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ANALYSIS OF INTELLECTUAL PROPERTY ISSUES

GENERAL EDITOR: PROFESSOR PETER K. YU

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Five Decades of Intellectual Property and Global Development

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☞ Intellectual property; International law; Legal history; Sustainable development; WIPO

Introduction

The 2016–2017 biennium marks the historical milestones of several major pro-development initiatives relating to intellectual property law and policy. In 1967, the Intellectual Property Conference of Stockholm (Stockholm Conference) was held to update the Berne Convention for the Protection of Literary and Artistic Works 1886 (Berne Convention) and, to a lesser extent, the Paris Convention for the Protection of Industrial Property 1883 (Paris Convention).¹ This conference ended up transforming the international intellectual property regime by creating the World Intellectual Property Organization (WIPO).²

In December 1986, about 20 years later, the UN General Assembly adopted the Declaration on the Right to Development (UNDRD).³ Article 1(1) of this declaration expressly states:

“The right to development is an inalienable human right by virtue of which every human person and all peoples are entitled to participate in, contribute to, and enjoy economic, social, cultural and political development, in which all human rights and fundamental freedoms can be fully realized.”

While this declaration has remained controversial in the developed world, the right to development was reaffirmed “as a universal and inalienable right and an integral part of fundamental human rights” in the World Conference on Human Rights in June 1993.⁴ The UNDRD further ushered in the development of “right-based approaches to development”,⁵ which have since “transformed both development theory and practice”.⁶

In October 2007, about yet another 20 years after the proclamation of the right to development, WIPO adopted the Development Agenda and its 45 recommendations for action.⁷ Based on these recommendations, WIPO introduced a wide variety of pro-development initiatives, ranging from technical assistance and capacity building to norm setting and public policy, and from technology transfer to assessment, evaluation

* Copyright © 2016 Peter K. Yu. The discussion of the Intellectual Property Conference of Stockholm draws on research from the author’s earlier article in the *Ohio Northern University Law Review* and his book chapter published by Sage Publications.

¹ Peter K. Yu, “A Tale of Two Development Agendas” (2009) 35 *Ohio N. U. L. Rev.* 465, 471–484.

² Yu, “A Tale of Two Development Agendas” (2009) 35 *Ohio N. U. L. Rev.* 465, 484–493.

³ “Declaration on the Right to Development”, December 4, 1986, U.N. Doc. A/RES/41/128.

⁴ “Vienna Declaration and Programme of Action”, July 12, 1993, U.N. Doc. A/CONF.157/23, para.10.

⁵ Samuel Hickey and Diana Mitlin (eds), *Rights-Based Approaches to Development: Exploring the Potential and Pitfalls* (Sterling: Kumarian Press, 2009); Takhmina Karimova, *Human Rights and Development in International Law* (Abingdon: Routledge, 2016), pp.74–77; Peter Uvin, *Human Rights and Development* (Bloomfield: Kumarian Press, 2004), pp.122–166.

⁶ Isabella Bunn, *The Right to Development and International Economic Law: Legal and Moral Dimensions* (Oxford: Hart, 2012), p.5.

⁷ Jeremy de Beer (ed.), *Implementing the World Intellectual Property Organization’s Development Agenda* (Waterloo: Wilfrid Laurier University Press, 2009); Neil Weinstock Netanel (ed.), *The Development Agenda: Global Intellectual Property and Developing Countries* (Oxford: Oxford University Press, 2009).

and impact studies.⁸ As this special issue enters into production, WIPO is poised to commemorate the tenth anniversary of this Development Agenda.

As if these three historical milestones were not enough, the UN Sustainable Development Goals (SDGs) came into force on January 1 this year. Adopted by the UN General Assembly in September 2015, the 2030 Agenda for Sustainable Development featured 17 SDGs and 169 targets. Prominently mentioned in Target 3.b of SDG 3 are the Agreement on Trade-Related Aspects of Intellectual Property Rights 1994 (TRIPS Agreement) and the Doha Declaration on the TRIPS Agreement and Public Health 2001 (Doha Declaration).

When all of these developments are taken together, the past five decades have seen the launch of a wide variety of pro-development initiatives relating to intellectual property law and policy. To help us take stock of these important yet diverse initiatives and to think ahead about the varied ways to harness our intellectual property system to better promote global development, this special issue focuses on the development aspects of intellectual property rights.

This introductory article begins by looking back at the various contributions of the Stockholm Conference. The article then examines the present efforts to realise the SDGs in the intellectual property arena, bringing to the discussion insights drawn from the development of the UNDRD. This article concludes by offering four general observations that aim to advance the debate on intellectual property and global development.

