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ADVANCES IN PATENT RIGHTS ACQUISITION IN INTERNATIONAL PATENT LAW[♦]

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INTRODUCTION

At this centennial event, we have been asked to reflect on the most consequential developments in international intellectual property law of the last 100 years, with an eye towards important future developments as well. This is no small task, given the proliferation of intellectual property-related treaties and the profound changes in business structures, manufacturing, and trade that the last century has seen. The rise of the multinational corporation has been fueled in part by changes to trade laws, and the inclusion of intellectual property in trade-related treaties has facilitated cross-border research and development, manufacturing, and distribution of goods subject to intellectual property rights.¹ I think the most consequential development in the last century both reflected and facilitated these changes, and that is the broad adoption of the Agreement on Trade-Related Aspects of Intellectual Property Law (TRIPS

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[♦] This Article is part of a collection of writings stemming from the *100 Years of International Intellectual Property Law* Panel held during the 100th Annual Meeting of the American Branch of the International Law Association on Saturday, October 22, 2022, in New York City.

^{*} Professor of Law, William & Mary Law School. These remarks were given as part of the intellectual property panel at the International Law Weekend. I am grateful to Rochelle Dreyfuss, Frank Abbott, Peter Yu, Janewa Osei Tutu, and Sean Flynn for their participation in this conversation and panel.

¹ See, e.g., Robert Merges, *National Sovereignty and International Patent Law*, 2019 MICH. ST. L. REV. 1249, 1254 (2019) (suggesting that “patent harmonization tracks the growth in international trade over time.”).

Agreement)²—an agreement made as part of the World Trade Organization Agreement in 1994.³ The TRIPS Agreement has arguably led to the biggest substantive changes in intellectual property law in countries throughout the world in the last 100 years.⁴ As such, it merits discussion. But I am not the first speaker, and there have been other developments that were hugely consequential for intellectual property rights globally. So, instead of focusing on the substantive changes required by the TRIPS Agreement, I want to discuss changes that are ostensibly about the process of intellectual property rights-acquisition, and patent acquisition specifically, that have affected both the practice and substance of intellectual property rights protection. In particular, the centralization of patent filing that was facilitated by the Patent Cooperation Treaty (PCT) also made it nearly inevitable that the United States and Canada would switch from their first-to-invent to first-to-file patent systems. The PCT has changed global patent prosecution and made it more efficient, but this sort of procedural streamlining can often make substantive changes seem inevitable.

The procedural and practical developments in international patent law over the last one hundred years have been important to businesses and practitioners. Moreover, these theoretically less exciting developments have led to changes in how countries weigh and implement the balance inherent in intellectual property law by making it more attractive to adopt the harmonized standard, whatever it is, rather than carefully engaging in the balancing that usually accompanies IP policy-making. International intellectual property law has had an enormous effect on the domestic balancing of intellectual property interests, even when—and maybe especially when—the changes are seemingly process-based. In particular, the treatment of priority dates by various multilateral treaties is seemingly procedural—perhaps even clerical. However, provisions that allow an applicant to rely on a filing date in one country in subsequent filings have ultimately resulted in substantive law changes that have shifted the balancing of IP lawmaking. These shifts affect national laws in least-developed and developing countries in ways that are important and have been well-documented; the change in how countries balance their intellectual property laws has also affected

² Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299 [hereinafter TRIPS Agreement].

³ Marrakesh Agreement Establishing the World Trade Organization, Apr. 15, 1994, 1867 U.N.T.S. 154.

⁴ See Margaret Chon, *Intellectual Property and the Development Divide*, 27 *Cardozo L. Rev.* 2813, 2815–16 (2006) (describing the TRIPS agreement as effecting a “tectonic shift in the landscape of intellectual property law.”); Sarah R. Wasserman Rajec, *Evaluating Flexibility in International Patent Law*, 65 *Hastings L.J.* 153, 155 (2013) (discussing “the strong prescriptions of the Agreement on Trade-Related Aspects of Intellectual Property Rights . . .”).

developed countries. And while procedure is not always of theoretical interest, the dampening of the balance of intellectual property policymaking *is* theoretically exciting.

