

JUSTIFYING AN INTERNATIONAL PATENT SYSTEM:  
THEORETICAL AND PRAGMATIC CONTEMPLATION OF PATENT HARMONIZATION  
BASED ON PROPERTY THEORIES

A Dissertation

Presented to the Faculty of the Graduate School

of Cornell University

In Partial Fulfillment of the Requirements for the Degree of

Doctor of the Science of Law

by

Dongwook Chun

May 2017

© 2017 Dongwook Chun

JUTIFYING AN INTERNATIONAL PATENT SYSTEM:  
THEORETICAL AND PRAGMATIC CONTEMPLATION OF PATENT HARMONIZATION  
BASED ON PROPERTY THEORIES

Dongwook Chun, J.S.D.

Cornell University 2017

Globalization is a double-edged sword for innovation. It can give innovative companies the opportunity to go beyond national boundaries, but at the same time can jeopardize their innovations without proper protection. In order to solve the problem of costs, delay, uncertainty, and unpredictability that fragmented patent system has caused, it has been argued that the harmonization of domestic patent laws is necessary. Countries have responded this by successfully concluding Patent Cooperation Treaty (PCT) and Trade Related Intellectual Property Rights (TRIPS). International communities have particularly focused on harmonizing procedural issues to share administrative works of search and examination. This work-sharing mechanism is effective in alleviating works of patent offices and reducing application costs, which can consequentially contribute to improving patent quality.

However, there have been growing conflicts around substantive harmonization. Developing countries argue that the benefits of patent harmonization was unevenly distributed, and resist further development of international patent laws. Historically, patent harmonization was discussed on the foundation of utilitarian theory. As a result, it was negotiated within the trade forum where countries can discuss compensation for Kaldor-Hicks improvement. However, the compensation mechanism of trade concession has not worked properly, and the relationship between trade and intellectual property (IP) is vague and tenuous at best. Thus, there is growing belief among developing countries that the international patent system is a coerced agreement that should be resisted rather than embraced.

In this situation, it is necessary to consider delinking patent harmonization from trade negotiation. Rather than depending on utilitarian calculation, it is worth adopting property theories as a normative justification for further harmonization. Among many property theories, Locke's labor theory can deliver balanced guidance by highlighting the natural-rights aspects of property, as well as recognizing a role of government. This fundamental paradigm shift of patent harmonization from the trade theory to property theories can provide a normative guidance to confront current issues in international intellectual property laws, such as biotechnology, traditional knowledge, and biodiversity.

## BIOGRAPHICAL SKETCH

Dongwook Chun was born in Seoul, South Korea. He majored in Electrical Engineering in Seoul National University. From 2002, he has served as a public official in the Ministry of Trade, Industry, and Energy (MOTIE). He began his career as a Deputy director in the Semiconductor division, and experienced Regional Economic Development division, and Petroleum division. In 2010, he was promoted to the Senior deputy director, and positioned as a trade lawyer. He was responsible for drafting ‘New Trade Roadmap’ for the new administration and represented Korean government in several WTO litigations. He also served as a lieutenant in the Republic of Korea Airforce (ROKAF) for three years and was recognized with several Ministerial Awards. He received his LL.M. degree at Cornell Law School in 2010, and is an active member of California Bar Association from 2011. He is currently working as a Senior Private Sector Specialist in the Investment Climate Department in the World Bank Group, Washington D.C.

This dissertation is dedicated to my beloved grandmother,

*Min Gui-nam (1910 - 2009)*

who showed us endless love and ultimate sacrifice

with the holy spirit of Saint Julia.

## ACKNOWLEDGMENTS

When I was a college freshman in 1997, I was asked what I wanted to be in the future. Filled with confidence, I asked my grandmother what she really hoped me to be. She answered, “to be a doctor!” Yes. That was my old but forgotten dream. However, being a doctor became the goal of other universe as I started working in government just after graduation. I was extremely busy for orienteering, working, learning, and practicing skills. I thought I would not have any more opportunity for studying in my life.

However, life changes very quickly. Thanks to the Rotary Foundation, I started studying at Cornell Law School. When I look back on those days, it was one of the toughest time in my life. Extensive reading, logical thinking, and intensive testing in the world-class law school was much more challenging and even frustrating than I had ever imagined. Moreover, during my LL.M year, I heard that my grandmother passed away. I was about to giving up.

In that situation, two occasions raised me up. Through a tough petition, I was able to sit for the California Bar Exam, and I made it. This gave me an incredible confidence, and stood up to pursue my old goal – being a doctor. At this moment, I fatefully met the savior of my life, professor Underkuffler. She is absolutely the greatest teacher as well as a caring mentor I have ever met. I cannot thank her enough for waiting for me with strong support and belief. I also thank professor Hockett and Liivak for their excellent teaching and clear guidance.

This J.S.D would not be possible without the sponsorship of Rotary Foundation. I would appreciate Rotary District 3650 for presenting an Ambassadorial Scholarship, and I also thank Ithaca Sunrise Rotary Club and Ithaca Rotary Club for advising and counseling. Rotary Foundation not only gave me financial assistance, but also introduced many good friends. Peter Brellochs was an excellent counselor to help me settle in Ithaca, and Janet Steiner, Jessie Ripple, David and Trisha Flaccus have shown generous hospitality to help this lonely family from Korea. They took care of us like their family, and I was very fortunate and happy to live in Ithaca with these great Rotarians.

There were more than thousands of occasions to make me think quit, but it was my family that persuaded me go back to the track. It was very sad that I lost my grandmother who inspired me to be a doctor, but I still have a united family that I always appreciate and acknowledge, including my father, mother, sisters, brothers, and nephews. As finishing this J.S.D. project, I am very happy that I can be their proud son, brother, sister, and uncle. Finally, I sincerely thank my wife, Jain Kim, and her family to lead me this tough path and push me until the end. She is undoubtedly a generous wife, lovely friend, wise advisor, and amiable partner. I also hope that my kids, Aynn Chun and Kyungmin Chun, will be proud of their father when they are grown up, for achieving academic and professional accomplishments at the same time.

*With congratulations on Kyungmin's 2<sup>nd</sup> birthday*

April 28, 2017

Washington D.C.

## TABLE OF CONTENTS

<b>Chapter 1 Introduction<sup>i</sup></b> .....	<b>1</b>
I. Background .....	1
II. Two Types of Harmonization .....	4
III. Substantive Patent Harmonization from a Property Perspective .....	6
IV. Research Outline .....	10
<b>Chapter 2 The Reason and Necessities for Patent Harmonization</b> .....	<b>12</b>
I. The Inherent Diversity of the Patent System .....	12
II. The Effect of Globalization on the Patent System .....	16
III. The Definition of Patent Law Harmonization .....	26
IV. Two Types of Patent Harmonization .....	35
V. Issues Around Two Types of Patent Harmonization .....	38
<b>Chapter 3 Procedural Harmonization<sup>ii</sup></b> .....	<b>43</b>
I. The Value of Procedural Harmonization .....	43
II. Strategies for Work-sharing .....	44
III. Suggestions for effective Work-sharing .....	61
IV. The Limitation of Procedural Harmonization .....	74
<b>Chapter 4 Substantive Harmonization and Utilitarian Justification<sup>iii</sup></b> .....	<b>77</b>
I. Substantive Harmonization .....	77
II. Utilitarian Theory .....	79
III. The Limitation of Utilitarian Argument .....	96
IV. Conclusion .....	103

<b>Chapter 5 Substantive Harmonization and Property Theory .....</b>	<b>105</b>
I. Normative Property Theory to Justify Patent Harmonization .....	105
II. Patent as Property in an International Context .....	108
III. Difference between Patent and Conventional Property Rights .....	114
IV. Property Theories and Patent Harmonization .....	118
V. Copyright Harmonization based on Personhood Theory .....	126
VI. Conclusion .....	132
<b>Chapter 6 Locke’s Theory for Patent Harmonization .....</b>	<b>134</b>
I. Locke’s Property Theory and Patent Rights .....	136
II. The Characteristics of Locke’s Theory .....	138
III. Locke’s Theory and Patent Harmonization .....	150
IV. Two Layers of Locke’s Theory to Justify Patent Harmonization .....	164
<b>Chapter 7 Policy Issues: the “Triplets” .....</b>	<b>167</b>
I. Defining the “Triplets” .....	169
II. The Biotechnology as a Separate Issue .....	177
III. Traditional Knowledge Associated with Genetic Resources .....	183
IV. Two Issues of CBD .....	187
V. Conclusion .....	197
<b>Chapter 8 Conclusion .....</b>	<b>199</b>

---

<sup>i</sup> Part of this chapter was included in my previous publication, Dongwook Chun, *Patent Law Harmonization in the Age of Globalization: The Necessity and Strategy for a Pragmatic Outcome*, 93 JOURNAL OF PATENT AND TRADEMARK OFFICE SOCIETY 127 (2011).

<sup>ii</sup> This chapter was published in Mar. 2012, in Dongwook Chun, *Justifying Patent Harmonization*, 12 ASPER REVIEW OF INTERNATIONAL BUSINESS AND TRADE LAW 99 (2012)

<sup>iii</sup> This chapter was published in Dongwook Chun, *Patent Law Harmonization in the Age of Globalization: The Necessity and Strategy for a Pragmatic Outcome*, 93 JOURNAL OF PATENT AND TRADEMARK OFFICE SOCIETY 127 (2011).

# CHAPTER 1

## INTRODUCTION

### I. BACKGROUND

Patent systems are designed to “incentivize innovations, encourage development, and commercialize inventions.”<sup>1</sup> Initially, the effectiveness of patent law was restricted to national boundaries so as to encourage inventive and innovative local activities.<sup>2</sup> Later, the concern grew beyond national territories paralleling the globalization and expansion of international trade.<sup>3</sup> At this stage, proposals to further harmonize domestic patent laws at the international level<sup>4</sup> have understandably attracted considerable attention.<sup>5</sup> As intellectual property (IP)

---

<sup>1</sup> Roberto Mazzoleni and Richard R. Nelson, *Economic Theories about the Benefits and Costs of Patents*, 32 J. ECON. ISSUE. 1031, 1033 (1998).

<sup>2</sup> WORLD INTELLECTUAL PROPERTY ORGANIZATION (WIPO), THE IMPACT OF THE INTERNATIONAL PATENT SYSTEM ON DEVELOPING COUNTRIES 4 (2003), available at [http://www.wipo.int/meetings/en/doc\\_details.jsp?doc\\_id=17556](http://www.wipo.int/meetings/en/doc_details.jsp?doc_id=17556) (last visited Feb 02, 2016).

<sup>3</sup> *Id.*

<sup>4</sup> World Intellectual Property Organization (WIPO), *Standing Comm. on the Law of Patents, Report*, at 1–2, WIPO Doc. SCP/10/11 (June 1, 2005); WIPO, Standing Comm. on the Law of Patents, *Information on Certain Recent Developments in Relation to the Draft Substantive Patent Law Treaty (SPLT)*, at 2–3, WIPO Doc. SCP/10/8 (Mar. 17, 2004); WIPO, Standing Comm. On the Law of Patents, *Draft Substantive Patent Law Treaty (SPLT)*, at 2, WIPO Doc. SCP/10/2 (Sept. 30, 2003).

<sup>5</sup> Jerome H. Reichman and Rochelle C. Dreyfuss, *Harmonization Without Consensus: Critical Reflections On Drafting A Substantive Patent Law Treaty*, 57 DUKE L.J. 85, 87.; Also See generally WIPO, Open Forum on the Draft Substantive Patent Law Treaty (SPLT), Geneva, Switz., Mar. 1–3, 2006 [hereinafter WIPO Open Forum],

continues to grow as a component of global trade, the cost expended in worldwide protection and enforcement have soared.<sup>6</sup> Those involved in this process also have to bear increasing frustration because of the need to pursue multiple actions concerning infringement in cross-border disputes.<sup>7</sup>

Thus, it had been widely recognized that territorial patent rights may have significant limitations in ensuring the economic benefits and incentives for inventors in the age of globalization. In this situation, it seemed reasonable for several industrialized countries to consider trans-national patent rights that are effective beyond territorial boundaries. They initiated international discussion for ‘patent harmonization’ to make the patent laws of each country similar or coherent.

The 1883 Paris Convention on Industrial Property Protection was a reflection of the concerns of earlier days.<sup>8</sup> The dramatic turning point in the recent phases of development concerning international patents came with the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs) in 1995, which established substantive principles that apply to all members of the World Trade Organization (WTO). TRIPs in fact had a substantial

---

available at [http://www.wipo.int/meetings/en/2006/scp\\_of\\_ge\\_06/scp\\_of\\_ge\\_06\\_inf1.html](http://www.wipo.int/meetings/en/2006/scp_of_ge_06/scp_of_ge_06_inf1.html) (hosting the presentation of papers, lectures, and speeches on the international harmonization of patent law).

<sup>6</sup> See *id.*; Also See Gretchen Ann Bender, *Clash of the Titans: The Territoriality of Patent Law vs. The European Union*, 40 IDEA 49, 53 (2000); Erwin F. Berrier, Jr., *Global Patent Costs Must Be Reduced*, 36 IDEA 473, 473 (1996).

<sup>7</sup> See *id.*; Also See, e.g., Int’l Ass’n for the Prot. of Intellectual Prop. (AIPPI), Question Q174—Jurisdiction and Applicable Law in the Case of Cross-border Infringement of Intellectual Property Rights, 2003/I Y.B. 827–28, Oct. 25–28, 2003, available at [http://www.aippi.org/reports/resolutions/Q174\\_E.pdf](http://www.aippi.org/reports/resolutions/Q174_E.pdf) (recognizing the need for a fairer and more efficient method of resolving cross-border controversies); European Max-Planck Group for Conflict of Laws in Intellectual Prop., *Exclusive Jurisdiction and Cross-Border IP (Patent) Infringement: Suggestions for Amendment of the Brussels I Regulation*, in 29(5) EUR. INTELL. PROP. REV. 195, 195–96 (2007) (suggesting the need to amend the Brussels Regulation on Jurisdiction and Enforcement of Judgments in Civil and Commercial Matters, EC Regulation No 44/2001, to improve the efficiency of transnational dispute resolution).

<sup>8</sup> WIPO, *supra* Note 4, at 4.

international impact because it signaled the inevitability of a more harmonized and stronger global patent system.<sup>9</sup>

Along its history throughout the 19th and 20th century, patent harmonization has been at the center of heated debate in the international community. The business sectors of several developed countries strongly argue that patent harmonization is necessary to confront free movement of goods and ideas in the age of open economy. They further argue that it is necessary to create the certainty of legal rights, enhance the value of a patent, and reduce legal fees. However, many countries oppose this idea on the basis of the principle of national sovereignty and territoriality. Specifically, they claim that patent law should be a very local matter reflecting the policy goals of each state and its particular economic and social situations. Patent harmonization, they claim, would undermine their autonomy. These countries view patent harmonization as an instrument for certain countries to exert unjustified pressure for their own benefits.

Especially in the post-TRIPs era since 1995, patent harmonization became increasingly problematic for many developing states,<sup>10</sup> as the implementation of TRIPs has been increasingly slow and costly and a source of domestic opposition. Developing countries became very suspicious that the economic benefits of the international patent system might be unevenly distributed in favor of certain developed countries.<sup>11</sup> The United States and the European Union added to this perception by pressuring developing countries to sign ‘TRIPs-plus’ bilateral agreements containing higher standards than those found in TRIPs.<sup>12</sup>

---

<sup>9</sup> *Id.*

<sup>10</sup> Laurence R. Helfer, *Regime Shifting: The TRIPS Agreement and New Dynamics of International Intellectual Property Lawmaking*, 29 YALE J. INT’L L. 1 24.

<sup>11</sup> *Id.*

<sup>12</sup> *Id.*

In addition, in 2000, several industrialized states helped the World Intellectual Property Organization (WIPO) initiate international discussions on the Substantive Patent Law Treaty (SPLT) to realize the adoption of identical rules granting and enforcing a patent. As a result, a growing belief has been fostered among developing countries that “the international patent system is a coerced agreement that should be resisted rather than embraced.”<sup>13</sup> Supporting this opinion, the United Nations Development Programme (UNDP) released a report in 2003 asserting that the “relevance of TRIPS is highly questionable for large parts of the developing world.”<sup>14</sup> The report urged developing countries to “begin dialogues to replace TRIPS . . . with alternative intellectual property paradigms” and, in the interim, to “modif[y] . . . the way the agreement is interpreted and implemented.”<sup>15</sup>

## II. TWO TYPES OF PATENT HARMONIZATION: PROCEDURAL AND SUBSTANTIVE

In order to better understand and resolve these conflicts around patent harmonization, it is helpful to categorize it into two types: procedural and substantive harmonization. First of all, procedural harmonization usually means a measure to harmonize the process necessary for granting patents. It is targeted to reduce patent backlogs by implementing similar procedures

---

<sup>13</sup> *Id.*

<sup>14</sup> Helfer, *supra* Note 10, at 3; See also UNITED NATIONS DEVELOPMENT PROGRAMME, MAKING GLOBAL TRADE WORK FOR PEOPLE 221, 222 (2003), available at <http://www.undp.org/dpalpublications/globaltrade.pdf>.

<sup>15</sup> *Id.*

and criteria and to prevent duplicate works in the examination process, and does not necessarily require a change in domestic patent laws. As a result, procedural harmonization has a strong possibility of less conflict and more cooperation among countries because it does not hurt their sovereign power or autonomy. Patent Offices can voluntarily explore plausible ways to alleviate the administrative burdens, and eventually make the patent process cheaper and faster. In this sense, procedural harmonization can provide practical solutions to solve the problem of fragmented patent systems.

On the other hand, substantive harmonization includes standards and rules for granting patents. It also covers the scope and strength of patent rights, such as the duration of patent rights.<sup>16</sup> It has been generally agreed that substantive harmonization is essential to resolve fundamental problems of a fragmented patent system that mere procedural harmonization cannot answer.<sup>17</sup> However, progress toward substantive harmonization is slow, costly and noisy because it requires every country to adopt similar, or even uniform, model laws into its domestic legal system. As countries have different views from their own economic situations, innovative capacities, and cultural environments, it is very hard to reach an agreement on this issue.

For example, developed countries with high innovative capacity strongly support this idea of substantive harmonization, and they press developing countries to adopt stronger patent systems as a form of international agreements. The international patent communities also have been supportive of the idea of uniformity, highlighting the value of creating a uniform patent law

---

<sup>16</sup> Reichman & Dreyfuss, *supra* note 5 at 90; See also Karen M Hauda, “The Role of the United States in World-Wide Protection of Industrial Property” in Frank Gotzen, ed, *The Future of Intellectual Property in the Global Market of the Information Society* (Brussels: Bruylant, 2003) 89 at 97.

<sup>17</sup> See *id.*

on a global scale.<sup>18</sup> As a result, participating countries in the World Intellectual Property Organization (WIPO) and the World Trade Organization (WTO) have concluded a number of treaties and agreements in place that articulate the concept of substantive harmonization of patent laws.<sup>19</sup> However, developing countries argue that the diversity of country-specific patent laws is natural and valuable in itself. They oppose the idea of patent harmonization by arguing that a consolidation of existing patent systems into a single monolith would impoverish the field: it would be a mass extinction of legal species.<sup>20</sup>

### **III. SUBSTANTIVE PATENT HARMONIZATION FROM A PROPERTY PERSPECTIVE**

Substantive patent harmonization is difficult and complicated because it involves the essential issues of normative choice. It has been witnessed that heated debate is growing around substantive patent harmonization, in particular concerning its justification and efficiency. In this situation, it is a meaningful task to seek guidance through revisiting the rationale and strategy for patent harmonization from a fresh angle – through the lens of *property theories*. By looking into harmonization from the perspective of property, this paper investigates the source of conflicts among countries, and proposes normative justification and pragmatic solutions toward a new international patent system.

---

<sup>18</sup> See *id.*, at 687.

<sup>19</sup> Takashi Kinoshita, *Strategy For Harmonization Of The Us Patent System With The International Norm 8*, (2001), available at [http://www.commercialdiplomacy.org/pdf/ma\\_projects/kinoshita\\_takashi.pdf](http://www.commercialdiplomacy.org/pdf/ma_projects/kinoshita_takashi.pdf).

<sup>20</sup> See *id.*, at 726.

It is true that much debate has surrounded the question of whether Intellectual Property (IP) is truly a kind of property. Many theorists have attempted to establish consistent, basic norms to categorize knowledge as a type of property, and have addressed substantive issues such as ownership, priority, discipline, and stringency of protection. For example, some scholars such as Richard Epstein maintain that knowledge deserves as much protection as tangible property such as real estate.<sup>21</sup> These authors argue that defining IP as an analogy to tangible property has many advantages, including the ability to claim ownership. In contrast, other scholars such as Peter Menell counter this theory by arguing that IP deserves its own edifice that is unrelated to property rights.<sup>22</sup> These scholars support Thomas Jefferson's view that "inventions cannot, in nature, be a subject of property."<sup>23</sup> Mark Lemley furthers this argument by claiming that we do not need an analogy for IP as a form of property at all.<sup>24</sup>

Despite this debate, it seems to be a reality that a patent is considered property or at least *like* property. As far back as the 1878 the Paris Convention, the idea of seeing patents as property has been both legally and practically supported and confirmed by businesses, domestic patent laws, and the international society. Increasingly, companies are recognizing the importance of knowledge assets that are worth protecting, and governments are striving to ensure

---

<sup>21</sup> Richard A. Epstein, *The Structural Unity of Real and Intellectual Property*, Periodic Commentaries on the Policy Debate, The Progress & Freedom Foundation (24 October 2006), *available at* [http://www.pff.org/issuespubs/pops/pop13.24RAE\\_9\\_26.pdf](http://www.pff.org/issuespubs/pops/pop13.24RAE_9_26.pdf).

<sup>22</sup> Peter S. Menell, *Intellectual Property and the Property Rights Movement: Should intellectual property be accorded the same protections as tangible forms of property?* 30 REGULATION 1, 7 (CATO Institutes, 2007), *available at* <http://www.cato.org/pubs/regulation/regv30n3/v30n3-6.pdf>.

<sup>23</sup> The Founders' Constitution, Volume 3, Article 1, Section 8, Clause 8, Document 12, THE WRITINGS OF THOMAS JEFFERSON. Andrew A. Lipscomb and Albert Ellery Bergh. (Thomas Jefferson Memorial Association, 1905), *available at* [http://press-pubs.uchicago.edu/founders/documents/a1\\_8\\_8s12.html](http://press-pubs.uchicago.edu/founders/documents/a1_8_8s12.html)

<sup>24</sup> Mark A. Lemley, *Property, Intellectual Property, and Free Riding*, Discovery: Faculty Ideas, Publications, And Conversations, Stanford Law School (2005), at 34, *available at* [http://www.law.stanford.edu/publications/stanford\\_lawyer/issues/73/sl73\\_Property.pdf](http://www.law.stanford.edu/publications/stanford_lawyer/issues/73/sl73_Property.pdf); *See also* Mark Lemley, *Property, Intellectual Property, and Free Riding*, 83 TEX. L. REV. 1031 (2005).

economic development by adhering to IP policies. Thus, discussing patent harmonization from property theories' perspective is not a new idea, but is firmly based on sound theories and practices.

Thus, the purpose of this paper is to revisit the rationale and theoretical justification for patent harmonization, especially substantive harmonization, from the perspective of property. Although the analogy between a patent and property is still controversial, an attempt to investigate patent harmonization from the property perspective is meaningful and beneficial for several reasons. First, this approach well represents the current recognition of patents as property. Much evidence reveals that the current trend is that patents are considered commodities, and governments want to protect them as property. To provide reasonable and plausible strategies toward harmonization, the discussion has to be based on this reality.

The property-based approach is also helpful in understanding the real origin of conflicts between countries. The relationship between patents and property has been at the center of conflicts around patent harmonization. Countries opposing harmonization claim that property law has long been considered a local matter and not a subject of international negotiation. Even in the age of globalization, they argue, courts have depended on the principle of conflicts of law to confront current international issues in property cases, rather than calling for the harmonization of laws. As a result, they claim that it is contradictory to argue for the patent-property analogy and patent harmonization at the same time. However, unlike other types of property, IP, which includes patents, has been the focus of harmonization discourse since the 19th century. Thus, to provide persuasive arguments for patent harmonization, it is necessary

to scrutinize the definition and relationship between property and patents in an international context.

Moreover, this property-based approach is necessary to analyze patent harmonization from a uniform analytical framework. One of the fundamental problems is that arguments for or against harmonization suggested by various countries and their scholars have been formulated under different definitions or understanding of harmonization, property, patents, and legal rights. Because 'harmonization' is a very broad and vague term, many different and sometimes conflicting measures are used for different concepts under the same names. Moreover, the term 'property' has numerous definitions and applications. As a result, some countries have sabotaged the entire discussion on harmonization due to different interpretations or analyses. In this situation, applying well-established uniform property theories can help us propose an analytical framework and understand the scope and category of harmonization in a more reasonable and reliable manner. Based on unified and consistent definitions, the international community can expect negotiations for practical and plausible solutions benefitting all participating countries.

In this sense, discussing patent harmonization from a property point of view is necessary to provide reasonable justifications based on the current recognition of patents as property. The analytical framework borrowed from property can provide theoretical and practical grounds for strategically achieving patent harmonization by doing what is possible first. This analysis will help the international society devise a roadmap and realize incremental improvements toward a higher degree of harmonization.

## **IV. RESEARCH OUTLINE**

Admitting that substantive harmonization is necessary but hard to achieve in the near term, it becomes necessary to consider alternative measures. As the problem of fragmented patent systems become more serious, it is imperative to find a practical and effective way to remedy the increasing number of multiple applications and unpredictable validity in this globalized world. Thus, in this thesis, it is helpful to discuss the easier case of procedural harmonization first; then will proceed to later chapters that address more difficult but essential issues involved in substantive harmonization.

First, Chapter 2 discusses the definition and rationale of patent harmonization. Starting from the problems that triggered the international discussion for patent harmonization, the definitions and characteristics of patent harmonization is explored based on the general understanding of harmonization.

In Chapter 3, procedural harmonization is discussed as a practical solution to alleviate the problem of the fragmented patent system. Several policy proposals are suggested based on the level and width of international cooperation. This chapter also explains the limitation of procedural harmonization and highlights the role of substantive harmonization.

Chapter 4 investigates substantive harmonization from utilitarian perspective. As a dominant theory to justify both patent system and international trade, utilitarian theory has played an important role to explain substantive harmonization. After discussing traditional

utilitarian theories, this chapter focuses on criticizing the logical weakness of these utilitarian grounds. This limitation calls for the further study based on other property theories.

And, Chapter 5 discusses substantive harmonization from the property theory's perspective. Specifically, personhood theory and labor theory are suggested as normative choices. By comparing patent harmonization with successful copyrights harmonization, this chapter highlights the role of a natural rights theory to justify international harmonization.

In chapter 6, Locke's theory and its implications are examined. This chapter focuses on applying Locke's theory to justify patent harmonization. The classic Locke's theory is discussed to build the analytic framework that can explain international issues around the harmonization of patent laws.

Chapter 7 discusses the actual application of a normative frame to real issues. There are three important issues named as 'triplets' that have been the center of global conflicts: biotechnology, traditional knowledge, and biodiversity. Based on Locke's theory, this chapter investigates solutions and proposals of these problems. Finally, Chapter 8 concludes this discussion of patent harmonization.

## CHAPTER 2

### THE REASON AND NECESSITIES FOR PATENT HARMONIZATION

#### I. THE INHERENT DIVERSITY OF THE PATENT SYSTEM

Patent laws are inherently diverse, or different from country to country for three reasons. The first reason is due to the centuries-old principle of territoriality. The seventeenth century Dutch scholar Ulrich Huber identified three precepts of the modern territoriality doctrine: (1) a state's laws have force within the state's boundaries; (2) anyone found within the state's boundaries is subject to the state's authority; (3) comity will discipline one sovereign's exercise of authority to respect the territorial competence of other sovereigns.<sup>25</sup> As synthesized by Harold Maier, these precepts state that "acts of foreign sovereigns should, when appropriate, give effect within another state's territory and that courts of all nations should indulge a presumption against the extraterritorial impact of law."<sup>26</sup>

Thus, given that the territoriality principle establishes the jurisdiction of a state's laws, patent rights – which constitute a portion of a state's laws – are protected only within and in

---

<sup>25</sup> PAUL GOLDSTEIN, INTERNATIONAL INTELLECTUAL PROPERTY LAW: CASES AND MATERIALS 7 (Fountain Press, 2008).

<sup>26</sup> *Id.*

accordance with the legal rules of the jurisdiction where they have been granted.<sup>27</sup> For example, the Patent Act in the United States adopted in 1952 contains language suggesting that its scope is limited to U.S. territory.<sup>28</sup> It provides that the granting of a patent confers a “right to exclude others from making, using, offering for sale, or selling the invention *throughout the United States*.”<sup>29</sup> Thus, “whoever without authority makes, uses, offers to sell, or sells any patented invention, *within the United States*, or imports into the United States any patented invention during the term of the patent therefore, infringes the patent.”<sup>30</sup>

Even before the adoption of this language, U.S. courts consistently held that patent law was territorial in scope.<sup>31</sup> In *Dowagiac Manufacturing Co. v. Minnesota Moline Plow Co.*, the Court said that “[t]he right conferred by a patent under our law is confined *to the United States and its territories* . . . and infringement of this right cannot be predicated of acts wholly done in a foreign country.”<sup>32</sup> In short, as the legal rights and protection of patents are limited within their respective jurisdiction by territoriality, countries naturally develop and maintain their own unique patent laws.

Second, the many ways in which patent law is manifested and practiced can be attributed to the governments’ use of patent law as a policy tool for economic growth. Assuming the

---

<sup>27</sup> Alexander von Mühlendahl and Dieter Stauder, *Territorial Intellectual Property Rights in a Global Economy – Transit and Other ‘Free Zones’*, 6 MPI STUDIES ON INTELLECTUAL PROPERTY: COMPETITION AND TAX LAW. 653 (2009), available at <http://www.springerlink.com/content/n868652q8u47n1r5/fulltext.pdf>.

<sup>28</sup> GOLDSTEIN, *supra* Note 25, at 183.

<sup>29</sup> 35 U.S.C. § 154(a).

<sup>30</sup> 35 U.S.C. § 271(a), 271(b), 271(c); Effective January 1, 1996, section 271(a) was amended to add "offering for sale" and "importing" to the exclusive rights conveyed by a U.S. patent. These rights were added to conform section 271 to Article 28 of the Trade-Related Aspects of Intellectual Property (TRIPS) agreement. See Chisum on Patents § 16.02 (2006).

<sup>31</sup> *Id.*

<sup>32</sup> *Dowagiac Manufacturing Co. v. Minnesota Moline Plow Co.*, 235 U.S. 641 (1915).

existence of a stable set of preferences in economic policies within each jurisdiction, it is generally agreed that the domestic laws tailored to each jurisdiction would better accommodate those individual preferences than a uniform set of laws imposed across all jurisdictions.<sup>33</sup> Thus, in making patent laws, each country decides for itself what intellectual assets to protect within its borders,<sup>34</sup> and subsequently adopts patent policies in connection with its respective preferences.<sup>35</sup> In other words, the standard for patents should be intimately tied to a nation's economic goals, and especially to its industries' technological potential and the types of innovation it hopes to foster.<sup>36</sup>

In this sense, patent law is established on the foundation of its national economic policy. In fact, patent law operates as an important policy tool that is closely related with the economic goals and strategic priorities of the government. Thus, a government requires an applicant to incorporate administrative formalities that must be satisfied to create or perfect a patent.<sup>37</sup> Also, government officials determine whether the application is fit for a patent according to national standards.<sup>38</sup>

Third, a nation's cultural fabric makes each patent system unique. According to Luigi, Paola, and Luigi, culture has a direct impact on expectations and preferences, which in turn have

---

<sup>33</sup> GOLDSTEIN, *supra* Note 25, at 183.

<sup>34</sup> *id.*

<sup>35</sup> DAN L. BURK AND MARK A. LEMLEY, *THE PATENT CRISIS AND HOW THE COURTS CAN SOLVE IT* 37 (The University of Chicago Press, 2009).

<sup>36</sup> Reichman & Dreyfuss, *supra* Note 5, at 99; *See also* Rochelle Cooper Dreyfuss & Andreas F. Lowenfeld, *Two Achievements of the Uruguay Round: Putting TRIPS and Dispute Settlement Together*, 37 VA. J. INT'L L. 275, 300-01 (1997).

<sup>37</sup> *London Film Productions Ltd v. Intercontinental Communications, Inc.*, 580 F. Supp. 47, 223 U.S.P.Q. 381. (S.D.N.Y. 1984)

<sup>38</sup> *See id.*

an impact on economic outcome.<sup>39</sup> Although economists have been reluctant to rely on culture as a possible determinant of economic phenomena,<sup>40</sup> there are countervailing historical arguments. Adam Smith viewed his “moral treaty” as an integral part to his “Wealth of Nations.” And John Stuart Mill regarded cultural constraints as sometimes more important than even the pursuits of personal interest.<sup>41</sup>

A powerful example of cultural impacts on the patent system is found in different approaches to the notion of “property.” Historically, western societies have conceived of the right to property as a natural right. John Locke believed that every man has an inherent property interests and asserted that “life, liberty, and property” are the inalienable rights of a just society.<sup>42</sup> Consistent with this notion, intellectual property law has long been placed under the general heading of traditional private property.<sup>43</sup> Richard Epstein furthers this argument by contending that patents deserve much the same protection as real estate.<sup>44</sup> This historical and cultural backdrop treating intellectual property as the form of private property can have the effect of strengthening the patent regime.

---

<sup>39</sup> Luigi Guiso, Paola Sapienza, and Luigi Zingales, *Does Culture Affect Economic Outcomes?*, 20 J. ECON. PERSP. 23, 23 (2006) (According to Luigi, Paola, and Luigi, in the context of identifying casual link between culture and economy, culture can be defined as “those customary beliefs and values that ethnic, religious, and social groups transmit fairly unchanged from generation to generation.”).

<sup>40</sup> *See id.*, at 23.

<sup>41</sup> *See id.*, at 24.; See JOHN STUART MILL, A SYSTEM OF LOGIC 484 (Longmans, Green and Co., 1956)

<sup>42</sup> Peter S. Menell, *Intellectual Property and the Property Rights Movement*, 30 REGULATION. 36, 38 (2007).

<sup>43</sup> *See id.* (The first use of the term “intellectual property” in a reported legal decision can be traced to an 1845 patent case in which the court observed that “a liberal construction ... given to a patent” will encourage “ingenuity and perseverance” and “only in this way can we protect intellectual property, the labors of the mind, productions and interests as much a man’s own, and as much the fruit of his honest industry, as the wheat he cultivates, or the flocks he rears.” Prof. Justin Hughes, in a recent Southern California Law Review article, notes that “the courts and legislatures had regularly discussed copyrighted works as ‘property’ throughout the seventeenth, eighteenth, and early nineteenth centuries, with the adjectival concepts of ‘artistic,’ ‘literary,’ and ‘intellectual’ orbiting around the property notion.”)

<sup>44</sup> *id.*

On the other hand, certain cultures emphasize the concept of commonality, or a communal property for ideas. For example, the Chinese believed for centuries that inventions and creative works belonged to the community or the government and should be freely shared.<sup>45</sup> Because traditional Chinese culture did not generally apply the concept to private individuals, the entire concept of intellectual property protection is relatively new to Chinese society.<sup>46</sup> Many Chinese business entities, in reality, were not aware of their intellectual property rights and the need to seek protection; likewise, many infringers were unaware that their activities infringed upon the private rights of others.<sup>47</sup> Many countries in Asia have similar traditions, so their reluctance to strengthen patent regimes is understandable. This cultural issue is believed to substantially affect the development of patent regimes, nationally and transnationally.

## II. THE EFFECT OF GLOBALIZATION ON THE PATENT SYSTEM

For the reasons discussed above, it can be argued that the patent system should be *country-specific*. Clearly, each country has a unique national policy and cultural background. These country-specific patent laws did not pose serious problems through the 18<sup>th</sup> century

---

<sup>45</sup> LEI FANG, CHINESE PATENT SYSTEM AND ITS ENFORCEMENT 12 (2005), <http://www.sutherland.com/files/Publication/7d59443f-8187-4680-b24a34de34553642/Presentation/Publication/Attachment/ce106e5e-d8f4-496f-a09bce892161dafb/Chinese%20Patent.doc>.

<sup>46</sup> *id.*

<sup>47</sup> *id.*

because research and business activities were restricted to the domestic market, and international trade was not common practice. Although inventors who sought protection beyond domestic boundaries could file patent applications in the respective jurisdiction, this was a rare practice.

However, as the world increasingly became globalized, there was a corresponding rise in the movement of economic resources beyond domestic borders. International trade exploded, and movements of capital and labor became more liberal.<sup>48</sup> It was frustrating for inventors to realize that their patent rights were not enforceable in foreign countries. For example, companies had to suffer from the movement of infringed products that were manufactured in foreign states and sold to the rest of the world. To prevent this infringement, they needed to obtain patent protection in those countries. However, obtaining foreign patents is not always guaranteed and sometimes even challenging because of the diverse patent laws in each country. For example, countries often have different criteria for patentability such as novelty, and filing a patent in one country often bars the applicant from obtaining a patent in others. As the world economy has become more globalized and integrated, inventors have recognized that the uncertainty and unpredictability of diverse patent systems is a serious challenge that may jeopardize their patent rights. This uncertainty may severely reduce the incentive of private inventors to appropriate their knowledge for economic gain.

Consequently, securing patent protection in foreign countries became a growing concern for businesses and governments. Admitting the seriousness of the matter, the U.S. Department of Commerce commented that “delay, uncertainty, and poor quality at the front end ultimately make private investments in innovation less likely and undermine the potential for economic

---

<sup>48</sup> WORLD TRADE ORGANIZATION (WTO), INTERNATIONAL TRADE STATISTICS (2008), *available at* [http://www.wto.org/english/res\\_e/statis\\_e/its2008\\_e/its08\\_charts\\_e.htm](http://www.wto.org/english/res_e/statis_e/its2008_e/its08_charts_e.htm)

growth and job creation.”<sup>49</sup> In this fast-changing technological world, the slow pace of the patent system and the low quality of patents can destroy the virtuous cycle of patents and innovations, and can eventually cause “a patent crisis.”<sup>50</sup>

From below, we are going to scrutinize the circumstances and reasons that raise the concern of “a patent crisis,” which consequentially triggered the argument for harmonizing patent laws. These are: 1) limited patent protection, 2) application costs, 3) examination delay, and 4) uncertainty and unpredictability.

## **1. Limited Patent Protection**

First and foremost, patent protection obtained in one country is not guaranteed in other countries because of different rules governing filing procedure and substantive rights. For example, in the U.S., Congress intended patentable subject matter to "include anything under the sun that is made by man."<sup>51</sup> However, in other countries, the scope of patentable subject matter was quite narrow. According to Joseph Straus in 1988, pharmaceutical products were not patentable in 49 countries, animal species in 45, methods for the treatment of the human or

---

<sup>49</sup> ARTI RAI, STUART GRAHAM, AND MARK DOMS, PATENT REFORM: UNLEASHING INNOVATION, PROMOTING ECONOMIC GROWTH & PRODUCING HIGH-PAYING JOBS 5 (A White Paper from the U.S. Department of Commerce, April 13, 2010), *available at* [http://2001-2009.commerce.gov/s/groups/public/~doc/~os/~opa/documents/content/prod01\\_009147.pdf](http://2001-2009.commerce.gov/s/groups/public/~doc/~os/~opa/documents/content/prod01_009147.pdf) (The USPTO currently has an unexamined patent application backlog of over 750,000. Patent application pendency – the time between when an application is filed and when it receives a final disposition – currently stands at 34 months on average).

<sup>50</sup> BURK & LEMLEY, *supra* Note 35, at 1.

<sup>51</sup> *Diamond v. Chakrabarty*, 447 U.S. 303 (1980).

animal body in 44, plant varieties in 44, biological processes for the production of plant varieties or animal species in 42, food products in 35, computer programs in 32, chemical products in 22, pharmaceutical processes in 10, processes for the manufacture of food in 9, and microorganisms in 9, from a total of 92 states in the Paris Convention.<sup>52</sup> In these circumstances, the companies that invented the above-mentioned products not only failed to obtain patent protection in countries that declared the subject matter unpatentable, but also had to suffer from the importation of copied products which were manufactured in those countries where the products were not protected by patents.

Moreover, as countries may have different criteria for novelty, filing a patent in one country often bars the applicant from obtaining a patent in others. In certain countries which institute a rule of ‘absolute novelty,’ any public disclosure of the invention, including those by the inventor, generally bars the obtainment of patent protection.<sup>53</sup> In other words, those countries, unlike the U.S. and Canada, rejected the argument for a grace period, and the inventor could not secure his or her patent protection. In short, different domestic patent laws might prevent inventors from maximizing opportunities – both domestic and international – through their patents.

---

<sup>52</sup> Joseph Straus, *Implications of the TRIPs Agreement in the Field of Patent Law*, in *From GATT to TRIPs: The Agreement on Trade-Related Aspects of Intellectual Property Rights 170-175* (Friedrich-Karl beier and Gerhard Schricker, 1996).

<sup>53</sup> CHRISTOPHER B. KILNER , U.S. “NOVELTY” VS. INTERNATIONAL “ABSOLUTE NOVELTY”, *available at* <http://ram.timberlakepublishing.com/files/usnoveltyvsinternationalabsolutenovety.pdf>.

## 2. Application Costs

Given the disparate patent laws in each jurisdiction, obtaining patents can result in substantial costs for multi-national corporations that have business operations throughout the world. Today, with the growing trend of globalization, the activities of multinational corporations are increasing in volume and importance. The Top 500 multi-national corporations account for nearly 70 percent of worldwide trade, and this percentage has steadily increased over the past twenty years.<sup>54</sup> For such corporations, having and maintaining patents in every jurisdiction is a crucial but costly investment.

A survey by the Korea Intellectual Property Office (KIPO) revealed that 63% of Korean businesses identified the obtainment of foreign patents as one of the most serious burdens to conducting business in foreign countries.<sup>55</sup> This notion is strongly evidenced by the empirical data of World Intellectual Property Organization (WIPO). WIPO roughly estimated that patenting in 2 major countries (US and Japan) costs approximately \$16,000 to \$19,000.<sup>56</sup> If a company wants to obtain and maintain patents in 7 major countries,<sup>57</sup> it must pay approximately

---

<sup>54</sup> World Trade Organization (WTO), *Trade liberalisation statistics: Poverty*, available at [http://www.gatt.org/trastat\\_e.html](http://www.gatt.org/trastat_e.html).

<sup>55</sup> KOREA INTELLECTUAL PROPERTY OFFICE (KIPO), *THE SURVEY ON INTELLECTUAL PROPERTY-RELATED ACTIVITIES IN KOREA* 84-85 (KIPO, 2009)

<sup>56</sup> WORLD INTELLECTUAL PROPERTY ORGANIZATION (WIPO), *WORLD PATENT REPORT: A STATISTICAL REVIEW* 51-58 (2008), available at [http://www.wipo.int/export/sites/www/ipstats/en/statistics/patents/pdf/wipo\\_pub\\_931.pdf](http://www.wipo.int/export/sites/www/ipstats/en/statistics/patents/pdf/wipo_pub_931.pdf) (The patenting costs are based on estimates sourced from Global IP Estimator (<http://www.globalip.com/>). They include filing, examining, prosecution, granting costs and the international phase for PCT scenarios. They do not include in-house and pre-filing costs. The figures shown above are based on typical cost schedules which are indicative only; actual costs will vary widely depending on the many options that are available to applicants and the many differences in costs and fees (including legal and translation costs) around the world. The last maintenance year is 10 years from filing. See appendix B for further details regarding the methodology used.).

<sup>57</sup> *See id.* (China, European Patent Office (validation in France, Germany and United Kingdom), Japan, United

\$60,000. If the company wants to have broader protection by obtaining patents in 15 countries,<sup>58</sup> it should be prepared to pay around \$120,000. Considering that this is the estimated cost for a single patent, one can imagine the enormous expenditures required of multinational companies to obtain and maintain hundreds or thousands of patent pools. Similarly, one study shows that one of the world's major research-based pharmaceutical companies is estimated to spend between \$750,000 and \$1,000,000 to obtain comprehensive world-wide patent protection for an important chemical compound; furthermore, the figure is continually growing at a rate of 10% each year.<sup>59</sup>

### 3. Examination Delay

The globalization of commercial activity has triggered striking internationalization in the world of patent protection.<sup>60</sup> Consequentially, the growing number of patent applications beyond domestic borders has led to increased workloads and backlogs in patent offices. In 1985, there were 1.2 million patent applications filed worldwide.<sup>61</sup> The number of patent

---

States of America, Republic of Korea).