The past

Although the WIPO Development Agenda has received considerable policy and scholarly attention, this agenda is actually not the first development agenda in the intellectual property field. Nor will it be the last, given the cyclical developments in the international intellectual property regime.⁹

In the 1960s and 1970s, developing countries already pushed for a similar development agenda.¹⁰ At that time, the post-World War II decolonisation movement had led many colonies and dependent territories to declare independence. These newly independent countries were eager to exercise their newfound independence and sovereignty by affirming international obligations into which their former colonial masters had entered on their behalf.¹¹ They also harboured serious concern that the extant obligations were too burdensome, especially in light of their limited economic development and technological backwardness.¹²

Consider, for example, the Berne Convention, the predominant international copyright treaty. A major decision for these newly independent countries at that time was to determine whether they should continue as convention members in their own right or whether they should withdraw from the convention. While India, Pakistan, the Philippines and many former French and Belgian African colonies elected to remain bound, Indonesia withdrew.¹³

To entice newly independent states to stay in or join the international intellectual property family, members of the Berne Convention, many of whom were also members at the Paris Convention, pushed for reforms within the international intellectual property regime. These reforms culminated in the Stockholm Conference, which was organised in June and July 1967 under the auspices of WIPO's predecessor, the United International Bureaux for the Protection of Intellectual Property (BIRPI).¹⁴

⁸ World Intellectual Property Organization, "The 45 Adopted Recommendations under the WIPO Development Agenda", available at <http://www.wipo.int/ip-development/en/agenda/recommendations.html> [Accessed November 15, 2016].

⁹ Peter K. Yu, "Déjà Vu in the International Intellectual Property Regime" in Matthew David and Debora Halbert (eds), *The SAGE Handbook of Intellectual Property* (London: Sage Publications, 2015).

¹⁰ Yu, "A Tale of Two Development Agendas" (2009) 35 Ohio N. U. L. Rev. 465, 468–511.

¹¹ Georges M. Abi-Saab, "The Newly Independent States and the Rules of International Law" (1962) 8 Howard L.J. 95, 103.

¹² Sam Ricketson and Jane C. Ginsburg, *International Copyright and Neighbouring Rights: The Berne Convention and Beyond*, 2nd edn (Oxford: Oxford University Press, 2005), pp.881–882; Charles F. Johnson, "The Origins of the Stockholm Protocol" (1970) 18 Bull. Copyright Soc'y U.S.A. 91, 93; Yu, "A Tale of Two Development Agendas" (2009) 35 Ohio N. U. L. Rev. 465, 472–474.

¹³ Ricketson and Ginsburg, *International Copyright and Neighbouring Rights* (2005), p.885.

¹⁴ BIRPI stands for "Bureaux Internationaux Réunis pour la Protection de la Propriété Intellectuelle" in French.

From the standpoint of intellectual property and global development, this conference was important for four reasons. First, the participating countries recognised the need to accommodate the special needs of developing countries in the international intellectual property regime. As then-US Register of Copyrights Barbara Ringer recounted, “[t]here was obviously a fear that ... Berne would become a moribund old gentlemen’s club”.¹⁵ At the time of the Stockholm Conference, the Universal Copyright Convention, an alternative international copyright treaty established under the auspices of the UN Educational, Scientific and Cultural Organization (UNESCO), was competing directly against the Berne Convention for members from the developing world. While the former already attracted 26 developing country members, its total membership had only two fewer countries than that of the latter.¹⁶ Had accommodation not been made to developing countries, the Berne Convention would be unlikely to have become the dominant international copyright treaty today.

Secondly, members of the Berne Convention adopted the Protocol Regarding Developing Countries (Stockholm Protocol). Had this protocol entered into effect, it would have allowed developing countries to make reservations to the Berne Convention in the area of copyright duration and in regard to reproduction, translation and broadcasting licences.¹⁷ The strong opposition from developed countries and their publishing industries eventually caused this protocol to remain unratified.¹⁸ Adopted in its stead, in the Paris revision conference in July 1971, was the optional appendix to the Berne Convention, which has since been incorporated by reference into the TRIPS Agreement and the WIPO Copyright Treaty.

Thirdly, members of the Paris Convention successfully amended the international industrial property treaty to accommodate the use of inventors’ certificates in the former Soviet Union and other socialist countries for the purposes of determining the right of priority.¹⁹ These certificates “acknowledged an economic remuneration to the inventor but reserved the actual use and commercial exploitation of the invention for the state”.²⁰ Although the transition of socialist economies since the fall of the Berlin Wall has consigned inventors’ certificates to the dustbin of history, the acceptance of these certificates at the Stockholm Conference provided an important reminder of the different acceptable modalities of protection in the international intellectual property regime.

Finally, the Stockholm Conference sought

“to effectuate the structural and administrative reform of the Paris and Berne Unions as well as of the then existing five special agreements under the Paris Union”.²¹

By revamping BIRPI’s structure, this conference helped prepare for the organisation’s eventual transformation into a UN specialised agency. Although WIPO did not join the United Nations immediately after its establishment in 1970,

“the draft of the WIPO Convention and the drafts for the revision of the then existing seven treaties, presented by BIRPI to the Stockholm Conference, were proposed with [that] objective in mind”.²²

¹⁵ Barbara A. Ringer, “The Role of the United States in International Copyright—Past, Present, and Future” (1968) 56 Geo. L.J. 1050, 1066.

