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Part I

Introductory

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1 Diversity versus Harmonization in Patent History
An Overview

Graeme Gooday and Steven Wilf

1.1 Introduction

If intellectual property is a universally recognized category for ordering creative rights, why does every country still have its own distinct patent system?[1] This lack of commonality is not so surprising if we consider that no single system of any kind is generally adopted as a standard across the globe. There are many diverse monetary currencies, units of measurement, and standards of power supply. Certainly, we do not share a common spoken language. Yet amongst this resilient and multifaceted pluralism we have flourished, trading between diverse systems around the world as our ancestors did for millennia.[2] More to the point, those whose living depends upon expertly translating between these systems have well-entrenched interests in maintaining the diversity of the status quo. Having professionally invested in the nonconvergence of their economic, technological, and linguistic systems, we can surely expect their sustained collective heterogeneity to continue.[3]

Why do so many therefore believe the situation for national patent systems is different – that their unification would be both natural and indeed anticipated? Could this be as much an ideal vision as a prediction about where we are heading? One common supposition is that the

[1] World Intellectual Property Office, *Guidelines and Manuals of National/Regional Patent Offices*, www.wipo.int/patents/en/guidelines.html, last accessed August 12, 2019.

[2] For the case of historical pluralism in schemes of measurement see Graeme Gooday, *The Morals of Measurement: Accuracy, Irony and Trust in Late Victorian Practice* (Cambridge: Cambridge University Press, 2004), 13–16.

[3] James Sumner and Graeme Gooday, eds., "By Whose Standards? Standardization, Stability and Uniformity in the History of Information and Electrical Technologies," a special themed issue of *History of Technology*, vol. 28 (London: Continuum, 2008). An excellent collection on the diverse histories of patents and attempts at internationalization can be found in a dedicated special issue on patent history, Ian Inkster and Anna Guagnini, eds., *History of Technology*, vol. 24 (New York/London: Thoemmes Continuum, 2002).

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integration of national patent systems into a single coherent international framework is desirable because it would promote the enhancement of global welfare.[4] To the extent that critics of globalized patent agreements such as the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) of 1995 have associated such overarching treaties with *injustice* to the poorer developing nations, it is not necessarily clear that recent moves to international harmonization are heading in the direction of global welfare.[5] Another stronger view, chiefly emanating from the World Intellectual Property Organization (WIPO), is that such unification is the expected outcome of certain harmonization processes that have been operating for well over a century.[6] However, this view has been contested by Graham Dutfield who argues that there are political limits to complete harmonization. Less developed "follower" nations have little to gain from acquiescing in the specific forms of strong patent protection demanded by powerful innovator countries.[7] In a cognate vein, recent research on the geographies of intellectual property highlights the global variety of intellectual property in the face of pressure toward harmonization.[8] Our contributors continue and extend that interest in the global mapping of the many varieties of patent systems, and place the narrative of harmonization within the broader framework of patent diversity.

In this volume our global historical approach suggests a further reason for suspending teleological assumptions about the long-term prospect of global patent law harmonization. We look at how the legal governance of invention has long embodied a resilient cultural-national element that leads nation-states to resist complete harmonization. It is this key feature that underscores how any *complete* long-term transnational unification of

[4] Alexander James Stack, *International Patent Law: Cooperation, Harmonization and an Institutional Analysis of WIPO and the WTO* (Cheltenham: Edward Elgar, 2006).

[5] Peter K. Yu, "The Global Intellectual Property Order and Its Undetermined Future," *The WIPO Journal* 1 (2009): 1–15.

[6] WIPO's manifesto statement specifies that its "mission is to lead the development of a balanced and effective international intellectual property (IP) system that enables innovation and creativity for the benefit of all." www.wipo.int/about-wipo/en/, last accessed August 12, 2019; James Boyle, "A Manifesto on WIPO and the Future of Intellectual Property," *Duke Law & Technology Review* 9 (2004): 1–12.

[7] See especially Graham Dutfield, "The Limits of Substantive Patent Law Harmonization," in *Patent Law in Global Perspective*, ed. Ruth L. Okediji and Margo A. Bagley (New York: Oxford University Press, 2014), 127–46. For a broader deconstructive perspective, see Mario Biagioli, Peter Jaszi, and Martha Woodmansee, eds., *Making and Unmaking Intellectual Property: Creative Production in Legal and Cultural Perspective* (Chicago: University of Chicago Press, 2011).