<sup>58</sup> *See id.* (Australia, Brazil, Canada, China, European Patent Office (validation in, France, Germany and United Kingdom), Israel, India, Japan, Mexico, United States of America, Republic of Korea, Russian Federation, Singapore).

<sup>59</sup> RAYMOND J. KEATING, PATENT REFORM: PROTECTING IP, ENABLING INNOVATION, & BOLSTERING ENTREPRENEURSHIP 18 (The Small Business & Entrepreneurship Council, February 2008), *available at* <http://www.sbecouncil.org/uploads/SBEC%20polseries%20IPPatents02081.pdf> (Gerald J. Mossinghoff, former assistant secretary of commerce and commissioner of patents and trademarks, noted in testimony before the U.S. Senate Judiciary Committee on July 26, 2005).

<sup>60</sup> HISAMITSU ARAI, WIPO INTELLECTUAL PROPERTY HANDBOOK: POLICY, LAW AND USE 13 (WIPO Publication No.489 (E)), *available at* [http://www.wipo.int/about-ip/en/studies/publications/wipo\\_pub\\_489/](http://www.wipo.int/about-ip/en/studies/publications/wipo_pub_489/).

<sup>61</sup> *id.*

applications more than doubled in only a decade, such that it reached 2.79 million in 1995.<sup>62</sup>

The increasing number of patent applications may not be a serious concern as itself, but the real problem is that many of these applications are actually duplicates. Nearly 242,000 applications were duplicates among the three major offices (U.S, EU, and Japan) in 2006.<sup>63</sup> These duplicate applications have been subjected to all the required steps of obtaining a patent, including searches and examination,<sup>64</sup> which substantially contribute to the patent backlog and depreciation of patent quality.<sup>65</sup> For example, the US Patent and Trademark Office has a backlog of more than 750,000 patents,<sup>66</sup> forcing an applicant to wait more than three years to be notified of the result.

The expansion of non-residential filing is major reason for this increase. In the U.S., domestic patent applicants stayed relatively stable at about 0.72 million over the course of the decade.<sup>67</sup> By contrast, applications by foreign inventors rose fourfold during the same period, from 0.5 million in 1985 to 2.07 million in 1995.<sup>68</sup> Many of the non-residential filings, however, were also duplicates, which – in their subjection to all the required steps of obtaining a patent including search and examination<sup>69</sup> – substantially contributed to patent backlog and depreciation of patent quality.<sup>70</sup>

---

<sup>62</sup> *id.*

<sup>63</sup> *id.*

<sup>64</sup> *id.*

<sup>65</sup> RAI, GRAHAM & DOMS, *supra* Note 49, at 4.

<sup>66</sup> *See id.*

<sup>67</sup> *id.*

<sup>68</sup> *id.*

<sup>69</sup> *id.*

<sup>70</sup> BRUCE BERMAN, THE PUZZLE THAT IS PATENT QUALITY (WIPO Magazine, Aug 2015), *available at* [http://www.wipo.int/wipo\\_magazine/en/2015/04/article\\_0004.html](http://www.wipo.int/wipo_magazine/en/2015/04/article_0004.html) (last visited Feb 3, 2017) (The legal definition of patent quality is “a valid invention right that permits the holder to sue in order to exclude an alleged infringer from practicing the invention”); RAI, GRAHAM & DOMS, *supra* Note 49, at 5. (The USPTO currently has an unexamined

As a result, the total number of pending patent applications, i.e. patent backlogs across the world, is estimated to be around 4.2 million in 2007.<sup>71</sup> The United States Patent and Trademark Office (USPTO) not only had the largest backlog (28.4% of the world total) in 2007, but also a backlog which has been increasing at a faster rate than that of any other comparably sized patent office.<sup>72</sup> According to a study by London Economics released on behalf of the United Kingdom Intellectual Property Office (UKIPO), the cost to the global economy by the delay in processing patent applications may amount to as much as £7.65 (\$11.4) billion each year.

#### **4. Uncertainties and Unpredictability**

A fragmented patent system that leads to uncertainty in the form of delays and unpredictability with regard to enforcement can be a grave concern for societies engaged in business. Delays, which heighten uncertainty, may be particularly problematic for startups with high growth potential<sup>73</sup> because they can lead to difficulty in securing patents and venture

---

patent application backlog of over 750,000. Patent application pendency – the time between when an application is filed and when it receives a final disposition – currently stands at 34 months on average); *See also* WIPO, *supra* Note 13, at 44 (In Japan, there were 888,198 pending patent application in 2007, and it has 32.4 month of average pendency time).

<sup>71</sup> WORLD INTELLECTUAL PROPERTY ORGANIZATION, WORLD INTELLECTUAL PROPERTY INDICATORS 44 (2009), available at [http://www.wipo.int/freepublications/en/intproperty/941/wipo\\_pub\\_941.pdf](http://www.wipo.int/freepublications/en/intproperty/941/wipo_pub_941.pdf)

<sup>72</sup> *See id.* (The number of pending applications by patent office in 2007: US (1,178,090), Japan (888,198), EU(550,079), Republic of Korea (445,944)); WIPO, *supra* Note 13, at 45 (between 2006 and 2007, examination pendency time also increased from 43.9 to 45.3 months at the European Patent Office (EPO), 31.8 to 32.4 months at the patent office of Japan, and 31.3 to 32.0 months at the patent office of the US).

<sup>73</sup> *id.*

funding in a timely fashion.<sup>74</sup> Moreover, the uncertainty associated with patent delay imposes significant costs not only to patent applicants but also to potential competitors.<sup>75</sup> Competitors will have less guidance with regard to research and development investments until the bounds of a patent applicant's claim to inventive territory are known.<sup>76</sup> Accordingly, companies in this situation may not only make fewer investments in innovation, but also make those which are potentially misdirected and wasteful.<sup>77</sup>

Another pressing concern for multi-national corporations is the unpredictability in patent enforcement or validity. In fact, costly infringement suits on parallel patents have become frequent.<sup>78</sup> If a patent office grants a patent that is subsequently invalidated or subject to invalidation proceedings, not only does the office waste its own time, the time and money of the applicant, and that of the applicant's competitors, but such a later-invalidated patent also distorts the market.<sup>79</sup> And, patent litigation in a fragmented system with large institutional and cost differences can lead to a proliferation of litigation tactics and strategies that cause hold-up problems and wasteful duplication.<sup>80</sup>

---

<sup>74</sup> *id.*

<sup>75</sup> RAI, GRAHAM & DOMS, *supra* Note 49, at 5.

<sup>76</sup> *id.*

<sup>77</sup> *id.*

<sup>78</sup> Reichman & Dreyfuss, *supra* Note 5, at 124; See John R. Thomas, *Litigation beyond the Technological Frontier: Comparative Approaches to Multinational Patent Enforcement*, 27 LAW & POL'Y INT'L BUS. 277, 291 (1996).

<sup>79</sup> ICC COMMISSION ON INTELLECTUAL PROPERTY (HEREINAFTER ICC), COOPERATION BETWEEN PATENT OFFICES: PRIOR ART SEARCHING OF PATENT APPLICATIONS 2 (Jun. 2010), [http://www.iccwbo.org/uploadedFiles/ICC/policy/intellectual\\_property/pages/ICC%20Statement\\_Patent%20Work%20Sharing\\_28%2006%2010.pdf](http://www.iccwbo.org/uploadedFiles/ICC/policy/intellectual_property/pages/ICC%20Statement_Patent%20Work%20Sharing_28%2006%2010.pdf)

<sup>80</sup> DIETMAR HARHOFF, ECONOMIC COST-BENEFIT ANALYSIS OF A UNIFIED AND INTEGRATED EUROPEAN PATENT LITIGATION SYSTEM 14-18 (Institute for Innovation Research, Technology Management and Entrepreneurship, 2009), *available at* [http://convenzioni.confindustria.it/Aree/DocumentiPINT.nsf/B79578C0259E50E5C12576D2003B5C8F/\\$File/litigation\\_system\\_en\\_Harhoff.pdf](http://convenzioni.confindustria.it/Aree/DocumentiPINT.nsf/B79578C0259E50E5C12576D2003B5C8F/$File/litigation_system_en_Harhoff.pdf) (Harhoff points out three kinds

Although different results are technically possible considering that national patent laws are independent of one another,<sup>81</sup> inconsistent outcomes in which different parties win in different locations can complicate global marketing efforts.<sup>82</sup> Furthermore, legal uncertainty also generates indirect transaction costs, such as the cost of collecting information, the cost of legal disputes, and the cost of setting incentives for pushing through legal claims.<sup>83</sup>

---

of problems in fragmented system: 1) wasteful duplication: whenever multiple litigation is undertaken, resources are wasted on duplication without generating concomitant benefits; 2) raising the cost for appropriating returns from patented inventions in Europe: leaving aside the cost of litigation, cross-border commerce is made more difficult and costly when diverging outcomes (patent protection in some, no patent protection in other EU Members States) prevail; 3) delay and hold-up: the system can be used to delay decisions in infringement cases or to raise the costs of entrants seeking access to the market; this may either reduce innovation incentives or the level of competition in a way that is welfare-reducing)

<sup>81</sup> Reichman & Dreyfuss, *supra* Note 5, at 124.

<sup>82</sup> *See id.*

<sup>83</sup> Helmut Wagner, *Legal Uncertainty – Is Harmonization of Law the Right Answer? A Short Overview* 4 (Discussion Paper No. 444, January 2009), available at <http://www.fernuni-hagen.de/FBWII/forschung/beitraege/pdf/db444.pdf> (On (a): Lack of knowledge of foreign statutes prevents international purchases or leads to the necessity of more or less expensive information collection. On (b): In the event of international legal disputes the costs are much greater than in the case of a domestic legal dispute (cf. Freyhold, Gessner, Vial and Wagner (eds.) 1995, Part II). On (c): This includes private attempts to speed up approval procedures, and legal procedures in the broadest meaning of the term. As is known, “beneficial charges”, which include bribes or pay-offs, represent an important cost factor for multinational corporations. (This applies in particular in developing countries.) No small part of this is probably the result of having to deal with legal uncertainty or legal instability. On (d): The difficulties involved in complaining about goods, in making warranty claims, and in exchanging goods, should probably prove to be much greater in the case of international purchases in comparison with domestic purchases. The associated costs, including travel expenses, time spent (opportunity costs), and annoyance (negative utility), are then correspondingly higher, in particular if law suits are the consequence.)

### III. THE DEFINITION OF PATENT LAW HARMONIZATION

In order to solve these problems caused by diverse patent systems, the harmonization of domestic patent laws at the international level<sup>84</sup> has understandably attracted considerable attention.<sup>85</sup> To further examine and explore possible normative grounds for this issue, it is necessary first to clarify the meaning and scope of ‘patent law harmonization.’ To this end, it is reasonable to commence with the dictionary definition and, subsequently examine other usages of the term ‘harmonization.’

#### 1. Harmonization in General

Harmonization is not a strictly legal word. ‘Harmonize’ generally means “to be suitable together, or to make different people, plans, situations, etc. suitable for each other.”<sup>86</sup> For example, in the technological field, ‘tariff harmonization’ in customs practice and ‘protocol harmonization’ are non-legal examples of usage. Basically, harmonization, which refers to a process, is a movement away from a total diversity of practice.<sup>87</sup> Harmony, a type of state,

---

<sup>84</sup> WIPO, *supra* note 4, at at 1–2.

<sup>85</sup> Reichman & Dreyfuss, *supra* Note 5, at 87; *See generally* WIPO, Open Forum on the Draft Substantive Patent Law Treaty (SPLT), Geneva, Switz., Mar. 1–3, 2006 [hereinafter WIPO Open Forum], available at [http://www.wipo.int/meetings/en/2006/scp\\_of\\_ge\\_06/scp\\_of\\_ge\\_06\\_infl.html](http://www.wipo.int/meetings/en/2006/scp_of_ge_06/scp_of_ge_06_infl.html) (hosting the presentation of papers, lectures, and speeches on the international harmonization of patent law).

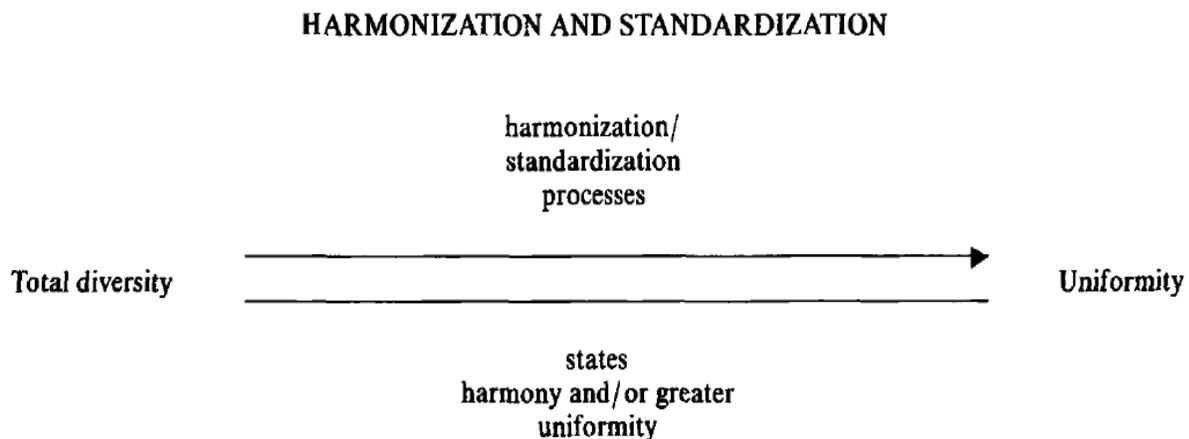
<sup>86</sup> Meaning of “harmonize” in the English Dictionary, *available at* <http://dictionary.cambridge.org/dictionary/british/harmonize?q=harmonization>

<sup>87</sup> J. S. W. Tay & R. H. Parker, *Measuring International Harmonization And Standardization*, 26 ABACUS 71, 73 (1990).

embodies the associated ‘clustering’ of companies around one or a few of the available methods,<sup>88</sup> and implicates a reduction in the number of these available methods.<sup>89</sup>

Therefore, harmony and uniformity are not dichotomous. The former is any point on the continuum between the two polar states of total diversity and uniformity, excluding these extreme states.<sup>90</sup> In other words, uniformity is the final goal of harmonization, and harmony is any stage in the process of realizing uniformity. Harmonization is a process of ascertaining the limits of unification, but it does not necessarily amount to a vision of total uniformity.<sup>91</sup> These ideas can be expressed in the following schematic drawing:

< Figure 1: The Concept of Harmonization<sup>92</sup> >



---

<sup>88</sup> *id.*

<sup>89</sup> *id.*

<sup>90</sup> *id.*

<sup>91</sup> WERNER MENSKI, *COMPARATIVE LAW IN A GLOBAL CONTEXT* 39 (Cambridge University Press, 2005) (2005).

<sup>92</sup> Tay & Parker, *supra* note 87, at 73.

In this sense, patent law harmonization is the process toward unification. Unifying patent law was the old dream and the final goal of patent law harmonization. This idea of harmonization is based on the concept that the creation of uniform patent laws would solve the problem caused by fragmented patent systems completely. Sherwood argues that “a uniform intellectual property system makes sense for the world.”<sup>93</sup> This idea is further supported by Radack who states “the phrase [patent harmonization] refers to efforts to make individual national patent laws around the world more uniform.”<sup>94</sup>

This idea of a uniform patent system is more clearly characterized by the term “*true harmonization*,” a label which was introduced in 1993 by the United States Assistant Secretary of Commerce Bruce Lehman. Under “true harmonization,” patent applicants would complete one prosecution in one patent office for global protection.<sup>95</sup>

Former Japanese Patent Office Commissioner, Hisamitsu Arai supported this idea, by arguing, “Might it not be possible . . . for a patent granted by the Japanese Patent Office in response to an application filed in Japan to be recognized internationally as well?”<sup>96</sup> The advocates of true harmonization believe that it will create a uniform patent law system that simplifies the law, making it easier to receive and enforce patents in many jurisdictions while reducing administrative costs.<sup>97</sup> For example, the United States’ uniform patent system,

---

<sup>93</sup> ROBERT M. SHERWOOD, WHY A UNIFORM INTELLECTUAL PROPERTY SYSTEM MAKES SENSE FOR THE WORLD 68 (Wallerstein et. al., National Academy Press, 1993)

<sup>94</sup> David V. Radack, *Patent Harmonization: Creating uniform patent laws*, 49 JOURNAL OF THE MINERALS, METALS AND MATERIALS SOCIETY. 66, 66 (1997), available at <http://www.tms.org/pubs/journals/JOM/matters/matters-9705.html>.

<sup>95</sup> HAROLD WEGNER, PATENT HARMONIZATION ON THE PACIFIC RIM 20 (Asia Pacific Legal Institute, May 1995)

<sup>96</sup> ARAI, *supra* Note 60, at 59.

<sup>97</sup> John F. Duffy, *Harmony and Diversity in Global Patent Law*, 17 BERKELEY TECH L J. 685, 686 (2002).

successfully maintained since 1790, is a testament to this effect. Before having a single federal system, patentees who wanted to use their invention in more than one state had to apply separately for patents in each state, which was expensive and time-consuming.<sup>98</sup> Thus, a standardized national patent law was needed for more efficient patent granting process,<sup>99</sup> and it was realized by the Patent Act of 1790.

## 2. Patent Law Harmonization as a Positive Harmonization

In the legal field, the term “harmonization” was widely used in the conflict-of-laws context. Geographically, harmonization of laws is widely discussed in the European Union as it moves forward toward greater economic integration.<sup>100</sup> The history of European Union can be said to be the process of harmonization of laws.<sup>101</sup> At first, under founding Treaty of Rome, the harmonization of national laws could be done by unanimity.<sup>102</sup> Afterwards, the Single European Act from 1987 introduced qualified majority voting for most harmonization in the internal market.<sup>103</sup> From 2009, the Lisbon Treaty introduced the possibility of a qualified majority harmonizing EU Law, even in sensitive political areas.<sup>104</sup>

---

<sup>98</sup> THE ORIGINS OF PATENT AND COPYRIGHT LAW. BILL OF RIGHTS IN ACTION (WINTER) 23 (Constitutional Rights Foundation, 2008). *available at* <http://www.crf-usa.org/bill-of-rights-in-action/bria-23-4-a-the-origins-of-patent-and-copyright-law>.

<sup>99</sup> *See id.*

<sup>100</sup> EUABC.com, *Harmonization*, *available at* <http://en.euabc.com/word/547>. (last visited April 24, 2016)

<sup>101</sup> *id.*

<sup>102</sup> *id.*

<sup>103</sup> *id.*

<sup>104</sup> *id.*

On the other hand, the legal field where harmonization is successfully achieved is international private law – especially commercial and contract law. Exemplified by the efforts of Pasquale Stanislao Mancini, Italy’s Minister of Justice who sought to convene a conference for the harmonization of private international law, projects for the unification or harmonization of international laws in general have been pursued since the middle of the 19th century.<sup>105</sup> It is notable that international efforts to harmonize commercial laws have achieved some fruits, such as the United Nations Convention on Contracts for the International Sale of Goods in 1970.

To better understand legal harmonization, it is helpful to think two types of harmonization using the concepts of liberty articulated by political philosopher Isaiah Berlin. In his famous lecture titled “Two Concepts of Liberty,” Berlin differentiated between ‘negative’ and ‘positive’ liberty. He stated, “[i]f negative liberty is concerned with the freedom to pursue one’s interests according to one’s own free will and without ‘interference from external bodies,’ then positive liberty takes up the ‘degree to which individuals or groups’ are able to ‘act autonomously’ in the first place.”<sup>106</sup>

Specifically, according to Berlin, negative liberty is implicated in responding to this question: “What is the area within which the subject . . . is or should be left to do or be what he is able to do or be, without interference by other persons?” On the other hand, positive liberty is involved in answering “[w]hat, or who, is the source of control . . . that can determine someone to do, or be, this rather than that?”<sup>107</sup>

---

<sup>105</sup> Britannica Encyclopedia, *conflicts of laws, available at* <http://www.britannica.com/EBchecked/topic/333023/conflict-of-laws/276352/The-nature-of-conflicts-law>, last visited 10/3/2010.

<sup>106</sup> ISAIAH BERLIN, *TWO CONCEPTS OF LIBERTY 2* (Oxford University Press 1958) (1969).

<sup>107</sup> *id.*

This classification of liberty can be applied in the categorization of rights: ‘positive’ and ‘negative’ rights. For example, negative rights are ‘negative’ in the sense that they claim for each person a zone of non-interference from others.<sup>108</sup> Negative rights can be characterized as a claim by one person that imposes a ‘negative’ duty on all others – the duty not to interfere with a person's activities in a certain area.<sup>109</sup> Negative rights are invoked to protect some form of human freedom or liberty, including the right to privacy, the right not to be killed, or the right to do what one wants with one's property.<sup>110</sup>

On the other hand, positive rights are ‘positive’ in the sense that they claim for each person the positive assistance of others in fulfilling basic elements of human well-being such as health and education.<sup>111</sup> In moral and political philosophy, these basic human needs are often referred to as ‘welfare’ concerns.<sup>112</sup> Positive rights, therefore, provide a basis for people to secure their well-being, such as the right to an education, food, medical care, housing, or job.<sup>113</sup> In addition, positive rights impose a positive duty on us – the duty to actively help a person to have or do something.<sup>114</sup>

These ideas are useful in categorizing legal harmonization into two types: ‘negative’ and ‘positive’ harmonization. “Negative-type harmonization” attempts to free private commercial activity from government intervention, which is interpreted as an outside force. Harmonization of commercial law, as mentioned above, is a good example of harmonization of a ‘negative type.’

---

<sup>108</sup> Manuel Velasquez et al., *Rights* (Aug 8, 2014), available at <http://www.scu.edu/ethics/practicing/decision/rights.html>. (last visited April 24, 2016).

<sup>109</sup> *id.*

<sup>110</sup> *id.*

<sup>111</sup> *id.*

<sup>112</sup> *id.*

<sup>113</sup> *See id.*

<sup>114</sup> *id.*

As David Kennedy explains, these internationally uniform commercial laws were designed for private traders to be disassociated from the messy politics of inter-sovereign negotiations and national parliamentary ideological conflicts.<sup>115</sup> Another such example is the harmonization of copyright law, as copyrights exist when they are created regardless of the government.

On the other hand, “positive type” harmonization involves an active role from governments. The achievement of positive harmonization requires more than merely not acting; just as positive rights impose on us the duty to help sustain the welfare of those who are in need of help, positive harmonization requires the government to act in a way that makes laws work in harmony.<sup>116</sup> Because this type of harmonization requires action from the government for the protection of one’s “positive rights,” it can be characterized as positive in nature. Harmonization of patent, competition, and public procurement laws serve as examples of positive type harmonization. As these rights are at least tied to the government’s economic goal for greater economic prosperity,<sup>117</sup> the rights protected by these laws are related to welfare rights. As a result, the effort to harmonize these rights and laws can be explained under the name of ‘positive-type’ harmonization.

Although remarkable achievements have been made in the field of negative law harmonization, there has been little overall progress in the field of positive law harmonization. This can be attributed to the fact that although it would be relatively easier for countries to agree on fundamental rights, and refrain from interfering with these rights. Rather, it would be

---

<sup>115</sup> David Kennedy, *New Approaches to Comparative Law: Comparativism and International Governance*, 1997 UTAH L. REV. 545 599.

<sup>116</sup> Manuel Velasquez, Claire Andre, Thomas Shanks, S.J., and Michael J. Meyer, *Rights*, ISSUES IN ETHICS V3 N1 (Winter 1990), available at <http://www.scu.edu/ethics/practicing/decision/rights.html>.

<sup>117</sup> *See id.*

relatively hard for countries to agree on their economic goals and policies and act in a uniform or harmonized way. Because positive rights are based on a country's specific economic situations and goals which merit protections by law, positive type harmonization can be very difficult to achieve.

< Table 1: Positive and Negative Harmonization >

<b>Type</b>	<b>Negative Harmonization</b>	<b>Positive Harmonization</b>
<b>Origin</b>	Negative Liberty / Rights	Positive Liberty / Rights
<b>Theoretic Foundation</b>	Natural Rights / Human Rights	Economic Rights / Welfare Rights
<b>Government's Role</b>	No Interference of Government	Active Role of Government
<b>Example</b>	Contract law, Copyright law	Competition law, Public Procurement law
<b>Evaluation</b>	Relatively Easy and Successful	Very hard to achieve

As observed above, patent harmonization is one example of positive harmonization. It can potentially include every measure of governments that enables the diverse patent system to work in harmony, and require the government to change laws to protect one's positive rights, or patent rights. Thus, patent harmonization requires the active role of governments, by legislator, executives, or courts, which is a typical feature of 'positive-type' harmonization.

### 3. Patent Law Harmonization focusing on the Acquisition of Rights

It is undeniable that enforcement is critical to securing patent rights throughout the world. There is little value in developing substantive standards of patent protection, if the rights holder cannot enforce them effectively through fair and expeditious procedures. This is especially true in light of an environment in which modern technologies have significantly facilitated the infringement of patents.<sup>118</sup> It must be possible for patent owners to stop current infringements, prevent future ones, as well as recover losses incurred from such infringements.<sup>119</sup> This is why the Preamble to the TRIPs Agreement recognizes the need to make available effective and appropriate means for the enforcement of such rights.<sup>120</sup>

However, it is notable that enforcement has not been the main issue in the history of patent harmonization. The scope of patent harmonization to date is limited to the acquisition of one's patent rights, rather than to enforcement. It is because the harmonization of patent enforcement necessarily requires the essential harmonization of two main legal traditions – common law and civil law – that are differ considerably on some key points, including the value of judicial precedents.<sup>121</sup> For this reason, TRIPs Preamble merely says that 'differences in national legal systems' will be taken into account.<sup>122</sup> Rather than attempting to harmonize

---

<sup>118</sup> ANTONY TAUBMAN, HANNU WAGER, AND JAYASHREE WATAL, A HANDBOOK ON THE WTO TRIPS AGREEMENT 136 (Cambridge University Press, 2012).

<sup>119</sup> *id.* at 137.

<sup>120</sup> *id.*

<sup>121</sup> *id.*

<sup>122</sup> *id.* at 136

substantive enforcement rules.<sup>123</sup> TRIPs sets certain minimum standards (article 1.1) such that the enforcement provisions of the TRIPs Agreement can be compatible with both systems.<sup>124</sup> Whereas, for instance, Part II of TRIPs about the substantive standards for the protection of patent rights draws upon the existing body of international intellectual property law extensively, Part III of TRIPs – about patent enforcement – incorporates only a few relevant provisions from earlier treaties.<sup>125</sup> This reflects an attitude that enforcement issues cannot be solved independently, but should be discussed within a bigger frame of legal system harmonization.

#### **IV. TWO TYPES OF PATENT HARMONIZATION**

Based on these characteristics of patent harmonization, this section focuses on analyzing several issues and strategies in detail. To do this, it is worth referring to the Korea Intellectual Property Office (KIPO)'s categorization that divides the measures for patent law harmonization into four categories (Figure 4):<sup>126</sup>

---

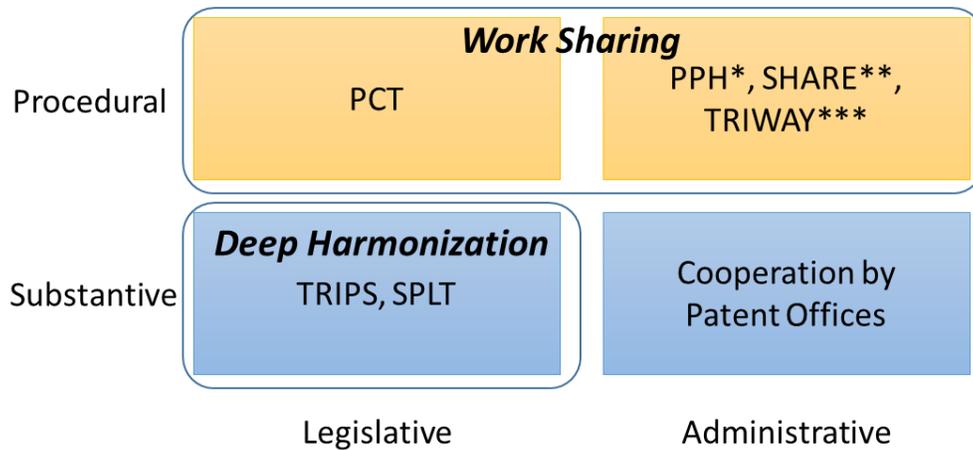
<sup>123</sup> *id.* at 138

<sup>124</sup> *id.* at 135

<sup>125</sup> *id.*

<sup>126</sup> KOREA INTELLECTUAL PROPERTY OFFICE (KIPO), A STUDY ON MUTUAL RECOGNITION OF PATENT EXAMINATION 5 (2008).

< Figure 2: The Four Categories of Patent Harmonization<sup>127</sup>>



(\*Patent Prosecution Highway<sup>128</sup>, \*\*Strategic Handling of Applications for Rapid Examination,<sup>129</sup> \*\*\*Triway<sup>130</sup> )

<sup>127</sup> See *id.*, at 5.

<sup>128</sup> United States Patent and Trademark Office (USPTO), Patent Prosecution Highway (PPH) - Fast Track Examination of Applications, available at <https://www.uspto.gov/patents-getting-started/international-protection/patent-prosecution-highway-pph-fast-track>. (The Patent Prosecution Highway (PPH) speeds up the examination process for corresponding applications filed in participating intellectual property offices. Under PPH, participating patent offices have agreed that when an applicant receives a final ruling from a first patent office that at least one claim is allowed, the applicant may request fast track examination of corresponding claim(s) in a corresponding patent application that is pending in a second patent office. PPH leverages fast-track examination procedures already in place among participating patent offices to allow applicants to reach final disposition of a patent application more quickly and efficiently than standard examination processing.)

<sup>129</sup> Trilateral Cooperation, *Strategic Handling of Applications for Rapid Examination – SHARE*, available at <http://www.trilateral.net/projects/worksharing/share.html> (Strategic Handling of Applications for Rapid Examination (SHARE) is a USPTO proposed concept in which each office will give priority to examining applications for which it is the office of first filing. This arrangement will maximize work sharing by eliminating timing imbalances that currently affect the availability of search and examination results from other offices, in turn reducing redundancy. The Office of Second filing will use the search and examination results from the Office of First Filing " to the maximum extent practicable", a concept endorsed by the Trilateral Offices. The Offices will explore approaches for a pilot project, including the incorporation into the pilot of the EPO's FOCUS project.)

<sup>130</sup> Trilateral Cooperation, *Triway*, available at <http://www.trilateral.net/projects/worksharing/triway.html> (Triway is a USPTO "search sharing proposal" in which a corresponding application must be filed in each of the Trilateral Offices and each application must be ready for examination (e.g. a request for examination must be filed, if one is necessary). This must include any required request for expedited examination, if appropriate. Searches will be conducted prior to substantive examination and shared among the offices and applicant, who will have an opportunity to amend or withdraw. The Trilateral Offices agreed at the November 2007 Trilateral Pre-conference to undertake a limited pilot programme.)

First, patent law harmonization can be classified as “procedural” or “substantive.” Procedural issues deal with the forms and processes for the filing of applications. Procedural harmonization focuses on providing a filing tool for applicants to file foreign patents, and also suggesting a route for other patent offices to effectively process patent applications if they are willing to exploit work done by other patent offices.<sup>131</sup> In short, procedural harmonization addresses requirements relating to the form and method of patent applications. It does not deal with the requirements of patentability in substantive patent law; rather, it focuses on providing tools which allow many countries to effectively deal with the requirements of their substantive patent laws. The Patent Cooperation Treaty (PCT) is an example of a treaty which focuses on procedural harmonization.

On the other hand, substantive cooperation covers standards and rules for the granting patents. Substantive harmonization is often called “deep harmonization,” which not only entails the drafting, filing, and examination of patent applications, but also the cornerstone requirements of patentability.<sup>132</sup> The Trade Related Intellectual Property Rights (TRIPs) is a representative treaty based on the idea of substantive harmonization.

In addition, one can categorize a certain kind of cooperation based on whether it is of a “legal” or “administrative” nature. This describes whether the particular kind of cooperation requires a change in patent law, or not. For example, the patentability requirement is a legislative or legal element because it should be clearly written in the patent laws. On the other

---

<sup>131</sup> WIPO, *The Need For Improving The Functioning Of The PCT System*, PCT/WG/3/2 (2010), at 19, available at [http://www.wipo.int/edocs/mdocs/pct/en/pct\\_wg\\_3/pct\\_wg\\_3\\_2.pdf](http://www.wipo.int/edocs/mdocs/pct/en/pct_wg_3/pct_wg_3_2.pdf).

<sup>132</sup> Reichman & Dreyfuss, *supra* note 5 at 90; See also Karen M Hauda, “The Role of the United States in World-Wide Protection of Industrial Property” in Frank Gotzen, ed, *The Future of Intellectual Property in the Global Market of the Information Society* (Bruylant, 2003) 89 at 97.

hand, decision made by examiners, and the process of search and examination, are administrative functions, which the patent office generally has much discretion within its legal framework. The administrative aspects of a patent system can also be an important issue for harmonization, because a Patent Office's rulemaking, adjudication, or enforcement of a specific regulatory agenda can strongly influence the actual operation of patent laws.<sup>133</sup>

## **V. ISSUES AROUND TWO TYPES OF PATENT HARMONIZATION**

As discussed earlier in this chapter, widely accepted and fundamental assumption is that patent harmonization is a necessary and urgent matter. In order to solve the problems of fragmented patent systems fundamentally, arguments have been made that we need substantive harmonization. It is because the problems of application cost, examination delay, uncertainty and unpredictability can be solved only when countries have similar, or harmonized, patent laws.

Based on this recognition, two notable international agreements were concluded with regard to substantive harmonization: the Paris Convention for the Protection of Industrial Property (Paris Convention) and the Agreement on Trade-Related Aspects of Intellectual

---

<sup>133</sup> NICHOLAS ASKOUNES ASHFORD AND CHARLES C. CALDART, *TECHNOLOGY, LAW AND THE WORKING ENVIRONMENT* 59 (Island Press, 1991) (1996).

Property Rights (TRIPS).<sup>134</sup> First, the Paris Convention, concluded in 1883 and amended in 1900, 1911, 1925, 1934, 1956, 1967 and 1993, is considered to be the first multilateral agreement in the field of patent law harmonization.<sup>135</sup> It guarantees national treatment, allowing the inventors from any signatory nation to claim priority in other nations based on the filing date of its first application, as embodied in Article 4.<sup>136</sup> Specifically, Article 4(A) (2) of the Paris Convention ties its requirement of patent priority to an “application for a patent ... in one of the countries of the Union.”<sup>137</sup> Article 4(A) (2) also provides that “[a]ny filing that is equivalent to a regular national filing under the domestic legislation of any country of the Union or under bilateral or multilateral treaties concluded between countries of the Union shall be recognized as giving rise to the right of priority.”

On the basis of the Paris Convention, the TRIPS agreement established a set of minimum international standards of protection in some 150 participating countries within the WTO frame.<sup>138</sup> Particularly, the TRIPS Agreement sweeps away national limitations on patents protection by stating in the first sentence of Article 27(1) that “patents shall be available for any inventions, whether products or processes, in all fields of technology, provided that they are new, involve inventive step and are capable of industrial application.”<sup>139</sup> Unlike prior Intellectual Property conventions, The TRIPs Agreement provided an effective dispute settlement

---

<sup>134</sup> See *id.*, at 89.; See also Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, LEGAL INSTRUMENTS—RESULTS OF THE URUGUAY ROUND vol. 31, 33 I.L.M. 81 (1994) [hereinafter TRIPS Agreement].

<sup>135</sup> Getachew Mengistie, *The Impact Of The International Patent System On Developing Countries* 18 (WIPO Thirty-Ninth Series Of Meetings, Geneva, September 22 to October 1, 2003), available at [www.wipo.int/edocs/mdocs/govbody/en/a\\_39/a\\_39\\_13\\_add\\_1.doc](http://www.wipo.int/edocs/mdocs/govbody/en/a_39/a_39_13_add_1.doc).

<sup>136</sup> Takashi, *supra* note 19, at 8.

<sup>137</sup> GOLDSTEIN, *supra* Note 25, at 400.

<sup>138</sup> See TRIPS Agreement, *supra* note 134, arts. 27–34.

<sup>139</sup> GOLDSTEIN, *supra* Note 25, at 370.

mechanism.<sup>140</sup> Countries failing to comply with the TRIPS Agreement standards could be subjected to trade retaliation if WTO's dispute settlement mechanism determined the existence of a case of non-compliance with the Agreement.<sup>141</sup>

However, substantive harmonization is not an easily attainable goal because it requires too much time and effort. It has been proven by long history that the harmonization of substantive law will necessarily result in high financial and social costs in order to modify domestic legal systems, and would cause a serious political issue in national congress, resulting in heated debates and conflicting interests among various lobbying groups.

Moreover, suggestions for substantive harmonization are not easily acceptable to countries that lack competitive systems for patent protection, which are mainly developing countries. It is apparent that the implementation of substantive harmonization, such as the TRIPS Agreement, involves the amendment of existing legislation, the adoption of new legislation, the strengthening of Intellectual Property Rights administration, and the development of enforcement capacity.<sup>142</sup> All of these entail huge financial cost, especially for developing countries. For example, a UNCTAD's study in table 2 demonstrates the required reform and the estimated cost in selected countries.<sup>143</sup>

---

<sup>140</sup> *id.*

<sup>141</sup> *id.*

<sup>142</sup> *See id.*

<sup>143</sup> WORLD INTELLECTUAL PROPERTY OFFICE (WIPO), THE IMPACT OF THE INTERNATIONAL PATENT SYSTEM ON DEVELOPING COUNTRIES: A STUDY BY GETACHEW MENGISTIE 33 (Aug 2003), *available at* [http://www.wipo.int/edocs/mdocs/govbody/en/a\\_39/a\\_39\\_13\\_add\\_1.pdf](http://www.wipo.int/edocs/mdocs/govbody/en/a_39/a_39_13_add_1.pdf).

< Table 2: UNCTAD Case study related to estimated costs for reform and capacity building<sup>144</sup>>

<b>Country</b>	<b>Reforms Needed</b>	<b>Costs in US \$</b>
<b>Bangladesh</b>	Draft new laws, improve enforcement	\$250,000 one-time plus \$1.1 million annually
<b>Chile</b>	Draft new laws, train staff administering IPR laws	\$718,000 one-time plus \$837,000 annually
<b>Egypt</b>	Train staff administering IPR laws	\$1.8 million
<b>India</b>	Modernize Patent Office	\$5.9 million
<b>Tanzania</b>	Draft new laws, develop enforcement capability	\$1.0 ~ 1.5 million

In addition, developing countries are often opposed to an international obligation for substantive harmonization, because it would limit their discretion and policy tools. Because developing countries do not have much in the way of patent backlogs or innovative industries, they want their patent policies to be as flexible as possible to encourage economic development. They believe that every country must design its patent system according to its level of industrial development; and that global substantive harmonization will constrain their governments from using patents as tools to devise particular economic and industrial policies.<sup>145</sup>

For example, it has been reported by the WIPO that the TRIPS Agreement in fact restricts the freedom of developing countries from fine-tuning their patent systems in line with their level of techno-economic development.<sup>146</sup> In this sense, Reichman and Dreyfuss argue that “it is unwise to move to deep substantive harmonization [because] these standards challenge

<sup>144</sup> *See id.*

<sup>145</sup> NALINI KANTA MOHANTY, THE ADVANTAGE/DISADVANTAGE OF THE HARMONIZATION OF THE PATENT SYSTEM 60 (Mar. 2008), [http://www.jpo.go.jp/torikumi\\_e/kokusai\\_e/pdf/ipcoop\\_asia-pacific\\_e/india02.pdf](http://www.jpo.go.jp/torikumi_e/kokusai_e/pdf/ipcoop_asia-pacific_e/india02.pdf)

<sup>146</sup> WIPO, *supra* Note 143, at 33.

the technological catch-up strategies of all the developing countries and saddle them with social costs [that] they are struggling to absorb.”<sup>147</sup>

It is clear that developed countries and international societies think that it is imperative to deliver meaningful outcomes of substantive harmonization in a very near-term timeframe, considering the frustration of business sectors and the increasing number of patent backlogs.<sup>148</sup> If too much delay occurs, the fragmented patent system could jeopardize the patent system itself and continue a vicious cycle of uncertainty and economic waste. However, there are strong oppositions from developing countries for economic and political reasons, as discussed above.

In this situation, it is worth discussing procedural harmonization first as a practical and effective solution that can bear fruits in the near term. Procedural harmonization can lead to practical benefits by providing a uniform filing tool for foreign applicants, and by suggesting a route for effective processing of applications if Patent Offices involve the exploitation of work done by others.<sup>149</sup> As procedural harmonization does not deal with the requirements of patentability in substantive patent law, but focuses on providing administrative tools that many countries can easily cooperate with, it can help relieve the problem of fragmented patent systems without causing serious conflicts.

---

<sup>147</sup> Reichman & Dreyfuss, *supra* Note 5, at 91; See COMM’N ON INTELLECTUAL PROP. RIGHTS, INTEGRATING INTELLECTUAL PROPERTY RIGHTS AND DEVELOPMENT POLICY 159–62 (2002), available at [http://www.iprcommission.org/papers/pdfs/final\\_report/CIPRfullfinal.pdf](http://www.iprcommission.org/papers/pdfs/final_report/CIPRfullfinal.pdf); CARLOS M. CORREA, INTELLECTUAL PROPERTY RIGHTS, THE WTO AND DEVELOPING COUNTRIES: THE TRIPS AGREEMENT AND POLICY OPTIONS 5–44 (2000).

<sup>148</sup> E.R. KAZENSKÉ, PATENT OFFICES: STRATEGIES FOR WORK SHARING “NEED FOR A PRAGMATIC OUTCOME” 2, [http://fordhamipconference.com/wp-content/uploads/2010/08/Kaz\\_Kazenske\\_Patent\\_Offices\\_Strategy\\_for\\_Work\\_Sharing.pdf](http://fordhamipconference.com/wp-content/uploads/2010/08/Kaz_Kazenske_Patent_Offices_Strategy_for_Work_Sharing.pdf).

<sup>149</sup> WIPO, Patent Cooperation Treaty (PCT) Working Group, Third Session, Geneva, June 14 To 18, 2010, The Need For Improving The Functioning Of The Pct System, Study prepared by the International Bureau, pp19 [http://www.wipo.int/edocs/mdocs/pct/en/pct\\_wg\\_3/pct\\_wg\\_3\\_2.pdf](http://www.wipo.int/edocs/mdocs/pct/en/pct_wg_3/pct_wg_3_2.pdf)

## CHAPTER 3

### PROCEDURAL HARMONIZATION

#### I. THE VALUE OF PROCEDURAL HARMONIZATION

It is widely accepted that a uniform patent procedure can benefit inventors throughout the world. In fact, there is not much opposition to procedural harmonization, as it does not discuss substantive legal issues regarding patent rights.<sup>150</sup> In other words, because procedural harmonization mainly focuses on administrative measures that do not necessarily require the changing of laws, they can be attained much more easily with relatively low costs. Procedural harmonization can focus on the patent prosecution process, and exclude questions of rights, enforcement or infringement, which necessarily require legal bases. Thus, they usually do not require concluding treaties or conventions which are accompanied by political debate or legal rectification; rather, they can be implemented by cooperation among some interested Patent Offices. This chapter investigates the possibility, costs, benefits, and limitations of this practical cooperation that can help the obtaining of a patent faster and cheaper.

---

<sup>150</sup> WIPO, *supra* Note 149, at 27 (The number of patent application filed through the Patent Cooperation Treaty (PCT) in 2008 was approximately 163,600, representing a 2.3% increase from the previous year.).

## II. STRATEGIES FOR WORK-SHARING

Procedural harmonization is often known as “work-sharing.”<sup>151</sup> Work-sharing can be an important part of patent harmonization as it helps Patent Offices to better understand each other’s work methods,<sup>152</sup> and gradually makes each country cooperate with others through rulemaking, adjudication, and implementation, without the amendment of patent laws. Therefore, the director of the USPTO David Kappos affirms that harmonization through work-sharing “allows us to [both] reduce pendency and improve quality.”<sup>153</sup>

### 1. The Stage of Work-Sharing

The purpose of work-sharing is simple but strong: “to eliminate unnecessary duplication of work among the offices, and enhance patent examination efficiency and quality.”<sup>154</sup> If an applicant files a patent application to a patent office, the application will be examined through the following procedure: filing, prior-art search, office action, and patent decision.<sup>155</sup> If the

---

<sup>151</sup> KIPO, *supra* Note 126, at 5.