¹⁶ Ricketson and Ginsburg, *International Copyright and Neighbouring Rights* (2005), p.886.

¹⁷ Ruth L. Okediji, “Sustainable Access to Copyrighted Digital Information Works in Developing Countries” in Keith E. Maskus and Jerome H. Reichman (eds), *International Public Goods and Transfer of Technology under a Globalized Intellectual Property Regime* (Cambridge: Cambridge University Press, 2005), p.157.

¹⁸ Ricketson and Ginsburg, *International Copyright and Neighbouring Rights* (2005), p.899; Yu, “A Tale of Two Development Agendas” (2009) 35 Ohio N. U. L. Rev. 465, 477–478.

¹⁹ Arpad Bogsch, *Brief History of the First 25 Years of the World Intellectual Property Organization* (Geneva: World Intellectual Property Organization, 1992), pp.18–21; Sam Ricketson, *The Paris Convention for the Protection of Industrial Property: A Commentary* (Oxford: Oxford University Press, 2015), pp.93–96.

²⁰ Pedro Roffe and Taffere Tesfachew, “The Unfinished Agenda” in Surendra J. Patel, Pedro Roffe and Abdulqawi Yusuf (eds), *International Technology Transfer: The Origins and Aftermath of the United Nations Negotiations on a Draft Code of Conduct* (The Hague: Kluwer Law International, 2001), p.387.

²¹ Bogsch, *Brief History of the First 25 Years of the World Intellectual Property Organization* (1992), p.24.

²² Bogsch, *Brief History of the First 25 Years of the World Intellectual Property Organization* (1992), p.26. In addition to the Paris and Berne Conventions, the five other treaties were the Madrid Agreement concerning the International Registration of Marks 1891, Madrid Agreement for the Repression of False or Deceptive Indications of Source on Goods 1891, the Hague Agreement concerning the International Registration of Industrial

In December 1974, WIPO finally became a UN specialised agency, thereby transforming BIRPI

“from a developed country club into an organisation with a multilateral character that could attract developing countries including the newly independent ones”.²³

Today, WIPO’s membership has grown exponentially to 189 and includes over 100 developing country members.²⁴

The present

In December 2015, the United Nations completed its cycle for the UN Millennium Development Goals, which were launched in September 2000 as part of the UN Millennium Declaration. Adopted in its place were 17 SDGs, which sought to achieve development for the next 15 years. Because the SDGs came into force only earlier this year and will continue until 2030, the adoption of these goals provided a timely and important opportunity for us to think more deeply about intellectual property and global development.

The incorporation of the SDGs into WIPO’s activities was indeed an important issue at the latest meeting of the WIPO Committee on Development and Intellectual Property (CDIP) in late October and early November 2016.²⁵ At that meeting, the CDIP explored the relationship between the SDGs and WIPO’s mandate and strategic goals. Considered directly related to WIPO were SDG 9 (“Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation”) and SDG 17 (“Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development”).

Also listed as relevant to WIPO’s programmes and activities in a CDIP document were SDG 2 (“End hunger, achieve food security and improved nutrition and promote sustainable agriculture”), SDG 3 (“Ensure healthy lives and promote well-being for all at all ages”), SDG 4 (“Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all”), SDG 7 (“Ensure access to affordable, reliable, sustainable and modern energy for all”), SDG 8 (“Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all”) and SDG 13 (“Take urgent action to combat climate change and its impacts”).²⁶

Thus far, developing countries have actively pushed for a broadened focus on the relationship between the SDGs and WIPO’s activities, as shown by the submissions from China, the Latin American and Caribbean Group (GRULAC), Uganda and Brazil.²⁷ Developed countries, by contrast, have been highly critical of this approach. Speaking on behalf of the Group B developed countries, the delegate from Turkey declared:

“WIPO’s work in relation to the SDGs must be in line with the organisation’s mandate as per its Convention and focus on the areas of expertise of the organisation.”²⁸

Designs 1925, the Nice Agreement concerning the International Classification of Goods and Services for the Purposes of the Registration of Marks 1957 and the Lisbon Agreement for the Protection of Appellations of Origin and Their International Registration 1958. Ricketson, *The Paris Convention for the Protection of Industrial Property* (2015), p.95.

²³ Sisule F. Musungu and Graham Dutfield, “Multilateral Agreements and a TRIPS-plus World: The World Intellectual Property Organisation (WIPO)” (2003) Quaker United Nations Office, TRIPS Issues Paper No.3, 4.

²⁴ World Intellectual Property Organization, “Member States”, available at <http://www.wipo.int/members/en/> [Accessed November 15, 2016].

²⁵ Catherine Saez, “WIPO Committee Debates SDGs, Review of Development Agenda Recommendations”, *Intellectual Property Watch*, November 1, 2016, available at <http://www.ip-watch.org/2016/11/01/wipo-committee-debates-sdgs-review-development-agenda-recommendations/> [Accessed November 15, 2016].