[8] Peter Yu, "Intellectual Property Geographies," *The WIPO Journal* 6.1 (2014): 1–15; Margaret Chon, "Notes on a Geography of Global Intellectual Property," *The WIPO Journal* 6.1 (2014): 16–25.

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patent law would be a fraught project that demands overcoming long-entrenched cultural disparities. In any case such unification remains far from being accomplished – whether as the natural course of events or by fiat – and conceivably might never be so. By examining historically the diverse roots and evolutionary patterns of patent systems around the world over the last two centuries, we establish how deeply an entrenched heterogeneity lies at the roots of patent systems – and that it remains a persistent and underestimated challenge to any project of unification.[9]

1.2 The Limits of Harmonization

According to one popular view, of course, all patent systems are expected to be alike in one key sense. This is in respect of the benefits to be reaped through the patent "bargain" or social contract. In exchange for their disclosure of know-how through publication of a patent specification, patentees have typically secured from the state (time-limited) exclusive rights over their technological innovations.[10] Nevertheless we would emphasize that even if each patent system is in that respect like every other, each is like others in its own distinctive ways. We emphasize how diversity of patent cultures emerges from their interrelated yet nevertheless contingent origins and socioeconomic contexts. Most of our contributors show how patent systems across their regions were developed, not from one single fundamental template, but by borrowing from and *adapting* other countries' systems to specific national needs, each retaining some particularities. This is one obvious historical reason why there is still such diversity among national patent systems.

Modern patent systems are an early modern invention that transforms feudal privileges into general legal rules. The English Statute of Monopolies (1624) evolved from an earlier practice of letters of patent whereby monopolies were granted by the monarch as a matter of crown favor. It regularized the assignment and provided patents for new inventions during a term of fourteen years when the patent met the requirements of novelty and not causing harm to the public.[11] Japanese patent

[9] For perspectives on the role of property rights in economic development see Douglass North, "Institutions," *Journal of Economic Perspectives* 5.1 (1991): 97–112; Heino Heinrich Nau, "Institutional, Evolutionary and Cultural Aspects in Max Weber's Social Economics," *Cahiers d'économie Politique / Papers in Political Economy* 49.2 (2005): 127–42.

[10] For a European perspective on this, see Dominique Guellec and Bruno van Pottelsberghe de la Potterie, *The Economics of the European Patent System: IP Policy for Innovation and Competition* (Oxford: Oxford University Press, 2007).

[11] Stathis Arapostathis and Graeme Gooday, *Patently Contestable: Electrical Technologies and Inventor Identities on Trial in Britain* (Cambridge, MA: MIT Press, 2013), 13.

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regulation similarly commenced with a shift from a more feudal governance to an emerging modern state. With the opening of the country during the Meiji period, an imperial decree of 1871 permitted the introduction of a modern form of patent system. This became operational when the national Patent Office at Tokyo was inaugurated in 1888.[12] The differences between these two systems might be explained by the fact that England was a progenitor of Western patent systems while Japanese patent emerged with numerous institutional models in the form of various patent offices around the globe. Global patent diversity partly reflects transplantation – and alteration – of model patent systems created in one place and adopted in another, whether autonomously or under (neo) colonial conditions.

The essays in this volume are the first attempt in over a half century to survey the history of how patent frameworks have developed across the globe and by a variety of mechanisms.[13] Although patent law has become increasingly important economically and thus a subject of substantial attention for a significant number of scholarly disciplines from the sciences to the humanities, there is no single, comprehensive volume describing comparative patent practices in historical perspective. *Patent Cultures* fills this gap by tracing the emergence of different modes of national patenting from the period of imperial expansion in the early nineteenth century through two world wars. Much of the writing covers the period before WIPO was launched in 1967 in an ongoing attempt to harmonize patent law in a unified international framework under the rubric (hitherto not globally adopted) of "intellectual property." Nevertheless, even while becoming an institutional entity in 1970 and notwithstanding its many achievements such as facilitating multinational treaties such as TRIPS,[14] WIPO has not resolved all key issues in a single global framework. In this volume, for example, Tania Sebastian's chapter emphasizes India's role in pioneering a differential approach to the costs of proprietary drugs among "developing" nations. In patented healthcare, national welfare needs can thus override commercial claims to global intellectual property rights.

To illustrate the scope and drama of the topic, let us consider the very limited success of WIPO's attempts in the five years up to 2000 to

[12] Hu, *International Patent Rights*, 139–42.
[13] Guellec and van Pottelsberghe de la Potterie give a brief overview in *The Economics of the European Patent System*, 15–45. The most recent comparable volume is Jan Vojáček, *A Survey of the Principal National Patent Systems* (New York: Prentice-Hall, 1936).
[14] Uruguay Round Agreement: TRIPS (Trade-Related Aspects of Intellectual Property Rights), www.wipo.int/treaties/en/text.jsp?file_id=305907, last accessed August 12, 2019.