<sup>152</sup> THOMAS H. STANTON, MARILU GOODYEAR, BERNARD ROSS, DANIEL L. SKOLER, AND CHARLES VAN HORN, U.S. PATENT AND TRADEMARK OFFICE: TRANSFORMING TO MEET THE CHALLENGES OF THE 21ST CENTURY xxi (A Report of the NATIONAL ACADEMY OF PUBLIC ADMINISTRATION for the United States Congress and the United States Patent and Trademark Office, August 2005).

<sup>153</sup> Gene Quinn, *Kappos Talks Patent Reform and Gene Patents at BIO Convention* (May 4, 2010), available at <http://ipwatchdog.com/2010/05/04/kappos-talks-patent-reform-and-gene-patents-at-bio-convention/id=10382/>.

<sup>154</sup> KAZENSKE, *supra* Note 145, at 1.

<sup>155</sup> KIPO, *supra* Note 126, at 5.

applicant files the application with multiple patent offices, each patent office will examine the application independently by following its own patent laws and administrative rules to determine patentability. Apparently, it is inefficient and wasteful for patent granting authorities to do virtually the same work day after day on thousands of duplicated patent applications.<sup>156</sup>

Thus, in order to secure efficient and reliable examination, it is necessary to share the information in each and every stage of this examination procedure. This includes search strategies, search results, and examination results for applications directed to the same invention.<sup>157</sup> Technically, as a process of sharing information, patent work-sharing necessarily implicates deferred examination for a significant percentage of patent applications. For patent applications with a foreign origin, this means a “second office” must await information processed and provided by a “first office.”<sup>158</sup>

One can think of three kinds of work-sharing based on the kinds of information that is shared between the first and second offices.<sup>159</sup> First, Patent Offices can share and mutually exploit the information of searching prior arts. This process can be called “*search-sharing*.” By using information from other offices, a particular office can reduce search time and reinforce the search result of prior art. As explained below, the “Patent Cooperation Treaty (PCT)” and the “Triway Project” suggested by USPTO is a good example of this type of sharing.

---

<sup>156</sup> Quinn, *supra* Note 156.

<sup>157</sup> ICC COMMISSION ON INTELLECTUAL PROPERTY (HEREINAFTER ICC), COOPERATION BETWEEN PATENT OFFICES: PRIOR ART SEARCHING OF PATENT APPLICATIONS 2 (Jun. 2010), *available at* [http://www.iccwbo.org/uploadedFiles/ICC/policy/intellectual\\_property/pages/ICC%20Statement\\_Patent%20Work%20Sharing\\_28%2006%2010.pdf](http://www.iccwbo.org/uploadedFiles/ICC/policy/intellectual_property/pages/ICC%20Statement_Patent%20Work%20Sharing_28%2006%2010.pdf).

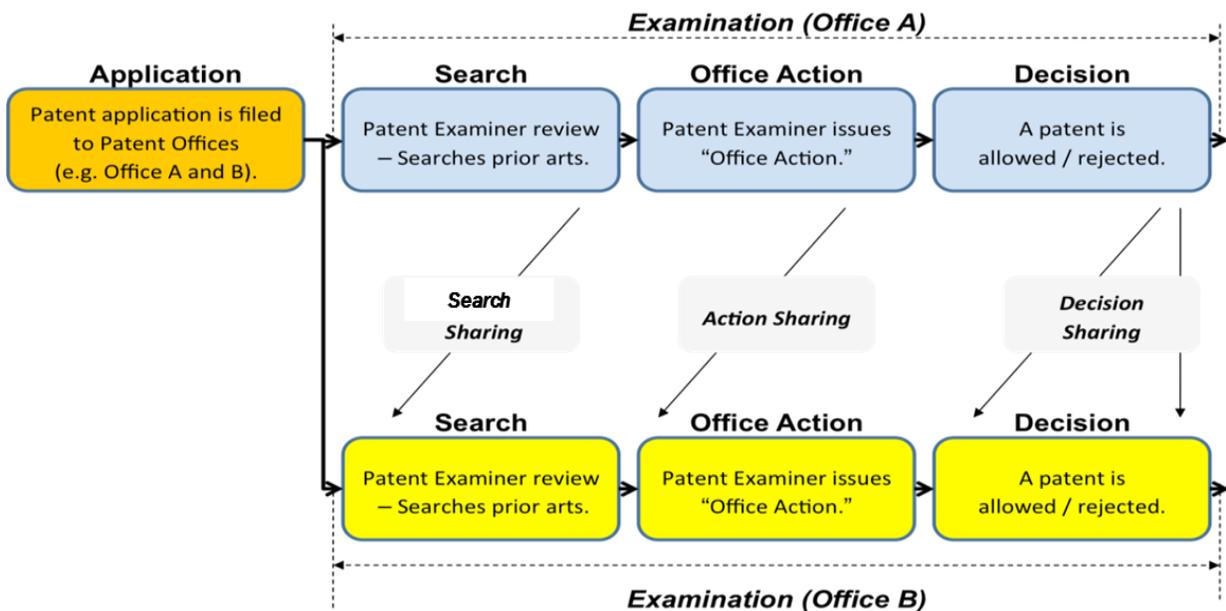
<sup>158</sup> HAROLD C. WAGNER, MAKING PATENT WORKSHARING WORK: NEEDED COMPLEMENTARY REFORM 1-2 (Apr. 2010), <http://www.grayonclaims.com/storage/Fordham2010.pdf>

<sup>159</sup> KIPO, *supra* Note 126, at 5.

Second, it is possible for offices to share the examination information including office action in the process of examination. This is called “*action-sharing*.” Through action-sharing, a second office can use it as a basis for decision making, or construct other points of view, or anticipate the result of patent decision or office action. The “New Route” suggested by JPO or the “SHARE” project proposed by USTPO, as described below, are examples of action-sharing.

Finally, it is possible for an office to cooperate with other offices by sharing its final decision. This is called “*decision-sharing*.” The second office can use the decision of the first office as a basis for deciding whether to grant a patent. From the applicant’s point of view, decision-sharing allows him to anticipate the decision of the patent application. The Patent Prosecution Highway (PPH), described below, is a typical example of this process. The three types of work-sharing are shown in figure 3:

< Figure 3: Three kinds of Work-sharing between Patent Offices >



## 2. The First Work-Sharing: Search-Sharing

All national patent laws and TRIPS Agreement require novelty to obtain a patent. When an applicant seeks patent protection in multiple jurisdictions, each of the Patent Offices performs a separate and independent novelty search on the same invention.<sup>160</sup> Each Patent Office performing such a search would examine all documents available before the latest filing date, thereby covering any document that is relevant in any territory.<sup>161</sup> And, subject to a few exceptions<sup>162</sup>, prior art that would defeat novelty in one jurisdiction will also defeat novelty in others, which means that each of the multiple offices is searching roughly the same body of prior art and comparing it to the same invention.<sup>163</sup>

On this background, search-sharing means mutually exploiting the strategy and results of a search. The second office can fully recognize the first office's search result, or it can just refer to the result in its own search of prior art. Search-sharing has a limited role only in prior-art search, and Patent Offices still retain the ultimate responsibility and discretion to decide granting patents.<sup>164</sup> Thus, search-sharing could be a fair starting point for broader work-sharing because it only provides information necessary for decision-making, and differing national laws

---

<sup>160</sup> ICC, *supra* Note 157, at 4.

<sup>161</sup> *id.*

<sup>162</sup> NEVIN CARMICHAEL, ABSOLUTE NOVELTY AND FOREIGN GRACE PERIOD PATENT PROVISIONS 1, *available at* <http://inhousecommunity.com/controlPanel/download.php?id=476&download=1>. (the majority of jurisdictions around the world adopts an absolute novelty standard when defining prior art. Notable countries that adopt such general statutory grace periods are for example the United States (twelve months) and Japan (six months). Other countries include for example Malaysia (twelve months), Australia (twelve months), South Korea (six months), Taiwan (six months), Canada (twelve months), Mexico (twelve months), Brazil (twelve months), South Korea (six months), Russia (six months), and Panama (twelve months).).

<sup>163</sup> *id.*

<sup>164</sup> ICC, *supra* Note 157, at 2.

would present no barrier to such a search. Also, even if the search examiner lacks experience in the appropriate field of law of one or other countries, search-sharing most likely does not pose a significant technical problem.<sup>165</sup>

Moreover, the language is not a big impediment of patents search-sharing. As a practical matter, examiners depend on the universal language such as drawings, pictures, and math formulas to find relevant prior art, rather than reading the full description of publications. Thus, for patent examiners, extensive databases of prior-art, advanced searching strategies, and trustworthy relevant information are useful and important. These can be supplemented by search-sharing. Search sharing can effectively reduce the costs for applicants and Patent Offices, considering that the cost of a comprehensive and coordinated search that is conducted in two or more offices will inevitably be greater than the search cost of a single office.<sup>166</sup> Furthermore, search-sharing can alleviate the problem of later-invalidated patents caused by different prior-art search.<sup>167</sup>

In fact, this search-sharing is already realized within the Patent Cooperation Treaty (PCT) structure. Signed in 1970, the PCT greatly streamlined and simplified the process for securing patent protection in multiple countries,<sup>168</sup> as many as 142 countries in 2010.<sup>169</sup> Specifically, PCT created a uniform legal route to file an international patent application in

---

<sup>165</sup> *See id.*, at 6.

<sup>166</sup> *id.*

<sup>167</sup> *id.*

<sup>168</sup> Wendy H. Schacht and John R. Thomas, *Patent Reform: Innovation Issues*, CRS Report RL32996 at 8, July 15, 2005, at 19.

<sup>169</sup> World Intellectual Property Organization(WIPO), *PCT Contracting States*, available at [http://www.wipo.int/pct/guide/en/gdvoll/annexes/annexa/ax\\_a.pdf](http://www.wipo.int/pct/guide/en/gdvoll/annexes/annexa/ax_a.pdf).

several countries by a single domestic filing. It also allows filing a single application, performing an international prior art search, and giving international publication.<sup>170</sup>

In particular, the PCT procedure consists of two main phases: the “international phase” and “national phase.”<sup>171</sup> The first step of the international phase consists of (1) the applicant’s filing of the international application and its processing by the “receiving Office”, (2) the establishment of the international search report and written opinion by one of the “International Searching Authorities (ISA)”, and (3) the publication of the international application and the international search report by the International Bureau of WIPO.<sup>172</sup> Optional steps include (1) the establishment of a supplementary international search, which may be carried out by one or more of the ISAs resulting in a supplementary international search report, and (2) the international preliminary examination, which concludes with the establishment of the international preliminary report on patentability by one of the “International Preliminary Examining Authorities (IPEA)”.<sup>173</sup>

On completion of the international phase, an applicant must carry out further actions in each of the national Offices where the applicant wishes to receive a patent on the basis of his international application.<sup>174</sup> In particular, the applicant must pay the national Offices the required national fees, furnish them with any requisite translations, and appoint a representative

---

<sup>170</sup> Mengistie, *supra* note 135, at 18.

<sup>171</sup> WORLD INTELLECTUAL PROPERTY ORGANIZATION (WIPO), THE PCT APPLICANT'S GUIDE, *available at* <http://www.wipo.int/pct/guide/en/gdvol1/pdf/gdvol1.pdf> (The expression “national phase” is used even if the Office before which it takes place is a regional Office. The expressions “international phase” and “national phase” are not actually used in the PCT, but they are convenient, short expressions which have become customary and are therefore used in this Guide.).

<sup>172</sup> *id.*

<sup>173</sup> *id.*

<sup>174</sup> *id.*

(patent agent) where required.<sup>175</sup> An applicant must take these steps within a fixed time to move the application forward in the national phase.

The drafters of the PCT expected that Examining Offices or International Searching Authorities (ISA) would create substantial economies, since the system renders all or most of the work involved in searching superfluous and help Patent Office decide by issuing an international preliminary examination report.<sup>176</sup> This process also helps the applicant by eliminating the need to apply for multiple patents in multiple jurisdictions. In fact, the PCT is considered the most successful mechanism in international patent cooperation, as reflected in its growing number of patent applications.<sup>177</sup>

However, under the current system many designated and elected Offices do not consider the international search as of high enough quality, and repeat the search when the application enters the national phase.<sup>178</sup> To overcome this problem of PCT, it is necessary to institutionalize the exploitation or recognition of search reports by Patent Offices. This requires embedding trust and confidence in the quality of the examinations based on the examiner, data base, and search strategy of other Patent Offices. As trust and credibility improve, so will the utility of search-sharing, from mere reference to full recognition of the prior-art search report. Accordingly, more efficient and reliable work-sharing is plausible.

---

<sup>175</sup> *id.*

<sup>176</sup> *id.*

<sup>177</sup> *id.*; Cumulative number of PCT application reached one million in 2005, two million in 2012, three million in Feb 2017; WIPO, *Cumulative number of PCT application 1978-2017*, available at [http://www.wipo.int/export/sites/www/pct/images/pct\\_3million-animation.gif](http://www.wipo.int/export/sites/www/pct/images/pct_3million-animation.gif) (last visited Feb 03, 2017)

<sup>178</sup> UNITED KINGDOM INTELLECTUAL PROPERTY OFFICE (UKIPO), *INFORMAL CONSULTATION ON REFORM OF THE PATENT COOPERATION TREATY (PCT) 7*, available at <http://www.ipo.gov.uk/consult-pct.pdf>.

These aspirations are widely supported by international organization and practitioners. In agreeing with the necessity and viability of search-sharing, International Chamber of Commerce (ICC) argues that “continued and improved cooperation between patent offices of an early coordinated comprehensive search would create efficiencies for patent offices.”<sup>179</sup> Former Commissioner of the Japan Patent Office, Hisamitsu Arai, also supported this argument by maintaining that “the first stage [toward global patent] is to get agreement on the sharing and mutual recognition of prior-art search results.”<sup>180</sup> Emphasizing the necessity of search-sharing among three countries – U.S., EU and Japan, Arai wrote this:

“There is, for example, an application pending in the U.S. for a patent on a DNA sequence. This is a single patent, but it is expected that it will cost the patent office about 9,100 dollars to ascertain whether or not the same basic application has already been filed, or the information is already commonly known. It would be very wasteful to have to duplicate this effort in Japan and Europe. If one patent office has conducted a prior-art search, it would make sense for the other jurisdictions to recognize those search results. An ordinary filing in Japan currently costs 191 dollars, and it is impossible for the JPO to hope to break even if it has to spend about 9,100 dollars just for ascertaining patentability. Likewise, business would prefer not to spend the time and money filing the same application in three different regions.”<sup>181</sup>

In reality, many international efforts are underway to improve search-sharing. Since 2005, UK Intellectual Property Office contracted with the Danish Patent and Trade Mark Office

---

<sup>179</sup> ICC, *supra* Note 157, at 2.

<sup>180</sup> ARAI, *supra* Note 60, at 60.

<sup>181</sup> *id.*

and the Netherlands Intellectual Property Office for mutual exploitation of search results.<sup>182</sup> And within the framework of Trilateral Cooperation<sup>183</sup> by three major patent offices in patent application – the European, Japanese, and the U.S., the “Triway” project suggested by USPTO is targeting the promotion of search-sharing by eliminating certain timing issues. Specifically, it provides applicants and Offices with the Trilateral Offices’ search results within a short period of time in order to give applicants and Trilateral Offices an opportunity to share and consider all of the Trilateral search results.<sup>184</sup> The pilot program was tested among three countries from 2008 to 2009.

Later on, as South Korea and China gained leverage in the patent field, the five major patent offices with high filing numbers have started a meeting called “IP5.” Since October 2008, the Five IP Offices (IP5) have been engaged in ten collaborative projects known as the Foundation Projects, which include projects of “Common Access to Search and Examination Results (One Portal Dossier)”.<sup>185</sup>

---

<sup>182</sup> UNITED KINGDOM INTELLECTUAL PROPERTY OFFICE (UKIPO), THE PATENT OFFICE CORPORATE PLAN 2005 23 (Apr. 2005), available at <http://www.ipo.gov.uk/about-plan2005.pdf>.

<sup>183</sup> See *id.*; See also Trilateral Cooperation, *The objective of Trilateral Cooperation*, available at <http://www.trilateral.net/about/objectives.html>: This long lasting co-operation is aimed at;

- Improving the quality of examination processes and reducing the processing time of patent applications
- Improving the quality of incoming applications
- Developing common infrastructure and compatible data for electronic business systems and search tools
- Solving common problems related to the protection of industrial property rights;
- Harmonizing practices of the three Offices
- Promoting the dissemination of the technical information contained in patents;
- Deepening awareness of the benefits of the patent system; and
- Exploiting the full potential of work performed by the other Trilateral Offices in search, examination, documentation and electronic tools

<sup>184</sup> USPTO, *Triway Pilot Among USPTO, EPO, and JPO*, available at <http://www.uspto.gov/web/patents/triwaypilot.html>.

<sup>185</sup> Five IP Offices, available at <http://www.fiveipoffices.org/obj.html>, The Foundation Projects of the Five IP Offices are (<http://www.fiveipoffices.org/projects.html>):

In summary, search-sharing is the fair starting point for further harmonizing efforts. Based on the successful operation of search-sharing, countries can advance to more cooperation such as decision-sharing and action-sharing, which will be discussed below.

### **3. The Second Work-Sharing: Decision-Sharing**

Decision-sharing refers to the second office's sharing of the final decision of the first office, and using it as a basis to decide whether the second office will grant a patent.<sup>186</sup> This is often called "mutual exploitation of examination results." Many advantages arise in the Second Office when its patent examiners can use the prior examiner's opinion, information on examination, prior-art search, and office action as reference materials. Even though the final decision on patentability remains solely with the Second Office, and the information from the initial Office can be of somewhat limited use due to differences in substantive patent law, the initial Office's examination is helpful in constructing a rationale for granting or rejecting an

- 
- Common Documentation (lead: EPO)
  - Common Hybrid Classification (lead: EPO)
  - Common Access to Search and Examination Results (lead: JPO)
  - Common Application Format (lead: JPO)
  - Common Training Policy (lead: KIPO)
  - Mutual Machine Translation (lead: KIPO)
  - Common Examination Practice Rules and Quality Management (lead: SIPO)
  - Common Statistical Parameter System for Examination (lead: SIPO)
  - Common Approach to Sharing and Documenting Search Strategies (lead: USPTO)
  - Common Search and Examination Support Tools (lead: USPTO)

<sup>186</sup> KIPO, *supra* Note 126, at 33.

application. Thus, when applications are filed in multiple patent offices, decision-sharing could significantly reduce the amount of work required in examinations.<sup>187</sup>

A powerful example of decision-sharing is the Patent Prosecution Highway (PPH), which is a set of initiatives that provide accelerated patent prosecution procedures in second patent offices by sharing information about decisions.<sup>188</sup> Specifically, under the PPH, an applicant receiving a ruling from the Office of First Filing (OFF) that at least one claim in his application is patentable, may request that the Office of Second Filing (OSF) fast track the examination of corresponding claims in corresponding applications filed in the OSF.<sup>189</sup> Overwhelming evidence proves that international applicants such as multi-national corporations can enjoy quicker and reliable patentability determinations in multiple jurisdictions through PPH.<sup>190</sup> In addition, the application costs to “enter the highway” is approximately only 20 ~

---

<sup>187</sup> LONDON ECONOMICS, ECONOMIC STUDY ON PATENT BACKLOGS AND A SYSTEM OF MUTUAL RECOGNITION – FINAL REPORT TO THE INTELLECTUAL PROPERTY OFFICE 77 (2010).

<sup>188</sup> American Intellectual Property Law Association, *Patent Prosecution Highway: A Key Strategy for Reducing Patent Backlogs* (May 24, 2010), available at [http://www.aipla.org/Template.cfm?Section=Press\\_Releases&Template=/ContentManagement/ContentDisplay.cfm&ContentID=25150](http://www.aipla.org/Template.cfm?Section=Press_Releases&Template=/ContentManagement/ContentDisplay.cfm&ContentID=25150); See also [http://www.uspto.gov/patents/init\\_events/pph/index.jsp](http://www.uspto.gov/patents/init_events/pph/index.jsp) (As of October, 2010, USPTO made an PPH agreement with 13 countries: Australia, Austria, Canada, Denmark, EU, Finland, Germany, Hungary, Japan, South Korea, Singapore, Spain, United Kingdom.); See also [http://www.jpo.go.jp/torikumi\\_e/t\\_torikumi\\_e/patent\\_highway\\_e.htm](http://www.jpo.go.jp/torikumi_e/t_torikumi_e/patent_highway_e.htm) (JPO (Japan Patent Office) made with 13 countries: the United States, South Korea, the United Kingdom, Germany, Denmark, Finland, Russia, Austria, Singapore, Hungary, Canada, EU, and Spain.); See also <http://www.ipo.gov.uk/p-pph-kipo-agree> (The UKIPO (United Kingdom Intellectual Property office) has only 3 agreements with the United States, Japan, and Korea.).

<sup>189</sup> United States Patent and Trademark Office (USPTO), *Patent Prosecution Highway (PPH) - Fast Track Examination of Applications* (Nov. 2010), available at [http://www.uspto.gov/patents/init\\_events/pph/index.jsp](http://www.uspto.gov/patents/init_events/pph/index.jsp).

<sup>190</sup> AIPLA REPORTS, AIPLA MEETING OF PATENT FILERS, USPTO, AND JPO CONFIRMS GREAT SUCCESS OF PPH 1 (May 20, 2010), [http://www.aipla.org/Content/ContentGroups/About\\_AIPLA1/AIPLA\\_Reports/20106/100520AIPLAReports.pdf](http://www.aipla.org/Content/ContentGroups/About_AIPLA1/AIPLA_Reports/20106/100520AIPLAReports.pdf) (Representatives of Microsoft and IBM confirmed the performance statistics of the USPTO and JPO. Microsoft’s statistics for its use of PPH in Japan as the Office of second filing showed: 73% allowance rate for PPH cases, 1.25 Office Actions from PPH-request to allowance, 1.9 months from PPH request to first Office Action, and 8.7 months from PPH request or examination to allowance. Consistent with Microsoft’s numbers was IBM’s experience in Japan: 86.7% allowance rate for PPH cases, 1.3 Office Actions from PPH-request to allowance, 49 days from PPH-request to first Office Action.).

30% of the cost incurred in pursuing examination through its current program. For the participating Offices, the PPH process avoids redundant works and reduces pendency.<sup>191</sup>

However, the usefulness of decision-sharing is limited because multiple applications will not be examined until the First Office entirely finishes examination. In other words, because the examinations in multiple Patent Offices are processed serially, not in a parallel manner, the total time for obtaining multiple patents might be longer. In addition, under a decision-sharing model, all claims in the office of second filing must be limited to the claim scope allowed in the office of first filing, which can result in narrower claims than if the applications were prosecuted separately in each country.<sup>192</sup>

As a result, the utility of decision-sharing depends on several issues between two countries involved: congruence of substantive standards, trust of examination, and language. For the first, decision-sharing is useful especially when substantive patent law is harmonized. Understandably, decision-sharing is especially useful for patent examiners when they receive examination results from countries with similar rules and standards to their own. If two countries share similar rules of patentability, the second office can dramatically reduce the need for further examination. This is evidenced in a KIPO report, where a Japanese applicant who used a PPH to file his second application in Korea – where the substantive patent law is almost

---

<sup>191</sup> See *id* (The USPTO statistics showed: 93% allowance rate for PPH cases, compared to a 44% rate for non-PPH cases, 1.7 actions per disposal for PPH cases, compared to 2.7 actions for non-PPH cases, 20% reduction in the number of claims, and 18-month decrease in pendency for some technologies. JPO also cited the speed of the PPH process, noting that PPH applications in the JPO, as the Office of second filing, have averaged a 1.9 month pendency to first action, compared to 29.3 month pendency for non-PPH applications. From first to final action, Niidome reported an average of 6.9 months, compared with 10.5 months for non-PPH applications.).

<sup>192</sup> Alicia Pitts and Joshua Kim, *The Patent Prosecution Highway: Is Life in the 'Fast Lane' Worth the Cost?*, 1 HASTINGS SCI. AND TECH. L.J. 127, 141 (2009).

identical to that of Japan – gained huge benefits from using PPH.<sup>193</sup> In one case, an applicant in Japan obtained a patent decision from Korea in only 28 days by using PPH.<sup>194</sup>

Moreover, decision-sharing should be based on the same trust and confidence that is required in search-sharing. The increased amount of information involved in decision-sharing requires the whole examination process to be viewed with wider and broader trust. Even though countries might differ in their substantive law, a country could issue patents by decision-sharing if it strongly believes and confides in the quality of patents granted by other countries.

Israel is an excellent example of attempt to implement these principles. If an applicant for an Israeli patent successfully obtained a patent on a parallel application filed in any other patent office on a published list, Article 17(c) of the Israeli Patents Law requires the Israeli Patent Office to “deem” the application compliant with the basic validity requirements of Israeli law (including novelty, non-obviousness, and enablement).<sup>195</sup> Currently, Israel’s list of acceptable Patent Offices includes the USPTO, the European Patent Office (EPO), and the national patent offices of Austria, Germany, Denmark, the United Kingdom, Norway, Sweden, Russia, Japan, and Canada.<sup>196</sup> Thus, a party seeking an Israeli patent may choose one of eleven foreign patent offices within which most of the examination can occur.<sup>197</sup> Without trust, applicants could abuse Israel’s decision-sharing as a backdoor to hastily obtain an Israeli patent; this would eventually result in a deterioration of the patent’s quality.

---

<sup>193</sup> KIPO, *supra* Note 126, at 79.

<sup>194</sup> *See id.*

<sup>195</sup> Michael Abramowicz & John F. Duffy, *Ending The Patenting Monopoly*, 157 UPENN L. REV. 1541, 1566 (2009).

<sup>196</sup> *See id.*; *See also* Posting of Michael Factor to The IP Factor, Israel Patent Office Relaxes Conditions for Modified Examination, <http://blog.ipfactor.co.il/2009/01/14/israelpatent-office-relaxes-conditions-for-modified-examination> (Jan. 14, 2009).

<sup>197</sup> *See id.*

The final consideration is language. Language may be one of the most practical and fundamental hurdles in discussing harmonization. Countries require patent applications to be written in their own language, and issue office actions and decisions in their own language as well. To share decisional information, examiners must understand patent applications written in highly technical and specialized terms, and examiner opinions which define the legal rights and scope of patents. Decision-sharing is impossible if examiners cannot understand the documentation. Thus, to facilitate decision-sharing between countries using different languages, accurate translations should be elaborated in advance. In short, participating countries could enjoy the benefits of decision-sharing if they find similarities in their patent laws, demonstrate strong trust, and agree on a same language. The effective use of decision-sharing will lead to mutual recognition of patents, which will be discussed later.

#### **4. The Third Work-Sharing: Action-Sharing**

“Action-sharing” defines the process in which offices share information about prior-art search results and office action. In action-sharing, OFF (Office of First Filed) has priority to conduct the first action in searching and examining prior art. Action-sharing is the sharing of information between searching prior-art and concluding examination, but it can be particularly helpful in cases where the examining speed of two offices is so different that it is difficult for the offices to timely use information to share the workload. In this case, this structure of action-sharing is helpful to synchronize examination.

For example, a 2004 study conducted by the Trilateral Offices showed that for USPTO-JPO/JPO-USPTO cross-filings, USPTO produced first action results prior to JPO first action in about 90% of cases, whereas JPO produced first action results prior to USPTO first action in only about 10% of cases.<sup>198</sup> The study revealed that the timing of the availability of Office of First Filing (OFF) search and examination results relative to Office of Second Filing (OSF) pendency is far from optimal, posing a major obstacle to work-sharing.<sup>199</sup> Given the high volume of JPO-USPTO filings, this disparity represented a significant loss to the USPTO in potential efficiency gains.<sup>200</sup> To address this problem, USPTO proposed a program known as SHARE, or Strategic Handling of Applications for Rapid Examination. Under SHARE, The Office of Second filing will use the search and examination results from the Office of First Filing “to the maximum extent practicable” to eliminate timing imbalances.<sup>201</sup> This action-sharing synchronizes time for efficient examination and improves the quality of examination in the Second Filing Office by using the information from the First Office as a basis for its decision process, constructing other points of view or anticipating the result of patent decision or office action.<sup>202</sup> As one can see in this case, action-sharing could be an additional consideration when there is particular time-difference or difficulties that make cooperation inefficient.

---

<sup>198</sup> PETER N. FOWLER, INTERNATIONAL POLICIES AND NORMS TO ADDRESS EMERGING IP CHALLENGES 16 (Mar. 2010), *available at* [http://www.oapi.wipo.net/edocs/mdocs/aspac/en/wipo\\_inn\\_tyo\\_10/wipo\\_inn\\_tyo\\_10\\_theme01b\\_04.pdf](http://www.oapi.wipo.net/edocs/mdocs/aspac/en/wipo_inn_tyo_10/wipo_inn_tyo_10_theme01b_04.pdf).

<sup>199</sup> *id.*

<sup>200</sup> *id.*

<sup>201</sup> *See* TRILATERAL OFFICE, *supra* Note 129.

<sup>202</sup> KIPO, *supra* Note 126, at 33.

## 5. Summary

There are many promising measures of work-sharing available. First of all, search-sharing is the most viable and practical way. It only provides information and resources to decide patentability, and many Patent Offices may feel much more comfortable in joining this cooperation as long as they still retain their discretion and authority to administer the examination process. To realize search-sharing, it is necessary to construct trust and confidence in the search results done by counterparts. Second, decision-sharing should be built on the foundation of search-sharing. In decision-sharing, examiners in the Second Office could enjoy a larger amount of reference data and record produced by other Offices. However, unless the patent law is similar, the examination is trustworthy, and the examiners could understand the record, the availability of this information would be substantially limited. In this situation, decision-sharing could be harmful by delaying the examining procedure until the end of the first office's examination. Finally, action-sharing functions as a supplementary tool. If one could find specific conditions that fit its use, such as different examination speeds between two offices, it could be used on a case-by-case basis.

These three work-sharing mechanisms are summarized in table 2. Based on this analysis, a step-by-step approach is suggested. Starting from search-sharing, countries with common backgrounds and interests could push towards decision-sharing. In this process of harmonization, offices could consider the supplementation of harmonization by action-sharing. Former Commissioner of the Japan Patent Office Hisamitsu Arai introduced a 4-stage-approach

toward true harmonization and global patents: the first stage consists of countries' agreeing on the sharing and mutual recognition of prior-art search results; the second stage is to recognize each other's patents; the third stage is to implement trilateral patents between U.S., Europe, and Japan; and the fourth stage is to extend worldwide in order to provide a truly global patent system.<sup>203</sup> This notion is well consistent with the arguments in this paper because it suggests that harmonization's trajectory begins from search-sharing to decision-sharing, and from procedural to substantive cooperation.

< Table 2: Three Kinds of Work-sharing >

	<b>Search-sharing</b>	<b>Action-sharing</b>	<b>Decision-sharing</b>
<b>Applicability</b>	Universal	Case-by-base	Limited
<b>Condition to Enhance Usefulness</b>	Trust and Confidence of Work		
	-	Timing Imbalance	Similarity of Law
	-	-	Language
<b>Shared Information</b>	Small	Middle	Large
<b>Advantage</b>	Broad cooperation	Tailored application	Maximum information sharing
<b>Disadvantage</b>	Small advantage and effect	Need to investigate timing imbalance in examination procedure	Serial, not parallel, examination
<b>Example</b>	Triway, IP5, UKIPO	One-Route, SHARE	PPH, Israel Patent Law

<sup>203</sup> ARAI, *supra* Note 60, at 60.

### III. SUGGESTIONS FOR EFFECTIVE WORK-SHARING

Currently, the U.S., EU and Japan are leading the discussion of procedural harmonization or work-sharing.<sup>204</sup> It is understandable that these offices have direct interests in harmonization due to their high number of patent applications, duplicated filing, and patent backlogs; as a result, once harmonization is realized, its influence on these offices would be substantial. However, work-sharing has universal applicability which can be applied more broadly and to other offices. More offices can participate in this cooperation, and more diverse forms of cooperation can be considered. Following are the suggestions which might represent useful and attainable cooperation based on the strategy of work-sharing.

#### 1. Language-based Cooperation

Language may be one of the most fundamental impediments in achieving harmonization. For applicants, a substantial portion of application costs consists in the cost of translating files. When applying for a patent in the U.S. or Japan, the translation costs can consume up to 36% of the total application cost.<sup>205</sup> Moreover, for Patent Offices, work-sharing assumes that the

---

<sup>204</sup> FIVEIPOFFICES, Those countries are the main members of trilateral Cooperation or IP5 Cooperation, and this shows that the most important criterion for finding partners to harmonize is the number of applicants., *available at* <http://www.fiveipoffices.org/>.

<sup>205</sup> WIPO, *supra* Note 56, at 51.

shared information is written in a language that the patent examiner can understand. If the material is written in a language that the examiner cannot understand, even a well-defined work-sharing mechanism or database would not work. In fact, the vast range of languages in the patent system most likely hampers harmonization: within the IP 5 circle, there are 6 languages – English, Japanese, French, Germany, Korean, and Chinese.<sup>206</sup> And, there are 23 official languages within the European Union.<sup>207</sup>

To confront this linguistic diversity that delays and impairs cooperation, countries have depended on machine translation. In 2008, IP 5 offices announced a project for “Mutual Machine Translation” to help offices overcome the language barrier of patent information and allow greater access to each other’s patent information.<sup>208</sup> In 2010, The EPO and Google signed a Memorandum of Understanding to improve access to patent translations in multiple languages.<sup>209</sup> But considering that patent applications and decisions are highly technical and sophisticated documents that should describe the legal rights and scope of patents, machine translations do not seem to be a prominent solution. For example, Chisum and Farmer have expressed concerns that inventive steps can be lost in transition, and patent translation errors can affect the legal determinations of claim scope.<sup>210</sup>

---

<sup>206</sup> European Patent Office, *Filing an application*, available at <http://www.epo.org/patents/Grant-procedure/Filing-an-application.html> (Three official languages in EPO: English, French, and Germany)

<sup>207</sup> EUROPA, *EU at a glance*, available at [http://europa.eu/abc/european\\_countries/languages/index\\_en.htm](http://europa.eu/abc/european_countries/languages/index_en.htm) (23 official languages: Bulgarian, Czech, Danish, Dutch, English, Estonian, Finnish, French, German, Greek, Hungarian, Irish, Italian, Latvian, Lithuanian, Maltese, Polish, Portuguese, Romanian, Slovak, Slovene, Spanish and Swedish)

<sup>208</sup> USPTO, *Press Release (Oct 31, 2008)*, available at <http://www.uspto.gov/web/offices/com/speeches/08-38.htm>.

<sup>209</sup> EPO, *Topics –News (Nov 30, 2010)*, available at <http://www.epo.org/topics/news/2010/20101130.html>.

<sup>210</sup> Donald S. Chisum and Stacey J. Farmer, *‘Lost in translation’: the legal impact of patent translation errors on claim scope* 289, *PATENT LAW AND THEORY: A HANDBOOK OF COMTEMPORARY RESEARCH*, Edited by Toshiko

In view of this, pragmatic gains would result if countries with the same language could discuss harmonization with one another; for example, English groups (e.g. the U.S, England, Canada, and Australia), Spanish groups (e.g. Spain, Mexico, Argentina, and Chile), French groups (e.g. France, Canada, and Switzerland) and Chinese groups (China and Taiwan). In addition, because countries with the same language tend to share common cultural backgrounds and legal heritage, it might be easy to find common denominators for cooperation in these cases.

In fact, two kinds of inter-governmental institutions in Africa are discussing harmonization based on their common language. OAPI (Organisation Africaine de la Propriété Intellectuelle: The African Intellectual Property Organization)<sup>211</sup> is an institution composed of 16 countries who use French, and ARIPO (African Regional Intellectual Property Organization)<sup>212</sup> is an institution that consists of 16 English-speaking countries.<sup>213</sup> Another example is the “Vancouver Group”, where the UK, Canada, and Australia launched discussion group in 2008 to discuss mutual exploitation of patents.<sup>214</sup> Based on the their recognition of common backgrounds for cooperation among them – similarly sized developed countries, similar legal heritage, and long standing relationships, they announced harmonization efforts to enhance efficiency of the intellectual property system and productivity of offices in the interests of

---

Takenaka, (Edward Elgar, 2008).

<sup>211</sup> There are 17 member states including: Benin, Burkina faso, Cameroun, Centrafrique, Comores, Congo, Côte d'Ivoire, Gabon, Guinée, Guinée Bissau, Guinée équatoriale, Mali, Mauritanie, Niger, Sénégal, Tchad, Togo. *available at* <http://www.oapi.int/> (last visited Jan 07, 2017).

<sup>212</sup> There are currently 19 States which are party to the Lusaka Agreement and therefore members of ARIPO. These are: Botswana, The Gambia, Ghana, Kenya, Lesotho, Malawi, Mozambique, Namibia, Sierra Leone, Liberia, Rwanda, São Tomé and Príncipe, Somalia, Sudan, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe. (Total: 19 Member States.) *available at* <http://www.aripo.org/> (last visited Jan 07, 2017).

<sup>213</sup> KIPO, *supra* Note 126, at 12.

<sup>214</sup> FATIMA BEATTIE, VANCOUVER GROUP MUTUAL EXPLOITATION: COLLABORATION BETWEEN UK, CANADA AND AUSTRALIA, *available at* <http://www.ipo.gov.uk/beattie.ppt>.

customers and the community.<sup>215</sup> Even though their discussions are still in the primitive stage, they have enough potential to expect more meaningful results in the future.

## **2. The Offshore Outsourcing of Patent Examination**

With search-sharing being recognized as the easiest and most realizable option to reduce work and cost, new forms of cooperation are emerging. One is the offshore outsourcing of patent examination. Outsourcing is the generic term used when companies contract-out certain business functions – usually in non-core areas – to an external supplier, eliminating the need to maintain an internal staff to perform that function.<sup>216</sup> Offshore outsourcing is the contracting of these business functions to companies in other countries that can provide lower-cost services.<sup>217</sup>

Management can consider offshore outsourcing to improve flexibility, reduce costs, and concentrate on core areas. This principle can also be applied to patent examination. From a Patent Office's point of view, prior-art searching is not a core function because it provides patent examiners with preliminary information on which to base their examinations. Thus, if another country can perform the prior-art search more efficiently with lower costs, both participating countries could benefit from the overall efficiency resulting from the cooperation. The countries that are outsourcing their work can benefit from reduced costs and shortened

---

<sup>215</sup> *id.*

<sup>216</sup> OFFICE OF SENATOR JOSEPH I. LIEBERMAN, OFFSHORE OUTSOURCING AND AMERICA'S COMPETITIVE EDGE: LOSING OUT IN THE HIGH TECHNOLOGY R&D AND SERVICES SECTORS (May 11, 2004), *available at* [http://lieberman.senate.gov/assets/pdf/off\\_shoring.pdf](http://lieberman.senate.gov/assets/pdf/off_shoring.pdf).

<sup>217</sup> *See id.*

examination times, which can lead to the improvement of patent quality. The countries to whom the work is outsourced can expect fee income and improved expertise.

Outsourcing in patent examination is already taking place in the real world. For instance, UKIPO began outsourcing to India in 2011, with answering telephone inquiries at first and then expanding to search and examination.<sup>218</sup> On the other hand, the Danish Patent Office is one of the leading Offices in the specialization of searching and providing information for examination. The Danish Patent Office offers fast opinions on patentability of inventive ideas, and it also provides opinions on the validity of existing patents, which a patentee's competitors or other Patent Offices might use when deciding whether to challenge an issued patent.<sup>219</sup> Both services are extraordinarily fast, advertising ten working days as the normal benchmark for completing the services.<sup>220</sup>

Moreover, the Danish Office advertises a general set of "business services" touted as "combin[ing] our search competencies with our knowledge about practices within the areas of rights and legislation."<sup>221</sup> Like a private law firm, the Danish Office urges potential clients to "[t]ake advantage of us being an authority" and having "more than a hundred experts at your disposal."<sup>222</sup> Also similar to a law firm, the Office charges its customers by the hour for its professional services.<sup>223</sup> Apparently, the development of information technology (IT) technology makes offshore outsourcing easier, faster, and more plausible. As convenient and

---

<sup>218</sup> UK-IPO TO OUTSOURCE TO INDIA, *available* at [http://groups.google.com/group/ipkat\\_readers/browse\\_thread/thread/c0d809dd2c527f09?pli=1](http://groups.google.com/group/ipkat_readers/browse_thread/thread/c0d809dd2c527f09?pli=1).

<sup>219</sup> Abramowicz & Duffy, *supra* Note 195, at 1570.

<sup>220</sup> *See id.*, at 1571.

<sup>221</sup> *See id.*; Danish Patent & Trademark Office, Business Services, <http://int.dkpto.dk/business-services.aspx> (last visited Apr. 15, 2009).

<sup>222</sup> *id.*

<sup>223</sup> *id.* (charging hourly rates of DKK 1050, equivalent to approximately \$190).

safe movement of vast information becomes possible with the help of IT technologies, patent examination's quality and overall efficiency can be dramatically improved by offshore outsourcing.

### **3. A Regional Patent System**

A regional patent system can be described as a regionally limited global patent system. It can be analogized to the comparison made between regional economic integration and global economic integration. As regional economic integration is a realistic reaction to the wave of economic globalization, a regional patent system is the pragmatic solution to confront the problems of fragmented patent systems in the age of globalization.

Theoretically, a regional patent system introduces a new patent which can be recognized in its member states. In this sense, a regional patent system is not a mutual recognition system, but a multilateral form of unilateral recognition. EU and ASEAN are examples of this regional patent system. The operation of the European patent and the on-going discussion in ASEAN suggest several prerequisite conditions in order to successfully introduce a regional patent system.

In order to achieve a regional patent system, first and foremost, there should be a fundamental motivation and agreement to construct a common market and promote free trade. Intellectual property and patents have been long recognized as one of the most important features

of the common market agreement. Differences between national laws in the intellectual property field may constitute protectionist barriers to the free movement of goods and services that distort competition and undermine the single market.<sup>224</sup> For example, a member state with extremely strict counterfeiting laws could easily be harmed by counterfeiting products from a member state whose laws were less stringent.<sup>225</sup> Accordingly, countries that initiated the regional integration agreement will subsequently have interests in a common patent system.

Another important condition for the regional patent system is the existence of a common denominator and a higher standard of patentability. In an optimal regional patent system, the regional patent should be fully recognized after translation, and the patentability rule should be the common denominator of national patent laws that can fully meet the requirement of national rules. Also, the standard and quality of regional patents should be high enough to satisfy the national standards of all member states.

A final and recurrent consideration to highlight in the regional patent system is language. Although the economic integration union will result in diverse languages, the regional patent system cannot support all languages. Thus, it is necessary to set an official language which is interchangeable, universal, and easily translated in a reasonable price and speed. For example, there are 26 official languages in the European Union, but the patent application should be written in three languages – English, French, and German. Even though Spain and Italy

---

<sup>224</sup> WEILER, AND KOCJAN, THE LAW OF EUROPEAN UNION, CHAPTER 12 (INTELLECTUAL PROPERTY) 1, available at <http://www.jeanmonnetprogram.org/eu/Units/index.html>.

<sup>225</sup> See *id.*

strongly criticize this condition, it is established that works by these three languages are well processed and reviewed with excellent translations.<sup>226</sup>

A notable example of the regional patent system is the European Patent Convention. Since the early stages of the European Community, the fear that national intellectual property rights would be abused to restrict trade within the European Community led the European Commission to seek solutions in the fields of patents, designs and trademarks.<sup>227</sup> As a result, in 1973, over twenty states met at the diplomatic conference in Munich to discuss the introduction of a European patent grant procedure, and the conference concluded with the signing of the European Patent Convention by sixteen participants.<sup>228</sup> The convention declared that its purpose is to strengthen co-operation between the European states to protect inventions.<sup>229</sup> Furthermore, it was intended to ensure that the states could guarantee such protection through a single procedure and standard rules that issue and govern patents.<sup>230</sup>

The proceedings in the European Patent Convention include not only a preliminary search but also a complete examination against a specific standard of invention for all applications filed in the European Patent Office.<sup>231</sup> Upon completing the examination stage and determining patentability, a copy of the patent application is transferred to the Patent Office in

---

<sup>226</sup> THOMAS BORECKI, MOVING TOWARDS REGIONAL PATENT SYSTEMS, 61, *available at* <http://www.law.washington.edu/casrip/symposium/Number6/Borecki.pdf>.