²⁶ Committee on Development and Intellectual Property, “WIPO and the Post-2015 Development Agenda”, October 9, 2015, WIPO Doc. CDIP/16/8.

²⁷ Committee on Development and Intellectual Property, “Compilation of Member State Inputs on SDGs Relevant to WIPO’s Work”, August 8, 2016, WIPO Doc. CDIP/18/4.

²⁸ Catherine Saez, “WIPO Members Divided on IP Agency’s Role in Implementation of UN Sustainable Development Goals”, *Intellectual Property Watch*, November 2, 2016, available at <http://www.ip-watch.org/2016/11/02/wipo-members-divided-ip-agencys-role-implementation-un-sustainable-development-goals/> [Accessed November 15, 2016].

While it is not difficult to understand the developed countries' resistance to the consideration of other SDGs when reviewing WIPO's programmes and activities, it is somewhat disingenuous to deny the direct relevance of SDG 3 to WIPO's mandate and strategic goals. After all, this goal was the only SDG that explicitly mentions the TRIPS Agreement and the Doha Declaration.

As WIPO and its CDIP explore ways to better incorporate the SDGs into the organisation's programmes and activities, it may be useful to revisit another historic milestone in the development arena—namely, the adoption of the UNDRD 30 years ago. Although controversy continues to exist in the developed world concerning the necessity, validity, viability, usefulness and legal status of the right to development,²⁹ along with the usual complications about recognising group rights in the international human rights regime, this section does not attempt to rehash arguments about whether the right to development should be protected as a human right. Instead, this section focuses on the consensus reached by the international community when the UN General Assembly adopted the UNDRD.

This consensus provided five important insights into our current efforts to realise the SDGs in the intellectual property arena. First, developing countries have warmly embraced the right-based approach to development—whether economic, social, cultural or political. Although one could still debate the human rights status of the right to development, the active push by developing countries for the recognition of this right through the UNDRD and a subsequent reaffirmation in the Vienna Declaration and Programme of Action underscored the importance of right-based approaches.³⁰ These approaches—or what Mary Ann Glendon has referred to as “rights talk”³¹—have earned growing support from academic and policy literature.³²

Secondly, development needs to be human-centred. Article 2(1) of the UNDRD explicitly states:

“The human person is the central subject of development and should be the active participant and beneficiary of the right to development.”

This human-centred approach explains in part why the protection—or, some would say, over-protection—of intellectual property rights has been increasingly discussed in human rights terms.³³ Among the oft-cited exogenous human rights-based constraints on intellectual property protection and enforcement are the right to life, the right to health, the right to food, the right to freedom of expression, the right to education, the right to cultural participation and development, the right to enjoy the benefits of scientific progress and its applications, and the right to self-determination.³⁴

²⁹ Bunn, *The Right to Development and International Economic Law* (2012), pp.1, 127. On this controversy, see Philip Alston, “The Shortcomings of a Garfield the Cat Approach to the Right to Development” (1985) 15 Cal. W. Int'l L.J. 510; Jack Donnelly, “In Search of the Unicorn: The Jurisprudence and Politics of the Right to Development” (1985) 15 Cal. W. Int'l L.J. 473; Stephen Marks, “The Human Right to Development: Between Rhetoric and Reality” (2004) 17 Harv. Hum. Rts. J. 137; Oscar Schachter, “Implementing the Right to Development: Programme of Action” in Subrata Roy Chowdhury, Erik M.G. Denters and Paul J.I.M. de Waart (eds), *The Right to Development in International Law* (Dordrecht: Martinus Nijhoff Publishers, 1992).

³⁰ “Vienna Declaration and Programme of Action”, 1993, U.N. Doc. A/CONF.157/23, para.10.

³¹ Mary Ann Glendon, *Rights Talk: The Impoverishment of Political Discourse* (New York: Free Press, 1991).

³² E.g. Hickey and Mitlin (eds), *Rights-Based Approaches to Development* (2009); Karimova, *Human Rights and Development in International Law* (2016), pp.74–77; Uvin, *Human Rights and Development* (2004), pp.122–166.

³³ E.g. Sub-Commission on the Promotion and Protection of Human Rights, “The Impact of the Agreement on Trade-Related Aspects of Intellectual Property Rights on Human Rights: Report of the High Commissioner”, June 27, 2001, U.N. Doc. E/CN.4/Sub.2/2001/13; Committee on Economic, Social and Cultural Rights, “General Comment No. 17: The Right of Everyone to Benefit from the Protection of the Moral and Material Interests Resulting from Any Scientific, Literary or Artistic Production of Which He Is the Author (Art. 15(1)(c))”, January 12, 2006, U.N. Doc. E/C.12/GC/17; Special Rapporteur in the Field of Cultural Rights, “Copyright Policy and the Right to Science and Culture: Report of the Special Rapporteur in the Field of Cultural Rights”, December 24, 2014, U.N. Doc. A/HRC/28/57 (by Farida Shaheed); Special Rapporteur in the Field of Cultural Rights, “Cultural Rights”, August 4, 2015, U.N. Doc. A/70/279 (by Farida Shaheed).