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negotiate an international Patent Law Treaty. This aimed to "harmonize and streamline formal procedures in respect of national and regional patent applications and patents," and thus to make such procedures more "user-friendly."[15] Yet even this relatively modest ambition to regularize the formalities of patent applications did not meet with global compliance. To date only thirty-five nations have signed up to this minimal treaty, with large swathes of Latin America, Africa, Asia, and even substantial parts of the industrial Northern hemisphere declining to ratify it. The dissonance becomes even more evident when we look at WIPO's next stage of attempted harmonization of what constituted a legitimate patent specification. This second Treaty addressed six issues of "direct relevance to the grant of patents" on which a common transnational approach was necessary to achieve patent harmonization:

i. the definition of prior art,
ii. novelty,
iii. inventive step/non-obviousness,
iv. industrial applicability/utility,
v. the drafting and interpretation of claims,
vi. the requirement of sufficient disclosure of the invention.[16]

Yet after six unsuccessful years of negotiations from 2000, this broad-ranging approach to complete unification of patent systems came to a halt. Evidently, the deeply entrenched and profound national differences on interpreting and applying these central facets of patenting practice led to irreconcilable difficulties in achieving agreement. As a result, plans for a full Treaty were put on hold, and less ambitious discussions have since continued (until at least 2010) on limited aspects of patenting unification, again without resolution.[17] Such are the divergences in practice between national patenting practices, it is unclear whether any resolution could be achieved; accordingly the framework for agreed patenting practices remains at the subglobal level: the nation-state, federal treaty, or economic treaty – just as it did in the period 1830–1967 covered by the main part of this book.

In fact, recently the legitimacy of patent law itself has come under attack once again, for backlogs and insufficient gatekeeping at patent offices, creating barriers to market entry, patent thickets and trolls, and

[15] WIPO, *Summary of the Patent Law Treaty (PLT) (2000)*, www.wipo.int/treaties/en/ip/plt/summary_plt.html, last accessed March 10, 2014.
[16] WIPO, *Draft Substantive Patent Law Treaty*, www.wipo.int/patent-law/en/draft_splt.htm, last accessed March 10, 2014.
[17] WIPO, *Standing Committee on the Law of Patents*, www.wipo.int/policy/en/scp/, last accessed August 12, 2019.

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uncertain litigation. Nongovernmental organizations (NGOs), grassroots citizen groups, and corporations promoting new technologies increasingly spar over the balance between patent protection and user rights. Public policy advocates, for example, believe that international patent cooperation immunizes patent offices from public-directed goals such as introducing green technologies to counter climate change or ensuring affordable access to pharmaceuticals. Moreover, the recent resurgence of economic nationalism has reopened the question of how nation-states can best utilize the patent system to maximize economic benefits. There is a concern that countries absent a robust international patent framework might utilize their patent laws in anticompetitive fashion to shield domestic industries from foreign competition. However, it is also the case that ceding control over the design of patent systems to international agencies under the rubric of harmonization has entailed a loss of creativity in designing patent governance. This is even more of a challenge as the introduction of new technologies recurrently demands a rethinking of the terms of the patent bargain.[18]

1.3 Competing Patent Historiographies: Social Contracts and Property Rights

One historiographical tradition in patent history starts with the first international agreement that is widely treated as the originating source for WIPO: the "Paris Convention for the Protection of Industrial Property" in 1883.[19] Passing over the shift in terminology from "industrial" to "intellectual" property, accounts in this tradition tend to project backwards into the late nineteenth century an inevitable trajectory toward unification. In prescriptive teleological accounts, the inception of WIPO is thus a natural outcome of integrative processes, not (as one might contrarily infer) that the additional creation of WIPO was motivated by the failure of such spontaneous processes to accomplish integration. The assumption has been that a variety of unifying agreements under the auspices of a United Nations Agency, WIPO, has forged common global substantive and procedural rules for patent protection under the universal rubric of intellectual property. Indeed, this historiography largely traces a broad narrative arc that explains how nations shifted from particular territorial patent laws to embracing the pursuit of a global patent system. In a world of ever-increasing technological exchange,

[18] See discussion in Oekdiji and Bagley, *Patent Law in Global Perspective.*
[19] "Paris Convention for the Protection of Industrial Property of March 20, 1883," www.wipo.int/treaties/en/text.jsp?file_id=288514, last accessed August 12, 2019.