<sup>227</sup> WEILER & KOCJAN, *supra* Note 224, at 1.

<sup>228</sup> European Patent Office, *History*, *available at* <http://www.epo.org/about-us/office/history.html>.

<sup>229</sup> *id.*

<sup>230</sup> European Patent Convention (EPC 1973), Preamble, *available at* <http://www.epo.org/patents/law/legal-texts/html/epc/1973/e/apre.html>.

<sup>231</sup> GOLDSTEIN, *supra* Note 25, at 183.; *See also* Robert B Benson, The impact of the Patent Cooperation Treaty (PCT) and the European Patent Convention (EPC) on U.S. practitioners, 60 J. PAT. & TRADEMARK OFF. SOC'Y 118 128 (1978).

each of the individual countries that were designated in the original application.<sup>232</sup> The application is then translated (if required) and the national Office issues a patent.<sup>233</sup> In effect, although an applicant files a single patent application, which is completed and prosecuted in the European Patent Office, it results in as many separate and distinct patents as the countries that were designated in the original application.<sup>234</sup>

In December 2012, following an earlier European Council decision in June of that year, the European Parliament voted on the formation of a pan-European patent system which includes a Unitary Patent (UP) effective in all participating EU member states and a Unitary Patent Court (UPC) having jurisdiction over all such member states<sup>235</sup>. The coming into effect of this pan-European patent system requires ratification of the UPC Agreement by at least 13 EU countries that must include Germany, France and the UK.<sup>236</sup> As the UK Government announced its intention to ratify the Agreement on a Unitary Patent Court (UPC) on November 28, 2016, it is expected that the Unitary Patent in Europe may become a reality in 2017.<sup>237</sup>

Another good example of the regional patent system is the ASEAN (Association of South East Asian Nations) Patent System. In 1995, seven Member states of ASEAN declared the “ASEAN Framework Agreement on Intellectual Property Cooperation.” In this agreement, the member states recognized the importance and need for regional cooperation in intellectual property among the surrounding countries. Moreover, according to Article 1(4), Member States

---

<sup>232</sup> *id.*

<sup>233</sup> *id.*

<sup>234</sup> *id.*

<sup>235</sup> Reinhold Cohn Group, *European Unitary Patent System and Unitary Patent Court After All*, available at <http://www.lexology.com/library/detail.aspx?g=d1ca3250-e3a1-4316-8801-3ea2eb39f98c> (last visited Jan 07, 2017).

<sup>236</sup> *id.*

<sup>237</sup> *See id.*

can explore the possibility of setting up an ASEAN patent system, including an ASEAN Patent Office, if feasible, to promote the region-wide protection of patents and to develop a regional and international protection system for patents. Based on this agreement, ASPEC (ASEAN Patent Examination Co-operation Programme) was established in 2008, with two announced objectives: the reduction of work and faster turnaround time; and the improvement of searches and examination procedures.

#### **4. Cooperation with Developing Countries**

Many developing countries have strongly opposed the position of a few developed countries driving patent harmonization forward. Specifically, it is true that developed countries want to protect their inventive ideas and check the competition of developing countries. In contrary, developing countries with low inventive capacity and unfamiliarity with intellectual property rights were unable to secure enough patents to guarantee the possibility of future development. Thus, developing countries find little merit in participating in negotiations; they consider patent law harmonization as an attempt to solidify or even widen the technical barrier and economic gap among countries.

These objections raise many difficult issues, which are considered at length in the next part of this work. However, work-sharing is an attractive subject to start discussion of harmonization within developing countries. First, developing countries can receive valuable

technical information from developed countries when they share information on application and prior-art search. Most patent laws require the patent description to disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.<sup>238</sup> Similarly, prior-art searches by other offices will disclose all relevant patents, publications, or products that existed before. If developing countries can take part in sharing such information and access an extensive database operated by developed countries, the resultant disclosure of comprehensive patent documents and research reports will be valuable resources for the developing countries' technical development. Shared information can also facilitate foreign investment in these countries, by advancing the identification, selection, negotiation, acquisition and transfer of foreign technology.

Work-sharing will also alleviate the burden on national offices of developing countries, as they often lack the requisite manpower, information, documentation, and financial resources to complete the patents' protection.<sup>239</sup> Thus, shared information about prior art will help improve patent quality by avoiding duplication of local inventive efforts, and to reorient them to invent around any patented invention.<sup>240</sup>

In summary, work-sharing can not only contribute the developing countries' economic development, but it can also help developing countries overcome the problem of failing to maintain a competitive patent regime due to their lack of capacity and information on alternative sources of technology.<sup>241</sup>

---

<sup>238</sup> WIPO, *supra* note 4, at 12

<sup>239</sup> *id.*

<sup>240</sup> *id.*

<sup>241</sup> *id.*

## 5. Combination with PCT Reform

Since its adoption in Washington in 1970, the PCT has achieved great success in meeting its objectives. In particular, it has succeeded in simplifying and rendering more economical protection of inventions throughout the world. An important factor in the PCT's success has been its procedural focus to obtain patent rights. Even though this procedural focus is of limited helpfulness in solving the patent problems in the globalized age, its low degree of mandate could rather encourage countries to join this treaty. From the standpoint of work-sharing, PCT can be a useful vehicle that implements the search-sharing mechanism. As discussed earlier, search-sharing mechanisms have already been implemented within the PCT framework, but it is possible to synthesize various practical measures of work-sharing in order to create synergy effects. As WIPO Director General Francis Gurry suggests,<sup>242</sup> there are several ways to reform PCT, as well as to strengthen work-sharing: (1) upgrade search-sharing, to make search report and preliminary examination more compliant and consistent; and (2) combine decision-sharing, to make international examination more complete, relevant and useful.<sup>243</sup>

## 6. The Evolution toward Mutual Recognition

The ultimate and ideal cooperation of work-sharing, especially decision-sharing, is a mutual recognition of patents. Mutual recognition of patents is based on the agreement

---

<sup>242</sup> UKIPO, *supra* Note 178, at 4.

<sup>243</sup> *id.*

between two or more Patent Offices to validate each other's patents, accrediting other Patent Offices that the methodology of the examination is sound and that the procedures are functioning accordingly.<sup>244</sup> From the standpoint of harmonization, mutual recognition is a more advanced form of cooperation than that of mere information-sharing in the examination process, and can be considered as bridge toward substantive harmonization. As mentioned in the previous discussion on decision-sharing, Patent Offices must build stronger relations of trust and confidence regarding examination, similarity of patentability standards, and interchangeability of language, if they are to realize mutual recognition. Mutual recognition may or may not require a change in substantive law for its implementation; and mutual recognition might not be easily attainable, just as the substantive harmonization of patent law is hard to achieve.<sup>245</sup>

Mutual recognition's expected benefits in reduced costs and enhanced predictability would, however, undoubtedly be great. Under a regime of mutual recognition, Patent Offices – theoretically – would not conduct any further examination of any application, where the same claims have previously been examined by another patent office.<sup>246</sup> The UK Intellectual Property Office (UKIPO) estimated that the mutual recognition system reduces the amount of time spent on duplicate applications by 25%, which will reduce the backlog by 9 backlog months

---

<sup>244</sup> The UNESCO definition of: *Mutual Recognition*: Agreement by two or more institutional bodies to validate each other's degrees, programmes, or institutions and/or affirmation by two or more quality assurance or accrediting agencies that the methodology of the agencies are sound and that the procedures are functioning accordingly. (Vlăsceanu *et al.* 2004, p.55), <http://www.qualityresearchinternational.com/glossary/mutualrecognition.htm>

<sup>245</sup> LONDON ECONOMICS, *supra* Note 187, at 5.

<sup>246</sup> *See id.*, at 77.

(19%) after 5 years.<sup>247</sup> As a result, it is expected that mutual recognition could achieve savings between £6 (\$8.9) billion and £23 (\$34.3) billion per annum in the U.K.<sup>248</sup>

#### **IV. THE Limitations of Procedural Harmonization**

Despite these sizable benefits, procedural harmonization cannot solve fundamental problems of fragmented patent system. It is because these procedural frameworks are designed to efficiently grant a set of individual national patents that remain separately enforceable under local laws.<sup>249</sup> Thus, as long as national Patent Offices finally has an authority to decide whether to grant a patent, the problems from a fragmented patent system – limited patent protection and unpredictability – cannot be solved. At best, procedural harmonization can make patent granting process fast and convenient, especially for multiple applications.

Many provisions in PCT clarifies this point: Article 27(5) expressly states that “[n]othing in this Treaty and the Regulations is intended to be construed as prescribing anything that would limit the freedom of each Contracting State to prescribe such *substantive conditions of patentability* as it desires.”<sup>250</sup> The “Notes on the PCT” further explain that “[c]onditions of

---

<sup>247</sup> *See id.*, at xiv.

<sup>248</sup> *Id.*

<sup>249</sup> Reichman & Dreyfuss, *supra* Note 5, at 88.

<sup>250</sup> WIPO PATENT COOPERATION TREATY (PCT) WORKING GROUP, THE NEED FOR IMPROVING THE

patentability’ include novelty, inventive step (non-obviousness), industrial applicability, certain subject matter (for example, foods and beverages, chemical products, pharmaceutical products, and plant or animal varieties, are not patentable in some countries).<sup>251</sup>

Moreover, economic benefits from procedural harmonization can be less than expected. For example, contrary to our intuitive expectation, an application through PCT is ineffective even in reducing costs and expediting the process. For example, WIPO shows that the costs using PCT is higher than direct application, especially when only a few countries are involved (Table 3).<sup>252</sup> The contributing factors behind the high costs include high default fees of international preliminary examinations compared to national examination fees, Offices’ failure to provide sufficient opportunity for discussion between the agent and examiner before a final report is established, and the fact that many elected Offices do not give significant attention to the international reports.<sup>253</sup>

< Table 3: The Comparison of Costs between Direct and PCT Applications >

	2 Countries <sup>254</sup>		7 Countries <sup>255</sup>		15 Countries <sup>256</sup>	
<b>Application</b>	Direct	PCT	Direct	PCT	Direct	PCT
<b>Costs</b>	\$16,971	\$19,406	\$59,397	\$60,481	\$119,381	\$118,339

---

FUNCTIONING OF THE PCT SYSTEM 19 (Third Session Geneva, June 14 to 18, 2010).

<sup>251</sup> *id.*

<sup>252</sup> WIPO, *supra* Note 4, at 51.

<sup>253</sup> WIPO, *supra* Note 250, at 39–40.

<sup>254</sup> WIPO, *supra* Note 4, at 58 (The United States of America and Japan).

<sup>255</sup> *See id.* (China, European Patent Office (validation in France, Germany and United Kingdom), Japan, the United States of America, and Republic of Korea).

<sup>256</sup> *See id.* (Australia, Brazil, Canada, China, European Patent Office (validation in France, Germany and United Kingdom), Israel, India, Japan, Mexico, the United States of America, Republic of Korea, Russian Federation, and Singapore).

Furthermore, the research by Korea Intellectual Property Office (KIPO) argues that PCT is relatively slow and the patent may have a reduced enforceable life span because the life of a patent is calculated from the date of its first filing.<sup>257</sup> According to WIPO, in 2009, 26% of international applications were published without an attached International Search Report (ISR)<sup>258</sup> because of delayed search. Also, in the same year, over 6% of ISRs were delivered more than 30 months after the priority date. International Authorities are mainly responsible for the delays because they often are unable to timely begin the international search or international preliminary examination as a result of difficulties in receiving information, documents or fees from the applicant or receiving Office. Part of the delay is also due to the time expended in application processing within the Office, including any Office correspondence with the applicant. Receiving Offices and International Authorities in different regions send documents in paper form and via surface mail, which also contributes to the delay.<sup>259</sup>

These problems and limitations of procedural harmonization call for discussing substantive harmonization. From next chapter, we are going to explore the issues of substantive harmonization, particularly focusing on its normative justification.

---

<sup>257</sup> KIPO, *supra* Note 126, at 20; see also *International Patent Protection*, available at <http://www.patent-faq.com/pct.htm>.

<sup>258</sup> WIPO, *supra* Note 250, at 6 (“ISR”: international search report: a report established by the International Searching Authority for every international application (subject to limited exceptions) listing the disclosures considered relevant to novelty or inventive step according to the definitions under the Treaty, which are intended to be sufficiently broad as to embrace the definitions of relevant prior art which apply in any Contracting State).

<sup>259</sup> WIPO, *supra* Note 250, at 29–30.

**CHAPTER 4**

**SUBSTANTIVE HARMONIZATION AND**

**UTILITARIAN JUSTIFICATION**

**I. SUBSTANTIVE HARMONIZATION**

Substantive harmonization is often called “*deep Harmonization,*” concerning not just the drafting, filing, and examination of patent applications, but also the cornerstone requirements of patentability.<sup>260</sup> For example, “*deep harmonization*” includes the adoption of identical rules concerning the amount of information revealed by patent disclosure, and the criteria to determine a novel and useful invention when a technical advance meets the requirement for an “inventive step” (non-obviousness).<sup>261</sup> It would also entail agreement on the priority of inventorship (whether a patent is awarded to the first to invent or the first to file), and whether inventors will be accorded a grace period permitting publication prior to filing.<sup>262</sup> The anticipated advantage of this substantive harmonization is the simple and rapid procedures, simplicity of access,

---

<sup>260</sup> Reichman & Dreyfuss, *supra* Note 5, at 90; *See also* Karen M. Hauda, *The Role of the United States in World-Wide Protection of Industrial Property*, in *THE FUTURE OF INTELLECTUAL PROPERTY IN THE GLOBAL MARKET OF THE INFORMATION SOCIETY* 89, 97 (Frank Gotzen ed., 2003).

<sup>261</sup> *Id.*

<sup>262</sup> *Id.*

proximity to courts, legal clarity and predictability.<sup>263</sup> In this sense, substantive or deep harmonization is essential elements for the ultimate goal of harmonization – “One patent application and global protection.”

The milestone for substantive patent harmonization was the Trade Related Intellectual Property Agreements (TRIPs) in 1995. After TRIPs, there have been numerous efforts by international communities, but there has been no additional step forward toward substantive harmonization. Rather, there has been growing conflicts around it. Developing countries who had agreed on TRIPs for expecting economic gains became very suspicious that the economic benefits of the international patent system were very unevenly distributed in favor of certain developed countries. They have raised questions about justification and reason for further harmonization, and resisted the pressure from developed countries.

The origin of this resistance and conflict can be that supporting countries have failed to provide satisfactory justification for patent harmonization. Conventionally, the utilitarian theory in connection with international trade has served to explain the necessity. However, as discussed below, it is very doubtful that any of these perspectives can provide satisfactory justification for patent harmonization.

---

<sup>263</sup> EUROPEAN COMMISSION, FUTURE PATENT POLICY IN EUROPE, PUBLIC HEARING 4 (12 JULY 2006), [http://ec.europa.eu/internal\\_market/indprop/docs/patent/hearing/report\\_en.pdf](http://ec.europa.eu/internal_market/indprop/docs/patent/hearing/report_en.pdf).

## II. UTILITARIAN THEORY

Arguably, the utilitarian theory is one of the most prevalent ways to explain patent harmonization. This approach is based on two observations: (1) patent laws can be justified by the utilitarian theory; (2) patent harmonization is necessary for free trade, which eventually benefits all participating countries from utilitarian perspective.

Because patent systems and international trade are both based on the utilitarian theory, patent harmonization can be construed through a unique utilitarian perspective. Namely, while country-specific patent systems are originally designed to maximize utility or economic benefits of one country, harmonizing each patent system can be helpful to further increase their utility by fostering free trade and lowering trade barriers.

From below, we are going to scrutinize the whole logical chain of utilitarian justification, starting from fundamental theories of patent systems and international free trade. Based on these theoretical foundations, we can evaluate the utilitarian justification for patent harmonization and its limitations in detail.

## 1. Theoretical Foundations

### (1) Theory 1: Patent Theory from Utilitarian Perspective

From a utilitarian standpoint, patent laws are designed to maximize the utility of a country. It is undeniable that the utilitarian theory is one of the most common ideas to justify patent laws. For example, the Supreme Court, Congress, and many legal scholars consider utilitarianism the dominant purpose of American patent law.<sup>264</sup> According to the utilitarian theory, patent law protects inventors' exclusive rights in their technologically or scientifically valuable inventions for limited periods of time, in order to foster innovation.

As Fromer confirms, “[t]he theory is that public benefits accrue by rewarding inventors for taking two steps they likely would not otherwise have taken: to invent, and possibly commercialize, in the first place, and to reveal information to the public about these inventions that stimulates further innovation.<sup>265</sup> . . . [U]tilitarian theories of intellectual property rest on the premise that the benefit to society of creators crafting valuable works offsets the costs to society

---

<sup>264</sup> Jeanne C. Fromer, *Expressive Incentives in Intellectual Property*, 98 VA. L. REV. 1745, 1750; See, e.g., *Diamond v. Chakrabarty*, 447 U.S. 303, 307 (1980); *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 330–31 (1945); Dan L. Burk & Mark A. Lemley, *Policy Levers in Patent Law*, 89 Va. L. Rev. 1575, 1597–99 (2003); F. Scott Kieff, *Property Rights and Property Rules for Commercializing Inventions*, 85 MINN. L. REV. 697, 697–98 (2001).

<sup>265</sup> *id.*; See Edmund W. Kitch, *The Nature and Function of the Patent System*, 20 J.L. & Econ. 265, 266 (1977) (A related theory advocates for encouraging commercialization because of its valuable role in diffusion of inventions).; See, e.g., Michael Abramowicz & John F. Duffy, *Intellectual Property for Market Experimentation*, 83 N.Y.U. L. Rev. 337, 337 (2008) (Another is the signaling theory, which proposes that patents are useful signals to financiers that the patenting firm is a worthy investment).; Clarisa Long, *Patent Signals*, 69 U. Chi. L. Rev. 625, 636–37, 648 (2002); Gideon Parchomovsky & R. Polk Wagner, *Patent Portfolios*, 154 U. Pa. L. Rev. 1, 37 (2005)

of the incentives the law offers to creators.”<sup>266</sup> Because this utilitarian framework entails a cost-benefit analysis, the leading scholarly analysis of patent has used economic methodologies.<sup>267</sup>

Under utilitarian theories, “patent laws are intimately tied to a nation’s economic goals, especially to its industries’ technological potential and the types of innovations it hopes to foster.”<sup>268</sup> Specifically, utilitarian theorists have generally endorsed the creation of patent rights as an appropriate means to foster innovation, subject to the caveat that such rights are limited in duration so as to balance the social welfare loss of monopoly exploitation.<sup>269</sup>

In other words, patent laws are designed to strike a balance between incentivizing local inventors and hence benefiting society, and granting the exclusive rights of patents to reinforce monopoly. It follows that the consequential social utility of patents in a country is conceived as the difference between domestic invention and domestic monopoly. This can be expressed in the following equation:

$$\text{Social Welfare in a Country} = \text{Domestic Invention} - \text{Domestic Monopoly}$$

---

<sup>266</sup> *id.*; Mark A. Lemley, *The Economics of Improvement in Intellectual Property Law*, 75 Tex. L. Rev. 989, 996-97 (1997).

<sup>267</sup> *id.*; *See, e.g.*, SUZANNE SCOTCHMER, *INNOVATION AND INCENTIVES* (1st paperback ed. 2006); John P. Conley & Christopher S. Yoo, *Nonrivalry and Price Discrimination in Copyright Economics*, 157 U. Pa. L. Rev. 1801 (2009); F. Scott Kieff, *The Case for Registering Patents and the Law and Economics of Present Patent-Obtaining Rules*, 45 B.C. L. Rev. 55 (2003); Lemley, *supra* note 134.

<sup>268</sup> Reichman & Dreyfuss, *supra* Note 5, at 99; *See also* Rochelle C. Dreyfuss & Andreas F. Lowenfeld, *Two Achievements of the Uruguay Round: Putting TRIPS and Dispute Settlement Together*, 37 VA. J. INT’L L. 275, 300–01 (1997).

<sup>269</sup> *See ibid.*

Under the current patent law system, a domestic patent system is believed to produce a net social gain because the social benefits of this increased rate of invention are large enough to offset the costs of patenting.<sup>270</sup> Moy elaborates this point as follows:

“Each unit of increased cost imposed on domestic consumers provides a unit of increased revenue to domestic industry. Evaluating such a patent system therefore involves, in large part, estimating the amount of increased invention that will actually result from a given increase in expected revenue. In addition, the increased resources diverted to a domestic patent owner are not wholly lost to the domestic economy. Rather, the domestic patent owner generally will reinvest all or a part of those resources, thereby mitigating the cost of patenting to some degree.”<sup>271</sup>

As a result, patent laws have resulted in divergent approaches,<sup>272</sup> because “the diverse laws tailored to each jurisdiction better accommodate those individual preferences than would a uniform set of laws imposed across all jurisdictions.”<sup>273</sup> For example, countries where innovation is not a major source of economic activity and growth are likely to choose a less stringent IP regime than would countries whose economies are highly dependent on innovation.<sup>274</sup> From this perspective, Trebilcock and Howse argue that “there is nothing suspect or unreasonable about the preference of many developing countries for a relatively lax system of IP rights.”<sup>275</sup>

---

<sup>270</sup> R Carl Moy, *The history of the Patent Harmonization treaty: economic self-interest as an influence* 26 J. MARSHALL L. REV. 457, 474 (1993)..

<sup>271</sup> *id.*

<sup>272</sup> Reichman & Dreyfuss, *supra* Note 5, at 120.

<sup>273</sup> GOLDSTEIN, *supra* Note 25, at 178.

<sup>274</sup> MICHAEL J. TREBILCOCK AND ROBERT HOWSE, *THE REGULATION OF INTERNATIONAL TRADE* (Routledge, 3<sup>rd</sup> ed. 2005) 399.

<sup>275</sup> *id.*

## (2) Theory 2: Trade Theory from Utilitarian Perspective

International trade theory also grounds on the utilitarian justification. From utilitarian perspective, free trade is helpful to increase the utility for each country. This means that “further liberalization will, with certain defined exceptions, always be beneficial both to the domestic economic welfare of the liberalizing state and to global economic welfare.”<sup>276</sup> This is also known as the theory of “comparative advantage”; through trade, a country can obtain goods and services with greater efficiency, given that each participating country specializes in activities in which that country has a comparative advantage.<sup>277</sup> This means that “through imports, a country can acquire goods and services that it either cannot produce at home or can produce at home only at a cost that is greater than the cost of obtaining them indirectly by exchanging them for the exports it produces . . . And every country, no matter how inefficient in its overall production structure, can always profitably export some goods to pay for its most desired imports.”<sup>278</sup>

David Ricardo, who conceived this comparative advantage theory, concluded that “a country would export the product in which it had the greater advantage, or a comparative advantage, and import the commodity in which its advantage was less, or in which it had a comparative disadvantage . . . Even when one country can produce commodities more efficiently than another country, both can gain from specialization and exchange, provided that the efficiency advantage is greater in some commodities than in others.”<sup>279</sup> As a result, the

---

<sup>276</sup> See *id.* at 401.

<sup>277</sup> David M. Gould & Graeme L. Woodbridge & Roy J. Ruffin, *The Theory and Practice of Free Trade*, FED. RES. BANK OF DALLAS ECO. REV., Fourth Quarter 1993, at 1.

<sup>278</sup> *id.*

<sup>279</sup> JOHN H. JACKSON, WILLIAM J. DAVEY, AND ALAN O. SYKES JR., LEGAL PROBLEMS OF INTERNATIONAL

classical economists concluded that “international trade does not require offsetting absolute advantages but is possible where a comparative advantage exists.”<sup>280</sup>

### **(3) Theory 3: Patent Harmonization based on the Utilitarian Theory**

By combining two arguments above, utilitarian scholars argued that patent harmonization is necessary to promote free trade and prevent trade distortion. As patent harmonization has been motivated by globalization and liberalization of the world economy, it is argued that a harmonized patent law can contribute to the removal of trade barriers and to the free movement of resources. For example, some developed countries claim that shortcomings in availability and enforcement of patent rights constitute barriers to trade, as potential exports by inventors or creators may be prevented or diminished through the circulation of illegal counterfeit products in foreign markets.<sup>281</sup>

This viewpoint becomes clear by looking at WTO treaties regarding trade and intellectual property, such as TRIPs. The preamble's chapeau of TRIPs highlights the reduction “of distortions and impediments to international trade” as the main target of the Agreement.<sup>282</sup> This statement suggests that improving the protection of patents could contribute to the reduction of such impediments involved in international trade.<sup>283</sup>

---

ECONOMIC RELATIONS: CASES, MATERIALS, AND TEXT 16-17 (Thomson West, 5<sup>th</sup> edition, 2008) (2008)

<sup>280</sup> *id.*

<sup>281</sup> CARLOS M CORREA, TRADE RELATED ASPECTS OF INTELLECTUAL PROPERTY RIGHTS: A COMMENTARY ON THE TRIPS AGREEMENT 3 (New York: Oxford University Press, 2007) (2007).

<sup>282</sup> *id.*

<sup>283</sup> *id.*

Consider, for example, that a country had no intellectual property protection, then presumably that country could be a source for the production and circulation of counterfeit goods. Should some of these goods find their way into markets with patent protection, this would result in a heavier burden being placed on border monitoring of imports. This monitoring would impose a cost on international trade that could have been avoided had there been a certain level of patent protection in all countries.

The establishment of an international patent protection would allow patent rights holders to inhibit any efforts of counterfeiting at its incipience, eradicating the need for the inefficient and costly method of blocking the exports of goods to countries with patent protection. Supporting this argument, Correa stated that:

“[T]rade distortions and impediments were resulting from, among other things: the displacement of exports of legitimate goods by unauthorized copies, or of domestic sales by imports of unauthorized copies; the disincentive effect that inadequate protection of intellectual property rights had on inventors and creators to engage in research and development and in trade and investment; the deliberate use in some instances of intellectual property right protection to discourage imports and encourage local production, often of an inefficient and small-scale nature; and the inhibiting effect on international trade of disparities in the protection accorded under different legislations.”<sup>284</sup>

---

<sup>284</sup> See *id.* at 3.

## 2. Utilitarian Justification for Patent Harmonization

It is clear that utilitarian arguments can support patent harmonization, if and only if patent harmonization can consequentially contribute to the increase of utilities. At the outset, this argument seems plausible because a harmonized patent law would contribute to the removal of trade barriers and to the free movement of resources, which would benefit all countries involved. Under this theory, Stack argues that “harmonization would be well-founded if and only to the extent that the benefits of harmonization outweigh the costs of a loss of heterogeneity of patent laws.”<sup>285</sup>

However, it is very hard to calculate ‘the benefits’ and ‘the costs’ in the global environment. One might imagine the concept of “global welfare” as the total sum of utility of all involved countries. However, such measure would not be ideal in representing global welfare, as this method would overlook the individual gains and – importantly – losses of the utilities of individual states. In other words, patent harmonization would not be satisfactory if any one participating country’s utility is consequentially worse off than before. No one country can force to sacrifice another country’s utility for the benefits of others.

In sum, harmonization can be justified only when the utility of each country that joins the scheme of harmonization is increased as a result of harmonization. Thus, one country can willingly consider the other’s patent law only if this harmonization can result in maximizing social utility for all participating countries. Then, harmonization would be justified and realized effectively from utilitarian perspective.

---

<sup>285</sup> ALEXANDER STACK, INTERNATIONAL PATENT LAW: COOPERATION, HARMONIZATION AND AN INSTITUTIONAL ANALYSIS OF WIPO AND THE WTO 18 (Edward Elgar Pub, 2011).

## **(1) Patent harmonization and Pareto optimality**

Another way to express this point is this: patent harmonization can be efficient only when it consequentially increases the welfare of each country. In economics, this process is known as the “Pareto improvement.” Pareto improvement refers to changes in which no harm is done to any state, and where at least one state is improved through the increase or sustaining of social utility of all participating countries. In other words, if harmonization can lead to an increase of social utility in one country with no harm done to others, harmonization is justifiable in the utilitarian sense by realizing the Pareto improvement.

However, in many cases, changes in a country’s patent law under the name of patent harmonization can change or sometimes decrease the social utility of that country. This goes against the assumption that patent law is originally designed, itself, to maximize a nation’s social utility. The change of one’s patent law, as the result of considering other countries patent laws (under the name of patent harmonization), implies the deviation from this optimal status.

Consider, for instance, the specific situations in developing countries. As mentioned previously, it is reasonable for developing countries with low innovative capacity to maintain relaxed levels of patent protection. Because these countries have little industries to use the monopoly rights given by patents, they rather choose to share the resources more broadly. Conversely, if they are required to make patent rights more stringent by agreeing to patent harmonization, this requires them to deviate from their optimal status – and results in welfare loss.

This result can become more serious when considering foreign applicants for patents. This is due to the fact that such individuals can often exercise their exclusive power without considering the effects on the local economy. For example, assume that an inventor from country B obtains a patent in country A, but produces or ‘works the patent’, not in country A, but in his or her own country B. In this situation, according to Moy, domestic industries in the inventor's own country, B, can receive increased profits from patenting and producing, such that higher prices are imposed on consumers buying the product in country A and B.<sup>286</sup> Such patent policy results in a clear economic loss for country A.

By the late 1880s, national governments and economists realized that granting patents to foreign nationals generally resulted in a net outflow of national wealth.<sup>287</sup> They think that international patent transactions reallocated wealth away from the granting country and into the country of the patent owner.<sup>288</sup>

One can argue that there can be some utility gained by these countries by enhancing free trade, and exporting those products in which these countries have a comparative advantage (e.g. agricultural goods). Or there can be a gain in utility through other spill-over effects gained from attraction of foreign direct investment. Unfortunately, in most cases, benefits of these kinds are rarely immediately realized. This is because these benefits require the innovation of domestic industries, as well as reshuffling of economic structure. It is hardly surprising that developing countries are commonly not export-driven countries and that their economies are basically self-sufficient. For these countries, when it comes to changing patent laws, concerns about imminent

---

<sup>286</sup> Moy, *supra* note 270 at 474.

<sup>287</sup> JANICE MULLER, *PATENT LAW*, 526 – 527 (NEW YORK: ASPEN PUBLISHERS, 3D ED, 2009).

<sup>288</sup> Moy, *supra* note 270 at 475.

welfare losses take priority over potential long-term benefits. As a result, changes of substantive patent rights are unlikely to be accepted, and the prospect of implementing patent harmonization seems highly unrealistic in such developing countries.

For example, it is unreasonable to expect Malawi (GDP per capital is \$195 and 60.4% of its export is tobacco product<sup>289</sup>) to have the same level of patent protection as the United States. In Malawi, more than 90% of the population works in the agriculture or related industries, with 90% of them actually living in suburban areas: In this situation, it seems very hard to expect innovation or spill-over effects by enhancing the level of patent protection. Arvind Subramanian makes this point, arguing that a strong patent system driven by patent harmonization negotiation is not an economic improvement in such countries considering its low innovative capacity. He writes:

“For developing countries, the economic calculus is different for two reasons. First, as net users rather than net exporters of R&D-intensive products, they do not benefit from the monopoly profits that are created by patent protection. On the contrary, their consumers suffer from the higher prices that result. Second, because their markets are small in relation to global demand . . . , actions taken by developing countries to strengthen patent protection have little impact on the incentive to undertake additional R&D. Thus, a combination of higher costs in the short run and the likely absence of dynamic gains over time means that raising levels of protection would not benefit developing countries.”<sup>290</sup>

---

<sup>289</sup> UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT (UNCTAD), MALAWI AND THE MULTILATERAL TRADING SYSTEM 6 (United Nations, 2006), *available* at [http://unctad.org/en/Docs/ditctnkd200518\\_en.pdf](http://unctad.org/en/Docs/ditctnkd200518_en.pdf). (last visited Dec 26, 2016)

<sup>290</sup> Arvind Subramanian, *Medicines, Patents, Has the intellectual property pact opened a Pandora's box for*

However, there can be a special case of patent harmonization that might yield Pareto-improvement: *procedural harmonization*. As discussed in the previous chapter, procedural harmonization is about the form and method of patent applications, and it does not deal with the standards and rules for the granting and enforcement of patents. That is, with no substantive issues involved, inventors of developed countries gain easy access to multiple patents in many countries. From the developing countries' point of view, welfare loss would be minimal because governments only have to provide additional routes for their patents. Furthermore, procedural harmonization does not require changing laws, making it relatively simple to implement.

In fact, the international community has been quite successful in realizing procedural harmonization. For example, the Patent Cooperation Treaty (PCT) provided procedural enhancements to the international IP regime.<sup>291</sup> Signed in 1970, the PCT greatly streamlined and simplified the process for securing patent protection in multiple countries including developing countries, resulting in patent protection in as many as 142 countries in 2010.

As discussed in the previous chapter, PCT created a uniform legal route to file international patent applications in several countries by a single domestic file.<sup>292</sup> It also allows filing of single applications, performing an international prior art search and providing international publication of the patent.<sup>293</sup> By being a member of PCT, developing countries can

---

*the pharmaceuticals industry?*, FIN. & DEV., Mar 2004, at 23.

<sup>291</sup> *Patent Cooperation Treaty*, 19 June 1970, 28 US Stat 7645, 1160 UNTS 231.

<sup>292</sup> US, Congress, *Patent Reform in the 112<sup>th</sup> Congress: Innovation Issues*, CRS Report RL32996, (Washington, DC: US Government Printing Office, 2005), at 19; World Intellectual Property Organization, *PCT Contracting States*, online, available at [http://www.wipo.int/pct/guide/en/gdvol1/annexes/annexa/ax\\_a.pdf](http://www.wipo.int/pct/guide/en/gdvol1/annexes/annexa/ax_a.pdf).

<sup>293</sup> World Intellectual Property Organization(hereinafter WIPO), *The Impact Of The International Patent System On Developing Countries*, A/39/13 Add. 1 (2003) at 18.

expect their industries to benefit by gaining easier access to the disclosed information of patents. Consequentially, each participating country can expect welfare gains with minimum welfare loss.

## **(2) Kaldor-Hicks improvement**

The previous discussion has shown that substantive harmonization cannot be justified by Pareto improvement because it causes the deviation from the optimal status. There can be ‘winners’ and ‘losers’ as a result of patent harmonization. Usually, winners are developed countries with high innovative capacities, namely creative industries and manpower. On the other hand, losers are developing countries that lack in capacity and capability in such domains.

In this situation, it is possible to conceive an additional means toward achieving consequential Pareto improvement, namely Kaldor-Hicks improvement. Borrowed from the economic theory of the Kaldor-Hicks criterion, a Pareto-optimal outcome can be reached by the better off state *compensating* those who are made worse off, to the degree that all would end up no worse off than before.<sup>294</sup> Compared to the simple Pareto improvement, the Kaldor-Hicks improvement is a more complicated process, as it realizes maximization of social utility through compensation.

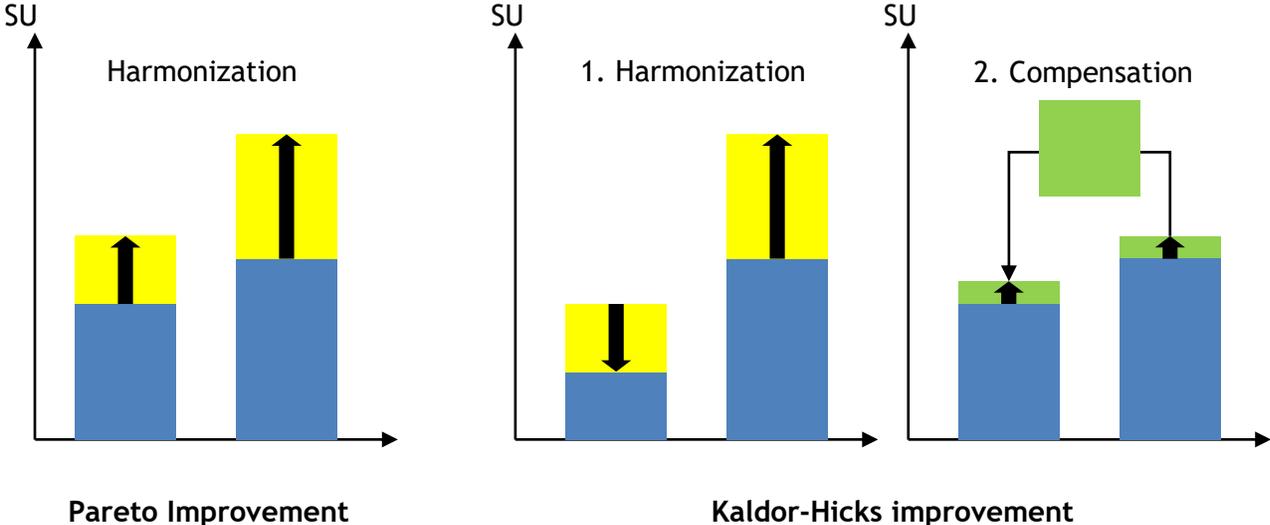
Under the Kaldor-Hicks criterion, one state of affairs is preferred to a second state of affairs if, by moving from the second to the first, the ‘gainer’ from the move can, by a lump-sum

---

<sup>294</sup> Investopedia, *Pareto Improvement*, available at <http://www.investopedia.com/terms/p/paretoimprovement.asp>. (last visited Mar 26, 2016).

transfer, compensate the ‘loser’ for his loss of utility and still be better off.<sup>295</sup> In this case, the compensation from the one who is better off to the other who is worse off will result in increasing the net social utility in each country. Then, each country can agree on the mechanism of compensation and consequential improvement. Under this theory, patent harmonization can be implemented efficiently if it results in consequential Pareto Optimal. This process is described in the following Figure 4.

< Figure 4: Pareto and Kaldor-Hicks Improvement<sup>296</sup> >



<sup>295</sup> WILLIAM W FISHER, NEW ESSAYS IN THE LEGAL AND POLITICAL THEORY OF PROPERTY 69 (Stephen R Munzer, ed, Cambridge University Press, 2001) (2001); Nicholas Kaldor, *Welfare Propositions in Economics and Interpersonal Comparisons of Utility*, 49 ECON. J. 549 at 549-552 (1939).

<sup>296</sup> ORGANIZATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT (hereinafter OECD), REGULATORY POLICY AND THE ROAD TO SUSTAINABLE GROWTH 15 (2010), <http://www.oecd.org/dataoecd/5/41/46270065.pdf>.

In principle, patent harmonization can be justified by a utilitarian theory only when it can provide higher utility, and when the welfare change by patent harmonization falls into Pareto optimal or Kaldor-Hicks improvement. Because Pareto optimality is very hard to achieve in most cases as a practical matter, the *compensation mechanism* for Kaldor-Hicks improvement is crucial in discussing substantive patent harmonization.

This argument can provide a reasonable explanation to the historic question why the most prominent substantive patent harmonization, TRIPs, was concluded in WTO (World Trade Organization), although the WIPO (World Intellectual Property Organization) had undertaken tremendous efforts for a long time. At first, WIPO, a specialized UN agency that deals with Intellectual Property Rights (IPRs), initiated a discussion on IP harmonization beginning in the 19<sup>th</sup> century and now administers two of the oldest IPR treaties: the Paris Convention for the Protection of Industrial Property, 1883 as revised up to 1967 (Paris Convention); and the Berne Convention for the Protection of Literary and Artistic Works, 1886 as revised up to 1971 (Berne Convention).<sup>297</sup>

However, the substantive standard of patent law in the Paris Convention was considered to be weak by several developed countries such as the U.S. For example, the Paris Convention only mandates national treatment and the recognition of a grace period for filing of industrial property applications.<sup>298</sup> Otherwise, member countries are free to determine the standards of patent protection, such as the subject matter, the terms of protection, or some limited restrictions on compulsory licenses.<sup>299</sup>

---

<sup>297</sup> JAYASHREE WATAL, *INTELLECTUAL PROPERTY RIGHTS IN THE WTO AND DEVELOPING COUNTRIES* 15 (The Hague: Kluwer Law International, 2001).

<sup>298</sup> *id.*

<sup>299</sup> *id.* at 16.

Developed countries were unsatisfied with the lack of substantive standards in the Paris Convention and started negotiating a higher standard of patents protection. However, developing countries have been rather demanding a further lowering up the standards of industrial property which are applicable to them.<sup>300</sup> Due to the severe conflicts among countries, the revision process broke down during the third session in Geneva in 1982,<sup>301</sup> and no further sessions were held after the fourth session in Geneva in 1984.<sup>302</sup>

To overcome the deadlock, developed countries attempted to discuss IP issues within the WTO framework. Based on our previous discussion, this can be described as an effort to discuss ‘patent harmonization’ and ‘compensation’, which pertains to the realization of the Kaldor-Hicks improvement. At first, in the Tokyo Round, there were discussions concerned only with counterfeiting. During negotiations in the Uruguay Round, developed countries led the negotiation and successfully persuaded developing countries within WTO to sign on to the substantive IP law treaty, or TRIPs by using the compensation mechanism for Kaldor-Hicks improvement. In explaining this mechanism, Arvind Subramanian argued that,

“In the Uruguay Round, which offered scope for bargaining and the exchange of concessions between countries, developing countries sought *compensation* for the likely negative impact of TRIPS. Industrial countries agreed to liberalize their textiles, clothing, and agricultural markets to provide increased access to the exports of developing countries. Higher standards of protection for intellectual property in exchange for better access for clothing and agricultural

---

<sup>300</sup> *id.* at 17.

<sup>301</sup> *id.* at 16.

<sup>302</sup> *id.* at 17.

goods thus constituted the grand bargain in the Uruguay Round between industrial and developing countries.”<sup>303</sup>

In other words, the problem of WIPO during the Paris Convention revision negotiation was that there were limited tools for compensation. It is because WIPO’s scope of work was inherently limited only to IP issues. However, countries were able to negotiate compensation at the WTO, including trade concessions in other fields. For example, in the Uruguay Round, developing countries gained trading concessions in agriculture and textiles as compensation for the welfare loss caused by stronger IP rights.<sup>304</sup> Unlike WIPO, representatives in the WTO have more flexibility to negotiate compensation for developing countries. This made it easier to conclude negotiations for the Kaldor-Hicks improvement and help substantive harmonization within WTO, rather than WIPO.

In summary, the conclusion of TRIPs within the WTO seems to be a good example of Kaldor-Hicks harmonization because it was realized through the compensation mechanism. When harmonization is expected to cause an overall welfare loss for given countries, those countries will be reluctant to participate in negotiations. For example, if the local innovative capacity in certain developing country is very weak and the spill-over effects are expected to be very low, the substantive harmonization of patent law with states of higher technical capacity would cause negative effects on that country’s social utility. In this situation, compensation mechanism should work to attract such developing countries to the negotiation table. The broad

---

<sup>303</sup> Subramanian, *supra* Note 290, at 23.

<sup>304</sup> Jerome H. Reichman, *The trips agreement comes of age: conflict or cooperation with the developing countries?* 32 CASE W. RES. J. INTL. L. 441, at 455-456 (2000).

and comprehensive coverage of WTO negotiation made this possible, and countries successfully made the package deal that resulted in the Kaldor-Hicks improvement.

### **III. The Limitation of Utilitarian Argument**

The previous section explored the utilitarian justification of patent harmonization in detail. This argument can be summarized that patent harmonization can be justified by utilitarian theory, if it can consequentially increase the benefits of all participating countries. The historical evidence of WTO and TRIPS revealed that compensation plays an important role to achieve the Kaldor-Hicks improvement.

However, there are several limitations to this argument. In fact, one of these limitations was already discussed above, that the benefits of free trade or comparative advantage are not immediately realized especially for developing countries. Free trade or comparative advantage is achieved through specialization and exchange, but restructuring domestic industries in developing countries has not worked well, and the economic gap between developed and developing countries became wider. In addition to this, there is a more fundamental limitation: it is suspicious about the validity of the assumption that patent harmonization is necessary for free trade. Trebilcock and Howse argue that “the conclusion that stronger intellectual property protection may benefit some countries but not others suggests a fundamental difference between

the theoretical case for trade liberalization and the case for mandating high levels of IP protection throughout the world.” Bhagwati supports this idea by arguing that “TRIPs has distorted and deformed an important multilateral institution, turning it away from its trade mission.”<sup>305</sup>

The validity of this argument is very important because it underlies the assumptions associated with the utilitarian theory and the Kaldor-Hicks improvement. The collapse of the former assumption can deny the whole logical chain regarding the utilitarianism-based justification.