³⁴ For the author's earlier articles on intellectual property and human rights, see Peter K. Yu, “The Anatomy of the Human Rights Framework for Intellectual Property” (2016) 69 SMU L. Rev. 37; Peter K. Yu, “Digital Copyright Enforcement Measures and Their Human Rights Threats” in Christophe Geiger (ed.), *Research Handbook on Human Rights and Intellectual Property* (Cheltenham: Edward Elgar Publishing, 2015); Peter K. Yu, “Intellectual Property and Human Rights in the Nonmultilateral Era” (2012) 64 Fla. L. Rev. 1045; Peter K. Yu, “Reconceptualizing Intellectual Property Interests in a Human Rights Framework” (2007) 40 U.C. Davis L. Rev. 1039; Peter K. Yu, “Ten Common Questions about Intellectual Property and Human Rights” (2007) 23 Ga. St. U. L. Rev. 709.

Thirdly, development is a collective responsibility. It is the responsibility of neither the Global North nor the Global South, but one shared by the entire international community.³⁵ As art.2(2) of the UNDRD declared: “All human beings have a responsibility for development, individually and collectively.” Although intellectual property laws, policies and treaties have been frequently criticised for favouring developed country interests, intellectual property rights per se are not biased towards either the north or the south. At the moment, the standards favour the north, due in large part to the developed countries’ predominant role in creating and shaping the international intellectual property regime. This bias, however, could be greatly reduced when the regime is adjusted to provide developing countries with greater benefits or stronger recognition of their intellectual property interests.

Fourthly, development depends on the existence of an enabling environment,³⁶ similar to the one needed for effective protection and enforcement of intellectual property rights.³⁷ As the preamble of the UNDRD declared,

“everyone is entitled to a social and international order in which the rights and freedoms set forth in that Declaration can be fully realized”.

While the existence of this order is essential to the realisation of the right to development, such realisation, in turn, could help foster creativity and innovation. Thus, through the generation of a virtuous cycle, the creation of an appropriate social and international order will not only help ensure the realisation of the right to development, but can also provide important benefits to the international intellectual property regime.

Finally, the preamble of the UNDRD recognises that “development is a comprehensive economic, social, cultural and political process”.³⁸ Because development is a cumulative enterprise, the process may be just as important as the outcome itself. This insight is important to the intellectual property field because knowledge production is an equally cumulative enterprise.³⁹ A greater focus on the process will certainly highlight the close interrelationship between intellectual property law and policy on the one hand and sustainable development⁴⁰ and intergenerational equity on the other.⁴¹ Moreover, as the UK Commission on Intellectual Property Rights rightly reminded us, the protection of intellectual property rights should be “a means to an end, not an end in itself”.⁴² Such protection therefore needs to be balanced against other important, and often more important, goals, such as the 17 recently-adopted SDGs.

In sum, the right to development and the adoption of the UNDRD provide important insights into the debate on intellectual property and global development. Sadly, except for the occasional mentions, this right has thus far been under-utilised in this debate. Indeed, very little academic or policy literature, if any, has discussed how the right to development or the UNDRD should, or could, be applied in the intellectual property context. It is therefore worthwhile to think more deeply about how this right, the UNDRD and other related documents can be leveraged to facilitate greater access to essential medicines,

³⁵ Khurshid Iqbal, *The Right to Development in International Law: The Case of Pakistan* (London: Routledge, 2010), pp.86–87; Karimova, *Human Rights and Development in International Law* (2016), p.110; Subrata Roy Chowdhury and Paul J.I.M. de Waart, “Significance of the Right to Development: An Introductory View” in Chowdhury, Denters and de Waart (eds), *The Right to Development in International Law* (1992), p.19.

³⁶ Iqbal, *The Right to Development in International Law* (2010), p.9; Karimova, *Human Rights and Development in International Law* (2016), pp.181–183.

³⁷ “Creating an Enabling Environment to Build Respect for IP: Concept Paper by Pakistan” in Advisory Committee on Enforcement, World Intellectual Property Organization, “Conclusions by the Chair”, November 4, 2009, WIPO Doc. WIPO/ACE/5/11, annex I; Peter K. Yu, “Intellectual Property, Economic Development, and the China Puzzle” in Daniel J. Gervais (ed.), *Intellectual Property, Trade and Development: Strategies to Optimize Economic Development in a TRIPS Plus Era*, 1st edn (New York: Oxford University Press, 2007), pp.213–216.

³⁸ Bunn, *The Right to Development and International Economic Law* (2012), pp.119–121; Rumu Sarkar, *International Development Law: Rule of Law, Human Rights, and Global Finance* (Oxford: Oxford University Press, 2009), p.78; Amartya Sen, *Development as Freedom* (New York: Anchor Books, 1999), p.3; Uvin, *Human rights and Development* (2004), pp.137–139.