I. PROCEDURAL DEVELOPMENTS IN GLOBAL PATENT RIGHTS ACQUISITION

Many of the major developments in global patent rights acquisition stem from treaties that were developed in the 1970s, and therefore, well within the last one hundred years. However, procedural cooperation in rights-acquisition is baked into agreements as early as the Paris Convention for the Protection of Industrial Property (Paris Convention), adopted in 1883.⁵

Patent rights are territorial; countries grant rights of exclusion to inventors and those rights are coextensive with their borders. Thus, companies and individuals seeking protection in multiple countries must apply for that protection in each jurisdiction. Before the Paris Convention, inventors or companies that wanted patents in multiple countries had to coordinate by finding patent agents in each country and adhering to the varying laws of each jurisdiction. And the laws varied greatly. Thus, actions that were customary in one country, such as publication of articles or public display of an invention in the year(s) leading up to filing an application, might render the invention unpatentable for lack of novelty elsewhere.⁶ Concerns about losing patentability in foreign countries were made more urgent as the World's Fairs were put on in London, Vienna, and Paris in the nineteenth century. These gatherings were demonstrations of both international interest in foreign innovations and the need for mechanisms that encouraged broad participation without appropriation of innovations or loss of potential patent protection abroad.⁷

The Paris Convention was responsive to these concerns. It included a twelve month right of priority for utility patents and a national treatment provision that required countries to treat nationals of other member

⁵ Paris Convention for the Protection of Industrial Property, Mar. 20, 1883, 828 U.N.T.S. 305 (revised at Stockholm July 14, 1967). The Paris Convention was ratified by eleven European countries in 1883 and joined by the United States in 1887. It currently has 175 signatories.

⁶ For example, the United States had a "grace period" for patent filings of first two years, later only one year prior to filing, so that publication or uses of inventions in that time would not bar the invention from being patented by virtue of no longer being "new." Elsewhere, there is no—or a very limited—grace period, such that suits American inventors considered standard could result in the denial of patents abroad. See, e.g., Margo A. Bagley, *The Need for Speed (and Grace): Issues in A First-Inventor-to-File World*, 23 Berkeley Tech. L.J. 1035, 1050–57 (2008) (discussing how the U.S. system in 2008 offered a robust, one-year grace period in stark contrast to European countries in particular, which had "absolute novelty" requirements).

⁷ See Petra Moser, *How Do Patent Laws Influence Innovation? Evidence from Nineteenth-Century World's Fairs*, 95 AM. ECON. REV. 1214, 1216 (2005).

countries as well as their own citizens.⁸ The right of priority means that after filing in one member country, if an applicant files in other member countries within twelve months, those countries will use the first filing date as the effective filing date. This right to a prior filing date is included in substantive patent law; in the United States, it is codified at 35 U.S.C. 119 and now applies to prior filings in any WTO member state.⁹ This provision was a major change in patent rights-acquisition, important to applicants for purposes of preserving claims to the novelty of the invention. Moreover, the right to delay decisions about foreign filings while preserving novelty is also useful to companies because it buys time as they decide whether to expand into international markets and whether to go through the expense and process associated with foreign filings. In contrast, the other major accomplishment of the Paris Convention—the imposition of a national treatment provision—did not require major substantive changes to most patent laws, but instead required extension of existing substantive patent rights to nationals of other member countries. In other words, national treatment “is a reciprocity requirement, not a requirement of minimum standards of protection.”¹⁰ Together, these two provisions made foreign patent rights available and accessible to member country inventors and investors and together with its copyright corollary, began the trend of multilateral intellectual property treaties that have proliferated ever since, many through the World Intellectual Property Organization (WIPO)¹¹ and some through the WTO.