As discussed above, the argument that patent harmonization is necessary for free trade is based on the assumption that shortcomings in availability and enforcement of patent rights constitute barriers to trade, as potential exports by inventors or creators may be prevented or diminished through the circulation of illegal counterfeit products in foreign markets.<sup>306</sup>

In fact, concerns in the multilateral trading system about counterfeiting and piracy predate the TRIPS Agreement.<sup>307</sup> A proposal on trade in counterfeit goods was submitted as early as 1978, as part of the Tokyo Round of trade negotiations.<sup>308</sup> Subsequent work led to the inclusion of a specific mandate in the Uruguay Round negotiations, which explicitly called for the development of a multilateral framework of principles, rules and disciplines dealing with international trade in counterfeit goods.<sup>309</sup>

---

<sup>305</sup> JAGDISH BHAGWATI, IN DEFENSE OF GLOBALIZATION 182-185 (Oxford University Press, 2004).

<sup>306</sup> CORREA, *supra* note 281, at 3.

<sup>307</sup> RUFUS YERXA, SPEAKING POINT DRAFT IN THE THIRD GLOBAL CONGRESS ON COMBATING COUNTERFEITING AND PIRACY 1 (Jan 30-31, 2007), *available at* [http://www.wipo.int/enforcement/en/global\\_congress/docs/rufus\\_yerxa.doc](http://www.wipo.int/enforcement/en/global_congress/docs/rufus_yerxa.doc). (last visited April 26, 2016).

<sup>308</sup> *id.*

<sup>309</sup> *id.* at 2.

But if preventing counterfeit goods was the main concern, countries had to focus on regulating and preventing counterfeit products, rather than harmonizing the other country's patent laws. However, TRIPs negotiation at the Uruguay Round primarily focused on substantive patent laws in all participating countries rather than on the regulation of counterfeit goods. It is hard to understand how much harmonized patent rights can contribute to the prevention of counterfeit products. The effect of harmonized patent laws by TRIPs on counterfeit goods seems to be vague or tenuous at best, because patent rights are not necessarily related to the international movement of goods or comparative advantages.

This argument can be supported by the analysis on TRIPs agreement. When we closely look at the treaty text, it is questionable whether TRIPs can contribute to the reduction "of distortions and impediments to international trade," as described in the preamble.<sup>310</sup> This suspect becomes more apparent when one compares the core provisions of national treatment (NT) and most-favored-nation (MFN) as articulated in the treaty governing free movement of goods (General Agreement on Tariffs and Trade: GATT) and the treaty of intellectual property (Trade-related Intellectual Property Rights: TRIPS).

The comparison between two treaties obviously shows that intellectual properties are not related to the movement of goods or *products*, but to personal rights for *nationals*. In GATT, these provisions are directly linked to the product or production. However, similar provisions in TRIPs do not have references to products. Rather, it is suggested that nationals of different countries should be treated as the same (NT) or most-favorably (MFN). This means that TRIPs does not regulate or consider movement of goods, but rather that of people.

---

<sup>310</sup> *id.*

< Table 4: Comparison between GATT and TRIPs >

	GATT	TRIPs
National Treatment (NT)	<b>Article III. 1.</b> The contracting parties recognize that internal taxes and other internal charges and laws, regulations, and requirements . . . , should not be applied to imported or domestic <u>products</u> so as to afford protection to domestic production.	<b>Article 3.1</b> Each Member shall accord to the <i>nationals</i> of other Members treatment no less favorable than that it accords to its own <u>nationals</u> with regard to the protection of intellectual property . . .
Most Favored Nation (MFN)	<b>Article I. 1.</b> With respect to customs duties and charges of any kind . . . , any advantage, favour, privilege or immunity granted by any contracting party to any product originating in or destined for any other country shall be accorded immediately and unconditionally to the like <u>product</u> originating in or destined for the territories of all other contracting parties	<b>Article 4.</b> With regard to the protection of intellectual property, any advantage, favour, privilege or immunity granted by a Member to the <i>nationals</i> of any other country shall be accorded immediately and unconditionally to the <u>nationals</u> of all other Members. . .

In GATT, national-treatment (NT) and most-favored-nation-treatment (MFN) are the core of the WTO system, because it ensures the free movement of goods by guaranteeing non-discriminatory treatment to all products. Benefits of comparative advantage can be achieved only when the domestic and foreign products are treated equally by ensuring competition based solely on price. However, TRIPs regulates people, rather than goods. It is very hard to find a

logical foundation that the regulation of nationals in TRIPs agreement could contribute to free trade.

One can argue that TRIPs provisions ensure that foreign nationals can easily secure patent rights in other countries. This allows these people to export their products without much concern for piracy, and the flexible movement of goods in turn contributes to free trade. However, this is contrary to the basic assumptions of comparative advantage which takes price as the sole factor in decisions regarding competitiveness. After all, even though one can have strong patent rights in foreign countries, one's decision to export or import is based on the market condition of the country in consideration, such as costs and consumer preference patterns. Patent rights are one of the factors that should be taken into consideration for the actual movement of goods. Hence, same or non-discriminatory treatment of people alone does not necessarily contribute the free movement of goods.

Moreover, Article XX (d) of the General Agreement on Tariffs and Trade (GATT)<sup>311</sup> permitted contracting parties to justify trade restrictions imposed by intellectual property rights.<sup>312</sup> Specifically, *GATT* Article XX, General Exceptions states:

“Subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade, nothing in this Agreement

---

<sup>311</sup> World Trade Organization, *General Agreement on Tariffs and Trade*, 30 October 1947, 58 U.N.T.S. 187, Can TS 1947 No 27 (hereinafter GATT 1947).

<sup>312</sup> Correa, *supra* Note 281 at 2 (the application of this article was considered, with different outcomes, in two GATT disputes: *United States-Import of Certain Automotive Spring Assemblies*, (1983) GATT Doc L/533-30S/107, and *United States-Section 337 a/the Tariff Act of 1930* (1989), GATT Doc L/6439-36S/345).

shall be construed to prevent the adoption or enforcement by any contracting party of measures: .

..

(d) necessary to secure compliance with laws or regulations which are not inconsistent with the provisions of this Agreement, including those relating to ... the *protection of patents, trademarks and copyrights . . .*”<sup>313</sup>

The fact that patent protection can be an exception for free trade means that member states can impose restrictions in trade for the protection of patents. Unlike the argument that patent harmonization of accessibility and enforcement is necessary to lower trade-barriers, the protection of patents is allowed to raise trade barriers under this provision in GATT. This means that the harmonized patent laws – usually toward strong patent protection – does not necessarily reduce trade barriers when countries use this Article XX (d) exception. This interpretation reinforces our suspicion that patent rights are not necessarily related to comparative advantage.

Another serious problem with the utilitarian justification for patent harmonization is that it does not work properly to face new and difficult issues in the patent harmonization field. As discussed above, patent harmonization needs to be in association with other tools for compensations. But countries made little consensus on dealing with a ‘compensation package.’ The Uruguay Round in 1994 was one of the few international meetings that discussed package deals among member states with regards to compensations, and new Doha Round has been deadlocked since 2001.

---

<sup>313</sup> *GATT 1947, supra* Note 311.

In this situation, there are growing concerns and conflicting issues around patent harmonization. In establishing the forward work program for the WTO on TRIPS issues, the Doha Declaration referred to three distinct but closely interrelated issues, which have become known informally as the "triplets": biotechnology, traditional knowledge, and biodiversity.<sup>314</sup> Paragraph 19 of the Doha Declaration referred to the Article 27.3(b) review that was already required in the text of the TRIPS Agreement itself, and instructed the TRIPS Council:

“[I]n pursuing its work programme including under the review of Article 27.3(b), the review of the implementation of the TRIPS Agreement under Article 71.1 and the work foreseen pursuant to paragraph 12 of this Declaration, to examine, inter alia, the relationship between the TRIPS Agreement and the Convention on Biological Diversity, the protection of traditional knowledge and folklore, and other relevant new developments raised by Members pursuant to Article 71.1.”<sup>315</sup>

However, WTO process is very slow these days, and there are limited opportunities of discussing compensation processes internationally. From 2001, WTO member states have been negotiating Doha Development Agenda (DDA) in vain for fourteen years. There is growing criticism that multilateral trade system cannot provide any meaningful result. Given that substantive harmonization cannot be achieved alone without other forms of compensations, the lack of a systematic means to discuss compensations leads to the inevitable result of patent harmonization being severely delayed or failed.

---

<sup>314</sup> WORLD TRADE ORGANIZATION (hereinafter WTO), MODULE X: CURRENT TRIPS ISSUES 7, *available at* [https://www.wto.org/english/tratop\\_e/trips\\_e/ta\\_docs\\_e/modules10\\_e.pdf](https://www.wto.org/english/tratop_e/trips_e/ta_docs_e/modules10_e.pdf)

<sup>315</sup> *id.*

## IV. Conclusion

Reasoning patent harmonization under the utilitarian framework was the normative foundation that led the successful conclusion of TRIPs agreement. This utilitarian reasoning is helpful to connect patent harmonization with international trade, and reveal the reason why substantive patent harmonization was successful not by WIPO, but by WTO. Historically, international society had accepted that utilitarian justification without much criticism.

However, there are several problems in this argument. The logical weakness between patent harmonization and international trade make developing countries be suspicious about the necessities and reasons for harmonizing their patent laws. In addition, as the multilateral negotiation within WTO has been deadlocked, it becomes very hard for countries to discuss compensation mechanism to make a progress in patent harmonization.

In fact, in addition to those limitations described above, utilitarian theory has a fundamental defect. It cannot provide satisfactory answers to the normative question of why we should harmonize domestic patent laws in the first place. For instance, it has been stated that “this utility-measuring process looks simple, but this process is not easy and is, in fact, impossibly complex.”<sup>316</sup> Specifically, it is difficult to empirically analyze the overall welfare effects of patent harmonization because the measurement would require direct comparisons (i.e. how much welfare would have occurred in the absence of harmonization?) There is also difficulty involved in the calculation of long-term costs and benefits.<sup>317</sup>

---

<sup>316</sup> ROBERT P. MERGES, JUSTIFYING INTELLECTUAL PROPERTY 2 (Harvard University Press, 2011).

<sup>317</sup> STACK, *supra* Note 285, at 18.

In conclusion, as Merges argues, “th[is] sheer practical difficulty of measuring or approximating all the variables involved means that the utilitarian program will always be aspirational, at best.”<sup>318</sup> Thus, based on this limitation of utilitarian theory, next chapter explores other strong theoretical or logical foundations to justify patent harmonization – property theories.

---

<sup>318</sup> MERGES, *supra* Note 316, at 3.

## CHAPTER 5

### SUBSTANTIVE HARMONIZATION AND ITS JUSTIFICATION

#### BASED ON PROPERTY THEORY

##### I. NORMATIVE PROPERTY THEORY TO JUSTIFY PATENT HARMONIZATION

The fundamental reason for the conflicts around patent harmonization is attributed to the lack of justification that countries with diverse interests can agree upon. Utilitarian theory has been the dominant theory used to justify the patent system and patent harmonization, but the previous chapter revealed several limitations of the utilitarian theory. Thus, despite the dominance of the utilitarian argument, it is necessary to turn to other theories that scholars proffer in order to explain several issues around patent harmonization. These theories are typically grounded in property theories regarding natural or moral rights, based on the assumption that a patent is a kind of a property.<sup>319</sup>

---

<sup>319</sup> Jeanne C. Fromer, *Expressive Incentives in Intellectual Property*, 98 VA. L. REV. 1745, 1753; *See, e.g.*, Balganes, *supra* note 7, at 1576–77; Brown, *supra* note 31, at 589–90.

It is true that many scholars think that theories of utilitarianism and moral rights are almost always incompatible.<sup>320</sup> Typically, scholars choose just one of these theories on which to base their view of intellectual property, as American courts usually favor utilitarianism over other theories.<sup>321</sup> Nonetheless, there is helpful scholarship which suggests that utilitarian and moral rights-based theories may simultaneously justify intellectual property laws.<sup>322</sup> For example, Alfred Yen observes that both utilitarianism and moral rights should guide the structure of intellectual property.<sup>323</sup> He suggests that it is useful to supplement intellectual property rules with moral-rights interests in some cases.<sup>324</sup> When he discusses copyright law, he sets forth two justificatory grounds:

“First, American law, both historically and at present, views copyright as a tool to effectuate both utilitarianism and moral rights.<sup>325</sup> Second, the economic thinking necessary to implement utilitarian intellectual property laws cannot answer all necessary questions, such as getting hold of reliable data on individual preferences necessary for calculating utilities.”<sup>326</sup>

---

<sup>320</sup> *id.*; See, e.g., Brown, *supra* note 31, at 607; Julie E. Cohen, *Creativity and Culture in Copyright Theory*, 40 U.C. DAVIS L. REV. 1151, 1155 (2007); Jane C. Ginsburg, *A Tale of Two Copyrights: Literary Property in Revolutionary France and America*, 64 TUL. L. REV. 991, 993–94, 1023 (1990); Jessica Silbey, *The Mythical Beginnings of Intellectual Property*, 15 GEO. MASON L. REV. 319, 319 (2008); See also Radin, *supra* note 43, at 984–86.

<sup>321</sup> See *id.* at 1761.

<sup>322</sup> *id.*; See Eyal Zamir & Barak Medina, *Law, Morality, and Economics: Integrating Moral Constraints with Economic Analysis of Law*, 96 CALIF. L. REV. 323, 325–28 (2008) (providing a general model for incorporating threshold deontological constraints into economic analysis of the law).

<sup>323</sup> *id.*

<sup>324</sup> See *id.* at 170–72.

<sup>325</sup> *Id.*; Alfred C. Yen, *The Interdisciplinary Future of Copyright Theory*, in THE CONSTRUCTION OF AUTHORSHIP 164–66 (Martha Woodmansee & Peter Jaszi eds., 1994).

<sup>326</sup> See *id.* at 169–71.

On a related note, Henry Hansmann and Marina Santilli maintain that there can be economic reasons to support moral-rights legislation.<sup>327</sup> For example, a right of integrity might be useful to society at large in ensuring that important artistic works are not altered or mutilated.<sup>328</sup> In addition, Dreyfuss maintains the interaction of utilitarian and moral rights theories by arguing that utilitarian intellectual property laws ought to also be concerned with the quality of works produced, which had been a traditional focus of author-centered moral rights theories.<sup>329</sup>

In sum, many scholars confirm the necessity to consider moral-rights theory in addition to utilitarian theory in analyzing certain issues. In line with this observation, when we seek theoretical guidance to justify patent harmonization, it is desirable to discuss both utilitarian theory and moral rights theory. There can be two reasons for this: First, there is plenty of evidence that the legal system, both theoretically and by custom, views patents as a property that can effectuate both utilitarianism and moral rights.<sup>330</sup> Second, the economic thinking necessary to implement utilitarian patent laws cannot address all necessary questions, such as patent harmonization.<sup>331</sup> As such is the case, patent harmonization is a field where utilitarian and moral rights theories may complement their respective limitations. Utilitarianism and moral rights can jointly structure the substantive justification of patent harmonization.

---

<sup>327</sup> *id.* at 606. (For example, Dreyfuss reasons that granting copyright ownership to universities for academic writing might inhibit authors' creativity by emphasizing the popular taste to which the university would likely want the work to appeal over perhaps more controversial topics.); *See id.* at 609–10. (Dreyfuss makes parallel arguments for control of academic works' dissemination); *See id.* at 616–20 (arguing that university control of the timing of dissemination might dampen both the work's quality and the author's reputation, and the creation of derivative works.)

<sup>328</sup> *id.*

<sup>329</sup> *See id.* at 643.

<sup>330</sup> *See id.* at 1; *id.* at 12; Yen, *supra* note 325, at 164.

<sup>331</sup> *id.*; Yen, *supra* note 325, 169-72.

Now, in order to discuss patent harmonization based on these moral rights property theories, it is first necessary to investigate how the legal system, theoretically and in practice, views patents as property. Then, we can continue on discussing several moral-rights property theories to justify patent harmonization.

## II. PATENTS AS PROPERTY IN AN INTERNATIONAL CONTEXT

### 1. Theory

The use of ‘property’ in the patent law context is somewhat different from that of traditional context. Historically, ‘property law’ originated with real property. Based on this foundation, there are those who claim that the concept of property is and always will be a prisoner of its origin: it can never grow out of its formative association with physical things, most notably, in the Anglo-American tradition, land.<sup>332</sup> For them, the idea of property contains certain historical-essentialist traits that may not be compatible with application to the intangible, such as intellectual property.<sup>333</sup>

---

<sup>332</sup> MERGES, *supra* note 316, at 4-5.

<sup>333</sup> *id.*

However, the meaning of ‘property’ need not always be interpreted narrowly. It used to mean the land or goods in the traditional age, but the scope of the definition has been expanded continuously to include newly developed objects that people consider valuable. In supporting this argument, Merges says that “[o]ver its long history, the term ‘property’ has shown a restless capacity to jump from one arena into another, morphing and adapting as it goes.<sup>334</sup> For example, property such as land, tools, trees, minerals, water, fractional ownership claims, legal obligations to pay money, and many others are subject to the wide embrace of the term “property.”<sup>335</sup> In this sense, property can be interpreted as a broad and roomy concept.

Under this definition of property, it has been argued that ideas or inventions, which are the objects of patent rights, can be a type of property. Supporting to this argument, Spooner says that the ideas we have, as well as our feelings and our emotions, are our property.<sup>336</sup> He argues that “[i]f the ideas, which a man has produced, were not rightfully his own, but belonged equally to other men, they would have the right imperatively to require him to give his ideas to them, without compensation; and it would be just and right for them to punish him as a criminal, if he refused.”<sup>337</sup>

---

<sup>334</sup> *Id.*; *See id.* at footnote 140~142. \_

<sup>335</sup> *id.*

<sup>336</sup> Tom G. Palmer, *Are Patents and Copyrights Morally Justified? The Philosophy of Property Rights and Ideal Objects*, 13 HARV. J.L. & PUB. POL'Y, 817, 822 (1990).

<sup>337</sup> *id.*

## 2. Domestic Law

This recognition of patents as property is also well recognized in several domestic patent laws and practices. For example, in the United States, the Patent Act expressly declares that “patents shall have the attributes of *personal property*” and the Supreme Courts acknowledges them as such.<sup>338</sup> In the *James v. Campbell* case in 1882, the U.S. Supreme Court asserted:

“[T]he government of the United States when it grants letters – patent for a new invention or discovery in the arts, confers upon the patentee an exclusive property in the patented invention which cannot be appropriated or used by the government itself, without just compensation, any more than it can appropriate or use without compensation land which has been patented to a private purchaser.”<sup>339</sup> The concept of patent rights as inviolable private property rights, even against governmental appropriation, was reiterated in *Hollister v. Benedict & Bernham Mfg. Co.*, as the Supreme Court state that:

“[T]he right of the patentee, under letters patent for an invention granted by the United States, was exclusive of the government of the United States as well as of all others, and stood on the footing of all other property, the right to which was secured, as against the government, by the constitutional guaranty which prohibits the taking of private property for public use without compensation.”<sup>340</sup>

---

<sup>338</sup> Menell, *supra* note 42, at 37.

<sup>339</sup> WENWEI GUAN, *INTELLECTUAL PROPERTY THEORY AND PRACTICE: A CRITICAL EXAMINATION OF CHINA’S TRIPS COMPLIANCE AND BEYOND* 15 (Springer, 2014); *James v. Campbell*, 104 U.S. 356, 357-8 (1882).

<sup>340</sup> *id.*; *Hollister v. Benedict & Burnham Mfg. Co.*, 113 U.S. 59, 67 (1885). (.)

In addition, in the *CCH Canadian Ltd.* case, the Supreme Court of Canada directly grounds its position of the “sweat of the brow” doctrine on the Lockean property theory of deserts.<sup>341</sup> Specifically, in comparison with the similar US Supreme Court case of *Feist Publications Inc. v. Rural Telephone Service*, Chief Justice McLachlin agreed with Justice O'Connor's assessment of the "sweat of the brow" approach.<sup>342</sup> The French Patent Law of 1791 also states, “[e]very novel idea whose realization or development can become useful to society belongs primarily to the person who conceived it, and it would be a violation to the very essence of the rights of man if an industrial invention were not regarded as *the property* of its creator.”<sup>343</sup> In addition, the European Patent Convention confirms this notion in a more conspicuous manner. Chapter IV deals with “the European patent application as an *object of property*,” and under Chapter IV, the convention defines the transfer and constitution of rights (Article 71), assignment (Article 72), and contractual licensing (Article 73).<sup>344</sup>

### 3. An International Treaty

Recognition of patent as property has been implicitly accepted internationally. At the Paris Conference of 1878 which discussed the provisions for the Paris Convention for the

---

<sup>341</sup> *See id* at 17.

<sup>342</sup> *CCH Canadian Ltd. v. Law Society of Upper Canada*, [2004] 1 SCR 339, para 16.

<sup>343</sup> A. Samuel Odd, *Un-Unified Economic Theories of Patents-The Not-Quite-Holy Grail*, 71 NOTRE DAME L. REV. 267, 274 (1996); STAFF OF SENATE SUBCOMM. ON PATENTS, TRADE- MARKS AND COPYRIGHTS, 85TH CONG., 2D SESS., AN ECONOMIC REVIEW OF THE PATENT SYSTEM, STUDY No.15 (COMM. PRINT 1958) (F. MACHLUP, AUTH.)

<sup>344</sup> CONVENTION ON THE GRANT OF EUROPEAN PATENTS (EPC), 1973, *available at* <https://www.epo.org/law-practice/legal-texts/html/epc/2016/e/ma1.html>.

Protection of Industrial Property and was concluded in 1883, the following resolution was accepted: “The right of inventors and of industrial creators in their own work, or the right of manufacturers and businessmen over their trademark is *a property right*.”<sup>345</sup> Although the sentence involving “a property right” was not included in the final draft, it reveals its international recognition at the time.<sup>346</sup>

#### 4. Custom

Finally, it is already customary for businesses and governments to recognize a patent as property. A patent is valued, transferred, assigned, and licensed in the market in the same way as a commodity. The U.S. “patent market” was reported to have generated transactions totaling \$500 million in 2006 alone.<sup>347</sup> An October 22, 2005 the Economist article entitled “A Market for Ideas” stated, “[i]n America alone, technology licensing revenue accounts for an estimated \$45 billion annually; worldwide, the figure is around \$100 billion and growing fast.”<sup>348</sup>

Many technology companies leverage patent rights and contractual licensing to create major revenue. For example, IBM, which has obtained more U.S. patents than any other

---

<sup>345</sup> Heinmich Kironstein & Imne Till, *A Reevaluation Of The International Patent Convention*, LAW & CONTEMP. PROBS. 765, 775 (1948).

<sup>346</sup> This spirit is partially reflected on the final text, by saying that “[i]ndustrial property shall be understood in the broadest sense and shall apply not only to industry and commerce proper, but likewise to agricultural and extractive industries and to all manufactured or natural products.” (Paris Convention Article 1 (3))

<sup>347</sup> Ashby H. B. Monk, *The Emerging Market for Intellectual Property: Drivers, Restrainers, and Implications*, Dec. 11, 2008, at 7, available at <http://ssrn.com/abstract=1092494>.

<sup>348</sup> THE ECONOMIST, *A market for ideas: a pioneering “innovation marketplace” is making steady progress*, Sep 17<sup>th</sup> 2009, available at <http://www.economist.com/node/14460185>.

company in the past 15 years, earned approximately \$1 billion from its portfolio in 2007.<sup>349</sup> U.S. universities, hospitals, research institutions and technology management companies that are members of the Association of University Technology Managers (AUTM) also have collectively earned \$1 billion in annual licensing revenues every year from 2000 to 2007.<sup>350</sup>

As a result, intellectual property assets have been considered one of the most valuable assets for business. Independent research has demonstrated that in 2009, nearly 81% of the value of the companies comprising the S&P 500<sup>®</sup> stock index came from intangible assets, the largest component of which is IP. As shown by these transactions, it is hard to deny that patents are treated as property in the real business world.

---

<sup>349</sup> Press Release, United States Patent and Trademark Office, *USPTO Releases Annual List of Top 10 Organizations Receiving Most U.S. Patents* (Jan. 10, 2006), available at <http://www.uspto.gov/web/offices/com/speeches/06-03.htm>. (As a result of innovations in these and other areas, IBM was once again awarded more U.S. patents in 2007 than any other company. This marks the 15th year in a row that IBM achieved this distinction. In addition to producing world-class hardware and software products, IBM innovations are a major differentiator in providing solutions for the company's clients through its growing services activities. The company's investments in R&D also result in intellectual property (IP) income of approximately \$1 billion annually. Some of IBM's technological breakthroughs are used exclusively in IBM products, while others are licensed and may be used in either/both IBM products and/or the products of the licensee." International Business Machines Incorporated, 2007 Annual Report (Form 10-K) 6 (2008). IBM was awarded approximately 3,000 patents in both 2005 (2,941) and 2004 (3,248)).

<sup>350</sup> AUTM U.S. Licensing Activity Survey: FY 2004, Survey Summary, 24 (2005); AUTM U.S. Licensing Activity Survey: FY 2005, Survey Summary, Data Appendix (2006); AUTM U.S. Licensing Activity Survey: FY 2006, Survey Summary, Data Appendix (2007); AUTM U.S. Licensing Activity Survey: FY 2007, Survey Summary, Data Appendix (2008).

### **III. DIFFERENCE BETWEEN PATENT AND CONVENTIONAL PROPERTY RIGHTS**

Previous section explored several evidences that patents are recognized as a type of property. However, recognizing patent as a property does not necessarily mean that all the theories applicable to conventional property rights can be used in discussing patent issues. Some theories may need to be changed or adjusted, or cannot be even applied when discussing patent harmonization based on the property theory. Thus, the next step in this section is to identify the characteristic of patents that sets it apart from conventional types of property and to check the applicability of property theories to the patent harmonization.

#### **1. Inexhaustible and Non-excludible Rights and Identical Qualities of Copied Objects**

The fundamental difference between a patent and conventional property originates in the unique characteristics of objects of rights. Knowledge, which is the object of patent rights, is inherently inexhaustible and non-excludable.<sup>351</sup> Specifically, unlike a tangible item, knowledge is inexhaustible because sharing an idea with another person does not split up or deplete the shared idea. Moreover, even if someone claims to ‘own’ a piece of knowledge, it is very difficult to exclude others from using it.<sup>352</sup> As a result, knowledge can cause an ‘appropriability

---

<sup>351</sup> JANICE M. MUELLER, PATENT LAW 6 (Wolters Kluwer Law & Business) (2013)

<sup>352</sup> Menell, *supra* note 42, at 38.

problem,'<sup>353</sup> which revolves around the ability of investors to reap the rewards of their investment without being taken by others.<sup>354</sup>

The patent system was originally designed to address this appropriability problem, but it may not be effective in an international context where multiple owners claim rights to the same object. Because the quality of copied knowledge is identical to that of its original, the patented knowledge can be presented anywhere in the world at the same time. Therefore, due to the principle of the territoriality of patent laws, multiple people around the world can obtain legitimate property or patent rights granted by individual governments. This can lead to a very precarious situation in which many people make legitimate arguments for different rights surrounding the same knowledge, invention, or other objects of intellectual property.

## **2. Exclusionary Rights Created by Examination and Registration**

Under the current patent law system, patent rights are created by a government after examination and registration. To enforce a person's patent rights, one has to register his or her rights after the government examines them. For example, any foreigner who wants to protect his rights in another country has to apply for a patent in that country. Each government grants patent rights after examining the invention's ability to satisfy the national standard of

---

<sup>353</sup> MUELLER, *supra* note 351, at 6.

<sup>354</sup> Yonatan Even, *Appropriability and Property*, 58:6 AM. U. L. REV. 1417, 1424 (2009).

patentability. A government exercises its sole discretion to grant a patent, usually without being affected by the decisions of other countries.

Another aspect of patent rights is that they grant exclusionary power only to one applicant. In other words, once the patent applicant obtains a patent, he can prevent others from having patent rights over the same invention. In this situation, the second applicant who invented the same item cannot make a valid claim for patent rights. There are no so called ‘safe-harbor’ provisions of copyrights to protect independent creation. The well-known example of Elisha Gray and Alexander Bell presents an extreme case on this problem. In this case, Bell finally obtained an exclusive patent right over the invention of the telephone even though it was known that Gray and Bell invented it independently, and almost around the same time.

### **3. The Scope of Rights Defined by Words**

The scope of property rights over a patent should be defined in writing. Specifically, the claims in the patent application define the scope of the patent owner’s rights to exclude others from making, using, selling, offering to sell, and importing his or her invention. It is as much of a deed to a plot of land to define the geographic boundaries of its owner’s rights as it is to exclude others from trespassing.<sup>355</sup> Thus, in order for the patent system to function properly,

---

<sup>355</sup> JAMES BESSEN & MICHAEL J. MEURER, *PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK* 46 (Princeton University Press, 2009).

it should be ensured that the patent claim provides a clear delineation of the scope on which other interested parties can rely.<sup>356</sup>

However, in our complicated world of technology, it has become increasingly difficult to define the precise scope of a patented invention. Frequently, patents fail to provide clear notice of the scope of its patents rights,<sup>357</sup> because the description often does not define the clear boundary of the subject matter. Innovators also find it increasingly difficult to determine whether an invention will violate existing patents, giving rise to inadvertent infringement.<sup>358</sup> Similarly, investors find it increasingly costly to negotiate the necessary patent licenses in advance of their technological development and adoption decisions.<sup>359</sup> Thus, clearance procedures that have worked well for tangible property are “undercut by a profusion of fuzzy patent rights.”<sup>360</sup>

The problem of an unclear scope and subsequent inadvertent infringement is amplified by the potentially lengthy and costly litigation process. The interpretation of the scope in a claim is also the focal point of any litigation involving a patent.<sup>361</sup> For example, total litigation costs for a medium-risk patent infringement suit averaged an estimated \$2.5 million in 2007.<sup>362</sup> Concerns over this blurred scope become greater in the international context when countries do not recognize the scope described by others and define the scope based on their own rules and standards.

---

<sup>356</sup> *id.*

<sup>357</sup> *id.*

<sup>358</sup> *id.*

<sup>359</sup> *id.*

<sup>360</sup> *id.*

<sup>361</sup> MUELLER, *supra* note 351, at 25.

<sup>362</sup> BESSEN & MEURER, *supra* note 355, at 46.

## IV. PROPERTY THEORIES AND PATENT HARMONIZATION

So far, we have discussed the characteristics that distinguish patent rights from conventional property rights. On the basis of this observation, this section will explore the moral-rights property theories and its applicability for patent issues.

### 1. Two moral-rights property theories

There are many property theories that have been tried as a justification for patent rights, and they can be categorized as two – utilitarian and moral rights theory. For example, William Fisher mainly explains the utilitarian theory, personhood, and labor theory.<sup>363</sup> In addition to the three theories, he suggests that the last theory of social planning to explain the limitations of those theories.<sup>364</sup> Also, Fromer confirms that moral-rights theories typically can be broken down into two kinds: labor-desert and personhood.<sup>365</sup> Based on these arguments, here in this article, we will focus on both types of moral property theories – the personhood theory and the labor theory – to explore the additional justificatory grounds for patent harmonization.

---

<sup>363</sup> WILLIAM FISHER, THEORIES OF INTELLECTUAL PROPERTY 1 (Cambridge University Press, 2001), *available at* <https://cyber.law.harvard.edu/people/tfisher/iptheory.pdf>.

<sup>364</sup> *id.*

<sup>365</sup> *id.*

First of all, the labor-desert theory is related to the Lockean argument of acknowledging the role of creation involved in labor in granting patent protection to creators that have worked sufficiently hard.<sup>366</sup> Specifically, a person who labors upon resources that are either unowned or ‘held in common’ has a natural property right to the fruits of his or her efforts – and that the state has a duty to respect and enforce that natural right.<sup>367</sup> These ideas are widely thought to be especially applicable to the field of intellectual property, where the pertinent raw materials (facts and concepts) do seem in some sense to be “held in common” and where labor seems to contribute so importantly to the value of finished products.<sup>368</sup> According to Wendy Gordon’s articulation in line with this idea, intellectual property rights cease to be justified when they “harm. . . other persons’ equal abilities to create or to draw upon the preexisting cultural matrix and scientific heritage.”<sup>369</sup>

Personhood theories also establish intellectual property protection as a moral right of a sort, but unlike labor-desert approaches, they see creative works as a Hegelian extension of the author’s personality.<sup>370</sup> Theoretically, personhood theory states that private property rights are crucial to the satisfaction of some fundamental human needs.<sup>371</sup> Thus, policymakers should

---

<sup>366</sup> Fromer, *supra* note 1, at 1753; *See generally* MERGES, *supra* note 316, at 31–67.; Wendy J. Gordon, *A Property Right in Self-Expression: Equality and Individualism in the Natural Law of Intellectual Property*, 102 YALE L.J. 1533, 1540–83 (1993); Justin Hughes, *The Philosophy of Intellectual Property*, 77 GEO. L.J. 287, 296–330 (1988).

<sup>367</sup> FISHER, *supra* note 363, at 4.

<sup>368</sup> *Id.*; *See, for example,* Justin Hughes, "The Philosophy of Intellectual Property," *Georgetown L. J.* 77 (1988): 287, at 299–330. These initial impressions are examined in more detail in part III, below.

<sup>369</sup> *Id.*; *See* Wendy J. Gordon, *A Property Right in Self-Expression: Equality and Individualism in the Natural Law of Intellectual Property*, 102 YALE L.J. 1533, 1563–64 (1993)

<sup>370</sup> *Id.*; *See* Lawrence C. Becker, *Deserving To Own Intellectual Property*, 68 CHI.-KENT L. REV. 609 (1993); Hughes, *supra* note 50, at 330–65; Margaret Jane Radin, *Property and Personhood*, 34 STAN. L. REV. 957, 957 (1982).

<sup>371</sup> STEPHEN R. MUNZER, *NEW ESSAYS IN THE LEGAL AND POLITICAL THEORY OF PROPERTY* 171 (Cambridge University Press, 2001).

strive to create and allocate entitlement to resources in a fashion that best enables people to fulfill those needs.<sup>372</sup> This theory is based on Hegel’s claim that property reflects how human beings constitute themselves as people, that is, by extending their will to manipulate the objects of the external world.<sup>373</sup>

According to Margaret Radin, “to achieve proper self-development – to be a person – an individual needs some control over resources in the external environment. The necessary assurances of control take the form of property rights.”<sup>374</sup> There are related understandings of personhood by many scholars: Roberta Kwall sees “the [work’s] importance as a reflection of the author’s meaning and an embodiment of her message.”<sup>375</sup> Sonia Katyal revealed the view that creative works may be seen as the expressions of a person’s individualism and freedom.<sup>376</sup> And Stewart Sterk states that a theory grounded in moral rights “conjures up a genius irrevocably committed to his work.”<sup>377</sup>

---

<sup>372</sup> FISHER, *supra* note 363, at 4.

<sup>373</sup> JOSEPH WILLIAM SINGER, INTRODUCTION TO PROPERTY 18 (Aspen Publishers, 2005).

<sup>374</sup> *id.*; See Radin, *supra* note 370, at 957; Accord JEREMY WALDRON, THE RIGHT TO PRIVATE PROPERTY 4 (1988) (noting that Hegelians “establish a connection between respect for property and respect for persons”). While Radin discusses the general theory for property in depth, she merely notes that personhood theory has relevance to copyright law. Radin, *supra* note 370, at 1013 n.202.

<sup>375</sup> Fromer, *supra* note 1, at 1754; See ROBERTA ROSENTHAL K WALL, THE SOUL OF CREATIVITY: FORGING A MORAL RIGHTS LAW FOR THE UNITED STATES 39 (Stanford Law Books, 2009) (2010) (describing protections in France, Germany, and other countries).

<sup>376</sup> *id.*

<sup>377</sup> *id.*

## 2. Personhood Theory

Between two types of moral theories – the personhood and labor theory, consider the personhood theory first. It is because the personhood theory is contrary to the utilitarian theory in several aspects, and it can provide meaningful implications for patent harmonization. First of all, the personhood theory is a typical kind of natural rights theory. Basically, one can think of two types of rights – natural rights and legal rights. At first, legal rights are those bestowed onto a person by a given legal system.<sup>378</sup> These rights can be modified, repealed, and restrained by human laws.<sup>379</sup> Patent rights justified by utilitarian theory can be an example of legal rights, because the right is given by the law designed to maximize the utility of one nation.

On the other hand, natural rights are not contingent upon the laws, customs, or beliefs of any particular culture or government, and are consequently universal and inalienable.<sup>380</sup> These rights cannot be repealed or restrained by human laws.<sup>381</sup> Human rights or moral-rights property theories are examples of natural rights theory. Specifically, moral-rights theories of patent rights are typically grounded in the notion of natural rights that inventors are entitled to by virtue of having created their works.<sup>382</sup> Originally, the term “moral rights” is a translation of the French term “droit moral,” and refers not to “morals” as advocated by the religious right, but

---

<sup>378</sup> DEAN J. CHAMPION, *THE JUVENILE JUSTICE SYSTEM, DELINQUENCY, PROCESSING, AND THE LAW*, legal rights (Cram 101, 2016).

<sup>379</sup> John Adams, *Dissertation on the Canon and Feudal Law*, in 3 *THE WORKS OF JOHN ADAMS* 449 (Charles Francis Adams ed., 1851).

<sup>380</sup> CHAMPION, *supra* Note 61, at legal rights.

<sup>381</sup> Adams, *supra* note 62, at 449.

<sup>382</sup> Fromer, *supra* note 1, at 1753.; See, e.g., Shyamkrishna Balganes, *Foreseeability and Copyright Incentives*, 122 *HARV. L.REV.* 1569, 1576–77 (2009); Ralph S. Brown, *Eligibility for Copyright Protection: A Search for Principled Standards*, 70 *MINN. L. REV.* 579, 589–90 (1985).

rather to the ability of authors to control the eventual fate of their works.<sup>383</sup> The concept of moral-rights theory thus relies on the connection between an author and her creation, and moral rights protect the personal and reputational, rather than purely monetary value of a work to its creator.<sup>384</sup> Personhood theory, in this sense, is the typical example of moral-rights theory that supports natural rights, whereas the utilitarian theory is the case of legal rights given by legislation.

Second, the personhood theory is the ‘least’ frequently used theory to justify patents,<sup>385</sup> whereas the utilitarian theory is the ‘most’ popular. Of course, according to personhood theory, knowledge or ideas can be the object of either personal or fungible property. To distinguish personal property from fungible property, and to determine whether certain property is personal or fungible property, Radin emphasizes the importance of consensus as a sufficient source of moral criteria.<sup>386</sup> From the current consensus in patent law societies, one can say a patent is fungible property because it is held purely instrumentally and patent rights are not recognized as a part of individual personal identity.<sup>387</sup> Thus, patent rights are considered purely economic rights,<sup>388</sup> and a patent is arguably fungible property.

---

<sup>383</sup> Betsy Rosenblatt, *Moral Rights Basics* (Mar. 1998), available at <https://cyber.law.harvard.edu/property/library/moralprimer.html>.

<sup>384</sup> *id.*

<sup>385</sup> Fromer, *supra* note 1, at 1754; Mark A. Lemley, *The Economics of Improvement in Intellectual Property Law*, 75 TEX. L. REV. 989, 1031 (1997).

<sup>386</sup> Radin, *supra* note 370, at 969; See Margaret Jane Radin, *Cruel Punishment and Respect for Persons: Super Due Process for Death*, 53 S. CAL. L. REV. 1143, 1176 n.109 (1980); Margaret Jane Radin, *The jurisprudence of Death: Evolving Standards for the Cruel and Unusual Punishments Clause*, 126 U. PA. L. REV. 989, 1030-42 (1978).

<sup>387</sup> *id.* at 960.

<sup>388</sup> MULLER, *supra* note 33, at 2.

The personhood theory basically emphasizes the extent to which property is personal as opposed to fungible: the arguments justifying patent rights by this personhood theory is strongest when an object or idea is closely intertwined with an individual's personal identity, and weakest where the "thing" is valued by the individual at its market worth.<sup>389</sup> As patent rights can be treated as fungible property, the personhood theory can provide little guidance for justifying the fungible property rights.

In supporting this argument, Kwall suggests that personhood theories are seldom referred to in patent law because functional scientific and technological works are perhaps less likely than are artistic works to need modifications that may ultimately conflict with the creator's artistic vision in order to serve their intended functions.<sup>390</sup> Alternatively, Justin Hughes argues that most patented works have a different and smaller degree of personality than copyrighted works.

<sup>391</sup> In supporting this view, Hughes says:

“[P]atentable inventions usually embody strongly utilitarian solutions to very specific needs. We tend not to think of them as manifesting the personality of an individual, but rather as manifesting a raw, almost generic insight. In inventing the light bulb, Edison searched for the filament material that would burn the longest, not a filament that would reflect his personality. In the same reason, Marconi chose to use a particular wavelength for his radio because that

---

<sup>389</sup> PETER S. MENELL, INTELLECTUAL PROPERTY: GENERAL THEORIES, ENCYCLOPEDIA OF LAW & ECONOMICS: VOLUME II 158 (Boudewijn Bouckaert and Gerrit de Geest ed., Edward Elgar: Cheltenham) (2000).

<sup>390</sup> Fromer, *supra* note 1, at 1754; Roberta Rosenthal Kwall, *Originality in Context*, 44 HOUS. L. REV. 871, 874–75 (2007).

<sup>391</sup> *id.*; See Hughes, *supra* note 50, at 351.

wavelength could travel much farther than waves slightly longer, not because that wavelength was his preferred form of expression."<sup>392</sup>

On the other hand, we can find numerous opinions from academic literature which indicate that the utilitarian theory is the dominant theory in justification of a patent right. As discussed above, in the U.S., the Supreme Court, Congress, and many legal scholars consider utilitarianism the dominant justificatory ground of American patent law. These scholars support patent law's protection of an inventor's exclusive right in his technologically or scientifically valuable invention for a limited period of time. The theory is that the public benefits from rewarding inventors for taking the two steps the inventor would otherwise have been unlikely to take: to invent, and possibly commercialize, in the first place, and to reveal information to the public about the invention that stimulates further innovation.<sup>393</sup>

Third, personhood theories typically suggest a broader scope of intellectual property protection than one based on utilitarian theories. Margaret Radin theorizes that once we admit a person to be bound up with an external 'thing' in some constitutive sense, the person should be accorded broad liberty with respect to control over that 'thing.'<sup>394</sup> This means that once we

---

<sup>392</sup> *id.*

<sup>393</sup> Fromer, *supra* note 1, at 1754; Jeanne C. Fromer, *Patent Disclosure*, 94 IOWA L. REV. 539, 547–49 (2009). Utilitarian thinking comes in different flavors. One is the prospect theory, which suggests that inventors are rewarded with a patent right to centralize investment in the patented invention's commercialization and improvement, which in turn benefits society. See Edmund W. Kitch, *The Nature and Function of the Patent System*, 20 J.L. & ECON. 265, 266 (1977). A related theory advocates for encouraging commercialization because of its valuable role in diffusion of inventions. See, e.g., Abramowicz & Duffy, *supra* Note 195, at 337. Another is the signaling theory, which proposes that patents are useful signals to financiers that the patenting firm is a worthy investment. Clarisa Long, *Patent Signals*, 69 U. CHI. L. REV. 625, 636–37, 648 (2002); Gideon Parchomovsky & R. Polk Wagner, *Patent Portfolios*, 154 U. PA. L. REV. 1, 37 (2005).

<sup>394</sup> Fromer, *supra* note 1, at 1755;

think of an intellectual property right in connection with a person or personality, the person should be accorded broad rights over that intellectual property.

In supporting this argument, Robert Merges says that rights based on the personhood theory are often designed to expand its rights until it reaches limits.<sup>395</sup> It is because that they respect claims over creative objects that are bound up with the exercise of an individual's will and thereby promote their personal freedom.<sup>396</sup> In turn, such rights allow creative individuals the opportunity to seek to devote themselves professionally and fully to their talents.<sup>397</sup> As long as property claims does not interfere with the freedom of fellow citizens as Kant suggests<sup>398</sup>, they need to be recognized as broadly as possible.

Patent rights conferred by utilitarian theory, on the other hand, are designed to be limited and balanced in time and scope.<sup>399</sup> If patent rights are provided too extensively, society would be hurt and social welfare diminished.<sup>400</sup> Bottom line is that utilitarian theories on patents rest on the premise that the benefit to society of a creator crafting valuable works offsets the social costs of the incentives the law offers to creators.<sup>401</sup> Thus, a balancing mechanism is necessary to craft the time and scope of the patent rights, and these rights need to be limited to a level that does not hurt social utility too much and break the balance.

---

<sup>395</sup> *id.* at 1756;

<sup>396</sup> *id.* at 1755;

<sup>397</sup> *id.*

<sup>398</sup> ANNA STILZ, LIBERAL LOYALTY: FREEDOM, OBLIGATION, AND THE STATE 92 (Princeton University Press, 2009).