³⁹ Rochelle Cooper Dreyfuss, “TRIPS-Round II: Should Users Strike Back?” (2004) 71 U. Chi. L. Rev. 21, 22.

⁴⁰ Bunn, *The Right to Development and International Economic Law* (2012), p.120.

⁴¹ “Intergenerational Equity and Intellectual Property” [2011] Wis. L. Rev. 103, 103–562.

⁴² Commission on Intellectual Property Rights, *Integrating Intellectual Property Rights and Development Policy: Report of the Commission on Intellectual Property Rights* (2002), p.6.

computer software, cultural and educational materials, and patented seeds and food products, as well as to strengthen protection for genetic resources, traditional knowledge and traditional cultural expressions.

The future

As we look for ways to harness our intellectual property system to realise the SDGs, we will need to devote more attention to the debate on intellectual property and global development. Thus far, development remains a concept that is vague, complex and highly difficult to define.⁴³ As shown by the considerable disagreement over efforts to establish development agendas at WIPO, the World Trade Organization and other international fora, different people subscribe to different concepts of development.⁴⁴ In the words of Upendra Baxi, “Development means many different things to many people at different times”.⁴⁵ Likewise, Gary Horlick observed:

“there is no consensus on what ‘development’ is, how to measure it, what causes it, or what law has to do with it”.⁴⁶

Notwithstanding these challenges, this section outlines four general observations that aim to advance the debate on intellectual property and global development. The first observation concerns the holistic approach required by development. Development is multi-dimensional, covering many different disciplines and issue areas.⁴⁷ Greater inter- and multi-disciplinary research is therefore needed to foster a deeper and fuller understanding of development.

This holistic approach can be further extended to the debate on intellectual property and global development. After all, intellectual property is equally inter- and multi-disciplinary. Indeed, every year since its inception, this journal has devoted a special issue to highlighting intellectual property research in a different discipline. Thus far, the journal has published special issues on law and policy (Vol.1), economics (Vol.2), politics and international relations (Vol.3), culture (Vol.4), history (Vol.5), geography (Vol.6) and philosophy (Vol.7). Collectively, these issues have shown that intellectual property research is not, and cannot be, limited to a single discipline. Instead, intellectual property scholars can enrich our understanding regardless of their interests or disciplinary focus.

While a holistic approach will help us formulate more complete, and therefore better, perspectives on intellectual property and global development, such an approach can also contribute to the development of a greater variety of rights for the benefits of both developed and developing countries. Due to historical legacy and path dependency, copyrights, patents and trademarks have remained the three main branches of intellectual property law. Beginning in the mid-1990s, the TRIPS Agreement has also facilitated the wide adoption of international minimum standards for five other categories of intellectual property rights—namely, trade secrets, geographical indications, industrial designs, layout designs of integrated circuits, and plant variety protections.

Although all of these eight categories of rights have distinct boundaries, which overlap at times, the intellectual property rights can be designed more holistically to cover subject matters that do not fall neatly

⁴³ On the deconstruction of the concept of development, see Arturo Escobar, *Encountering Development: The Making and Unmaking of the Third World* (Princeton: Princeton University Press, 1995); Ruth E. Gordon and Jon H. Sylvester, “Deconstructing Development” (2004) 22 *Wis. Int’l L.J.* 1.

⁴⁴ Michael A. Gollin, Gwen Hinze and Wong Tzen, “Scenario Planning on the Future of Intellectual Property: Literature Review and Implications for Human Development” in Wong Tzen and Graham Dutfield (eds), *Intellectual Property and Human Development: Current Trends and Future Scenarios* (New York: Cambridge University Press, 2010), p.352. On the different theories of development, see Richard Peet and Elaine R. Hartwick, *Theories of Development* (New York: Guilford Press, 1999).

⁴⁵ Upendra Baxi, *Human Rights in a Posthuman World: Critical Essays* (New Delhi: Oxford University Press, 2007), p.76.

⁴⁶ Gary N. Horlick, “Nonconclusions” in Lee Yong-Shik, Gary N. Horlick, Choi Won-Mog and Tomer Broude (eds), *Law and Development Perspective on International Trade Law* (Cambridge: Cambridge University Press, 2011), p.395.

⁴⁷ Baxi, *Human Rights in a Posthuman World* (2007), p.116; Bunn, *The Right to Development and International Economic Law* (2012), p.113; Karimova, *Human Rights and Development in International Law* (2016), p.105; Madhukar Hiralal Kania, “Advancing the Interests of Mankind by the Rule of Law” in Chowdhury, Denters and de Waart (eds), *The Right to Development in International Law* (1992), p.5.

into traditional categories. The continued mismatch between these categories and the intellectual property interests in developing countries is indeed why these countries have been actively pushing for greater protection of genetic resources, traditional knowledge and traditional cultural expressions.⁴⁸ Until we develop a more holistic conception of intellectual property rights and interests, we will continue to have a tough time seeing how such protection could fit well within our existing international intellectual property regime.

