1939, the proportion of goods sold under cartel control in the United States was roughly 87 percent for mineral products, 60 percent for agricultural products, and 42 percent for manufactured products.¹²⁰ In sector after sector, risk was subordinated to security and control.

Lessons for Today

There are numerous parallels between the contemporary era and the world of one hundred years ago. The current era is characterized by extensive property rights and economic concentration in leading industrial sectors. To be a member of the WTO, follower countries must abide by TRIPS strictures that sharply reduce their policymaking autonomy, and require them to abide with rules that serve policy ends for which they have not chance to deliberate nor effect. In some ways this is evocative of the late nineteenth and early twentieth centuries in which countries began to accept some uniformity in intellectual property policy. Just as in the nineteenth century, today countries have been increasingly unable to resist pressure to offer higher levels of intellectual property protection. Under intense bilateral economic pressure,

¹¹⁵ Jenkins, 2004: 28.

¹¹⁶ Cullis, 2004: 40.

¹¹⁷ Cullis, 2004: 42.

¹¹⁸ Cullis, 2004: 43.

¹¹⁹ Braithwaite and Drahos, 2002a: 41.

¹²⁰ Porter, 1999: 266.

developing countries in particular have been forced to adopt policies that reflect an unproven linkage between intellectual property protection and incentives to invest. Moreover, desperate for foreign investment, many countries have signed bilateral foreign investment, and foreign trade agreements that require them to offer much higher standards of protection than are incorporated in the TRIPS agreement.¹²¹

At the same time, as we have seen in the past, new groups have mobilized to protest this over-reach of property rights. This movement has been most pronounced in connection with access to HIV/AIDS drugs in sub-Saharan Africa, but has a number of other growing elements. Certainly, the HIV/AIDS pandemic has thrown into sharp relief the trade-offs inherent in intellectual property rights. At what point do rights-based incentives to invest in developing life-saving pharmaceutical products defeat the very purpose of saving lives? This question is animating one of the most vigorous areas of contestation in contemporary thinking about property rights.

While the overall pattern of settlement and contestation is fairly consistent throughout history, it is also clear that in recent years the baseline for property rights has moved significantly in the direction of private reward over public access. Rights, that used to be thought of as privileges and exceptions, have superseded any connected obligations; the balance *must* be restored. History teaches us that it might. Highlighting this imbalance, a “one-way ratchet,” Professor Cooper Dreyfuss has proposed the incorporation in TRIPS of a Bill of Rights for users.¹²² As a way forward this approach could revisit the possibility of reinstating some of the important instruments that nearly all countries used in the past, such as working requirements, compulsory licensing, and differential treatment for foreigners.

Centrally, a legitimate international intellectual property rights regime must recognize the variegated constellation of interests and abilities within and between countries. One-size-fits-all approaches make no sense in light of the historical record of economic development. States must find ways to reclaim their autonomy to craft policies appropriate to their levels of economic development and comparative advantages in innovation and imitation. The fundamental mismatch between TRIPS as a blanket form of global governance, and the diverse patchwork it purports to address is destined to create friction. As one of us has argued elsewhere:

Either the global governance of IPRs needs to more resemble the previous national regimes of governance, or states’ governments need to reassert their sovereignty over certain aspects of the governance of IPRs.... It may be the case that, when the issues become so politically charged, the notion of an emergent global polity collapses under the weight, returning the political response to the national level, where many governments feel the need to respond to a domestic polity whose interests are likely to be somewhat different from the global class of knowledge owners.¹²³

¹²¹ Peter Drahos, 2001. “BITS and BIPS: Bilateralism in Intellectual Property” THE JOURNAL OF WORLD INTELLECTUAL PROPERTY LAW 4:6 (November): 791-808.

¹²² Rochelle Cooper Dreyfuss, 2004. “TRIPS-ROUND II: Should Users Strike Back?” 71 U. Chi. L. Rev. 21

¹²³ Christopher May, 2004. “Cosmopolitan Legalism Meets ‘Thin Community’: Problems in the Global Governance of Intellectual Property” GOVERNMENT AND OPPOSITION Ltd.:393-422, at 422.

Our history of intellectual property rights problematizes the assertion of a direct relationship between the protection of these rights and the early acceleration of economic development or industrialization. For different countries with different mixes of industries and/or services, alongside differing structural positions in relation to the global economy, there are multiple answers to the question of ‘when do IPRs start to serve the policy goals of our country?’ However, what is becoming clear to many writers and analysts is that there *is* a threshold: and thus much recent work has focused on examining in specific instances when such a threshold might be crossed, and how this can be linked to the future economic development of poorer and under, or un-developed, countries in the global system.