The Paris Convention was concluded well over one hundred years ago in a much different legal environment, when each member country still had its own substantive patent law and there was great variety among them. Thus, each country made its own determinations of patentability, based on its processes and laws. As a result, companies that had an eye on international markets had their work cut out for them when engaging in patent prosecution in multiple jurisdictions. But just about one hundred

⁸ See Sarah R. Wasserman Rajec, *The Harmonization Myth in International Intellectual Property Law*, 62 ARIZ. L. REV. 735, 751-752 (2020) (discussing the provisions of the Paris Convention).

⁹ See 35 U.S.C. 119(a), which provides:

An application for patent for an invention filed in this country by any person who has, or whose legal representatives or assigns have, previously regularly filed an application for a patent for the same invention in a foreign country which affords similar privileges in the case of applications filed in the United States or to citizens of the United States, or in a WTO member country, shall have the same effect as the same application would have if filed in this country on the date on which the application for patent for the same invention was first filed in such foreign country, if the application in this country is filed within 12 months from the earliest date on which such foreign application was filed.

¹⁰ Wasserman Rajec, *supra* note 8, at 751.

¹¹ WIPO is a U.N. agency established in 1967. See generally Convention Establishing the World Intellectual Property Organization, art. 1, July 14, 1967, 828 U.N.T.S. 3.

years after the Paris Convention, there were new and major developments in global patent rights acquisition.

A set of multilateral agreements in the late twentieth century moved well beyond the Paris Convention's preservation of a priority date by allowing patent applicants to file a single application and send it to patent offices worldwide, after a first round of examination, for further examination pursuant to national patent laws. Moreover, within some regions, patent applicants can prosecute a single application that results in the issuance of patent rights in all the countries in the region. There are such regional agreements in Africa and Europe. And the latest progress towards efficiency of patent rights acquisition is soon to come, with the Unitary Patent and Unified Patent Court¹² set to enter into force in Europe in June 2023. The Unitary Patent is a single patent that will be valid in all states that ratify the agreement and enforceable in a court that is granted jurisdiction to make determinations for the contracting states. These mechanisms have made life easier for patent applicants to preserve priority abroad and to obtain foreign patent rights by simplifying the initial process and delaying the need for decisions until years into the patenting process, when an inventor has more knowledge about their likelihood of success in patenting and the potential scope of their market.

The Patent Cooperation Treaty (PCT),¹³ concluded in 1970 and administered by WIPO, allows patent applicants to file a single application centrally and later send it to selected patent offices worldwide for further prosecution. While there were only eighteen contracting states when the PCT entered into force in 1978,¹⁴ there are now 157 contracting states.¹⁵ And it is heavily used; in 2021, there were 277,500 PCT applications.¹⁶ The process of filing PCT applications includes an international stage and a national stage. During the international stage, the single application is subject to preliminary examination, resulting in an international preliminary examination report on patentability.¹⁷ Following this report, the applicant can amend the application and then choose which countries they elect to continue the application process. The criteria for the preliminary report are uniform, allowing for this

¹² Agreement on a Unified Patent Court No. 175/01 2013 O.J. (June 20, 2013).

¹³ Patent Cooperation Treaty, June 19, 1970, 28 U.S.T. 7645.

¹⁴ Jay Erstling & Isabelle Boutillon, *The Patent Cooperation Treaty: At the Center of the International Patent System*, 32 WM. MITCHELL L. REV. 1583, 1584 (2006).

¹⁵ *The PCT Now Has 157 Contracting States*, WIPO, https://www.wipo.int/pct/en/pct_contracting_states.html [<https://perma.cc/Q9H6-57ZU>].

¹⁶ WIPO, PCT YEARLY REVIEW 2022: THE INTERNATIONAL PATENT SYSTEM 12 (2022), <https://www.wipo.int/edocs/pubdocs/en/wipo-pub-901-2022-en-patent-cooperation-treaty-yearly-review-2022.pdf> [<https://perma.cc/GQV6-6HWP>].