<sup>399</sup> Fromer, *supra* note 1 at 1752; Lemley, *supra* note 66, at 997.

<sup>400</sup> *id.*, at fn32; Lemley, *supra* note 66, at 996-97.

<sup>401</sup> *id.*

## V. COPYRIGHT HARMONIZATION BASED ON PERSONHOOD THEORY

So far, we have discussed how the patent rights are different from the conventional property rights, and discovered that the personhood theory is positioned at the opposite side of the utilitarian theory. In order to investigate its implication on patent harmonization, it is helpful to study the similar case of copyright harmonization from the personhood theory's perspective.

### 1. Copyrights Harmonization based on the Personhood Theory

Scholars acknowledge the historical and rhetorical uses of personhood theory in copyright law.<sup>402</sup> These scholars typically view the process of creation as both personal and subjective.<sup>403</sup> Thus, to authors, the artistic works they create are vehicle for their reputation or for esteem, which must surely relate to strong personhood interests.<sup>404</sup> In theory, people experience possessory and self-concept effects with regard to their artistic creations, especially

---

<sup>402</sup> *id.* at 1756; Oren Bracha, *The Ideology of Authorship Revisited: Authors, Markets, and Liberal Values in Early American Copyright*, 118 YALE L.J. 186, 188 (2008); Peter Jaszi, *Toward a Theory of Copyright: The Metamorphoses of "Authorship"*, 1991 DUKE L.J. 455, 455.

<sup>403</sup> *id.* at 1769; MARK ROSE, *AUTHORS AND OWNERS: THE INVENTION OF COPYRIGHT* 38 (Harvard University Press, 1993) (1995); Jeanne C. Fromer, *A Psychology of Intellectual Property*, 104 NW. U. L. REV. 1441, 1467 (2010); Jane C. Ginsburg, *Creation and Commercial Value*, 90 COLUM. L. REV. 1865, 1881–86 (1990); cf. Rebecca Tushnet, *Economies of Desire: Fair Use and Marketplace Assumptions*, 51 WM. & MARY L. REV. 513, 522–27 (2009) (arguing that creativity is often inspired by non-economic, intrinsic motivation).

<sup>404</sup> *id.* at 1770.; See generally GEOFFREY BRENNAN & PHILIP PETTIT, *THE ECONOMY OF ESTEEM: AN ESSAY ON CIVIL AND POLITICAL SOCIETY* 13 (Oxford University Press 2004) (studying the central human desire for esteem, or prestige).

because they are self-made and far from fungible.<sup>405</sup> They frequently believe in their works' integrity, so that authors ought to be able to prevent their works from alteration.<sup>406</sup> In fact, European countries, such as France, Germany, and Italy, provide authors with a broad – often perpetual and inalienable – range of protections based on moral-rights interests: principally, the rights of attribution, integrity, retraction of a work from the public, and first disclosure of a work to the public.<sup>407</sup>

In this sense, Article 6*bis* of the Berne Convention, which is the major international treaty of copyrights, articulates the notion of “moral rights,” which protects the personal right of a creator, as distinguished from his economic rights. These moral rights consist of the right to create, right to publish a work in any form desired, the creator's right to claim the authorship of his work, the right to prevent any deformation, mutilation or other modification thereof, the right to withdraw and destroy the work, protection from excessive criticism, and protection from all other injuries to the creator's personality.<sup>408</sup>

Moreover, protection exists from the moment the author's work is created and fixed in a tangible form and those rights are recognized throughout the world. To obtain copyright

---

<sup>405</sup> *id.* at 1767; See MIHALY CSIKSZENTMIHALYI & EUGENE ROCHBERG-HALTON, *THE MEANING OF THINGS: DOMESTIC SYMBOLS AND THE SELF* 28 (Cambridge University Press 1981); Jon L. Pierce et al., *The State of Psychological Ownership: Integrating and Extending a Century of Research*, 7 *REV. GEN. PSYCHOL.* 86, 93–94 (2003); accord HEGEL, *PHILOSOPHY OF RIGHT* §§ 68- 69, at 54–56 (T.M. Knox trans., Oxford Univ. Press 1952) (1821); see Justin Hughes, *The Personality Interest of Artists and Inventors in Intellectual Property*, 16 *CARDOZO ARTS & ENT. L.J.* 81 87-88 (1998). On authors' belief that their creations are personal and not fungible, see *infra* notes 130–42 and accompanying text.

<sup>406</sup> *id.* at 1768; See *Carter v. Helmsley-Spear, Inc.*, 71 F.3d 77, 81 (2d Cir. 1995).

<sup>407</sup> *id.* at 1756; Amy M. Adler, *Against Moral Rights*, 97 *CALIF. L. REV.* 263, 268 (2009); Henry Hansmann & Marina Santilli, *Authors' and Artists' Moral Rights: A Comparative Legal and Economic Analysis*, 26 *J. LEGAL STUD.* 95, 95–96 (1997).

<sup>408</sup> Adam Moore & Ken Himma, *Stanford Encyclopedia of Philosophy: Intellectual Property* (Sep 22, 2014), available at <http://plato.stanford.edu/entries/intellectual-property/>.

protection, authors need only create a qualifying work.<sup>409</sup> There is no requirement that a work be published to be protected under copyright law,<sup>410</sup> and protection is vested in authors without reference to any formality like patent registration.<sup>411</sup> Registration in the national copyright office is an additional, voluntary act.<sup>412</sup> In other words, copyright automatically exists throughout the world from the moment the work is created.

In this sense, the Berne Convention in Article 5(2) and the TRIPS Agreement confirms that copyright protection – unlike most other forms of intellectual property rights – should not be subject to any formality of registration, deposit or the like.<sup>413</sup> Thus, in the *London Film* case, the court reasoned that it is not required to second-guess the administrative decision of a foreign government.<sup>414</sup> The courts also argues that “[a]lthough the United States is not a party to the multilateral copyright treaty known as the Berne Convention, American nationals obtain copyright protection under foreign laws by virtue of the Universal Copyright Convention. The principal of the U.C.C. is the same as that of the Berne Convention. Under both treaties ‘an author who is a national of one of the member states ... or one who publishes his work in any such member state, is entitled to the same copyright protection in each other member state as such other state accords its own nationals.’ ”<sup>415</sup>

---

<sup>409</sup> *id.* at 1749

<sup>410</sup> *id.*; 17 U.S.C. § 102(a) (requiring only that a work be “fixed in any tangible medium of expression” to be copyrightable).

<sup>411</sup> *id.*; Registration of a protected work with the Copyright Office is permissive. *id.* § 408(a). To bring an infringement action, though, a copyright holder must in the ordinary case first have registered the copyright with the Copyright Office. *id.* § 411(a).

<sup>412</sup> United States Copyright Office, *Copyright in General*, available at <http://www.copyright.gov/help/faq/faq-general.html#what>.

<sup>413</sup> TAUBMAN ET AL., *supra* note 118, at 42.

<sup>414</sup> GOLDSTEIN, *supra* Note 25, at 37.

<sup>415</sup> 580 F. Supp. at FN5 (S.D.N.Y. 1984).

The close link between copyrights and the personhood theory can suggest the strong justification for international harmonization. As copyrights justified by the personhood theory are natural rights existing regardless of a legal frame, they can support the international harmonization of laws. A person who has obtained a copyright in one Berne Convention country possesses automatic copyright protection in all Berne Convention countries.<sup>416</sup> The Berne Convention eliminates many of the various formal requirements with which copyright owners were required to comply in the past.<sup>417</sup> In this sense, as the U.S. Copyright Office notices, “one country (the United States) has copyright relations with most countries throughout the world, and as a result of these agreements, we honor each other's citizens' copyrights.”<sup>418</sup> As personhood theory highlights the universal value of property rights, it can be argued that copyrights should be recognized and harmonized regardless of domestic laws and policies.

## **2. The limitation of personhood theory in patent harmonization**

Unlike the copyright that exists automatically from the moment the work is created, patent system is very different. A patent is granted by the national patent office based on its relevant domestic patent law. A patent is granted after successfully undergoing examination by the patent office which ascertains that an invention meets the conditions for patentability and the

---

<sup>416</sup> *id.* at 4.

<sup>417</sup> *id.*

<sup>418</sup> United States Copyright Office, *Copyright in General*, available at <http://www.copyright.gov/help/faq/faq-general.html#what./help/faq/faq-general.html#what>.

description in the patent application satisfies certain disclosure requirements.<sup>419</sup> Thus, the validity of a patent is confined to the country in which the patent is issued, and does not exist until the patent office has completed the process of patent examination.

As a result, whereas the Berne convention has achieved the copyrights harmonization, the international patent agreement has failed to reach such a high level of harmonization. It is true that the Paris Convention, one of the international agreements in the patent laws, essentially allowed a person who has filed a patent application in one member country to file another application for the same invention in another member country, and to establish an effective filing date for the second application equivalent to that of the original application.<sup>420</sup> However, because this is largely a procedural tool, it does not address each member country's substantive patent laws much.<sup>421</sup> Hence, patent owners must comply with various formal and substantive legal requirements in each of the countries in which they seek patent protection.<sup>422</sup>

The previous discussion in copyright harmonization and personhood theory can provide the answer to the reason why patent harmonization has been unsuccessful. The personhood theory is a natural-rights theory, thus it can have strong implications for harmonizing copyrights. With this theory in mind, if international communities want to achieve patent harmonization, one possibility is that they reach a consensus that patent rights are rooted in the morally based personhood theory. There is certainly support for this idea. For instance, some scholars have

---

<sup>419</sup> Fromer, *supra* note 1, at 1750,; 35 U.S.C. § 131. The Patent Act requires disclosure of certain content within the patent by calling for a written description, enablement, and best mode. *id.* § 112. *See generally* Jeanne C. Fromer, *Patent Disclosure*, 94 IOWA L. REV. 539, 546–94 (2009) (describing these requirements and arguing that they do not suffice for useful and clear disclosures).

<sup>420</sup> HARMONIZATION OF INTELLECTUAL PROPERTY 3, *available at* <http://www.jdsupra.com/documents/745350cd-5bca-4f48-8327-8a450138a2e7.pdf>.

<sup>421</sup> *id.*

<sup>422</sup> *id.*

underscored a strong notion of the romantic inventor employing his or her particular brand of genius to create valuable scientific and technological works.<sup>423</sup> Specifically, they argue that Radin's characterization of the connection between personhood and control over one's resources seems just as apt for inventions as it does for artistic works protected by copyright law.<sup>424</sup> All in all, an inventor might maintain personhood interests in his or her creations, but perhaps in different ways that an author retains in his or her artistic works.

However, excluding isolated cases related to personhood rights such as traditional knowledge or folklore, almost no country recognizes a patent's personhood characteristic aspects. In other words, as we have discussed in the previous chapter, the personhood theory is the "least" popular theory to justify patent laws because the patent system is particularly concerned with inventions' functionality, a quality not necessary for artistic works.<sup>425</sup> As a result, the personhood theory is rarely applied to explanations of patent laws and other policy issues, such as patent harmonization.

In sum, the case of the copyrights harmonization provides us a guidance that international harmonization can be achieved based on the natural-rights theory, such as personhood theory. Thus, in order to find a normative justification for patent harmonization, it is worth employing natural rights theories. Of course, that justificatory theory should be compatible with the current patent regime.

---

<sup>423</sup> Fromer, *supra* note 1, at 1755.

<sup>424</sup> *id.*

<sup>425</sup> Fromer, *supra* note 1, at 1776.

## VI. CONCLUSION

When the utilitarian theory fails to provide satisfactory justification for patent harmonization, it is worth studying a new approach based on the property theory. At first, distinction between legal and natural rights is useful to give an important implication on the international harmonization of rights. Natural rights can be harmonized internationally with ease, thanks to its universal feature. On the other hand, legal rights can be modified, repealed, and restrained by domestic laws and policies, thus these rights are very hard to be harmonized among countries.

In this sense, personhood theory provides interesting insights that the utilitarian theory cannot. The discussion of copyrights harmonization based on the personhood theory confirms the usefulness of natural-rights theory to justify international harmonization of laws. When we can ascertain that a given property right is personal, there is a *prima facie* case that rights should be protected to some extent against invasion by governments.<sup>426</sup> But, personhood theory is rarely used to justify patent laws, as the patent system is particularly based on inventions' functionality, a quality not necessary for artistic works.<sup>427</sup> As a result, personhood theory cannot be used to justify the patent harmonization as it does in copyrights harmonization.

To explore further, it is necessary to pay attention to Locke's labor theory. As we have briefly mentioned, Locke's theory is a type of moral rights theory, like the personhood theory.

---

<sup>426</sup> MARGARET JANE RADIN, REINTERPRETING PROPERTY 71 (University of Chicago Press 1993) (1993).

<sup>427</sup> *id.* at 1776;

Because it is a natural rights theory, with several exceptions and limitations, it could be a theory that supports international harmonization. Also, we can find numerous scholars who explain the patent system based on Locke's theory. Thus, from the next chapter, we are going to discuss Locke's theory and patent harmonization, and related policy issues in detail.

## CHAPTER 6

### LOCKE'S THEORY FOR PATENT HARMONIZATION

The property theory on which we need to finally focus is Locke's labor theory. Locke's labor theory stems from the propositions that a person who labors upon resources that are either not owned or "held in common" has a natural property right to the fruits of his or her efforts, and that the state has a duty to respect and enforce that natural right.<sup>428</sup> Fundamentally, Locke famously understood individual rights, property rights in particular, as belonging to people in its "state of nature."<sup>429</sup> In this sense, Locke asserted that the property rights existed before communities were settled.<sup>430</sup> He contended that such civil societies are instituted voluntarily by individual right-holders because they are superior means to protect their pre-existing rights.<sup>431</sup>

---

<sup>428</sup> FISHER, *supra* note 363, at footnote 4; *See, for example*, Justin Hughes, *The Philosophy of Intellectual Property*, 77 GEO. L. J. 287, 299-330 (1988).

<sup>429</sup> *id.*; Locke writes "want [lack] of a common judge, with authority, puts all persons in a state of nature" and again, "Men living according to reason, without a common superior on earth, to judge between them, is properly the state of nature." (Two Treatises 2.19) Many commentators have taken this as Locke's definition, concluding that the state of nature exists wherever there is no legitimate political authority able to judge disputes and where people live according to the law of reason. On this account the state of nature is distinct from political society, where a legitimate government exists, and from a state of war where men fail to abide by the law of reason. (Locke's political Philosophy, Stanford Encyclopedia of Philosophy, *available* at <http://plato.stanford.edu/entries/locke-political/#StaNat>)

<sup>430</sup> JOHN LOCKE, TWO TREATISES OF GOVERNMENT: SECOND TREATISE, Sec. 45 (P. Laslett, ed., Cambridge: Cambridge University Press, 1970) (1970).

<sup>431</sup> MERGES, *supra* note 316, at 93.

It has been debated amongst scholars whether Locke's theory can justify the patent system. Some argue that the basic philosophy under intellectual property is to reward one's labor. They maintain that Locke's theory highlighting labor and desert can provide important justification and provide meaningful implications to solve many patent law issues. On the other hand, others argue that Locke's theory cannot justify intellectual property, especially patents, because they are incompatible with the actual operation of the current patent system. Modern patent laws, they argue, are exemplified by the first-to-file system, the lack of independent creation, and the limited duration of patent rights.<sup>432</sup> They think those features cannot be explained by Locke's theory and also criticize Locke's vague expressions which do not make it clear whether the theory can be applicable to ideas or intellectual assets.

However, in our path to find a normative foundation to guide patent harmonization issues, Lockean property theory can give us meaningful insights which the utilitarian discussion or personhood theory cannot. As discussed below, Locke's theory is basically a natural and moral theory, and it sits in an interesting position between the utilitarian theory and the personhood theory. While Locke's labor theory can be one of the strongest arguments in support of patent rights, it can also, as a moral theory, justify the international harmonization of patent rights and provide meaningful guidelines to related issues.

---

<sup>432</sup> *id.*

## I. LOCKE'S PROPERTY THEORY AND PATENT RIGHTS

Many scholars argue that, in addition to the utilitarian theory, Locke's labor theory provides strong theoretical grounds for intellectual property, including patents. In essence, the Lockean theory recognizes intellectual property rights in the same way, fundamentally as property rights in other type of assets – from personal goods to land, air, inventions and books.<sup>433</sup> Also, it is notable that Locke himself expressly labels copyright as a type of a property.<sup>434</sup> He also wrote approvingly inventions and technical arts as exemplars of value-creating, productive labor that creates all property.<sup>435</sup> Moreover, as numerous commentators have observed, Locke's theory of appropriation is, in fact, easily applied to defend in the context of intellectual property than it is in the domain of tangible property.<sup>436</sup> Ayn Rand, for example, claimed, "patents and copyrights are the legal implementation of the base of all property rights: a man's right to the product of his mind."<sup>437</sup> Furthermore, Merge argues that Locke's theory applies equally well, if not better, to intellectual property,<sup>438</sup> and his reasons are as follows:

"First, Locke's focus on appropriation from a 'state of nature' fits much more accurately the usual 'origin story' of our own time. . . . Second, it is well understood that for Locke, labor plays a crucial role in both justifying and bounding property rights. Again, there are strong

---

<sup>433</sup> Adam Mossoff, *Why Intellectual Property Rights? A Lockean Justification* (May 4, 2015), available at <http://www.libertylawsite.org/liberty-forum/why-intellectual-property-rights-a-lockean-justification/>.

<sup>434</sup> *id.*

<sup>435</sup> *id.*

<sup>436</sup> Gregory S. ALEXANDER & EDUARDO M. PENEVER, *AN INTRODUCTION TO PROPERTY THEORY* 191 (Cambridge University Press, April 9, 2012).

<sup>437</sup> *id.* at 192

<sup>438</sup> MERGES, *supra* note 316, at 32.

parallels to the world of IP rights. . . . Finally, . . . Locke recognizes the work required in researching and writing, and so implicitly at any rate legitimizes a labor-based property claim for the end product of this type of work.”<sup>439</sup>

In fact, Locke’s argument for private property differs in fundamental ways from utilitarian approaches which highlight the instrumental value of property rights to some further extent, e.g., aggregate welfare or utility. The argument for Lockean intellectual property rights would be a straightforward application of Locke’s theory of appropriation to the domain of ideas: (1) the inventor/creator owns herself; (2) she therefore owns her own labor; (3) invention and intellectual creation are the products of labor; and (4) consequently, she owns the inventions/creations generated through her intellectual labor.<sup>440</sup>

In this sense, contrary to the utilitarian theory, Locke’s theory is built around notions of moral desert.<sup>441</sup> The notion of desert remains a familiar and prominent feature of morality,<sup>442</sup> as Becker mentioned, “I took the *trouble* to make it; I deserve some reward for my efforts. . . .”<sup>443</sup> In other words, the above notion safeguards intellectual property rights as they emanate from the natural law right to the fruit of one’s labor.<sup>444</sup> Subsequent to such logic, it would be appropriate to state that, as one has a right to retain the crops he or she plants, so do those who generate their ideas and produce their art. Therefore, when one has improved what was before unimproved

---

<sup>439</sup> MERGES, *supra* note 316, at 32-33.

<sup>440</sup> ALEXANDER & PENEVER, *supra* note 436, at 191.

<sup>441</sup> *id.* at 37.

<sup>442</sup> Stephanie Gore, “*Eureka! But I filed too late ...*”: *The Harm/Benefit Dichotomy of a First-to-File Patent System*, The University of Chicago Law School Roundtable: Vol. 1: Iss. 1, Article 21. 302 (1993), available at <http://chicagounbound.uchicago.edu/roundtable/vol1/iss1/21>

<sup>443</sup> *See id.*, at 302.

<sup>444</sup> Tom G. Palmer, *Are Patents and Copyrights Morally Justified? The Philosophy of Property Rights and Ideal Objects*, 13 HARV. J.L. & PUB. POL’Y 819 (1990).

(or created what before did not exist), one is entitled to the result of one's labor, because one deserves it.<sup>445</sup>

## **II. THE CHARACTERISTICS OF LOCKE'S THEORY**

This section is going to discuss Locke's theory by comparing it with other justifying theories such as the utilitarian theory and the personhood theory, which was covered in the previous chapter. The comparison will furnish us with a more comprehensive understanding of the Lockean theory and patent rights, and will provide insights and guidelines in discussing patent harmonization.

### **1. Justifying the patent system, but not as frequently as the utilitarian theory**

As discussed in the previous chapter, the utilitarian property theory is, without a doubt, the dominant view of the concept of property today, at least among lawyers.<sup>446</sup> However, it is true that Locke's theory has also significantly influenced the crafting and interpreting of patent

---

<sup>445</sup> *id.*, at 822.

<sup>446</sup> ALEXANDER & PENEVER, *supra* note 436, at 11.

laws. It seems clear that the utilitarian as well as Lockean theories offer robust normative justifications for intellectual property rights, and historically were both called upon by courts and commentators.<sup>447</sup> In supporting this argument, Palmer even thinks that the Lockean argument and the utilitarian arguments are close cousins.<sup>448</sup> He says this because the utilitarian theories are explicitly consequentialist (and welfarist), while natural rights theories usually contain, what Alan Ryan calls, “a buried utilitarian assumption.”<sup>449</sup>

For instance, property rights by the labor theory were first defined by a mixture of statutes enacted by the British Parliament and later by American legislatures and common law court decisions.<sup>450</sup> In line with this trend, legislators and judges alike were motivated by the Lockean property theory in securing intellectual property rights, including patent rights, as fundamental property rights.<sup>451</sup>

## **2. Natural rights theory, but not as universal as the personhood theory**

As we have discussed above, Locke’s labor-desert theory is based on the natural rights property theory. Locke argued that people have rights, such as the right to life, liberty, and

---

<sup>447</sup> Mossoff, *supra* note 433.; *See* Eldred v. Ashcroft, 537 U.S. 186, 212 footnote 18 (2003) (noting the “complementary” relationship between utilitarian and labor-desert policies as long-established justifications for copyright).

<sup>448</sup> Palmer, *supra* note 444, at 819.

<sup>449</sup> *id.*; ALAN RYAN, PROPERTY 63 (1987) (Such “buried assumptions” concern human flourishing or the attainment of man’s natural end. These consequences are usually attained indirectly, through respect for general rights, or rules of conduct, rather than directly, as in most utilitarian theories. The sharp separation in contemporary moral philosophy between natural rights and utility, or the common good, is however, an artificial one, and would certainly be foreign to many of the great natural law theorists.)

<sup>450</sup> *id.*

<sup>451</sup> *id.*

property, which have a rigid foundation independent of the laws of any particular society.<sup>452</sup> These characteristics of Locke's theory as a natural rights theory become clear when discussing his definition of 'the state of nature.' Locke's theory of the state of nature is tied closely to his theory of natural law that defines the right of persons and their status as free and equal persons.<sup>453</sup>

In some sense, Locke's argument of property is much related to the personhood argument. It has been argued that the key moral insight in Locke's *Two Treatises of Civil Government* is that all property arises from the fact that individuals must produce value required for a flourishing human life.<sup>454</sup> Accordingly, property rights define the sphere of liberty required for an individual to create, use, and dispose of these values.<sup>455</sup>

This means that Locke's property theory can be justified at least by exercising labor, but only when that labor can add value for flourishing a human life. For example, Merges criticized Nozick's famous anecdote of 'tomato juice'<sup>456</sup> for not fulfilling this human-flourishing requirement.<sup>457</sup> According to his argument, a property right is assumed to one as a natural right, but they should not be given if, from the beginning, they cannot meet this human-flourishing requirement.<sup>458</sup> In other words, one's property or patent rights would be denied if one does not satisfy the purpose for a flourishing human life. This argument shows that labor theory share the common grounds with the personhood theory.

---

<sup>452</sup> Moore & Himma, *supra* note 408.

<sup>453</sup> *id.*

<sup>454</sup> Mossoff, *supra* note 433.

<sup>455</sup> *id.*

<sup>456</sup> ROBERT NOZICK, *ANARCHY, STATE, AND UTOPIA* 175 (Oxford, 1974); Nozick writes "If I own a can of tomato juice and spill it in the sea so that its molecules (made radioactive, so I can check this) mingle evenly throughout the sea, do I thereby come to own the sea, or have I foolishly dissipated my tomato juice?"

<sup>457</sup> Merges, *supra* note 316, at 48.

<sup>458</sup> *id.*

Although Locke's theory recognizes natural property rights and is closely related with personhood or human-flourishing theory, Locke's theory is not as universal a natural-rights theory as the personhood theory. The personhood property theory consistently recognizes rights regardless of any condition, just because they are necessary to realize one's personhood. This is very universal, as it is built on the recognition that human rights have a higher value than any other economic sense. As a result, personhood theory asserts its rights without any limitations or conditions.

However, Locke's natural property rights are subject to certain limitation by the government. Locke proposed the claim of social contract where people in the state of nature conditionally transfer some of their rights to the government in order to better ensure the stable, comfortable enjoyment of their lives, liberty, and property.<sup>459</sup> Locke repeatedly makes clear throughout the Second Treatise that a person in a democratic government "consents" to the laws (including property laws) enacted by the governing majority.<sup>460</sup> He states that, "every man, by consenting with others to make one body politic under one government, puts himself under an obligation to everyone of that society to submit to the determination of the majority, and to be concluded by it."<sup>461</sup> This presumably means that a citizen's property rights can be subject to the goals of the government, if and only if the majority of people consents it. By consent of most, there can be some limits on one's rights; and this is quite contrary to the personhood theory that posits no limit on rights.

---

<sup>459</sup> Moore & Himma, *supra* note 408.

<sup>460</sup> ALEXANDER & PENEVER, *supra* note 436, at 43.

<sup>461</sup> *id.*

### 3. Balancing mechanism to define rights, but not as strictly as utilitarian

In addition to the control by governments and consents, property rights by Locke are primarily limited by certain conditions – three provisos. As Waldron observes, it certainly appears to be the unanimous opinion of Locke’s interpreters and critics that Locke intended a restriction on acquisition.<sup>462</sup> Locke’s three constraints, or provisos, are as follows: First, appropriation out of the commons is permissible where “there is enough, and as good left in the commons for others.” – this is known as the *sufficiency proviso*. Second, no one may appropriate more than he can use before it spoils.<sup>463</sup> Locke says that “[w]hatever is beyond this, is more than his share, and belongs to others. Nothing was made by God for man to spoil or destroy.”<sup>464</sup> It is often called *non-waste proviso*. Finally, there is the *charity proviso*. With strong echoes from Thomas Aquinas, Locke states that, “justice gives every man a title to the product of his honest industry and the fair acquisitions of his ancestors descended to him; so charity gives every man a title to so much out of another’s plenty, as will keep him from extreme want, where he has no means to subsist otherwise.”<sup>465</sup>

Although Locke’s theory does not require the very strict calculation of costs and benefits that the utilitarian theory obliges, the provisos of Locke’s theories suggests that the rights justified by Locke’s theory are not as broad as that of the personhood theory. Because property

---

<sup>462</sup> Jeremy Waldron, *Enough and as Good Left for Others*, *Philosophical Quarterly* 29, no 117 (1979) 319-28.

<sup>463</sup> *id.* at 39.

<sup>464</sup> *id.*

<sup>465</sup> *id.* at 40.

rights by Locke are justified only when meeting these three conditions, the scope of rights should be limited in consequence.

In this sense, satisfying the three conditions or provisos by Locke is a significant consideration in arguing for patent rights. As Merges states that the provisos hold great promise for resolving some difficult issues in intellectual property law,<sup>466</sup> it is necessary to look at three provisos in depth to discuss the patent harmonization issue.

### **(1) Two Provisos: The sufficiency proviso and the non-waste proviso**

First, it is necessary to discuss two relevant provisos that have significant implications on patent rights – the *sufficiency* proviso and *non-waste* proviso. Locke’s proviso appears immediately when he introduces labor and original appropriation, starting with paragraph 27<sup>467</sup>:

“for this labour being the unquestionable property of the labourer, no man but he can have a right to what that is once joined to, at least where there is enough, and as good left in common for others.”<sup>468</sup>

The stricture to leave “enough, and as good . . . for others” is referred to as the *sufficiency proviso*. The proviso works as a condition for granting property rights, patent rights cannot be justified – whether as a domestic or international matter – if they cannot satisfy the *sufficiency proviso*.

---

<sup>466</sup> MERGES, *supra* note 316, at 48.

<sup>467</sup> *id.*

<sup>468</sup> *id.*

In addition, Locke argues with great emphasis that “an appropriator must not waste his or her property or take more than s/he can use.”<sup>469</sup> In paragraph 31 in his First Treatise of Government, Locke adds what is generally called the spoliation or *non-waste proviso*:

“It will perhaps be objected to this, That if gathering the Acorns, or other Fruits of the Earth, etc., makes a right to them, then anyone may ingross as much as he will. To which I answer, Not so. The same Law of Nature, that does by this means give us Property, does also bound that Property too. God has given us all things richly . . . But how far has He given it to us? To enjoy. As much as anyone can make use of to any advantage of life before it spoils; so much he may by his labour fix a property in. Whatever is beyond this, is more than his share, and belongs to others. Nothing was made by God for Man to spoil or destroy.”<sup>470</sup>

## **(2) Two Provisos and Patent Rights**

Some scholars who think that Locke’s theory cannot justify the current patent system argue that patent rights cannot meet these provisos, particularly *sufficiency proviso*. Nozick is one of those scholars. He argues that the sufficiency proviso in the patent law context only requires that patents was not hindered from inventing it independently and should not last longer than – on average – the period it would have taken for someone else to invent the same device who had the knowledge of the invention.<sup>471</sup> But, modern patent laws cannot meet this condition because they do not recognize the doctrine of independent creation or a safe harbor to protect

---

<sup>469</sup> KARL WIDERQUIST, LOCKEAN THEORIES OF PROPERTY: JUSTIFICATIONS FOR UNILATERAL APPROPRIATION 3 (2010), [www.publicreason.ro/pdfa/21](http://www.publicreason.ro/pdfa/21).

<sup>470</sup> MERGES, *supra* Note 316, at 49.

<sup>471</sup> FISHER, *supra* Note 363, at 5.

independent inventors. In other words, under the current system of awarding patents, only one inventor reaps the full benefits of his or her labor; other inventors are denied these benefits, regardless of the labor it took to invent.<sup>472</sup> The compliance with Locke's theory requires fundamental changes of patent system, and those cannot be accepted within intellectual property communities with ease.

To confront this issue, it is necessary to investigate the *sufficiency proviso* in detail. There have been diverse arguments by scholars on the interpretation of this proviso. Some scholars think that this sufficiency proviso should not be treated as a necessary condition. For example, Nozick agreed that the sufficiency proviso poses a challenge to his entitlement conception of justice when it is interpreted as a necessary condition on acquisition, and attempts to defuse the treat by interpreting that concept differently.<sup>473</sup> In the same context, Waldron argues that sufficiency proviso should be a sufficient condition (in the logical sense) but not necessary one: meeting the sufficiency proviso is not a requirement of legitimate appropriation, but where satisfied, it justifies a claim to property.<sup>474</sup> Waldron thinks that this proviso is better understood as a sufficient condition because Locke is saying that there is certainly no difficulty with unilateral acquisition (which satisfies the other provisos) in circumstances of plenty, but he is leaving open the possibility that some other basis might have to be found to regulate acquisition in circumstances of scarcity.<sup>475</sup> Agreeing with the Waldron's opinion, Merges argues as follows:

---

<sup>472</sup> Gore, *supra* note 442 301.

<sup>473</sup> Waldron, *supra* note 462, at 319-28.

<sup>474</sup> MERGES, *supra* note 316, at 50.

<sup>475</sup> JEREMY WALDRON, GOD, LOCKE, AND EQUALITY: CHRISTIAN FOUNDATIONS IN LOCKE'S POLITICAL THOUGHT 172 (Cambridge University Press, 2002).

“If you can satisfy the sufficiency condition, you are home free; there is no further requirement that your appropriation avoid all spoilage. Appropriation that meets the sufficiency condition is necessarily modest, and hence, non-wasteful. So the prohibition on spoilage is automatically satisfied when appropriation leaves ‘as much and as good for others.’ Where spoliation enters the picture the sufficiency condition cannot be satisfied. Under conditions of scarcity, appropriation is permitted even though one is unable to leave enough and good for the others. But in such condition, appropriation is limited to the amount that the appropriator will not waste. Thus, only when the sufficiency condition is inoperative, the spoliation steps in to limit what one can take.”<sup>476</sup>

Although many scholars disagree with Waldron’s formulation,<sup>477</sup> his interpretation of Locke can provide an important idea to justify current patent system as well as to discuss the patent harmonization based on Locke’s theory. It is true that the current patent system is not compatible with the strict interpretation of sufficiency proviso and substantial reform is necessary to meet this requirement. However, if we follow Waldron’s argument, because *the sufficiency proviso* is a sufficient condition, there is a possibility that a person can obtain a valid claim over an object even if one fails to leave others with “enough, and as good.”<sup>478</sup> As a result, although current patent systems cannot meet the *sufficiency proviso*, patent rights still can be justified if we can satisfy other provisos, *non-waste* and *charity* proviso.

This leads to a conclusion that *non-waste proviso* should be considered very importantly. This proviso is particularly significant because it ensures substantial equality by limiting the size

---

<sup>476</sup> MERGES, *supra* note 316, at 50.

<sup>477</sup> *id.*

<sup>478</sup> *id.*

of holding to the amount a person can work directly.<sup>479</sup> In the context of intellectual property, Merges interprets that, “[f]or spoilage to occur, it is necessary that . . . the owner of the item must truly not use it at all, must let it go completely to waste. . . . The real key, the guiding principle that Locke was driving at, is not an unsatisfied demand, but a thing that has been appropriated and then put to no productive use at all.”<sup>480</sup>

According to his argument, spoilage or *non-waste proviso* cannot be met only when the patent rights are completely useless. Thus, as long as someone gets some use out of the mere concept or idea, spoilage proviso can be met and patent rights should be recognized.<sup>481</sup> Until it is certain that yet undeveloped variants will never in fact be put into use, we should refrain from declaring spoliation and invalidating a portion of the patent rights.<sup>482</sup> This means that if one patent is helpful to give ideas leading to subsequent invention, its usefulness and non-wastefulness should be recognized. In sum, non-waste proviso can be consistent with the current patent system properly.

### **(3) The charity proviso**

Locke believed in a strong duty of charity by which everyone is entitled to maintain subsistence.<sup>483</sup> Although intellectual property scholars have not had much to say about the charity proviso in Locke’s second treatise, the charity proviso is absolutely central to Locke’s ideas.<sup>484</sup>

---

<sup>479</sup> *See id.* at 4.

<sup>480</sup> *See id.* at 58.

<sup>481</sup> *See id.*

<sup>482</sup> *See id.* at 61.

<sup>483</sup> WIDERQUIST, *supra* note 469, at 8.

<sup>484</sup> MERGES, *supra* note 316, at 49.

In paragraph 42 of his First Treatise of Government, Locke introduced the charity proviso, as follows:

“God, the Lord and Father of all, has given no one of his children such a property in his peculiar portion of the things of this world, but that he has given his needy brother a right to the surplusage of his goods; so that it cannot justly be denied him, when his pressing wants call for it: and therefore no man could ever have a just power over the life of another by right of property in land or possessions; since it would always be a sin, in any man of estate, to let his brother perish for want of affording him relief out of his plenty. As justice gives every man a title to the product of his honest industry, and the fair acquisitions of his ancestors descended to him; so charity gives every man a title to so much out of another’s plenty as will keep him from extreme want, where he has no means to subsist otherwise.”

In this paragraph, Locke suggests two important aspects regarding the charity proviso: (1) that property does not confer the right to deny relief to those in “pressing want”; and (2) that people in desperate need have an actual, binding right to the assets held by legitimate owners, and this right arises from the same source, and carries the same weight, as an initial appropriator’s right.<sup>485</sup>

Even in Locke’s expansive theory of legislative power, the state cannot abrogate an owner’s duty of charity, since the beneficiaries of the duty cannot waive their own obligation of self-preservation.<sup>486</sup> As Merges argues, “Locke says that people in desperate need have a claim

---

<sup>485</sup> *id.* at 273.

<sup>486</sup> ALEXANDER & PENEVER, *supra* note 436, at 197.

on the assets held by legitimate owners.<sup>487</sup> For Locke, the destitute have title to the goods they need to survive, even when those goods are otherwise legitimately held by others, either through valid original appropriation or a subsequent transfer from an original acquisition.”<sup>488</sup>

The inescapability of the duty of charity is clearly relevant for owners of intellectual property rights governing products necessary for human survival. The most obvious example of this would be patents for life-saving medicines,<sup>489</sup> which will be discussed later.

#### **(4) Summary**

Applying Locke’s theory to the patent law system is not straightforward. Locke sets three limitations or provisos – sufficiency, non-waste, and charity, but there was a problem that those provisos, especially *sufficiency proviso*, cannot be compatible with the current patent rights. In this situation, some scholars’ arguments that sufficiency proviso is actually a *sufficient* condition is helpful to explain current patent systems and to continue discussing patent harmonization based on Locke’s theory. From next section, we are going to discuss the theoretical framework to discuss patent harmonization from Locke’s perspective.

---

<sup>487</sup> MERGES, *supra* note 316, at 49.

<sup>488</sup> *id.*

<sup>489</sup> ALEXANDER & PENEVER, *supra* note 436, at 197.

### III. LOCKE'S THEORY AND PATENT HARMONIZATION

The previous discussion of the Locke's theory in relation with patent rights reveals the interesting point that labor theory is positioned between utilitarian theory and personhood theory in many ways. Specifically, utilitarian theory and personhood theory are two extremes, representing legal rights and natural rights, and Locke's theory can be a compromise between two extreme theories. As Locke's theory justifies the natural-rights, it opens the possibility to support harmonization laws, similar to personhood theory. As discussed in personhood theory, natural-rights theory highlights the universal feature of rights, and these rights should not be influenced by individual governments' policies. Thus, it can provide strong justification for international harmonization. But, unlike universal personhood theory, the scope of its rights should be limited, as Locke highlights the role of governments and three restrictions for the property rights.

As Locke's theory has the mixture characteristics of both utilitarian and personhood theory, it is meaningful to look at patent harmonization from Locke's perspective. At first, based on the basic features of a natural-rights theory, Locke's theory can arguably provide a strong normative foundation for patent harmonization as the personhood theory does. It is supported by Locke's argument that, although positive law can give a precise form to the

indeterminate law of nature, the precepts of natural law must continue to operate in the civil society that is needed.<sup>490</sup>

However, the mere recognition of natural rights does not necessarily mean that all elements of patent laws should be harmonized or more unified. In fact, patent harmonization covers broader and more technical issues such as patentable subject matter, the scope of patent rights, and duties levied on the patentee. It is true that natural rights theory can give theoretical grounds for the inevitability and necessities of international harmonization of patent rights, but it does not give us a detailed guidance or strategies on how individual patent laws should be harmonized.

The project in this thesis is to provide a reasonable justification for patent harmonization based on the recognition of patents as property, and find practical guidelines for the related policy issues. For this purpose, it is necessary to build an analytic framework based on Locke's theory in order to analyze actual issues. In doing this work, it is notable that Locke, unlike other typical libertarian theorists, highlights the role of government and the power of legislation for the citizenry. Thus, from below, we are going to explore the role of government, which is the entity that makes law, and the abovementioned Locke's three provisos in relationship with patent harmonization.

---

<sup>490</sup> *id.* at 37.

## 1. Lockean Property Theory and Governments

It is apparent that Locke says much about individual property rights as well as the role of government. In fact, from the beginning, Locke's theory was not a theory of property, but of government. As Alexander and Penever argue, "Locke did not write the Treatise as a defense of private ownership. The Treatise is the foremost defense of democratic self-government against pretensions of monarchial absolutism. Locke's theory of property is instrumental, but ultimately subservient, to this project of constructing the basis for democratic political theory."<sup>491</sup>

However, in Locke's view, a government can no more justly contravene the law of nature than individuals could before the formation of civil government.<sup>492</sup> In the context of property rights, the state's power is therefore limited by the natural rights of property which exist at the time the government is formed.<sup>493</sup> These include the right to continue the possession of rightfully appropriated property unless the owner consents to lose it.<sup>494</sup> This Lockean argument about natural property rights shares common ground with libertarian property theorists who argue that intellectual property rights are an example of natural property rights that pre-exist prior to formation of a government, and that the government is therefore naturally bound to the natural laws.<sup>495</sup>

---

<sup>491</sup> ALEXANDER & PENEVER, *supra* note 436, at 36.

<sup>492</sup> *See id.* at 42.

<sup>493</sup> *id.*

<sup>494</sup> *id.*

<sup>495</sup> *See id.* at 192.

For example, Daniel Webster, the famous Whig politician known as the Great Orator, introduced legislation in the U.S. House of Representatives 1824 to secure patent rights to all first inventors *regardless of their national citizenship*.<sup>496</sup> Webster said that this was justified because: “at this time of day, and before this Assembly, . . . he need not argue that the right of the inventor is a high property; it is the fruit of his mind – it belongs to him more than any other property – he does not inherit it – he takes it by no man’s gift – it peculiarly belongs to him, and he ought to be protected in the enjoyment of it.”<sup>497</sup> Even Webster’s opponent in this legislative debate agreed with Webster that the law should “protect the just rights of patentees” by securing “the property which an inventor has in that which is the product of his own genius.”<sup>498</sup>

Although property rights are among rights derived from the state of nature that continue to constrain government, Locke thinks that the legislature has the power to interpret what natural law requires in this matter in a fairly substantial way.<sup>499</sup> As a result, the scope of intellectual property rights justified within the state of nature would be subject to a great deal of revision within the civil society for a variety of reasons (including utilitarian concerns).<sup>500</sup>

To summarize, under Locke's theory, patent rights should be recognized internationally because they implement what are natural property rights. Of course, the three Lockean provisos should be met for individuals at the outset. Furthermore, although a country or a government does not have the power to nullify patent rights once they are justified by Locke’s theory, a country or a government can have ample discretion in the implementation and interpretation of those rights.

---

<sup>496</sup> Mossoff, *supra* note 433.

<sup>497</sup> *id.*

<sup>498</sup> *id.*

<sup>499</sup> Moore & Himma, *supra* note 408.

<sup>500</sup> ALEXANDER & PENEVER, *supra* note 436, at 196.

The question remains what – under Locke’s theory – the government can do specifically. Regarding this point, Locke mentions that government can implement or interpret rights based on the people's consents. Particularly, if a government regulates patent rights in the way its people desire, each patent law would consequentially diverge and fragmented. Thus, in order to solve the conflict revolving around patent harmonization, it is necessary to look beyond existing work by focusing on government’s roles or its powers.

## **2. The Analytic Framework for Patent Harmonization**

### **(1) The State of Nature and International Relations**

To discuss the government’s role in patent harmonization with insights from Locke’s theory, it is first necessary to apply Lockean property theory in the international environment. Surprisingly, perhaps, the state-of-nature idea in Locke’s original model is well applied to the international context. As Alex Tuckness has observed, Locke describes *international relations* as the very same way as the *state of nature*, and so in principle “states should have the same power . . . in the international community that individuals have in the state of nature.”<sup>501</sup> As a result (in discussing international crime), he concludes that “the most common interpretation has been that the power to punish internationally is symmetrical with the power to punish in the state of nature.”<sup>502</sup>

---

<sup>501</sup> Moore & Himma, *supra* note 408.

<sup>502</sup> *id.*

Moreover, in the *international relations* context is well compatible with Locke's *state of nature* in the sense that both are rooted in consents or agreements. As Michael Sendel observes, "[the international dispute on what the rules of intellectual property] should be, [is] . . . , in a way, . . . the last frontier of *the state of nature* . . . [A]mong nations where there is no uniform law of patent rights and property rights, it's up for grabs until, by some act of consent, some international agreement, people enter into some settled rules."<sup>503</sup> This argument is symmetric with Locke's argument that consent is the major factor in the establishment of a regulation or government. It has been extensively argued by scholars that international laws are basically based on consents of each country.<sup>504</sup> As a result, one can conclude that 'consent' is a common feature to infer that international relations are very similar to the concept of Locke's state of nature.

---

<sup>503</sup> MICHEL SANDEL, JUSTICE: WHAT IS THE RIGHT THING TO DO? EPISODE 4" "THIS LAND IS MY LAND", available at <http://www.justiceharvard.org/2011/02/episode-04/>; As Guzman argues, "international law is built on the foundation of state consent. A state's legal obligations are overwhelmingly – some would say exclusively – based on its consent to be bound. This focus on consent offers maximal protection to individual states."; Andrew Guzman, *The Consent Problem in International Law 2* (Berkeley Program in Law and Economics (Berkeley Program in Law and Economics Working Paper Series, May 3, 2011), available at <https://escholarship.org/uc/item/04x8x174#page-2>.