For Dru Brenner-Beck, only when countries recognize that it is in their interest to adopt specific IPR-related legislation will workable laws be deployed (even under TRIPs).¹²⁴ For instance, the successes of Japan, Korea and Taiwan all follow a similar pattern with the absorption and copying of important technologies pushing industrial development forward, until the point is reached when domestic companies start to seek protection for their *own* ideas and innovations. Only then did these countries start to develop stronger protection of intellectual property rights.¹²⁵ In a review of ‘historical lessons’, for the UK’s Department for International Development’s Commission on Intellectual Property Rights, Zorina Khan concluded:

the major lesson that one derives from [the international] aspect of the economic history of Europe and America is that intellectual property rights best promoted the progress of science and the arts when they evolved in tandem with other institutions and in accordance with the needs and interests of social and economic development in each nation... appropriate policies towards intellectual property are not independent of the level of development nor of the overall institutional environment.¹²⁶

This immediately raises the questions of periods of transition, and perhaps most importantly, how best to judge when countries have reached a level of development when they should be required to become TRIPs compliant, and, by implication, the political problem of which institution or body should be empowered to make, and enforce, this judgment.

While questions of development certainly are central to our analysis of intellectual property, this is not strictly a “North-South” issue. Indeed, new questions have arisen about the expansion of intellectual property rights within industrialized countries as well. The drivers of the ratcheting up of domestic and global intellectual property rights have been members of the so-called “knowledge cartel”, large globally-active firms that “control the distribution of a disproportionately large share of existing technologies without necessarily being particularly innovative themselves.”¹²⁷ A key question in this regard is how much extra innovation do the strong intellectual property rights that corporations press for actually provide? Or

¹²⁴ Dru Brenner-Beck, 1992. “Do As I Say, Not as I Did” 11 UCLA Pacific Basin L. J. 84

¹²⁵ Nagesh Kumar, 2003. “Intellectual Property Rights, Technology and Economic Development” Economic and Political Weekly, 38:3 (18 January)
<http://www.epw.org.in/showArticles.php?root=2003&leat=01&filename=5391&filetype=pdf>

¹²⁶ Zorina Khan, 2002. “Intellectual Property and Economic Development: Lessons from American and European History” Commission on Intellectual Property Rights, Study Paper 1a, p. 58.
<http://www.iprcommission.org>

¹²⁷ Keith Maskus and Jerome Reichman, 2004. “The Globalization of Private Knowledge Goods and the Privatization of Global Public Goods” Journal of International Economic Law, 7:2: 295.

rather, does this system stifle follow-on innovation and lead to abuses of market power? Maskus and Reichman suggest that overly strong protection hurts small- and medium-sized enterprises that have been leaders in important innovation in the past.¹²⁸ To the extent that current levels of protection shrink the research commons, expand and multiply exclusive and overlapping rights, increase barriers to entry, constrict reverse-engineering and other pro-competitive strategies built around value-adding applications of new technologies it threatens to undermine the purpose of intellectual property rights as an incentive for innovation.¹²⁹

Changes in companion institutions have increased the dangers that too many rights for too many things will have negative effects *everywhere*. In the past, innovation in the United States was built upon competition (supported by vigorous antitrust policies and enforcement), patent misuse doctrines, easy availability of government-generated data and a rich research commons, mechanisms to foster exchange of technical know-how, and the preservation of the right to reverse-engineer routine innovations in order to improve upon them.¹³⁰ This regulatory balancing act, in recent years, has given way to a lopsided system in which exclusive property rights tend to trump these other concerns and assail these core elements that fueled innovation in the past. Indeed, if the current system is dangerous even for the most innovative agents within countries like the United States it makes no sense to export this system to others.

The question of transition between previous legal institutions and those that are required for TRIPs compliance has been one of the key areas of political conflict at the WTO as well as in academia and the NGO-advocacy community. As Ritter points out: ‘had the TRIPs agreement been signed in 1883 instead of the Paris Convention, Switzerland never would have met the requirements within the limited transition period, of one, five or even eleven years.’¹³¹ Certainly, as our history demonstrates, the period of development enjoyed by the now rich and developed countries was very long. Even with the technical assistance provided, the transition times for the developing country members of the WTO are unprecedentedly short, at between five and ten years (or sometimes less, under bilateral pressure). Ituku Elangi Botoy makes this point powerfully:

As the level of protection of IPRs similar to that of the TRIPs agreement was reached in industrialized countries only in the mid-1980s, it can be calculated that from the Paris Convention to 1985, it took one hundred and two years, and from 1985 to 1995, it took ten more years. If industrialized countries have benefited from one hundred and twelve years (plus one year for transition according to Article 65(1) TRIPs), why grant only five or ten years to other countries [to achieve]... what industrialized countries took over one hundred years to achieve?¹³²

Indeed, if one further examines many developing countries’ legal starting points, the actual lead time may be even longer when directly compared to the historical development of IPRs in Europe and the United States. Or, as Chang puts it ‘it seems

¹²⁸ Ibid. 279-320.