¹⁷ Jay Erstling & Isabelle Boutillon, *The Patent Cooperation Treaty: At the Center of the International Patent System*, 32 WM. MITCHELL L. REV. 1583, 1590 (2006) (describing the international phase of a PCT application process).

centralized process. However, patent laws are still generally territorial,¹⁸ and a patent applicant needs to complete the process in each country in which they want to obtain a patent. Therefore, there may still be requirements to be met and amendments required at the country level. Still, the PCT process streamlines the application and priority process.

There are other process and form-based benefits to applicants from filing PCT applications. For example, an applicant can file in their primary language for the most part, and file the application in their national patent office. And because the PCT allows for applicants to file only one application that is later distributed to all the patent offices designated by the applicant, there is no need to format multiple applications for different jurisdictions. These developments are not what scholars typically devote much time to, because there are not many theoretically interesting or generalizable issues related to the formatting of documents or translation of patent text. However, these provisions require significant coordination by member countries and confer significant savings on inventors who would otherwise have to pay for the formatting and translation of highly technical language and coordinate the foreign filing of patent applications. In this way, the PCT has led to major cost savings for applicants who wish to pursue global patent protection and has brought down barriers to obtaining protection abroad. Another benefit to the PCT process for applicants is that it delays the need to make a decision on which national applications they will pursue, allowing a total of between thirty and thirty-four months from the time of application to the decision of where to pursue national applications.¹⁹ This time can be useful to inventors for gathering information on the prior art that might narrow the scope of the patent that is ultimately granted, collecting market information about various countries, and generating investment.

Another major development in patent rights acquisition is the development of regional patent agreements. While patents are generally territorial for enforcement purposes, some regions have come to agreements that allow for regional decision-making on the grant of a patent. As a result, applicants may complete the entire prosecution

¹⁸ See, e.g., Sarah R. Wasserman Rajec, *Infringement, Unbound*, 32 HARV. J.L. & TECH. 117, 155-60 (2018) (explaining that this generally means that each country's granting authority grants a patent that can be enforced by domestic tribunals and within that country's territory. Regional patent grants are discussed below, which somewhat stretch the idea of territoriality in patent grants. The Unitary Patent and Unified Patent Court that are set to enter into force in June 2023 are also discussed below, which further stretch the idea of territoriality by allowing for centralized enforcement of a regional patent. In addition, even in countries that do not participate in these regional agreements such as the United States, there are doctrines that occasionally extend ideas of infringement to incorporate acts outside of the territory.).

¹⁹ PAUL GOLDSTEIN & MARKETA TRIMBLE, *INTERNATIONAL INTELLECTUAL PROPERTY LAW: CASES AND MATERIALS* 488-89 (5th ed. 2019).

process through one of these regional bodies, resulting in a set of issued patents that can potentially cover all the countries that are members of the agreement. These regional agreements include the African Regional Industrial Property Organization (ARIPO), the Eurasian Patent Office (EAPO), the European Patent Office (EPO), and the African Intellectual Property Organization (OAPI). As one example, the European Patent Convention was signed in 1973 and entered into force in 1978. Under the convention, applicants file a single application and go through one process, indicating at the end of the process the countries in which they want to obtain patents. The European Patent Office (EPO) issues patents for each of those countries through a central process. Once issued, the patents are creatures of national law and their enforcement is still state-by-state. Another example is the African Regional Intellectual Property Organization (ARIPO) formed in 1976. Like the EPO, ARIPO provides for centralized examination that results in national rights.

All these late twentieth century agreements let patent holders delay expensive decisions and allow for interactions with central organizations rather than requiring interested applicants to hire local counsel in each country in which there is potential interest in future protection. They also can serve as money-savers for countries that can pool resources for patent examinations.