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where international borders seem porous, patent law appears like simply another example of the master narrative of globalization.[20] There have, of course, been many critiques of globalization as both conceptually and politically problematic, and our account adds to those who claim that patents are no more amenable to globalization than other socioeconomic enterprises.

A second, older historiographic tradition starts from a rather different point. In a more geographically descriptive vein, it tells the story of particular national patent systems notably as seen in the work of the international patent agent Jan Vojáček (1937)[21] and Edith Penrose (1951)[22] who conducted wide-ranging surveys of national regimes. Focusing on the contrasts between patent regimes, national systems are described as isolated, cabined illustrations of how countries grappled with the problem of crafting incentives for technological development. More recently, Eda Kranakis has shown how patents might be tools of power deployed by European countries in the sphere of international relations, with differentials between patent systems a key feature of those power relationships. For the most part, however, most national patent historiographies are not in conversation with each other, apparently reflecting disparate political and social negotiations within a given polity.[23] And until now, no contemporary historian has offered historical analysis of the *diversity* of approaches to patenting.

Accordingly, this volume argues that harmonization and resilient diversity remain in dynamic tension with each other. It therefore both synthesizes and departs from the prevailing historiographic traditions described. Looking at the history of modern patent law across the globe, it is impossible to embrace either a triumphalist historical narrative of intellectual property harmonization or a willingness to view national patent histories as unrelated to each other. The issues raised are very much part of the new critical global history. How do we explain the surprising tenacity of patent diversity despite pressure to establish a seamless unified international patent system? What economic and political strategies impel nations to adopt alternative ways of protecting

[20] Among many critiques of globalization on access to knowledge, see for example Ruth Rikowski, *Globalisation, Information and Libraries: The Implications of the World Trade Organisation's GATS and TRIPS Agreements* (Oxford: Chandos, 2005).
[21] Vojáček, *Principal National Patent Systems.*
[22] Edith Penrose, *The Economics of the International Patent System* (Baltimore: Johns Hopkins Press, 1951).
[23] Eda Kranakis, "Patents and Power: European Patent-System Integration in the Context of Globalization," *Technology and Culture* 48.4 (2007): 689–72. A valuable recent collection is Ian Inkster, ed., "Patent Agency in History: Intellectual Property and Technological Change," *History of Technology* 31 (2012).

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innovation? These questions of the balance between the local and the global are at the frontier of many debates in the history of technology as well as law. Hence any attempt at a history of intellectual property globalization must address the substantial resistance to international norms in much the same way as the history of intellectual property protection needs to encompass the long-standing subversive role of piracy.[24]

But beyond the historiographic significance of resurfacing the abundance of different patent cultures in a comparative perspective, there is a compelling policy reason to rethink patent diversity in historical perspective. If we ask what patents are supposed to accomplish and for whose benefit, we find that a revealing assortment of answers is available. Mario Biagioli has shown that patents for invention evolved independently in many different trading and market cultures at different times around the world.[25] Letters of patent in the early modern period were often awarded by monarchs, emperors, or other heads of state for reasons of patronage or favoritism and did not necessarily reflect any novelty in the invention. Biagioli's account shows compellingly a *longue durée* transformation from monarchical privileges to global patent rights based upon some form of objectified criteria. However, the lingering diversity of these criteria has often been somewhat understated, not least in explaining how patent systems came to be so diverse in the first place.

As Fritz Machlup and Edith Penrose pointed out in their classic 1950 paper, four entirely independent arguments generally have long been used to defend the legitimacy and utility of patents for inventions. These arguments served to fend off the many critics who have, at different times, disputed the moral and economic credentials of the patenting enterprise. These arguments are:

(1) A natural and exclusive property right exists in intellectual creations;
(2) Adequate reward for useful inventions is a matter of social justice;
(3) Patents provide the framework for the risk-taking that is necessary for industrial progress;
(4) Patents provide the incentives necessary for the sharing of innovation.

[24] Steven Wilf, "Intellectual Property," in *The Blackwell Companion to American Legal History*, ed. Al Brophy and Sally Hadden (Chichester: Blackwell, 2013), 441–60; Adrian Johns, *Piracy: The Intellectual Property Wars from Gutenberg to Gates* (Chicago: Chicago University Press, 2009).
[25] Mario Biagioli, "Patent Republic: Specifying Inventions, Constructing Authors and Rights," *Social Research* 73 (2006): 1129–72.

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