¹²⁹ Ibid. 310.

¹³⁰ Ibid. 311.

¹³¹ Dominique Ritter, 2004. “Switzerland’s Patent Law History” Fordham Intellectual Property Media and Entertainment Law Journal 14:2: 492.

¹³² Ituku Elangi Botoy, 2994: 129.

unfair to ask modern-day developing countries to behave to a standard that was not even remotely observed when the now-advanced countries were at the similar, or even more advanced, stages of development.¹³³ The point that all these authors stress is that there is more than a trace of hypocrisy on display in light of the historical record of those countries clamoring loudest for developing countries to become TRIPs compliant.

Such hypocrisy is hardly recent. At the close of the nineteenth century the US was adamant that other countries needed to enhance and improve the protection of patents in their territories in the run up to ratification of the Paris Convention, while at the same time showing a flagrant disregard for foreign copyrights (and, of course, remaining outside the Berne Convention until the last quarter of the twentieth century). Likewise, at the same time that Germany was putting pressure on Switzerland to introduce a patent law to protect German intellectual property, German manufacturers were happily violating British trademarks and producing what would now be regarded as ‘pirated’ goods.¹³⁴ Indeed, the rhetoric of ‘pirates’ has been deployed extensively by the office of the US Trade Representative and others, with, for instance, Bénédicte Callan titling her discussion of the ‘Asian challenge’ to high technology industries *Pirates on the High Seas*.¹³⁵ However the behavior that is now being labeled piracy is exactly the development strategy adopted by the now-developed countries at an earlier stage in their history. Rather than a response to natural rights, or justice for creators and innovators, the establishment of TRIPs was driven by a policy of protectionism and mercantilism by the developed countries’ trade negotiators and governments, as it was in the past (even if this is often obscured by rhetoric).

Our historical survey of intellectual property rights demonstrates that they have evolved as a result of shifting conceptions of property rights, technological change, and institutionalization of legal settlements. Private actors have played an important role in mobilizing to shape this evolution. Property owners have not always prevailed, and rights of ownership are dynamic, contested, and socially constructed. Realist understandings based on power cannot capture this complex interplay of ideas, institutions, and material capabilities. Functional accounts of “economic necessity” neglect the extent to which “necessity” is a highly contested social construction. Both accounts offer only a partial and insufficient analysis of the issues that are confronted by many countries’ negotiators and policy makers working to find a way through the thickets of global intellectual property governance. As we have argued, each new round of contestation and settlement produces new winners and losers. Depending upon how mobilized and badly threatened the losers are, they can rise up to challenge the settlement. Sometimes they prevail and help to redress egregious imbalances. History provides some hope for a more balanced future for intellectual property rights, even if the dominant accounts of intellectual property work to obscure and even deny such possibilities.

¹³³ Ha-Joon Chang, 2001. “Intellectual Property Rights and Economic Development: Historical Lessons and Emerging Issues”, *Journal of Human Development*. 2:2: 293.

¹³⁴ *Ibid*, 303.

¹³⁵ Bénédicte Callan, 1997. *PIRATES ON THE HIGH SEAS: THE UNITED STATES AND GLOBAL INTELLECTUAL PROPERTY RIGHTS* Washington, D.C.: Council on Foreign Relations.

We also have noted that there is little evidence that a shift to higher standards in intellectual property rights is necessarily of any benefit at all levels of economic development, indeed there is convincing evidence that there is a profoundly detrimental effect on poorer, lesser developed countries. There is too much unevenness in the global system, especially as related to economic development, for there to be an effective ‘one-size-fits-all’ policy. Furthermore, as our history has demonstrated, the broad developed country position as regards the worth of strong intellectual property rights contradicts these countries’ own historical experience. Contemporary structures that have grown as a response to various stages of economic development are treated as the final establishment of a neutral and ahistorical solution for making markets in knowledge and information. However, the issues that so trouble the US government, and the interests it represents, are not those that are worrisome elsewhere in the global system.