There are other forms of cooperation among countries that have made it easier for applicants and international bodies to learn about the state of the art and to coordinate international searches related to patentability. While the topic may seem dry, in the late 1960s, through the Strasbourg Agreement of 1971, an international patent classification system was established for fields and subfields of technology. Coordinating the merging of classification systems from many countries is a large and unenviable task. Europe had consolidated its classification system slowly over time, with the Council of Europe setting up a European classification for patents in 1954. The Strasbourg Agreement on International Patent Classification (IPC) entered into force in 1975, adding an international classification to each patent. Then, in 2013, the EPO and USPTO launched the Cooperative Patent Classification System, which is more detailed than the IPC. As a result, there is a coordinated system for searching prior art and patents. This coordination of classification lowers the information costs of searching for prior art in foreign countries.

The changes discussed above have greatly lowered the costs of considering and engaging in international patent filing. They have also standardized much of the process of filing patent applications. And, for the most part, they don't appear to be particularly substantive. However,

these treaties have had ripple effects on substantive patent law as well, which I turn to now.

II. TREATIES ON PATENT RIGHTS ACQUISITION HAVE AFFECTED SUBSTANTIVE DOMESTIC PATENT LAW

Generally, when patent law policy is at stake, there is an acknowledgment of the need to balance society's interest in encouraging innovation with the public interest in access to that innovation. Often, industry representatives and interest groups (such as patient advocacy groups or software user groups) organize to be heard in debates about proposed changes. When global procedural efficiency is at stake, however, the potential benefits of procedural harmonization may be so strong that the argument is reframed into "why *not* change the law in order to harmonize?" The change from the first-to-invent system to the first-to-file system in the United States followed this pattern. A major substantive change of patent law began to seem inevitable following the seemingly procedural changes of the PCT and other treaties of the time.

The Paris Convention, the PCT, and the other regional agreements discussed above all include provisions that make it easier to file a single application and rely on that application date during the patent prosecution process in multiple countries. Importantly, these treaties allow a patent application to be judged on its novelty as of the date of the first global filing—the priority date. Nothing the applicant or any third party does after that date will render the application not novel, because novelty is measured as of the date of filing. These provisions seem fairly straightforward and mechanical; the applications that are sent to individual countries' patent offices will be identical, and so the treaties seemingly only affect the process of filing an application. However, these ostensibly procedural provisions and mechanisms that make filing easier have made changes to domestic laws seem inevitable. Treaties affecting patent rights acquisition have changed domestic patent law by making it more attractive to harmonize to whatever substantive patent laws support the process of rights-acquisition elsewhere, blunting the natural balance of patent law interests. The gains in procedural ease of patent filing that the PCT facilitated eventually became significant justification for the United States' move from a first-to-invent to a first-to-file system of priority.

Patents in the United States were long granted to the person who could lay claim to being the first inventor. Determining priority of invention required determining the date an applicant could claim to have conceived of the invention and whether any third parties had disclosed the invention prior to that date. An inventor could also destroy novelty through their own actions before the filing date, meaning that both the

date of invention and the date of filing were important for determining patentability in the United States. As a result of this system, the United States was considered a “first to invent” country, in contrast to the rest of the patent-granting world, which adhered to a “first to file” system, granting a patent to the first inventor to file a patent application rather than engaging in complex factual determinations on the timing of various stages of invention. The Paris Convention did not require much in the way of substantive change to U.S. laws. It required that U.S. patent law protection be equally available to foreign nationals of member countries and required the use of a foreign filing date when certain conditions were met rather than the U.S. filing date. It did not dictate what that date was used for.