<sup>504</sup> Andrew Guzman, *The Consent Problem in International Law 4*, Berkeley Program in Law and Economics, Working Paper Series (Mar 10, 2011), available at <http://escholarship.org/uc/item/04x8x174> (last visited Feb 05, 2017); Anthony Aust, HANDBOOK OF INTERNATIONAL LAW 4 (2005)("[International Law] is based on the consent (express or implied) of states."); IAN BROWNLIE, PRINCIPLES OF PUBLIC INTERNATIONAL LAW 4 (6 ed.1995) ("the general consent of states creates general rules of application"); James Leslie Brierly, THE LAW OF NATIONS : AN INTRODUCTION TO THE MODERN LAW OF PEACE , 51 – 54 (1963)(states obey international law because they have consented to it); Louis Henkin, INTERNATIONAL LAW : POLITICS AND VALUES 28 (1995) ("No treaty, old or new, whatever its character or subject, is binding on a state unless it has consented to it."); Malgosia A. Fitzmaurice, *Third Parties and the Law of Treaties* 6 MAX PLANCK Y.B. U.N.L. 37, 38 (the principle of reciprocity remains the governing norm in the creation of international legal obligations); Laurence R. Helfer, *Nonconsensual International Lawmaking*, 2008 ILL. L. REV. 71, 72 (2008) ("For centuries, the international legal system has been premised on the bedrock understanding that states must consent to the creation of international law."); Duncan B. Hollis, *Why Consent Still Matters – Non-State Actors, Treaties, and the Changing Sources of International Law*, 23 BERKELEY J. INT'L LAW 137 (2005) ("Notwithstanding criticism of Article 38 and state consent, most international lawyers rely on them as international law's operating framework."); Restat 3d of the Foreign Relations Law of the U.S., Introduction to Part I, Chapter 1, 18 (1987) ("Modern international law is rooted in acceptance by states which constitute the system."); but see Oscar Schachter, *Towards a Theory of International Obligation*, in THE EFFECTIVENESS OF INTERNATIONAL LAW DECISIONS 9 - 10 (Stephen Schwebel ed.,1971) (citing eleven other possible sources of international obligation).

## (2) Property Rights and Sovereign Rights

The previous assumption on the symmetry between Locke's definition of state of nature and the international environment is a starting point to link Locke's labor theory with international patent harmonization. As Alex Tuckness argues, one can assume that an individual country acts like an individual in this international model.<sup>505</sup> Then, a country can claim the property rights that were originally given to an individual by Locke's theory. Of course, in order to make this analogy work, a country's claimed property rights must involve a country should exercise labor and satisfy the three provisos.

Yet, recognizing this symmetry leaves an important question. What are the property rights that a country can acquire? Until now, we have argued that individuals can have property rights or patent rights justified by the Lockean theory. Does a country "acquire" patent rights owned by the government? Maybe not. Patent rights are given to individuals, not to countries. Thus, the question continues, what are the property rights that a country has in this international model?

To answer this question, it is necessary to find the rights of a country that is well recognized in the international relations. One possible example is the sovereign power. Specifically, sovereignty over natural resources is a well-established principle of international law recognized by the international community.<sup>506</sup> As reflected in the United Nations General Assembly (UNGA) Resolution 1803 (XVII) on Permanent Sovereignty over Natural

---

<sup>505</sup> Moore & Himma, *supra* note 408.

<sup>506</sup> *id.* at 1.

Resources<sup>507</sup>, every state has the right of development and economic self; “1. The right of peoples and nations to permanent sovereignty over their natural wealth and resources must be exercised in the interest of their national development and of the well-being of the people of the State concerned.” Ultimately, the principle determines the exclusive<sup>508</sup>, absolute<sup>509</sup>, and inalienable<sup>510</sup> right of every nation to explore and exploit the natural resources within its borders<sup>511</sup> – both territorial and maritime<sup>512</sup> – without interference of any other State. It provides a country the exclusive option of choosing its own public policies according to its beliefs and what better suits a determinant community or the entire population. The power to develop and explore its own natural resources is now a matter of domestic policy.<sup>513</sup>

It is notable that the concept of ‘natural resources’ needs not to be limited only to tangible and conventional resources. For instance, the 1968 African Convention of Natural Resources defines natural resources as “renewable resources, tangible and *non-tangible*, including soil, water, flora and fauna and non-renewable resources.”<sup>514</sup> (Emphasis added) The 1992

---

<sup>507</sup> See *id.* at 4; United Nations General Assembly Resolution 1803 (XVII), U.N. Doc. A/5217 (14 Dec 1962), available at: <http://daccessddsny.un.org/doc/RESOLUTION/GEN/NR0/193/11/PDF/NR019311.pdf?OpenElement>. (last visited 19 July 2013)

<sup>508</sup> See *id.* at 2.; David M. Ong, *Joint Development of Common Offshore Oil and Gas Deposits: “Mere” State Practice or Customary International Law?*, 93 AM. J. INT’L L. 771, 774 (1999).

<sup>509</sup> See *id.*; A. D. Tarlock, *Exclusive Sovereignty versus Sustainable Development of a Shared Resource: The Dilemma of Latin American Rainforest Management*, 32 TEX. INT’L L.J. 37, 43 (1997).

<sup>510</sup> See *id.* at 4.; Peters P., et al., *Responsibility of the States in Respect of the Exercise of Permanent Sovereignty over Natural Resources*, Netherlands International Law Review, issue 03, Vol. 36, (1989), p. 292

<sup>511</sup> See *id.*; PHILIPPE SANDS & JACQUELINE PEEL, *PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW I* 187 (Manchester University Press, 1995) (1995).

<sup>512</sup> See *id.*; Art. 193 of the United Nations Convention on the Law of the Sea (10 December 1982), 1833 U.N.T.S. (hereinafter UNCLOS), available at [http://www.un.org/depts/los/convention\\_agreements/texts/unclos/unclos\\_e.pdf](http://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf), (last visited 19 July 2013) (reaffirms the same principle: “States have the sovereign right to exploit their natural resources pursuant to their environmental policies and in accordance with their duty to protect and preserve the marine environment”)

<sup>513</sup> *id.*

<sup>514</sup> See *id.* at 3.; Art. V n. 1 of African Convention on the Conservation of Nature and Natural Resources, (15 September 1968), 1001 U.N.T.S. 4, available at <http://www.africa->

Biodiversity Convention refers to biological resources and defines it as “genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity.”<sup>515</sup> In line with this argument, one can logically expand the definition of “natural resources” into the inclusion of intellectual assets in the domain of intellectual property law.

The analogy between property rights and sovereign rights are well supported by several international cases, which refer to state’s sovereignty rights in a similar fashion to property rights, by including the essence of property rights: the rights to exclude and use. It is often said that sovereignty implies the existence of *a right to exclude* other nation – states and foreign entities such as corporation,<sup>516</sup> and *the right to use*; for example, it is mentioned in the Island of Palmas Case: “[t]erritorial sovereignty . . . involves the exclusive right to display the activities of a State.”<sup>517</sup> Moreover, General Assembly Resolution 626 (VII) by United Nations stipulates that States may exercise *their right freely to use and exploit* their natural wealth and resources ‘wherever deemed desirable by them for their own progress and economic development.’<sup>518</sup>

---

union.org/root/au/documents/treaties/Text/nature%20and%20natural%20recesource.pdf. (last visited 19 July 2013).

<sup>515</sup> See *id.*; Art. 2 United Nations Convention on Biological Diversity, June 5, 1992, 31 I.L.M. 818, available at <http://www.cbd.int/doc/legal/cbd-en.pdf>. (last visited 19 July 2013).

<sup>516</sup> GRAHAM DUTFIELD, *INDIGINOUS PEOPLES AND TRADITIONAL RESOURCE RIGHTS* 109, (Sheldon Krimsky and Peter shorett Edit, 2005, Rowman and Littlefield Publishers Inc.).

<sup>517</sup> MIGUEL MORAIS AGUIAR, *DOES SUSTAINABLE DEVELOPMENT CONTRAINS A STATE’S SOVEREIGNTY RIGHTS OVER ITS NATURAL RESOURCES* 3 (2013), [http://www.dundee.ac.uk/cepmlp/gateway/files.php?file=cepmlp\\_car17\\_67\\_370269315.pdf](http://www.dundee.ac.uk/cepmlp/gateway/files.php?file=cepmlp_car17_67_370269315.pdf); Island of Palmas Case, (Netherlands v. USA), Report of International Arbitral Awards, Vol. II, (4 April 1928), available at: [http://untreaty.un.org/cod/riaa/cases/vol\\_ii/829-871.pdf](http://untreaty.un.org/cod/riaa/cases/vol_ii/829-871.pdf), (last visited 19 July 2013)

<sup>518</sup> NICOLAAS JAN SCHRIJVER, *SOVEREIGNTY OVER NATURAL RESOURCES: BALANCING RIGHTS AND DUTIES* 254 (Cambridge University Press, 1997).

### (3) Labor and Legislation

In fact, a noted historian of political philosophy has popularized the extreme view that “Locke had no theory of sovereignty all.”<sup>519</sup> It is true that Locke did not use the term ‘sovereign’ in its technical meaning, perhaps because of its Hobbistic associations.<sup>520</sup> Rather, Locke attains on the whole a sound theory of sovereignty that is the single supreme and yet limited legal authority in the state.<sup>521</sup>

In other words, Locke does not characterize the highest authority in the state as ‘sovereign’ perhaps, but he defines ‘political power’ as “a right of making laws with penalties of death, and consequently all less penalties, for the regulating and preserving of property” (which to Locke means life, liberty and property) and “of employing the force of the community, in the execution of such laws, and in the defense of commonwealth from foreign injury, and all these only for the public good.”<sup>522</sup> This supreme power inheres in the legislature.<sup>523</sup>

This Locke’s theory of property and government is interesting in the sense that property rights as well as sovereign rights are not absolute. As discussed above, Locke argues that property rights is not unconditional natural rights, but is given on the condition that exercising labor. Similarly, sovereign power or supreme political power to Locke is defined by exercise of legislative power of the government. More specifically, for Locke, the sovereign must be directly answerable to the laws created by the legislature and it must be kept subordinate both to

---

<sup>519</sup> Raghuvver Singh, *John Locke and the Idea of Sovereignty* 20 INDIAN J. POL. SCI. 320-324 (1959).

<sup>520</sup> *id.*, at 321

<sup>521</sup> *id.*

<sup>522</sup> LOCKE, *supra* note 430, at Chapter 1 Sect. 3.

<sup>523</sup> Singh, *supra* note 519, at 321.

the legislature and to the people.<sup>524</sup> As we build a similarity between international relations and the state of nature, and sovereign rights and property rights, it is possible to find the analogy between legislation for sovereign rights and labor for property rights.

In summary, based on the analogy between Locke's theory and international relations, when a country has sovereign power over subject matter, one can assume that a country has property rights over that subject matter. As Locke argues that property rights is given on the condition of exercising labor, a government's sovereign rights is given on the condition of exercising legislative power.

In addition to stressing the role of government, Locke contends that property rights are not absolute, but conditional, justified by satisfying the three provisos. In building an international model, it is necessary to explore the question about how a country should satisfy the three provisos in relation with sovereign rights.

#### **(4) Locke's Three Provisos**

As with individual patent rights, a country should satisfy Locke's three provisos in the exercise of sovereign power: 1) the enough-and-as-good proviso, or sufficiency limitation, 2) the no-waste proviso, or spoliation limitation, and 3) the charity, or subsistence requirement.

If we apply the sufficiency proviso to the international model, a country's property rights or exercise of sovereign power, would be valid, "at least where there is enough, and as good left

---

<sup>524</sup> GARY B. HERBERT, *A PHILOSOPHICAL HISTORY OF RIGHTS* 121 (Transaction Publishers, 2002).

in common for other countries.”<sup>525</sup> As discussed above, this paper has chosen to adopt the more conservative position that, as Waldron argues, this *sufficiency proviso* is a sufficient condition in a logical sense. Thus, it is necessary not to further discuss this sufficiency proviso in detail, but to focus on non-waste proviso.

If we apply the non-waste proviso to the international case, a country must not use its resources to waste or harm another country’s usage. Even though it is not exactly the same, international principles repeatedly recognize that a country’s right should not be used in a way to harm its people and the rights of other countries. For example, in the Trail Smelter Case, the tribunal stated that, “no State has the right to use or permit the use of its territory in such a manner as to *cause injury* by fumes in or to the territory of another or the properties or persons therein, when the case is of serious consequence and the injury is established by clear and convincing evidence.”<sup>526</sup> (Emphasis added) Moreover, in the Corfu Channel Case decision, it is stated that it is “every State’s obligation not to knowingly allow its territory to be used for acts *contrary to* the rights of other States.”<sup>527</sup> (Emphasis added) From this principle, it can be implied that sovereign rights over natural resources, or a country’s property rights, is limited if the actions or omissions of a certain state could cause damage or harm to another’s territory state.<sup>528</sup>

---

<sup>525</sup> WIDERQUIST, *supra* note 469, at 9.

<sup>526</sup> AGUIAR, *supra* note 517, at 4; Trail Smelter Case, (USA v. Canada), Report of International Arbitral Awards, Vol. III, (16 April 1938 and 11 March 1941), available at [http://untreaty.un.org/cod/riaa/cases/vol\\_iii/1905-1982.pdf](http://untreaty.un.org/cod/riaa/cases/vol_iii/1905-1982.pdf). (last visited 19 July 2013); See also art 194 n. 2 of UNCLOS that reaffirms the same principle: “States shall take all measures necessary to ensure that activities under their jurisdiction or control are so conducted as not to cause damage by pollution to other States and their environment, and that pollution arising from incidents or activities under their jurisdiction or control does not spread beyond the areas where they exercise sovereign rights in accordance with this Convention”

<sup>527</sup> *id.*; Corfu Channel Case (United Kingdom of Great Britain and Northern Ireland v. Albania), ICJ Reports of Judgments, Advisory Opinions and Orders, (9 April 1949) available at <http://www.icj-cij.org/docket/files/1/1645.pdf>. (last visited 19 July 2013).

<sup>528</sup> *id.*

Likewise, a State is only free to explore and exploit its natural resources if its action (or omission) does not interfere or cause damage to another state.<sup>529</sup> This is, of course, very symmetrical to Locke's non-waste proviso.

If we apply Locke's charity proviso in the international model, two important issues emerge. First, sovereign power cannot confer the right to deny relief to those in "pressing want"; and second, that people in desperate need have an actual, binding right to the assets held by legitimate sovereign power holders.<sup>530</sup> This issue will be analyzed in the next chapter in detail, when we discuss specific policy issues such as those involved in pharmaceutical products.

#### **4. Conclusion**

Starting from the similarity between international relations and Locke's state of nature, it is possible to build an analytic model of Locke's theory applicable to the international cases. In this model, sovereign rights over patentable subject matters can be regarded as property rights that are conferred on a government. This is based on the notion that sovereign power is about a government's right over resources, which is very symmetrical to Locke's theory on property rights. More detailed analogy or the application of the Lockean theory to the international case is explained in the table 5 below.

---

<sup>529</sup> *id.*

<sup>530</sup> MERGES, *supra* note 316, at 273.

< Table 5: Symmetry between the Original and International Model of Locke >

<b>Original Model</b>	International Model
<b>State of Nature</b>	International Relations
<b>Individuals</b>	Countries
<b>Property rights</b>	Sovereign Power
<b>Labor</b>	Legislation
<b>Three Provisos</b>	Three Provisos

Based on this symmetry, in principle – by applying the Lockean theory – international property or sovereign rights should be given to individual countries that mix their labor with resources. Just as an individual can acquire property rights by mixing his labor with resources, a country can claim sovereign rights when it mixes its labor with resources. In the international model, one might say that a country’s legislative effort is ‘labor’ which justifies the recognition of its sovereign rights. Specifically, a country’s effort to design and enforce patent law, such as defining patentable subject matter, duration of patents, and the scope of patent rights, requires a lot of resources and labors. Under a Lockean theory, when a country mixes this legislative labor with something derived from the state of nature, it is theoretically justified to claim sovereign rights over that subject matter.

#### IV. TWO-LAYERS OF LOCKE’S THEORY TO JUSTIFY PATENT HARMONIZATION

As we discussed in Chapter 2, harmonization is a process of ascertaining the admitted limits of unification but does not necessarily amount to a vision of total uniformity.<sup>531</sup> Uniformity is the final goal of harmonization, but harmonization is any stage in the process toward realizing uniformity.

Based on our previous discussion, it is possible to define the driving forces toward patent harmonization in two ways. One is the argument for strong patent harmonization, or toward the uniformity of patent systems. This is based on the natural rights theory, which says that property rights should be recognized regardless of the laws of any particular society. The other driving force is toward a country-specific patent system, and is based on the sovereign power of a country having an exclusive right to use its resources.

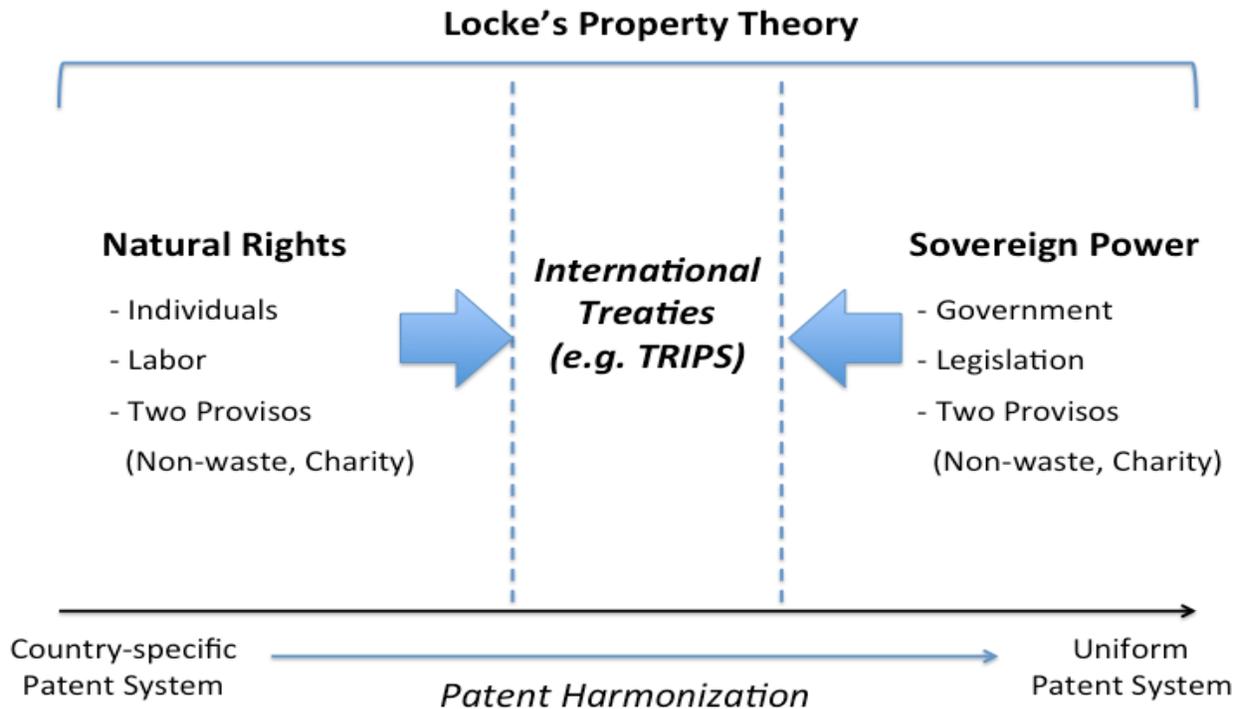
One can say that harmonization involves balancing activity between natural rights and sovereign power. Among the theories that we discussed in Chapter 4, the utilitarian theory highlights sovereign power, whereas the personhood theory highlights natural rights. These theories, however, are at two extremes, and therefore cannot provide a full explanation for the patent harmonization issue. If one highlights the natural rights theory, it can strongly support the harmonization or even unification of patent laws. However, if we place more weight on the concept of sovereign power, a country would have a comprehensive right to design its law, and would not be obligated to recognize a foreigner’s rights given by another government.

---

<sup>531</sup> WERNER F. MENSKI, *COMPARATIVE LAW IN A GLOBAL CONTEXT: THE LEGAL SYSTEMS OF ASIA AND AFRICA* 39 (Cambridge University Press, 2005) (2006).

What this paper would like to suggest is that Locke’s theory can provide balanced guidance between those extremes in the discussion of patent harmonization, by providing two-layers of normative theories for both driving forces. Specifically, Locke highlights the natural-rights aspects of property, while recognizing a role for government. Although Locke does not provide much guidance about the exercise of government, we can construct a symmetrical model by applying his property theory in the international domain. Under this approach, the Lockean property would require the legislation efforts of a country, which is a holder of sovereign rights.

< Figure 5: Locke’s Theory and Patent Harmonization >



In sum, international patent harmonization is a result of striking a balance between two tensions. However, applying the international model of Locke's theory to real issues renders more complications. It is true that many issues around patent harmonization are rooted in a conflict between a country's sovereign power and an individual's patent (or property) rights. Traditional knowledge, pharmaceutical products, and biodiversity are typical examples. Developing countries argue the absolute sovereign rights, whereas developed countries defend the value of individual patent rights. Because Locke's property theory arguably supports both conclusions, it is possible to find some uniform guidance in dealing with those conflicts around patent harmonization. From the next chapter, we will discuss important policy issues around patent harmonization based on Locke's theory and our analytic frame.

## CHAPTER 7

### POLICY ISSUES: THE “TRIPLETS”

In the above chapters, we have discussed a two-layer normative frame based on the property theory – in particular, Locke’s labor theory. This chapter actually applies this analytic tool to real policy issues. It is true that there are numerous issues that could be subsumed under the name of “patent harmonization.” For example, when countries develop a uniform patent system, there are many complicated but difficult issues on which every country must reach consensus. Among many policy issues, this chapter particularly focuses on the normative questions, rather than practical questions, that can be analyzed by using property theories.<sup>532</sup>

To consider normative issues involved in patent harmonization, it is beneficial to refer to the current issues debated in the WTO TRIPS Council. After the conclusion of the TRIPS Agreement in 1995, many countries – usually developing countries – have argued over the interpretation and revision of that agreement. Particularly contentious are those identified by the Doha Declaration as the “triplets”:<sup>533</sup> biotechnology, traditional knowledge, and biodiversity.

---

<sup>532</sup> Consider, for instance, the long historical debate in the United States about priority – between first-to-invent and first-to-file. The main argument supporting the first-to-file system was to harmonize the U.S. patent law system with those of the rest of the world. And, the reason to change to a first-to-file system was based on a very economic and pragmatic argument. Although it is theoretically correct to give priority to the one who invents first and not the one who files an application first, most countries choose the first-to-file system because of its cost and efficiency. Thus, while consequential harmonization might be one of the benefits for adopting the first-to-invent system in the United States, this was not based on normative choices. Rather, saving costs and enhancing predictability as other countries do is the main reason for changing the system, with harmonization only a collateral benefit. Thus, this issue is not a debate about normative questions, and it is out of the scope of our discussion.

<sup>533</sup> TAUBMAN ET AL., *supra* note 118, at 205. (Paragraph 19 of the Doha Declaration instructed the TRIPS

First of all, biotechnology issue stems from the Article 27.3 (b) of TRIPS agreement. It concerns the scope of permissible exceptions to patentable subject matter in biotechnology patenting, and leaves open an option for Members to rule out patents on certain biological inventions within their national IP systems.<sup>534</sup> As the TRIPS Council maintains this review on its agenda, discussions have included debate on: patentability of certain life forms and whether there should be exclusions for any such inventions; and how to strike a balance, in the protection of plant varieties, between private and community interests, and other issues such as farmers' rights and maintaining biodiversity.<sup>535</sup>

In line with the instructions given in the Doha Declaration, the TRIPS Council has continued to work on the protection of traditional knowledge and folklore since 2002.<sup>536</sup> The general issues covered, for instance, the question of why there is need for international action on the protection of traditional knowledge and folklore; and the international forums most appropriate to pursue such a work.<sup>537</sup>

The third of the "triplets" issues concerns the relationship between the TRIPS Agreement and the Convention on Biodiversity (CBD). Similar to the other two issues, this has remained on the agenda of the TRIPS Council as a distinct item since 2002, although it deals with issues that had earlier been raised under the Article 27.3(b) review.<sup>538</sup>

---

Council “in pursuing its work programme including under the review of Article 27.3(b), the review of the implementation of the TRIPS Agreement under Article 71.1 and the work foreseen pursuant to paragraph 12 of this Declaration, to examine, inter alia, the relationship between the TRIPS Agreement and the Convention on Biological Diversity, the protection of traditional knowledge and folklore, and other relevant new developments raised by Members pursuant to Article 71.1.”).

<sup>534</sup> *id.*

<sup>535</sup> *See id.* at 8.

<sup>536</sup> *id.*

<sup>537</sup> *id.*

<sup>538</sup> *id.* at 9.

As these are the central issues in the international community, it is meaningful to apply our analytic framework to these issues, and to explore solutions and their justifications. Before proceeding to that task, it is necessary to clarify the definitions and relations of these three issues in detail.

## **I. DEFINING THE “TRIPLETS”**

### **1. Biotechnology**

Proponents of patent law, primarily developed countries like the U.S. or EU member states, justify patents on drugs by arguing that removing or limiting patent rights will dramatically affect research and development in the pharmaceutical sector. However, other developing countries argue that pharmaceuticals should be excluded from the purview of patent law, due to the possibility of abuse of monopoly rights and the taking of unfair advantage of the absence of competition that results from the grant of a patent.<sup>539</sup> This gets especially problematic in the case of life-saving medicines, since it is possible that the inventor can raise the price of a patented drug to the point that it is inaccessible to poor people. The life-saving

---

<sup>539</sup> Raadhika Gupta, *Compulsory Licensing under TRIPS: How far it addresses public health concerns in developing nations*, 15 J. INTELL. PROP. R. 357 358 (2010).

medicine can become very expensive as a result of the granting of a patent, so people in developing countries cannot afford it.

Developing countries oppose the idea of harmonization because they think it will consequentially lead to a strong control over life-saving medicine all around the world. Such a harmonized patent regime allows the patentee to exercise larger control over both availability and accessibility (in terms of price, quantity, etc.) of the life-saving drug.<sup>540</sup> In fact, they argue that the TRIPS Agreement puts countries with poor capacity to develop essential drugs at a disadvantage.<sup>541</sup> They also claim that limiting patent rights can help to bring down prices and facilitate the entry of generic products.<sup>542</sup> For example, India's adoption of price control and a process-only patent regime transformed the country's drug prices from among the highest in the world to one of the lowest.<sup>543</sup>

## **2. Traditional Knowledge (TK)**

Traditional Knowledge (hereinafter TK) can be defined as a living body of knowledge that is developed, sustained and passed on from generation to generation within a community, often forming part of its cultural or spiritual identity.<sup>544</sup> Traditional knowledge represents the

---

<sup>540</sup> *id.*

<sup>541</sup> *id.*

<sup>542</sup> *id.*

<sup>543</sup> *id.*

<sup>544</sup> *id.*

oldest form of "cumulative and sequential innovation" known to man.<sup>545</sup> Traditional knowledge is more intuitive, not bound by formal technical paradigms, and, guided by instinct, and it often takes place by slow accretions of experience over long periods of time.<sup>546</sup> Like present-day applications of know-how to industry, it proceeds mostly by trial and error.<sup>547</sup> Recently, this traditional lore has become commercially valuable, as the applications of know-how to industry generally represent one of the most valuable forms of commoditized information in today's knowledge-based economy.<sup>548</sup>

Traditional knowledge is not easily protected by the current intellectual property system, because traditional knowledge belongs to, or is devoted to a tribe, or a community, or even a nation. Moreover, patent laws at the national and international level do not recognize the patentability of traditionally developed and indigenously used knowledge, because the long-time existence characteristic of TK cannot meet the well-established standard of novelty for granting patent rights.<sup>549</sup>

For this reason, in recent years, indigenous peoples, local communities, and governments, mainly in developing countries, have demanded equivalent protection for traditional knowledge systems.<sup>550</sup> They argue that the current international system for protecting intellectual property

---

<sup>545</sup> JEROME H. REICHMAN AND TRACY LEWIS, USING LIABILITY RULES TO SIMULATE LOCAL INNOVATION IN DEVELOPING COUNTRIES: APPLICATION TO TRADITIONAL KNOWLEDGE 356 (International Public Goods and Transfer of Technology under a Globalization Intellectual Property Regime, Keith E. Maskus and Jerome H. Reichman Ed. Cambridge University Press).

<sup>546</sup> *id.*

<sup>547</sup> *id.*

<sup>548</sup> *See id.*, at 356.

<sup>549</sup> SUN LEI, PROTECTION OF TRADITIONAL KNOWLEDGE, FOLKLORE AND GENETIC RESOURCES: FROM THE PERSPECTIVE OF INTELLECTUAL PROPERTY RIGHTS 4, <http://www.bioin.or.kr/fileDown.do?seq=3289>.

<sup>550</sup> World Intellectual Property Organization (WIPO), *Traditional Knowledge and Intellectual Property – Background Brief*, available at [http://www.wipo.int/pressroom/en/briefs/tk\\_ip.html](http://www.wipo.int/pressroom/en/briefs/tk_ip.html).

was fashioned during the age of industrialization in the West, and was developed subsequently in line with what were perceived to be the needs of technologically advanced societies.<sup>551</sup>

To a great extent, the significant contribution of TK to modern technology and the little recognition of it in modern intellectual property regimes has subjected TK to a free-riding situation.<sup>552</sup> In practice, some TK has been commercially used without authorization and payment, or even legitimately monopolized by others using intellectual property rights, while TK holders and original countries have received nothing.<sup>553</sup> The “Turmeric” case in India is the very example of such piracy.<sup>554</sup>

The growing trend towards the commercialization of TK and the threat of encroachment coming from the tech-advanced world has gradually awakened TK holders and original countries, and stimulated them to protect their TK in the context of trade globalization.<sup>555</sup> The main voice can be heard from developing countries, such as India and Brazil, which have both fallen behind in the race of to develop modern technologies,<sup>556</sup> and have a huge amount of TK.<sup>557</sup>

---

<sup>551</sup> *id.*

<sup>552</sup> *id.*

<sup>553</sup> *id.*

<sup>554</sup> *id.* at 5.; (In India, there grows a plant named turmeric, which has been used for healing wounds and rashes by local people for thousands of years. In 1995, the U.S. Patent and Trademark Office granted a patent, US5, 401,504, to two expatriate Indians at the University of Mississippi Medical Center on use of turmeric in wound healing. This patent triggered demurrals from the Indian government and people. The Council of Scientific and Industrial Research of India challenged this patent for the reason that the use of turmeric for wound healing is widely known in India, and thus that “invention” has lost novelty. With the support of two written documentations, an ancient sanskrit text and a paper published in 1953 in which the use of turmeric for wound healing is documented, India won the case, and the USPTO had to cancel the patent.)

<sup>555</sup> *id.*

<sup>556</sup> CARLOS M. CORREA, INTELLECTUAL PROPERTY RIGHTS, THE WTO AND DEVELOPING COUNTRIES: THE TRIPS AGREEMENT AND POLICY OPTIONS 174 (Zed Books, 2000) (2000). (United States, Japan, European countries,

Those developing countries complain that current international agreements such as TRIPS do not mention TK at all. The TRIPS Agreement only requires a review of Article 27.3(b), which deals with patentability or non-patentability of plant and animal inventions, and the protection of plant varieties.<sup>558</sup> Countries had felt the necessity to reflect this concern in the current WTO negotiations, and finally agreed on the Paragraph 19 of the 2001 Doha Declaration. Specifically, Doha Declaration says that the TRIPS Council should look at the relationship between the TRIPS Agreement and the UN Convention on Biological Diversity (CBD) with regard to the protection of traditional knowledge and folklore.<sup>559</sup> It also adds that the TRIPS Council's work on these topics must take development issues fully into account.<sup>560</sup> However, there has been little progress in the WTO and TRIPS negotiations as the Doha Round has been deadlocked.

### **3. Biodiversity: The Convention on Biological Diversity (CBD)**

Third issue is about the biodiversity, or the Convention on Biological Diversity (hereinafter "CBD"). CBD is the only legally binding international treaty in force that touches the protection of traditional knowledge and genetic resources.<sup>561</sup> The objectives of this

---

Australia, Canada controlled over 97 per cent of all biotech patents in the world).

<sup>557</sup> LEI, *supra* note 549, at 108.

<sup>558</sup> World Trade Organization (hereinafter WTO), *TRIPS Issues: Article 27.3b, traditional knowledge, biodiversity*, available at [http://www.wto.org/english/tratop\\_e/trips\\_e/art27\\_3b\\_e.htm](http://www.wto.org/english/tratop_e/trips_e/art27_3b_e.htm). (last visited April 22, 2016).

<sup>559</sup> *id.*

<sup>560</sup> *id.*

<sup>561</sup> *id.* at 112.; GERARD BODEKER, *INDIGENOUS MEDICAL KNOWLEDGE: THE LAW AND POLITICS OF*

convention are: 1) the conservation of biological diversity, 2) the sustainable use of the components of biological diversity, and 3) the fair and equitable sharing of the benefits arising out of the utilization of genetic resources.<sup>562</sup> CBD Article 8(j) requires signatory members to “respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices”.<sup>563</sup>

This CBD issue may not be an independent issue, but is important and meaningful because it covers the previous issue of traditional knowledge within the legal framework. Unlike TRIPS agreement, CBD says much more about genetic resources and traditional knowledge. For example, Article 18(4) of CBD reinforces the status of TK by requiring state members to “encourage and develop models of cooperation for the development and use of technologies, including traditional and indigenous technologies, in pursuance of the objectives of this convention”.<sup>564</sup> In fact, Article 8(j) and Article 18(4) of CBD leave rooms for members to legislatively build a regime for bio-related TK protection.<sup>565</sup>

---

PROTECTION 3-5, (Jan 25, 2000), <http://www.oiprc.ox.ac.uk/EJWP0300.pdf>.

<sup>562</sup> Convention on Biodiversity (hereinafter *CBD*), *Convention > about > Introduction*, available at <http://www.cbd.int/intro/default.shtml>. (last visited April 22, 2016).

<sup>563</sup> *See id.*, at Article 8(j).

<sup>564</sup> *See id.*, at Article 18(4) (The Contracting Parties shall, in accordance with national legislation and policies, encourage and develop methods of cooperation for the development and use of technologies, including indigenous and traditional technologies, in pursuance of the objectives of this Convention. For this purpose, the Contracting Parties shall also promote cooperation in the training of personnel and exchange of experts.)

<sup>565</sup> *See id.*, at Article 8(j) (Each contracting Party shall, as far as possible and as appropriate: Subject to national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such

As the CBD entered into force on December 29 1993, there are growing concerns with respect to the implementation and enforcement of the CBD and its possible conflicts with TRIPS. With regard to the relationship between the TRIPS Agreement and the CBD, the WTO identified two general issues:<sup>566</sup> (1) whether or not there is conflict between the TRIPS Agreement and the CBD; and (2) whether something needs to be done, at least on the TRIPS side, to ensure that the two instruments are applied in a non-conflicting and mutually supportive way.

A number of proposals on these issues have been put forward and extensively debated. Some proposals were intended to preclude possible conflicts in the practical implementation of the two treaties, or deal with claimed areas of conflict or tension between them. For example, proposals include amending the TRIPS Agreement to introduce a mandatory requirement for patent applicants (1) to disclose the source and country providing genetic resources or traditional knowledge used in inventions, and (2) to demonstrate that they had obtained prior informed consents from the competent authority in the country of origin, and entered into fair and equitable benefit-sharing arrangements or that they followed national legal requirements.

Proposals of this sort have actually been made and negotiated. For example, a WTO negotiating proposal, tabled in the Trade Negotiations Committee (TNC) in 2008 by a number of Members (TN/C/W/52), suggested negotiations to amend the TRIPS Agreement to introduce a mandatory disclosure requirement concerning the country providing or the source of genetic resources and/or associated traditional knowledge, and also referred to prior informed consent

---

knowledge innovations and practices.); CBD, *supra* note 532, at Article 18(4).

<sup>566</sup> WTO, Council for Trade-Related Aspects of Intellectual Property Rights, The Relationship Between The Trips Agreement And The Convention On Biological Diversity (IP/C/W/368/Rev.1) *available* at [https://www.wto.org/english/tratop\\_e/trips\\_e/ipcw368\\_e.pdf](https://www.wto.org/english/tratop_e/trips_e/ipcw368_e.pdf). (last visited Dec.26.2016)

and access and benefit sharing.<sup>567</sup> Other Members disagreed that such a disclosure mechanism was the best way to ensure compliance with prior informed consent and equitable benefit sharing obligations.<sup>568</sup>

More recently, as part of the April 2011 stocktaking exercise, a group of active proponents of the disclosure approach tabled in the Trade Negotiations Committee of the WTO, presented a new formal proposal to revise the TRIPS Agreement.<sup>569</sup> This would have introduced a mandatory disclosure mechanism, and linked this issue with the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization, which was concluded in October 2010 under the aegis of the CBD.<sup>570</sup>

---

<sup>567</sup> WORLD TRADE ORGANIZATION, DRAFT MODALITIES FOR TRIPS RELATED ISSUES 1 (TN/C/W/52, 19 July 2008), available at <https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:tn/c/w52.pdf> (last visited Feb 03, 2017).

<sup>568</sup> *id.*

<sup>569</sup> *id.*

<sup>570</sup> Along with the issue of geographical indication(GI) extension, the TRIPS-CBD relationship has also been considered in the consultative process convened by the Director-General. As noted above, while these consultations are informal, their proceedings have been reported periodically, including a report by the Director General as part of the general stocktaking of Doha-related work in April 2011. Reports from the consultations have noted the continuing differences between Members on the choice between these options, although general consensus has been reported concerning the principle of equitable benefit sharing and the need to avoid erroneous patenting. Reports have described how the consultations have focused on the analysis and clarification of the technical and legal aspects of the questions of erroneous patenting and misappropriation, and the different approaches that have been put forward in the general debate – the tailored disclosure mechanism, greater use of databases to preclude erroneous patents on genetic resources and traditional knowledge subject matter, and the national contract-based approach to enforcing access and benefit-sharing obligations.

## II. THE BIOTECHNOLOGY (DRUG PATENTS) AS A SEPARATE ISSUE

It is true that those three issues are very important and heated topics around international patent harmonization. However, it should be noted that the first issue – of biotechnology – be distinguished from the other two issues. Granting patents to medicine and giving exclusive rights to pharmaceuticals, which result in the high price of medicine making it unaffordable to poor people and poor countries, is not a matter of harmonizing international patent systems but rather of making a strong patent system. To put it another way, expensive life-saving medicine as a result of granting strong patents can happen in a domestic as well as international situation. This problem will not be solved even if the patent laws are unified into a single system. Rather, it might be solved only if granting a patent over a medicine were completely prohibited. But the validity of this solution is questionable because it will threaten the incentive system to research and develop new medicines that require huge investments. In theory, harmonization does not necessarily mean stronger patent system and cause this drug patent issue. Although it is true that patent harmonization supported by developed countries has been directed toward stronger patent protection, patent harmonization and this issue of biotechnology needs to be discussed separately.

Although this biotechnology issue is rather unrelated, it is worth discussing this issue of biotechnology as a threshold matter, because conferring monopoly patent rights over life-saving drugs is highly contentious.<sup>571</sup> It seems that Locke's property theory generally does not support

---

<sup>571</sup> Gupta, *supra* note 539, at 358.

the idea of excluding pharmaceutical products from the patent system. Locke's theory is a natural rights theory, and it dictates that one deserves property rights when he exercises labor, and satisfies the provisos. Prohibiting one's property rights in a certain sector, therefore, is generally contrary to Locke's basic spirit of natural rights. Locke's theory suggests no reason for denying property rights because they are (or would be) acquired in a certain field. Moreover, there is no obvious reason under Locke's theory why we should deny property rights for economic reasons, which would include that the patent system raises the price of medical products so high that developing countries and poor people cannot afford them.

This spirit has been reflected in TRIPS 27.1, which obliges Members to make patents available for inventions in all fields of technology without discrimination.<sup>572</sup> This means that those interested in obtaining a patent for their invention must have the legal means to do so in every Member's jurisdiction, irrespective of the field of technology.<sup>573</sup> Thus, Members cannot exclude from patenting classes of inventions for example those pertaining to the field of medical technologies, unless there is a specific exclusion allowed under the TRIPS Agreement.<sup>574</sup>

However, there has been continuous discussion to limit the patent rights for life-saving medicines, and it is reflected in Paragraph 19 of the Doha Declaration. It concerns the scope of permissible exceptions to patentable subject matter in biotechnology patenting, and leaves open an option for Members to rule out patents on certain biological inventions within their national IP systems.<sup>575</sup>

---

<sup>572</sup> TAUBMAN ET AL., *supra* note 118, at 97.

<sup>573</sup> *id.* at 98.

<sup>574</sup> *id.*

<sup>575</sup> TAUBMAN ET AL., *supra* note 118, at 205.

One possible justification by Locke's theory is based on the *charity provisos* when it comes to a life-saving medicine. In Paragraph 42 of his First Treatise of Government, Locke says two important things regarding the charity proviso: (1) that property does not confer the right to deny relief to those in "pressing want"; and (2) that people in desperate need have an actual, binding right to the assets held by legitimate owners, and this right arises from the same source, and carries the same weight, as an initial appropriator's right.<sup>576</sup> A straightforward application of Locke's charity proviso would seem to obligate owners of these sorts of life-saving patented inventions to make them available to those who cannot afford to purchase them at monopoly prices.<sup>577</sup> And, when individual owners appear inclined to shirk this duty, it is – for Locke – well within the legitimate power of civil government to enforce it through a coercive mechanism like compulsory licensing.<sup>578</sup>

Compulsory licenses are "involuntary contracts between a willing buyer and an unwilling seller imposed or enforced by the state."<sup>579</sup> According to TRIPS, compulsory licensing and government use without the authorization of the right holder are allowed, but are made subject to conditions aimed at protecting the legitimate interests of the right holder.<sup>580</sup> The conditions are contained, primarily, in Article 31 of TRIPS. And, a model patent law proposed by WIPO includes detailed provisions for the compulsory licensing of patents that take into account the rules of Article 31.<sup>581</sup> These include the obligation, as a general rule, to grant such licenses only if an unsuccessful attempt has been made to acquire a voluntary license on reasonable terms and conditions within a reasonable period of time; the requirement to pay adequate remuneration

---

<sup>576</sup> MERGES, *supra* note 316, at 273.

<sup>577</sup> ALEXANDER & PENEVER, *supra* note 436, at 197.

<sup>578</sup> *id.*

<sup>579</sup> Gupta, *supra* note 539, at 357.

<sup>580</sup> World Trade Organization, *TRIPS: A More Detailed Overview of The Trips Agreement*, available at [http://www.wto.org/english/tratop\\_e/trips\\_e/intel2\\_e.htm](http://www.wto.org/english/tratop_e/trips_e/intel2_e.htm). (last visited April 22, 2016).

<sup>581</sup> *id.*

in the circumstances of each case, taking into account the economic value of the license; and a requirement that decisions be subject to judicial or other independent review by a distinct higher authority.<sup>582</sup>

There have been complaints from developing countries, however, that TRIPS has unnecessarily limited the usage of compulsory licenses. When the Paris Convention originally authorizes the grant of compulsory licenses, it sets out limited conditions to be applied in cases of non-working.<sup>583</sup> This means that the origin of compulsory licenses is linked to the obligation to work a patent.<sup>584</sup> The Paris Convention does not otherwise establish specific conditions or restrictions on the granting of compulsory licenses.<sup>585</sup>

TRIPS raised the bar. The most significant clause in TRIPS is subparagraph (f) of Article 31 which says that “such use shall be authorized predominantly for the supply of the domestic market of the Member authorizing such use.”<sup>586</sup> Developing countries argue that this provision effectively limits the benefits of compulsory licensing to member countries which have good manufacturing capacity.<sup>587</sup> As most countries needing to make use of the patent exceptions are economically troubled nations with insufficient or no manufacturing capabilities, the exceptions in TRIPS fail to satisfy the needs of those countries that the exceptions were designed, in fact, to benefit.<sup>588</sup>

---

<sup>582</sup> *id.*

<sup>583</sup> *id.*

<sup>584</sup> CARLOS M. CORREA, INTELLECTUAL PROPERTY RIGHTS AND THE USE OF COMPULSORY LICENSES: OPTIONS FOR DEVELOPING COUNTRIES 12 (The South Center, 1999), *available* at [http://www.iatp.org/files/Intellectual\\_Property\\_Rights\\_and\\_the\\_Use\\_of\\_Co.pdf](http://www.iatp.org/files/Intellectual_Property_Rights_and_the_Use_of_Co.pdf) (last visited Dec 26, 2016)

<sup>585</sup> *id.*

<sup>586</sup> Gupta, *supra* note 539, at 358.