The second observation relates to the context-sensitive nature of development. Since its establishment, the TRIPS Agreement has been harshly and repeatedly criticised for embracing a “one size fits all” approach—or, more precisely, a “super-size fits all” approach.⁴⁹ Economists and development experts have empirically shown that countries need to adopt intellectual property standards that are tailored to their economic conditions, imitative or innovative capacities, research and development productivities, and availability of human capital.⁵⁰ By now, it is apparent that one size does not fit all, whether it is for intellectual property, trade or investment. More importantly, if there is only one size, that size should not be extra-large.⁵¹

While the TRIPS Agreement has already privileged developed countries by adopting their preferred standards and pushing those standards towards countries in the developing world, the aggressive negotiation of bilateral, regional and plurilateral trade agreements in the past decade has led to the further strengthening of these standards and therefore even more privileging of developed countries. From the Anti-Counterfeiting Trade Agreement 2011 to the Trans-Pacific Partnership Agreement 2016, these agreements have included intellectual property standards that fail to meet the needs, interests, conditions and priorities of developing countries. These standards have also made it more difficult for developing countries to catch up with their more developed counterparts.

The third observation pertains to how development evolves over time.⁵² When the TRIPS Agreement was being negotiated in the late 1980s and early 1990s, developed country governments and their supportive industries were deeply disappointed by the lack of intellectual property protection and enforcement in developing countries. Appearing on the ground were massive piracy and counterfeiting problems, at least based on the developed countries’ intellectual property standards.

Today, however, these countries—at least the larger ones—have begun to benefit from stronger protection and enforcement of intellectual property rights. Although they continue to resist the positions taken by the European Union, the United States and other developed countries, and may prefer a different path from the one trodden by these countries,⁵³ they have also slowly embraced intellectual property reforms to promote economic and technological developments.

China has provided a paradigmatic example. While its intellectual property laws in the 1980s and early 1990s remained far behind international standards, the country is now “at the cusp of crossing over from a pirating nation to a country respectful of intellectual property rights”.⁵⁴ In 2015, for instance, China had the world’s third largest number of international applications filed through the Patent Cooperation Treaty

⁴⁸ Tania Bubela and E. Richard Gold (eds), *Genetic Resources and Traditional Knowledge: Case Studies and Conflicting Interests* (Cheltenham: Edward Elgar Publishing, 2012); Peter Drahos, *Intellectual Property, Indigenous People and Their Knowledge* (Cambridge: Cambridge University Press, 2014); Christoph B. Graber, Karolina Kuprecht and Jessica C. Lai (eds), *International Trade in Indigenous Cultural Heritage: Legal and Policy Issues* (Cheltenham: Edward Elgar Publishing, 2012); Daphne Zografos, *Intellectual Property and Traditional Cultural Expressions* (Cheltenham: Edward Elgar Publishing, 2010).

⁴⁹ Peter K. Yu, “The Global Intellectual Property Order and Its Undetermined Future” (2009) 1 WIPO J. 1, 9.

⁵⁰ Claudio R. Frischtak, “Harmonization Versus Differentiation in Intellectual Property Rights Regimes” in Mitchel B. Wallerstein, Mary Ellen Moguee and Roberta A. Schoen (eds), *Global Dimensions of Intellectual Property Rights in Science and Technology* (Washington: National Academy Press, 1993), p.97; Peter K. Yu, “The International Enclosure Movement” (2007) 82 Ind. L.J. 827, 889.

⁵¹ James Boyle, “A Manifesto on WIPO and the Future of Intellectual Property” [2004] Duke L. & Tech. Rev. 9, at 3–4.

⁵² Hiroyuki Odagiri, Akira Goto, Atsushi Sunami and Richard R. Nelson, “Introduction” in Hiroyuki Odagiri, Akira Goto, Atsushi Sunami and Richard R. Nelson (eds), *Intellectual Property Rights, Development, and Catch-up: An International Comparative Study* (Oxford: Oxford University Press, 2010), p.3.

⁵³ Yu, “The Global Intellectual Property Order and Its Undetermined Future” (2009) 1 WIPO J. 1, 13.

⁵⁴ Peter K. Yu, “The Rise and Decline of the Intellectual Property Powers” (2012) 34 Campbell L. Rev. 525, 528.

(PCT) and seventh largest number of international trademark applications under the Madrid System.⁵⁵ Among all corporate applicants, two Chinese firms, Huawei Technologies and ZTE Corporation, also had the first and third largest number of PCT applications, respectively.

Although China continues to be confronted with piracy and counterfeiting problems—due in large part to the country’s large size, internal complexities and uneven development—many of the traditional arguments advocating for China to be treated as a developing country are no longer as convincing as they were two decades ago. In fact, with all of the country’s recent improvements in economic development and technology proficiency, it remains unclear whether China is now the exciting proof of the success brought by TRIPS-based intellectual property reforms or a painful reminder that developing countries should strive hard to resist high international intellectual property standards until they can start benefiting from those standards. The truth probably lies somewhere in between.