In contrast, while the PCT was primarily about process, its standardization of that process did result in substantive legal changes.²⁰ At about the same time as the PCT was being negotiated, a 1966 Presidential Commission in the United States studying patent law recommended that the U.S. change its patent system to a first-to-file system.²¹ One of the reasons given for this change was that it would “bring U.S. practice into harmony” with those of other patent systems.²² No change was made at the time, but this harmonization argument flows from the PCT process discussed supra. The patent search that is part of the PCT process is a search for prior art, and therefore the relevant priority date matters; in the United States, the filing date was not the only relevant priority date. So, while the PCT did not require the U.S. to change its system, and in fact it took many more years before that happened, the idea that the process for obtaining a patent in the United States should be consistent with that in other countries persisted. The question of whether the United States should switch to a first-to-file system came up periodically after the first Presidential Commission recommended it, both domestically²³ and in treaty negotiations at WIPO.²⁴ While the first-to-invent system was seen as fairer and more

²⁰ See Gerald J. Mossinghoff & Vivian S. Kuo, *World Patent System Circa 20XX, A.D.*, 38 IDEA 529, 536 (1998).

²¹ PRESIDENT'S COMM'N ON THE PAT. SYS., TO PROMOTE THE PROGRESS OF USEFUL ARTS, S. DOC. NO. 90-5, at 13 (1st Sess. 1966), <https://digitalcommons.law.scu.edu/cgi/viewcontent.cgi?article=1010&context=historical> [<https://perma.cc/9DRE-WUXU>].

²² *Id.* at 14.

²³ See ADVISORY COMM'N ON PATENT LAW REFORM, 102D CONG., REP. TO THE SECRETARY OF COM. 11 (1992), https://ipmall.law.unh.edu/sites/default/files/hosted_resources/lipa/patents/patentact/ACPLR-1.pdf [<https://perma.cc/4HUB-NT4Y>] (classifying the change to first-to-file as one related to global patent law harmonization and suggesting that it should be made if favorable conditions could be extracted for the change).

²⁴ See Standing Comm. on the Law of Pats., Draft Treaty Supplementing the Paris Convention for the Protection of Industrial Property as far as Patents Are Concerned, U.N. Doc. PLT/DC/3, art. 9 (Dec. 21, 1990), https://www.wipo.int/edocs/pubdocs/en/wipo_pub_351.pdf [<https://perma.cc/BL6H-JALP>].

favorable to smaller entities, it was also a very costly system. Applicants had to develop and rely on laboratory notebooks and participate in hearings that relied on complex evidence to prove that they had conceived of an invention prior to others; this system was also costly to administer.²⁵ Ultimately, the 2011 Leahy-Smith America Invents Act (AIA) changed the law in the United States, moving the U.S. from its first-to-invent system to a first-to-file system for patents filed on or after March 16, 2013.²⁶ Canada, too, felt the international pressure to harmonize the process of obtaining patent rights by making the substantive change to a first-to-file system of priority.²⁷

CONCLUSION

The past one hundred years have seen extensive changes to the global intellectual property law landscape. The TRIPS Agreement of the WTO required countries to grant minimum rights in intellectual property, resulting in extensive substantive changes for many countries, in patent law protection as in other areas of IP.²⁸ Still, the more procedural changes wrought by the PCT and regional agreements that followed may have had at least as great an impact on the practice of patent law. And, as I have discussed, these procedural treaties have often led to substantive changes that become nearly inevitable in retrospect. These cost-saving, efficiency-increasing process mechanisms have the effect of making sweeping changes to developed countries' patent systems seem desirable, with perhaps less engagement on what is lost and if there should be counterweights or balancing measures. Looking forward, it makes sense to be aware of these potential effects as patent rights acquisition becomes ever more centralized.

²⁵ See, e.g., Donald R. Dunner, *First to File: Should Our Interference System be Abolished?*, 68 J. PAT. & TRADEMARK OFF. SOC'Y 561 (1986) (arguing that we should "join the rest of the world in adopting a first-to-file system," based on arguments about the relative cost of administering the first-to-invent system).

²⁶ See Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011).

²⁷ Dunner, *supra* note 25 (Canada amended its patent law in 1989 to a first-to-file system of priority).

²⁸ Wasserman Rajec, *supra* note 4, at 167 (describing how TRIPS included requirements that "address patent-eligible subject matter, patentability standards, and the duration and scope of rights.").