<sup>587</sup> *id.*

<sup>588</sup> *id.*

As this complaint became more serious, some amendments were proposed. In 2001, the Doha Declaration sought to resolve the issue of the use of compulsory licensing to export drugs to developing countries.<sup>589</sup> Paragraph 6 of the Doha Declaration recognized the problem that countries with insufficient or no manufacturing capacity in the pharmaceutical sector have in making effective use of compulsory licensing, and directed the TRIPS Council to recommend an expeditious solution.<sup>590</sup> On August 30, 2003, following nearly two years of negotiation, the General Council adopted the Decision<sup>591</sup> that is intended to allow countries with manufacturing capacity to make and export pharmaceutical products to countries with public health needs, notwithstanding Article 31(f) of TRIPs that limits compulsory licensing predominantly to the supply of the domestic market.<sup>592</sup> It does this by establishing a mechanism under which the restriction of Article 31(f) is waived for the exporting country, and Article 31(h) (remuneration) is waved for the importing country.<sup>593</sup>

This Decision can be normatively justified as it well reflects Locke’s charity provisos. First of all, Locke’s charity proviso 2<sup>nd</sup> prong says that “people in desperate need have an actual, binding right to the assets held by legitimate owners, and this right arises from the same source.”<sup>594</sup> This expression clearly supports the rights of the compulsory licensee in case of life-saving medicine. Locke also says that “this right [of people in desperate need] arises from the

---

<sup>589</sup> *See id.* at 357-363, 358-359.

<sup>590</sup> Carlos M. Correa, IMPLEMENTATION OF THE WTO GENERAL COUNCIL DECISION ON PARAGRAPH 6 OF THE DOHA DECLARATION ON THE TRIPS AGREEMENT AND PUBLIC HEALTH 16 and 33 (World Health Organization, April 2004), available at [http://www.who.int/medicines/areas/policy/WTO\\_DOHA\\_DecisionPara6final.pdf](http://www.who.int/medicines/areas/policy/WTO_DOHA_DecisionPara6final.pdf).

<sup>591</sup> *id.*

<sup>592</sup> *id.*

<sup>593</sup> *id.*

<sup>594</sup> MERGES, *supra* note 316, at 49.

same source, and carries the same weight, as an initial appropriator's right.”<sup>595</sup> Thus, it is against the Locke's theory to have additional requirements, such as demanding manufacturing facilities, only when they grant compulsory license.<sup>596</sup> In this sense, original TRIPs provision that prohibits the export of products manufactured under the compulsory license cannot be not normatively justified by Locke's theory. Rather, Locke theoretically supports the Decision in 2003 that waived this additional prohibition and allowed countries with manufacturing capacity to make and export pharmaceutical products to countries with public health needs.

In conclusion, exercising compulsory licenses can be a way to implement the charity proviso, but current provisions in TRIPs unnecessarily limit the usage of accessing to life-saving medicines to countries with manufacturing facilities. Access to life-saving medicine should be available based on Locke's charity proviso, regardless of whether that country has manufacturing ability or not. Locke's theory suggests that it is desirable to follow the Doha Declaration and Decision in 2003 with a more relaxed standard for compulsory licensing, which allows countries with manufacturing capacity to make and export pharmaceutical products to countries with public health needs.

---

<sup>595</sup> *id.*

<sup>596</sup> Marketa Trimble, *Patent Working Requirements: Historical and Comparative Perspectives*, UC IRVINE L. REV. at 6 (2017 forthcoming), available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2727624](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2727624); (A working requirement is a provision of a national patent statute that says that an owner of a patent must practice his or her patented invention (meaning manufacture the invention or import the invention) within the country that granted the patent. Current U.S. patent law does not include a general patent working requirement per se.)

### III. TRADITIONAL KNOWLEDGE ASSOCIATED WITH GENETIC RESOURCES

As discussed above, the issue of biotechnology can be analyzed independently. But, this issue becomes more important when linked with the other issues, such as traditional knowledge. Usually, traditional knowledge can be found in a wide variety of contexts, including agricultural, scientific, technical, ecological and medicinal knowledge, as well as biodiversity-related knowledge.<sup>597</sup> But its overwhelming significance in modern industries exists in the field of bio-pharmaceuticals.<sup>598</sup> Increasingly, biotechnology has used traditional knowledge in developing medicines. It is because, over thousands of years, “appropriate bio-species for medicinal use and their locations, the proper time for their collection, the parts of the plant to use and methods for preparing, storing and administering the medicine” have been identified and employed in traditional medicinal knowledge.<sup>599</sup>

Numerous advantages – such as increasing the efficiency of plant screening for medicinal use – can be enjoyed, provided bio-pharmaceutical companies use local traditional knowledge as a guide to lead them towards medicinal biological resources.<sup>600</sup> Without traditional medicinal knowledge, “bio-pharmacological researchers have to perform a ‘needle in a haystack’ search, randomly screening countless plant species in the hope of finding one useful chemical compound”<sup>601</sup>. Currently, it is assessed that “74% of all plant-derived drugs in the world have

---

<sup>597</sup> World Intellectual Property Organization, *Traditional knowledge*, available at <http://www.wipo.int/tk/en/tk/>.

<sup>598</sup> LEI, *supra* note 549, at 106.

<sup>599</sup> *id.* at 107.

<sup>600</sup> WORLD BANK, INDIGENOUS KNOWLEDGE AND INTELLECTUAL PROPERTY RIGHTS 1, available at <http://www.worldbank.org/afr/ik/iknt19.pdf> (last visited April 23, 2016).

<sup>601</sup> LEI, *supra* note 549, at 107.

the same or related use as they first did in traditional medical applications”.<sup>602</sup> The economic contribution of traditional medicinal knowledge to the modern pharmaceutical industry is astonishing.<sup>603</sup> The estimated market value of pharmaceuticals derived from traditional medicinal knowledge in 1995 was U.S. \$ 43 billion worldwide.<sup>604</sup>

As many pharmaceutical products use traditional knowledge, defining who has the right over those products and how to share the benefits can be a very serious problem. Because patents protect new biotechnologies, not traditional knowledge, developing countries have been posing serious concerns about patent harmonization that would facilitate the use of their traditional knowledge in the development of biotechnologies without any compensation to them. Their complaint has grown officially as CBD took effect as the only international treaty protecting their rights on traditional knowledge.

The above analysis leads us to focus on single merged issue: traditional knowledge associated with biotechnology within the CBD frame. Three different subjects of ‘triplets’ can be discussed in this single issue. The two issues – traditional knowledge and the relationship with the CBD – are in fact dealing with same issue, as the CBD is the only international treaty for discussing traditional knowledge. And, this issue of traditional knowledge becomes more debatable when it comes to biotechnology. Although it has been argued that biotechnology is an unrelated issue, one cannot avoid touching this issue while discussing traditional knowledge, considering its economic impact and political conflicts.

---

<sup>602</sup> *id.*

<sup>603</sup> *id.*

<sup>604</sup> Blakeney M, *The Protection of Traditional Knowledge under Intellectual Property Law*, 22 EUR. INTELL. PROP. REV. 251, 255 (2000).

It is fair to start discussing this single issue from analyzing the legal platform – international agreement of CBD. Within this CBD frame, two issues have been raised with regard to the traditional knowledge: (1) access to the traditional knowledge, and (2) benefit-sharing. To provide a transparent legal framework for the effective implementation of these issues, countries agreed on supplementary agreement named as ‘The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (ABS) to the Convention on Biological Diversity,’ which is often called ‘the Nagoya Protocol.’

The Nagoya Protocol further addresses genetic resources where indigenous and local communities have the established right to grant access to them.<sup>605</sup> Contracting Parties are to take measures to ensure these communities’ prior informed consent, keeping in mind community laws and procedures as well as customary use and exchange.<sup>606</sup> In addition, Article 5 in the Nagoya Protocol about fair and equitable benefit-sharing says; “5. Each Party shall take legislative, administrative or policy measures, as appropriate, in order that the benefits arising from the utilization of traditional knowledge associated with genetic resources are shared in a fair and equitable way with indigenous and local communities holding such knowledge. Such sharing shall be upon mutually agreed terms.” In the Annex, examples of monetary and non-monetary benefits are enumerated. Among these are fees, payments, royalties for monetary

---

<sup>605</sup> CBD, *Access and Benefit-sharing > Nagoya Protocol > About the Nagoya Protocol*, available at <https://www.cbd.int/abs/about/default.shtml/>. (last visited April 22, 2016).

<sup>606</sup> *id.*

benefits,<sup>607</sup> and strengthening capacities for technology transfer or institutional capacity building for non-monetary benefits.<sup>608</sup>

From the next section, we are going to discuss two key issues that international communities discuss with regard to traditional knowledge associated with biotechnology within CBD frame: (1) access to the traditional knowledge and (2) benefit-sharing by using the traditional knowledge. After analyzing these issues, we are going to evaluate them on the basis of Locke's property theory and our analytic model that were discussed in the previous chapter.

---

<sup>607</sup> CBD, *Text of the Nagoya Protocol*, available at <http://www.cbd.int/abs/text/articles/default.shtml?sec=abs-37>. (1. Monetary benefits may include, but are not limited to: (a) Access fees/fee per sample collected or otherwise acquired; (b) Up-front payments; (c) Milestone payments; (d) Payment of royalties; (e) License fees in case of commercialization; (f) Special fees to be paid to trust funds supporting conservation and sustainable use of biodiversity; (g) Salaries and preferential terms where mutually agreed; (h) Research funding; (i) Joint ventures; (j) Joint ownership of relevant intellectual property rights).

<sup>608</sup> *id.* (2. Non-monetary benefits may include, but are not limited to: (a) Sharing of research and development results; (b) Collaboration, cooperation and contribution in scientific research and development programmes, particularly biotechnological research activities, where possible, in the Party providing genetic resources; (c) Participation in product development; (d) Collaboration, cooperation and contribution in education and training; (e) Admittance to ex situ facilities of genetic resources and to databases; (f) Transfer to the provider of the genetic resources of knowledge and technology under fair and most favourable terms, including on concessional and preferential terms where agreed, in particular, knowledge and technology that make use of genetic resources, including biotechnology, or that are relevant to the conservation and sustainable utilization of biological diversity; (g) Strengthening capacities for technology transfer; (h) Institutional capacity-building; (i) Human and material resources to strengthen the capacities for the administration and enforcement of access regulations; (j) Training related to genetic resources with the full participation of countries providing genetic resources, and where possible, in such countries; (k) Access to scientific information relevant to conservation and sustainable use of biological diversity, including biological inventories and taxonomic studies; (l) Contributions to the local economy; (m) Research directed towards priority needs, such as health and food security, taking into account domestic uses of genetic resources in the Party providing genetic resources; (n) Institutional and professional relationships that can arise from an access and benefit-sharing agreement and subsequent collaborative activities; (o) Food and livelihood security benefits; (p) Social recognition; (q) Joint ownership of relevant intellectual property rights).

## IV. TWO ISSUES OF CBD

### 1. Access to Traditional Knowledge

Some countries argue that states have sovereign rights over their natural resources, including traditional knowledge. Thus, they argue that they have the right to exclude regarding traditional knowledge, which is a kind of natural resources, and to require consents to use it. This is the principle known as the “prior informed consent” (hereinafter PIC). This argument is reflected in the text of the Nagoya Protocol. Article 6(1) of the Nagoya Protocol states that access to genetic resources for their utilization is subject to the prior informed consent of the Party providing such resources, unless otherwise determined by that Party. The formulation “subject to the prior informed consent” seems to imply that access requires PIC, which is the permission given by the Party providing the genetic resource to a user prior to access.

This principle of PIC is applied in some national TK protection systems and is often present in regimes regulating access to genetic or biological resources.<sup>609</sup> The World Intellectual Property Organization (WIPO) Committee has reviewed PIC as a “key principle” of TK protection,<sup>610</sup> and it is generally agreed that PIC is fundamental for the effective protection

---

<sup>609</sup> WIPO, TRADITIONAL KNOWLEDGE AND LEGAL OPTIONS, at Section II, para 22. *available* at [http://www.wipo.int/edocs/mdocs/tk/en/wipo\\_grtkf\\_ic\\_6/wipo\\_grtkf\\_ic\\_6\\_4.doc](http://www.wipo.int/edocs/mdocs/tk/en/wipo_grtkf_ic_6/wipo_grtkf_ic_6_4.doc) (WIPO/GRTKF/IC/6/4).

<sup>610</sup> *id.*

of TK.<sup>611</sup> The principle enables the regulation of the use of TK by third parties and ensure a flow of benefits to the knowledge holders, in a way that may be consistent with the collective nature of TK.<sup>612</sup>

Under the CBD, the concept of PIC has two meanings. First, it is meant to protect the Party that provides genetic resources and not the one that acquires them.<sup>613</sup> Second, it requires consent for access to genetic resources and their subsequent export from the providing Party.<sup>614</sup> For this, the provider country (represented by its competent national authority) must be informed in advance and in detail about the planned research or bio-prospecting activity (that is, the access activity). It is the basis of the information that a potential user furnishes before the providing Party makes a decision whether to allow access.<sup>615</sup>

Although there are negotiations to implement PIC in the international treaties of patent harmonization, developed countries are reluctant to agree on PIC as it can limit the accessibility to resources. In this conflicting situation, it is necessary to review this access to traditional knowledge and PIC from Locke's perspective. It is apparent that PIC grounds on the principle of sovereignty over natural resources. Not surprisingly, the Nagoya Protocol Preamble reaffirms the sovereign rights of States over their natural resources in the chapeau of the

---

<sup>611</sup> WIPO, INTERGOVERNMENTAL COMMITTEE ON INTELLECTUAL PROPERTY AND GENETIC RESOURCES, TRADITIONAL KNOWLEDGE AND FOLKLORE, FIFTH SESSION (July 7 To 15, 2003) available at [http://www.wipo.int/edocs/mdocs/tk/en/wipo\\_grtkf\\_ic\\_5/wipo\\_grtkf\\_ic\\_5\\_inf\\_4.doc](http://www.wipo.int/edocs/mdocs/tk/en/wipo_grtkf_ic_5/wipo_grtkf_ic_5_inf_4.doc). (WIPO/GRTKF/IC/5/INF/4, WIPO/GRTKF/IC/5/INF/6, WIPO/GRTKF/IC/5/INF/7, WIPO/GRTKF/IC/6/4, WIPO/GRTKF/IC/7/5, WIPO/GRTKF/IC/8/5.)

<sup>612</sup> WIPO, INTERGOVERNMENTAL COMMITTEE ON INTELLECTUAL PROPERTY AND GENETIC RESOURCES, TRADITIONAL KNOWLEDGE AND FOLKLORE, NINTE SESSION (April 24 To 28, 2006) Annex, at 8, *available at* [http://www.wipo.int/edocs/mdocs/tk/en/wipo\\_grtkf\\_ic\\_9/wipo\\_grtkf\\_ic\\_9\\_5.pdf](http://www.wipo.int/edocs/mdocs/tk/en/wipo_grtkf_ic_9/wipo_grtkf_ic_9_5.pdf). (WIPO/GRTKF/IC/9/INF/5)

<sup>613</sup> THOMAS GREIBER ED. AL, AN EXPLANATORY GUIDE TO THE NAGOYA PROTOCOL ON ACCESS AND BENEFIT-SHARING 95 (IUCN Environmental Policy and Law Paper No. 83, 2012).

<sup>614</sup> *id.*

<sup>615</sup> *id.*

Protocol.<sup>616</sup> As discussed in the previous chapter, it should be noted that this sovereign rights of government is not absolute, but conditional, according to Locke. Our analytic model interprets that sovereign rights are contingent on exercising a government's labor, or legislative power, so that governments are required to have legislative measures in place to argue sovereign rights.

This argument is supported by common implementation of PIC. WIPO says that any direct access to TK from TK holders is subject to the relevant *national laws*.<sup>617</sup> They also confirm that TK holders are normally entitled to grant PIC for direct access to TK, or to approve the grant by an appropriate national authority, depending on applicable *national legislation*.<sup>618</sup> As a result, PIC is granted by a competent State authority;<sup>619</sup> or by an indigenous/local community or TK holder directly.<sup>620</sup> In practice, the manner, extent, and procedure in which PIC should be obtained are governed by national regulations. For example, the providing Party usually certifies its PIC by issuance of a permit of access according to its national laws. The issuance of a permit or its equivalent becomes a mandatory requirement under the Nagoya Protocol where access is subject to PIC (Article 6(3) (e)). Sometimes, national laws can regulate that PIC may be obtained also from other stakeholders, for example from Indigenous and Local Communities (hereinafter ILCs), if access is requested to genetic resources for which the ILCs

---

<sup>616</sup> *id.* (Cheapeu of Nagoya protocol says : “Reaffirming the sovereign rights of States over their natural resources and according to the provisions of the Convention”).

<sup>617</sup> WIPO, *supra* note 609, at 8.

<sup>618</sup> *id.*

<sup>619</sup> Art.4 (1)(xi) and 4(1)(x), African Model Law; Art.11 (IV)(b), Brazilian Provisional Measure; Art.62, Costa Rican Biodiversity Law; Art.3(1), Indian Biodiversity Act; Art.7(1), Portuguese Decree Law 118.

<sup>620</sup> African Model Legislation for the Protection of the Rights of Local Communities, Farmers and Breeders (2000); Brazilian Provisional Measure Regulating Access to the Genetic Heritage, Protection of and Access to Associated Traditional Knowledge; Costa Rican Biodiversity Law No. 7788; Peruvian Law No. 27,811 Introducing a Protection Regime for the Collective Knowledge of Indigenous Peoples Derived from Biological Resources; and Portuguese Decree Law No. 118 of 2002.

have the established right to grant access (see Article 6(2)) or to traditional knowledge associated with genetic resources (see Article 7).<sup>621</sup>

In sum, it can be inferred from Locke's theory that a country that wants to exercise sovereign rights should establish related laws to regulate the manner, extent, and procedures by proper legislation processes. In this manner, a country can acquire sovereign rights to exclude or use their traditional knowledge.

However, there can be a problem when the country do not consent the use of traditional knowledge which is already used to develop a product, for example, a medicine. In this case, the strict application of PIC principle to recognize the country's sovereign rights can result in denying the property rights of the inventor. This can be problematic for the Locke's theory that highlights the importance of labor and the according property rights.

For example, this case can happen when indigenous providers keep specific traditional knowledge, whether in absolute or relative secrecy, or perhaps in some geographically defined public domain, but foreign entrepreneurs commercialize that knowledge without authorization.

<sup>622</sup> So long as providers prefer to keep their traditional know-how in its raw or inchoate state, there is little room for formal intellectual property protection.<sup>623</sup> It should be discussed under a

---

<sup>621</sup> THOMAS GREIBER ET AL., AN EXPLANATORY GUIDE TO THE NAGOYA PROTOCOL ON ACCESS AND BENEFIT-SHARING 323-338 (IUCN Environmental Policy and Law Paper No. 83, IUCN Environmental Law Centre, 2012) (2012) (The 2002 Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization (the Bonn Guidelines) list and elaborate possible elements of a PIC in Paragraphs 27-40).

<sup>622</sup> REICHMAN AND TRACY LEWIS, *supra* note 545, at 358.; See e.g., Thomas Cottier & Marion Panizzon, *Legal Perspectives on Traditional Knowledge: The Case for Intellectual Property Protection* [this volume]; Graham Dutfield, *Legal and Economic Aspects of Traditional Knowledge* [this volume].

<sup>623</sup> *id.*

theory of unjust enrichment.<sup>624</sup> The CBD provides some legal foundation to support such a claim in the international context; local legislation sounding in unjust enrichment may explicitly regulate these unauthorized uses; and there is a pattern of customary practice forming to support such claims against foreign entrepreneurs.<sup>625</sup> Under the local laws regulating unjust enrichment, any claim for compensation may arise from an improper violation either of the relative secrecy in which the know-how was held or of the social and religious constraints upon its use that the relevant community imposes.<sup>626</sup>

## 2. Benefit-sharing

It has been emphasized that the fair and equitable sharing of the benefits arising out of the utilization of genetic resources – including through appropriate access to genetic resources, transfer of relevant technologies, and funding – is at the core of the CBD (Article 1). Through benefit-sharing, the CBD seeks to ensure that the benefits of biodiversity – both monetary and

---

<sup>624</sup> *id.*

<sup>625</sup> *id.*; See e.g., Antony Taubman, *Saving the Village: Conserving Jurisprudential Diversity in the International Protection of Traditional Knowledge* [this volume]; Graham Dutfield, *Legal and Economic Aspects of Traditional Knowledge* [this volume];

<sup>626</sup> *id.* (The legal anthropologist, Rosemary Coombe, astutely observes that the construct of a public domain is itself a product of the observers' own social and cultural mores.) See Rosemary Coombe, *Protecting Cultural Industries to Promote Cultural Diversity: Dilemmas for International Policymaking Posed by the Recognition of Traditional Knowledge* [this volume]; See also Antony Taubman, *Saving the Village: Conserving Jurisprudential Diversity in the International Protection of Traditional Knowledge* [this volume].

non-monetary – provide biodiversity-rich countries and communities with the incentives and financial support required for conservation and sustainable use.<sup>627</sup>

Benefit-sharing principle can do little to help any indigenous groups who are determined to keep their traditional knowledge secret or who, for one reason or another, prefer to opt out of an emerging worldwide scheme of intellectual property protection.<sup>628</sup> However, the holders of traditional knowledge would voluntarily make it available if that can help them obtain the economic benefits.<sup>629</sup> In such cases, the most that international law can provide is some legal framework to reinforce the principles of prior informed consent and equitable sharing of benefits set out in the CBD, which, as Correa points out, logically translate into measures to protect holders of traditional knowledge against specified forms of misappropriation.<sup>630</sup>

Benefit-sharing can be seen as a logical consequence of the recognition of the rights of communities over the traditional knowledge associated with genetic resources. It also follows from the application of the principle of equity, which would demand that benefits be shared with all those who contributed to the management, research, and development processes that generated these benefits.<sup>631</sup>

As a general matter, one can say with confidence that a Lockean theory of intellectual property offers support for only qualified property rights in the product of intellectual labor.<sup>632</sup> In other words, according to Locke, a person is entitled to own the increment of value she creates

---

<sup>627</sup> GREIBER ED. AL, *supra* note 621, at 95.

<sup>628</sup> REICHMAN & LEWIS, *supra* note 545, at 355.

<sup>629</sup> *See id.*, at 355 and fn 101.

<sup>630</sup> *See id.*, at 355 and fn 100.

<sup>631</sup> GREIBER ED. AL, *supra* note 621, at 95.

<sup>632</sup> ALEXANDER & PENEVER, *supra* note 436, at 195.

through her intellectual work.<sup>633</sup> Although highly romanticized accounts discuss discourses “emerging out of nothing that came before,” a more sophisticated and accurate description of intellectual creation will admit that, in virtually every case, the inventor or creator builds to some extent on the intellectual accomplishments of her predecessors.<sup>634</sup> At the most basic level, any intellectual activity depends upon activities carried out for thousands of years by countless human beings.<sup>635</sup> No one person who employs those systems to create a new idea or product can claim total credit for her creations.<sup>636</sup> Thus, one has to admit that all intellectual creation draws at least to some extent on the prior intellectual labor of others.<sup>637</sup>

Thus, using Locke’s theory, it is reasonable that an inventor has property rights only over the portion to which she has added her labor, not over the entire result of the invention. This is known as the legal principle of proportionality. Thus, it is justifiable for the community or government who has the right to traditional knowledge to have the right to claim partial property rights. Based on this foundation, it is necessary for international communities to agree on guidelines that will divide a property right between an inventor and country in proportion to the relative amount of labor provided. If the inventor receives the economic benefits for a property or patent right over a final product by utilizing traditional knowledge, proper compensation should be given to the community providing it.

Notwithstanding this justification, fair and equitable sharing of the benefits – in spite of its fundamental role in the CBD – has been largely overlooked in legal and policy

---

<sup>633</sup> *id.*

<sup>634</sup> *id.* at 194.

<sup>635</sup> *id.*

<sup>636</sup> *id.*

<sup>637</sup> *id.*

implementation.<sup>638</sup> Most legislation, policies, and studies on traditional knowledge have considered only one side of the equation, focusing on asserting *access rights* over genetic resources and traditional knowledge associated with those resources and establishing access procedures and requirements.<sup>639</sup> Now, an urgent task in discussing Article 5 of the Nagoya Protocol<sup>640</sup> was the clarification of the triggers, obligations, and possible approaches towards the fair and equitable *sharing of benefits*, as well as of the link between many obligations and access requirements.<sup>641</sup> One possible solution, named as ‘a compensatory liability regime,’ will be discussed below.

### 3. A Compensatory Liability Regime

There are some scholars that express concerns about the trend that developing countries have restricted access to their traditional knowledge for virtually all uses, including public research uses, and to assert ownership claims to resources held in the public collections of developed countries.<sup>642</sup> In a related articles, Reichman discussed the high social costs of these trends and the risk that, by making inputs into future innovation too costly and difficult to obtain, these could ultimately destabilize the national systems of innovation that rely on them to

---

<sup>638</sup> GREIBER ED. AL, *supra* note 621, at 84.

<sup>639</sup> MORTEN WALLØE TVEDT & TOMME YOUNG, BEYOND ACCESS: EXPLORING IMPLEMENTATION OF THE FAIR AND EQUITABLE SHARING COMMITMENT IN THE CBD 145 (2007, IUCN).

<sup>640</sup> *id.*

<sup>641</sup> *id.*

<sup>642</sup> Jerome H. Reichman, *A compensatory liability Regime to promote the exchange of microbial genetic resources for research and benefit sharing* 44, available at [http://scholarship.law.duke.edu/faculty\\_scholarship/2620/](http://scholarship.law.duke.edu/faculty_scholarship/2620/) (last visited Jan 7, 2017).

excess.<sup>643</sup> Specifically, this proprietary tendency undermine and risk defeating the research potential of university research scientists everywhere because academics depend on their ability to screen large collections of raw materials against leads developed in their laboratories either by phenotypical observations or by genetic analysis, or by some combination of the two.<sup>644</sup>

In fact, the proliferation of exclusive property rights is not helpful even for developing countries or local communities in seeking economic benefits from their traditional knowledge. They have worried that the current discussion for international protection on inventions can incur the under-protection of their own traditional knowledge.<sup>645</sup> Rather, they want to establish a fair mechanism to guarantee proper profits or compensations, and hope to best utilize their traditional resources for their economic prosperity. Thus, it is beneficial for both sides of researchers in developed countries and local communities in developing countries to improvise principles that can facilitate the use of traditional knowledge and the share of benefits.

In this sense, Reichman suggests to formulate a rational set of rules between exclusive intellectual property rights and free competition.”<sup>646</sup> It is so-called “compensatory liability rule,” yielding equitable compensation for the providers or their designate representatives under international law, while fulfilling international obligations under the CBD.<sup>647</sup> A liability rule means that one may freely take the materials for any research purpose, without need of any permission to use, on condition that a duty to pay equitable compensation arises if and when the

---

<sup>643</sup> *id.*

<sup>644</sup> *id.*

<sup>645</sup> Keith E. Maskus & Jerome H. Reichman, *The Globalization of Private Knowledge Goods and the Privatization of Global Public Goods*, in INTERNATIONAL PUBLIC GOODS AND TRANSFER OF TECHNOLOGY UNDER A GLOBALIZED INTELLECTUAL PROPERTY REGIME 345, fn40 (Keith Maskus & Jerome H. Reichman eds., 2005).

<sup>646</sup> *id.*

<sup>647</sup> Reichman, *supra* note 642, at 46.

application itself accrues commercial gains.<sup>648</sup> This rule gives providers a means of securing equitable compensation from future commercial applications, unknown or unlikely at the time of deposit, that ultimately resulted from research uses of the deposited materials.<sup>649</sup>

Compensatory liability concepts for TK have been proposed by think tanks, governmental research services,<sup>650</sup> and Committee members.<sup>651</sup> They suggest that the compensatory liability approach can be used in cases where TK has already been published and publicly available for some time, so as to balance equitable benefit-sharing with prior use of TK undertaken in good faith.<sup>652</sup> Publication or publicly available sources of TK mean that holders of TK, usually countries or communities, agree the use of TK for the commercial use. For example, the *sui generis* law of Peru applies this approach ‘in cases where the collective knowledge has passed into the public domain within the previous 20 years,’ when a payment is made into a common fund based on “a percentage of the value, before tax, of the gross sales resulting from the marketing of the goods developed on the basis of that knowledge”.<sup>653</sup>

Moreover, several suggestions have also been made for TK-specific innovation laws, based on this liability principle. Such laws would entitle TK holders to compensatory contributions from those who make industrial use of traditional know-how during a specified

---

<sup>648</sup> *id.*

<sup>649</sup> *id.*

<sup>650</sup> See, for example, American Law Division (Ackerman et al.), *Biotechnology, Indigenous Peoples and Intellectual Property Rights*, Congressional Research Service. United States of America, (April 16, 1993) at 65 and footnote 280. See document WIPO/GRTKF/IC/7/5, para. 79, for a more detailed description of the findings of the Congressional Research Service and the suggestions of the Director of the American Folklife Center on compensatory liability principles.

<sup>651</sup> See, GRULAC (WIPO/GRTKF/IC/1/5, Annex I, page 2), Panama (WIPO/GRTKF/IC/4/15, para. 157).

<sup>652</sup> See, GRULAC (WIPO/GRTKF/IC/1/5, Annex I, page 2), Panama (WIPO/GRTKF/IC/4/15, para. 157) and Peru (WIPO/GRTKF/IC/6/INF/6 and Peru WIPO/GRTKF/IC/3/17, para. 221).

<sup>653</sup> See WIPO/GRTKF/IC/5/INF/2, Annex II, page 14.; See, for example, Jerome H. Reichman, *Of Green Tulips and Legal Kudzu: Repackaging Rights in Subpatentable Innovation* 53:6 VAND. L. REV. 1743 1743.

period. Some *sui generis* regimes utilize similar rules to reward TK holders for the conservation and development costs invested by the communities in certain elements of TK, without endowing exclusive property rights to control such uses.<sup>654</sup> They would combine the equitable reallocation of benefits without constraining open access to know-how, and avoid the division or atomization of the community's shared TK base into ever-smaller parcels that are withdrawn from the TK holding community's own intellectual commons through the vehicle of private property rights.<sup>655</sup>

## V. CONCLUSION

This chapter covered the application of Locke's theory to actual policy issues. Policy issues were chosen based on the current debate on the WTO, which involves the "triplets": biotechnology, traditional knowledge, and biodiversity. In fact, these issues can converge on one critical issue: the use of traditional knowledge in the development of biotechnology within the CBD treaty. Based on Locke's theory and the international analytic framework, one can conclude that requiring informed consent can be justified based on the Locke's property rights. Also, it is justified by Locke's theory to share the benefits with the group who has that traditional knowledge. Thus, it is desirable that member states in the WTO and WIPO consider the

---

<sup>654</sup> See Peruvian Law No. 27811 of August 10, 2002.

<sup>655</sup> WIPO, *supra* note 617, at 23.

implementation of this benefit-sharing mechanism. For example, both institutions can cooperate to develop model contracts that can be used to implement benefit-sharing principle. In addition, a compensatory liability regime would affect a compromise between these two positions,<sup>656</sup> which include the prevalent view in developed countries that TK belongs in the public domain and the aspirations of many developing country governments for a strong exclusive property right in TK.<sup>657</sup>

---

<sup>656</sup> *See id.* at 354 and fn 95 (In reality, customary perceptions, practices and norms concerning TK vary widely. While the CLR fits between the two extremes, one can find communities in the world whose IP-related norms fall all along the continuum from very exclusive rights in some (but not all) useful knowledge, to no property rights at all in knowledge that may well have commercial value to others. See, e.g., Russel L. Barsh, *Indigenous Knowledge and Biodiversity*, in *CULTURAL AND SPIRITUAL VALUES OF BIODIVERSITY* (Darrell A. Posey, ed., UNEP & INTERMEDIATE TECHNOLOGY PuBs.1999), at 73-76.

<sup>657</sup> REICHMAN AND LEWIS, *supra* note 545, at 354 and fn 94 (The legal anthropologist, Rosemary Coombe, astutely observes that the construct of a public domain is itself a product of the observers' own social and cultural mores. See Rosemary Coombe, *Protecting Cultural Industries to Promote Cultural Diversity: Dilemmas for International Policymaking Posed by the Recognition of Traditional Knowledge* [this volume]; *see also* Taubman, above n.51; Cottier & Panizzon, above n. 51 (recommending use of some traditional IPR, but not necessarily an exclusive property right, and welcoming attention to a compensatory liability regime).

## CHAPTER 8

### CONCLUSION

Globalization is a double-edged sword for innovation. It can give innovative companies the opportunity to go beyond national boundaries, but at the same time can jeopardize their innovations without proper protection. It can even destroy the virtuous cycle of patents, incentives and innovation.<sup>658</sup>

This worry is actually intensified in the United States. Traditionally, with its relatively experienced patent office, excellent trial courts, specialized appellate courts, and Supreme Court poised to add a generalist perspective, the United States uniquely possesses the kind of institutional infrastructure needed to build and maintain a strong patent law system.<sup>659</sup> Even so, all the proponents for change can agree that its patent law badly needs reform<sup>660</sup> in this age of globalization. The risk and cost of litigation is rising rapidly, creating a drag on innovation and imposing disincentives to invest in creative production.<sup>661</sup> Two studies by the National

---

<sup>658</sup> The world “Patent Crisis” is come from the book *The Patent Crisis and How the Courts Can Solve It* (BURK & LEMLEY, *supra* Note 35).

<sup>659</sup> Reichman & Dreyfuss, *Supra* Note 5, at 103; *See also* Rochelle C. Dreyfuss, *The Federal Circuit: A Case Study in Specialized Courts*, 64 N.Y.U. L. Rev. 1 (1989).

<sup>660</sup> *See id.*

<sup>661</sup> *See id.*; *See also* James Bessen & Michael J. Meurer, *Patent Failure: How Judges, Bureaucrats, and Lawyers Put Innovators at Risk* (Sept. 19, 2007) (unpublished manuscript at 14, on file with the *Duke Law Journal*) (suggesting that the costs of litigation are beginning to overtake the monetary rewards of the patent system, at least in certain technological sectors); Michael J. Meurer & James Bessen, *The Patent Litigation Explosion 1* (Am. L. &

Academies,<sup>662</sup> a publication by the Federal Trade Commission,<sup>663</sup> criticism from numerous legal and economics scholars,<sup>664</sup> and a number of judges<sup>665</sup> have offered various diagnoses and asserted prescriptions for change, often in contradiction to one another.<sup>666</sup>

One of the suggested solutions to confront this serious crisis is greater international collaboration.<sup>667</sup> For example, A 2004 National Academy of Sciences (NAS) report concluded

---

Econ. Ass'n 15th Annual Meeting, Working Paper No. 57, 2005), available at <http://law.bepress.com/alea/15th/art57>; Scott Stern & Fiona Murray, *Do Formal Intellectual Property Rights Hinder the Free Flow of Scientific Knowledge? An Empirical Test of the Anti-Commons Hypothesis* 9–10 (Nat'l Bureau of Econ. Research, Working Paper No. 11465, 2005), available at <http://ssrn.com/abstract=755701>.

<sup>662</sup> See *id.*; NAT'L RESEARCH COUNCIL, REAPING THE BENEFITS OF GENOMIC AND PROTEOMIC RESEARCH: INTELLECTUAL PROPERTY RIGHTS, INNOVATION, AND PUBLIC HEALTH (2006) (considering the effects of patenting and licensing practices in the fields of genomics and proteomics and steps that the NIH can take to promote productivity and innovation); NAT'L RESEARCH COUNCIL, A PATENT SYSTEM FOR THE 21ST CENTURY (2004) (offering seven criteria for evaluating the present patent system and seven recommendations for designing a more effective patent system).

<sup>663</sup> FED. TRADE COMM'N, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY (2003), available at <http://www.ftc.gov/os/2003/10/innovationrpt.pdf> (recommending policies for maintaining the proper balance between patent law and competition law and policy).

<sup>664</sup> Reichman & Dreyfuss, *Supra* Note 5, at 103; See, e.g., ADAM B. JAFFE & JOSH LERNER, INNOVATION AND ITS DISCONTENTS 35 (2004) (contending that patents are now available “to pretty much anyone who ask[s] for one, despite the legal tests of novelty and nonobviousness,” arguing that the trend “now undermines rather than fosters the crucial process of innovation”); Rochelle Dreyfuss, *Pathological Patenting: The PTO as Cause or Cure*, 104 MICH.L. REV. 1559, 1578 (2006) (“[A] strong argument can be made that the observed problems are not caused merely by the implementation of the law, but also by its articulation: by an institutional failure to keep patent law and policy abreast with developments at the technological frontier.”); Keith E. Maskus & Jerome H. Reichman, *The Globalization of Private Knowledge Goods and the Privatization of Global Public Goods*, in INTERNATIONAL PUBLIC GOODS AND TRANSFER OF TECHNOLOGY UNDER A GLOBALIZED INTELLECTUAL PROPERTY REGIME 24 nn.85–88 (Keith Maskus & Jerome H. Reichman eds., 2005) (citing critical articles by Professors Rai, Kesan, Merges, Lemley, Heller & Eisenberg, Barton and others); Robert P. Merges, *As Many as Six Impossible Patents before Breakfast: Property Rights for Business Concepts and Patent System Reform*, 14 BERKELEY TECH. L.J. 577, 615 (1999) (proposing “common-sense starting points to deal with the problem of business concept patents”). In reality, Professors Jaffe and Lerner are more optimistic than they sound, because they think the problems stem from how the patent law is applied and not from what it provides. ADAM B. JAFFE & JOSH LERNER, INNOVATION AND ITS DISCONTENTS 35 (2004), at 5–6.

<sup>665</sup> See *id.*; See, e.g., *In re Fisher*, 421 F.3d 1365, 1379–80 (Fed. Cir. 2005) (Rader, J., dissenting) (disagreeing with the majority's position on utility standards); *Univ. of Rochester v. G.D. Searle & Co.*, 358 F.3d 916, 919–30 (Fed. Cir. 2004) (considering and rejecting Rochester's position on the written description requirement); *Integra Lifesciences I, Ltd. v. Merck KGaA*, 331 F.3d 860, 863–64 n.2 (Fed. Cir. 2003) (disagreeing with the dissent's position on the scope of infringement liability), *vacated*, 545 U.S. 193 (2005).

<sup>666</sup> Reichman & Dreyfuss, *Supra* Note 5, at 104.

that the United States, Europe, and Japan should further harmonize patent-examination procedures and standards to reduce redundancy in the search and examination functions, and – eventually – to achieve mutual recognition of results.<sup>668</sup>

This suggestion can be an example of various opinions toward patent harmonization. Harmonization basically refers to efforts to bring the patent systems of different countries into alignment by reducing or eliminating the differences between them.<sup>669</sup> In this sense, patent harmonization can include any measure that forces the diverse patent system to work in harmony. From a government’s point of view, patent harmonization involves the consideration of other countries’ patent laws when designing its own patent system, and negotiating to change the others’ patent laws if necessary. From a business point of view, harmonization is usually the argument that patent holders can enforce property rights over a patent in other countries in the same way that they can in their own countries.

Most developed countries recognizing the problem caused by globalization expect that patent harmonization will eventually provide an answer. To fundamentally solve this problem of fragmented patent system, the international community should cooperate toward deep harmonization – substantive and legal harmonization. However, for the reasons discussed in this work, the effort toward deep harmonization is hard, expensive, and time-consuming. Rather, as preliminary steps, it is practical to recognize that “there is room for effective, quality-enhancing collaboration between Patent Offices, without substantive patent law

---

<sup>667</sup> *See id.*

<sup>668</sup> STANTON, GOODYEAR, ROSS, SKOLER AND HORN, *Supra* Note 152, at xxi.

<sup>669</sup> MUELLER, *supra* note 351, at 546.

harmonization.”<sup>670</sup> Administrative and procedural harmonization, i.e. work-sharing, can be a relatively easy, economic, and viable first focus.

However, procedural harmonization has limitations. As long as national Patent Offices operate their own laws and finally have an authority to decide whether to grant a patent, the problems of fragmented system cannot be resolved completely. Thus, several developed countries have exerted political pressure to implement substantive harmonization. But, developing countries are opposing that idea because they are not sure whether it is beneficial or right. In other words, the fundamental reason for the conflicts around patent harmonization is the lack of justification that countries with diverse interests can agree upon.

Several attempts, notably a utilitarian argument, have been tried to justify harmonized international patent system, but this utilitarian argument cannot explain the long and debated history of patent harmonization. Developing countries have opposed the expansion of free trade regime, and patent harmonization meets with greater levels of hostility in these countries. It is further argued that “[p]atent harmonization cannot be justified from the trade theory perspective, and political pressure to implement patent harmonization would result in a growing belief among developing countries that the international patent system and patent harmonization is a coerced agreement that should be resisted rather than embraced.”<sup>671</sup>

Rather than depending on inconclusive empirical data to show that countries are economically better off with patent harmonization, this paper have focused on a doctrinal approach based on property theories. This shift from a social utility to a fundamental right

---

<sup>670</sup> Alison Brimelow(The president of European Patent Office), *Not Seeing The Woods For The Trees': Is The Patent System Still Fit For Purpose* (March 2010), available at <http://fortnightlyreview.info/2010/03/12/not-seeing-the-wood-for-the-trees-is-the-patent-system- still-fit-for-purpose/>.

<sup>671</sup> Helfer, *supra* note 10 at 24.

standpoint, as Merges argues, is “an important one because the hallmark of a right is that social utility alone is not reason enough to override it.”<sup>672</sup> Waldron also supports this opinion when he distinguishes between mere interests and true rights.<sup>673</sup> Starting from personhood theory, this paper has investigated patent harmonization from the property theory’s perspective. Specially, Locke’s theory provides a meaningful explanation to justify a country’s sovereign power and an individual’s patent rights, and delivers a fresh analytic framework to investigate conflicting policy issues, such as biotechnology, traditional knowledge, and biodiversity.

The journey to true harmonization will be a long and twisted way. Many strategies to achieve a global patent system will be difficult to implement, such as negotiating new treaties, amending national laws, harmonizing examination standards, fostering the mutual confidence of search results, creating interconnected computer systems, and providing more international training for examiners.<sup>674</sup> However, international communities as well as many countries are recognizing its value and taking actions. The European Community has long been debating the merits of instituting a Community Patent and other regions are considering similar projects.<sup>675</sup> The United States, Europe, Japan, and other industrialized countries have discussed the possibility of creating a “limited package” instrument.<sup>676</sup> If such arrangements were to move forward, broader harmonization might eventually trickle down.<sup>677</sup>

---

<sup>672</sup> MERGES, *Supra* Note 316, 3.

<sup>673</sup> *See id.*; *See* JEREMY WALDRON, INTRODUCTION TO THEORIES OF RIGHTS 15 (Jeremy Waldron ed., 1984) (distinguishing "three ways in which the special force of rights may be understood" : (1) a right is a "particularly important interest" that can be outweighed by other interests; (2) a right is to be "protected and promoted to the greatest extent possible before other interests are even taken into consideration," but may be balanced against other rights; and (3) a right is a "strict constraining requirement[ ] on action").

<sup>674</sup> *id.*

<sup>675</sup> *id.*

<sup>676</sup> Reichman & Dreyfuss, *Supra* Note 5, at 126.; *See also Industrialized Countries to Seek Deal on Global Patent Treaty Outside WIPO*, 72 Pat. Trademark & Copyright J. (BNA) No. 1788, at 606 (Oct. 6, 2006).

<sup>677</sup> *id.*

Globalization is an undeniable trend evidenced by the global expansion of international transactions. The important implication in patent harmonization is that there are no mutually exclusive strategies, and conducting a “policy-mix” to better fit the interests of countries and its partnering communities. Many strategies and proposals could complement other harmonizing efforts. Specifically, it is necessary to combine procedural with substantive, legal with administrative, and bilateral with multilateral harmonization. In this era, international harmonization of patent law can be a natural, reasonable, and ultimately required step which will benefit all participating countries. While starting with a single steps in a limited ways, it is necessary and important to move forward consistently towards the direction of global patent protection.