Peter Drahos argues that as the evidence for the advantage of moving to robust protection of IPRs in currently developing countries has largely been absent, the onus is on those who wish to continue strengthening the global governance of IPRs to substantiate their claims.¹³⁶ The argument that the claimed benefits of global governance should clearly be demonstrated does not seem outlandish. However, the last ten years of governance have demonstrated that many of these claimed advantages to developing countries are, at the very least, difficult to substantiate. This is both the case for the direct benefits of ratcheting up the protection of IPRs, and the indirect, diplomatic benefits of ‘horse-trading’ during the Uruguay Round of trade negotiations. Specifically, there has until recently been very slow progress on opening international agriculture markets by removing subsidies (and other ‘support’) in the US and EU, although developed countries have continued to force the pace of TRIPs compliance. Any structure of global governance can only be legitimate if it takes into account the various levels (or ‘stages’) of development achieved by various countries across the global system. The attempt to argue that there is some universal policy interest in intellectual property seems to us to be profoundly mistaken.

Again as we have demonstrated, there is certainly a great deal to be said for recognizing what Chang has termed ‘historical justice’¹³⁷: the need to recognize the manner in which the now rich and developed countries treated intellectual property when they were developing, as a solvent of hypocrisy as regards the claimed timeless worth of intellectual property rights. While some supporters of intellectual property rights may argue that the developing countries should learn the lessons of the past, and institutionalize intellectual property early to support and enhance innovation, we suggest that the real lessons of history are closer to the argument of those who, while accepting that intellectual property rights certainly serve a purpose for some economic actors at certain levels of economic development, suggest that such socio-economic benefits cannot be universalized. Our history suggests that there is a threshold moment when disadvantage is finally outweighed by the advantages of protecting intellectual property rights. However, few developing countries are at this point for all their commercial sectors, and thus for historical justice to be served, a return to a more varied diet of global legal protection of intellectual property rights is required.

¹³⁶ Peter Drahos, 1997b. “Thinking Strategically about Intellectual Property Rights” *Telecommunication Policy*, 21:3: 57.

¹³⁷ Chang, 2004: 304.

For Murumba, therefore what is needed at the global level is a ‘justice-constituency’ for intellectual property rights’ governance. This constituency would face two challenges: firstly to articulate ‘what the public purpose is at the global level, instead of simply transposing ready-made purposes and rules from national jurisdictions’; secondly, it would need to ‘formulate rules, norms and concepts that are carefully calibrated to achieve that public purpose’.¹³⁸ This constituency would need to be able to resist (or offer help resisting) the continuing bilateral pressure to ratchet up the standards of protection of IPRs, expressed both within the WIPO’s Patent Agenda and by the office of the USTR and the EU trade negotiators, among others. To some extent this sort of constituency has started to emerge during the discussions and political conflicts that have been articulated at the World Intellectual Property Organization’s various forums regarding the proposal for a WIPO Development Agenda.¹³⁹

Although mechanisms exist at the national level to ameliorate problems that the conflict between private rewards and public benefits might produce, similar mechanisms still remain difficult to enact at the global level. There is little way for developing countries to meaningfully factor in the national social costs of strong intellectual property rights laws into the global political process at the WTO or WIPO. Whereas in national political debates those groups shouldering the immediate social costs may (potentially) have a number of political avenues through which counter measures can be mobilized, with the exception of breaking international agreements there is much less scope for such mediation at the global level. Thus while there are considerable organizational structures for the global governance of IPRs, any mechanisms for the realization of a global polity or community interest within these interactions is currently severely under-developed.

If the political economy of intellectual property rights tells us one thing it is that the world is far too insufficiently globalized for the imposition of a global legal settlement that does not allow for the divergent social developmental interests of all countries to be recognized (and acted upon). Not only is greater historical sensitivity required as regards the manner in which intellectual property rights have been governed in the past, an explicit recognition of the social bargain that lies at the center of the justification of intellectual property is also required. Political campaigners and critics should look to the history of the governance of intellectual property rights for political sustenance.

Our explicit intent in our history project has been to lay out the historical context of contemporary debates about intellectual property rights to provide an intellectual armory for those arguing that further harmonization of intellectual property rights at the global level is not only premature, but is unlikely to be just while there continue to be such wide disparities of wealth in our global society. As we have demonstrated at some length here and elsewhere, the history of intellectual property has been driven by a volatile and changing interaction between technological change, rhetorical argument, legal precedent and political maneuvering. Today is no different, and therefore the politics of intellectual property remain indeterminate and

¹³⁸ Samuel Murumba, 1998. “Globalizing Intellectual Property: Linkage and the Challenge of a Justice Constituency” U PA J International Economic Law 19:2: 459.

¹³⁹ See Christopher May, 2006, ‘Global Monitor: The World Intellectual Property Organization’ NEW POLITICAL ECONOMY, *forthcoming*.

open to continuing political struggle. Embedding the political debates around the (global) governance of intellectual property rights in their historical context, we hope, eventually will produce a more just political economy of intellectual property.