The final observation involves the participatory aspect of development,⁵⁶ which commentators have linked to the right to self-determination.⁵⁷ Article 2(3) of the UNDRD emphasises the “active, free and meaningful participation in development and in the fair distribution of the benefits resulting therefrom”. Article 8(2) further provides: “States should encourage popular participation in all spheres as an important factor in development”. Similar to this provision, Recommendation 21 of the WIPO Development Agenda states:

“WIPO shall conduct informal, open and balanced consultations, as appropriate, prior to any new norm-setting activities, through a member-driven process, promoting the participation of experts from Member States, particularly developing countries and [least developed countries]”.

A widely cited example illustrating the importance of participation and self-determination concerns the protection of traditional knowledge and traditional cultural expressions. Policymakers and commentators have widely attributed the deficiency in such protection to the historical lack of respect and representation for traditional communities in domestic and international political processes. As Rosemary Coombe observed:

“Although indigenous peoples are now recognized as key actors in this global dialogue, it will need to be expanded to encompass a wider range of principles and priorities, which will eventually encompass political commitments to indigenous peoples’ rights of self-determination. Only when indigenous peoples are full partners in this dialogue, with full juridical standing and only when ... their cultural world views, customary laws, and ecological practices are recognized as fundamental contributions to resolving local social justice concerns will we be engaged in anything we can genuinely call a dialogue.”⁵⁸

To a large extent, the public’s urge for democratic participation, transparency and accountability have driven the common and widespread criticisms of the recent efforts by developed and like-minded countries to conduct secret plurilateral negotiations to ratchet up international standards of intellectual property protection and enforcement.⁵⁹ In regard to ACTA, for example, these secret negotiations backfired by

⁵⁵ World Intellectual Property Organization, “Who Filed the Most Madrid Trademark Applications in 2015?”, available at http://www.wipo.int/export/sites/www/ipstats/en/docs/infographics_madrid_2015.pdf [Accessed November 15, 2016]; World Intellectual Property Organization, “Who Filed the Most PCT Patent Applications in 2015?”, available at http://www.wipo.int/export/sites/www/ipstats/en/docs/infographics_pct_2015.pdf [Accessed November 15, 2016].

⁵⁶ Bunn, *The Right to Development and International Economic Law* (2012), pp.187–191; Iqbal, *The Right to Development in International Law* (2010), pp.84–86.

⁵⁷ Bunn, *The Right to Development and International Economic Law* (2012), p.291; Tatjana Ansbach, “Peoples and Individuals as Subjects of the Right to Development” in Chowdhury, Denters and de Waart (eds), *The Right to Development in International Law* (1992), p.157.

⁵⁸ Rosemary J. Coombe, “The Recognition of Indigenous Peoples’ and Community Traditional Knowledge in International Law” (2001) 14 *St. Thomas L. Rev.* 275, 284–285.

⁵⁹ David S. Levine, “Transparency Soup: The ACTA Negotiating Process and ‘Black Box’ Lawmaking” (2011) 26 *Am. U. Int’l L. Rev.* 811; Peter K. Yu, “Six Secret (and Now Open) Fears of ACTA” (2011) 64 *SMU L. Rev.* 975, 998–1019; Peter K. Yu, “TPP and Trans-Pacific Perplexities” (2014) 37 *Fordham Int’l L.J.* 1129, 1170–1176.

leading to the widespread online coverage of the leaked drafts and updates on the negotiations, which in turn mobilised the public and sharpened the debate on intellectual property rights. The effort to adopt ACTA in the European Union also led to massive street protests throughout Europe in the middle of winter—in major cities such as Amsterdam, Berlin, Copenhagen, Krakow, Munich, Paris, Prague, Sofia, Stockholm and Vienna.⁶⁰

Conclusion

When *The WIPO Journal* was launched in summer 2009, the WIPO Development Agenda was only less than two years old. Countries worldwide were also going through the global economic crisis, raising important questions about what this crisis would mean for intellectual property and global development. Today, however, WIPO, or at least its developing country members, is poised to celebrate the tenth anniversary of the establishment of the WIPO Development Agenda. The organisation has also actively explored ways to implement the recently-adopted SDGs through its programmes and activities.

Although it remains debatable how much the WIPO Development Agenda has achieved in relation to what developing countries and civil society organisations set out to do, there is no denying that it is now a good time to think more deeply about intellectual property and global development and to take stock of all the recent pro-development initiatives in the intellectual property field. In fact, many would deem it urgent to do so considering the developing countries' continuous and considerable struggle with problems caused by a lack of access to essential medicines, computer software, cultural and educational materials, and patented seeds and food products.

In view of this timely opportunity and the potential urgency, this special issue has been devoted to the development aspects of intellectual property rights. The articles in this issue will enrich our understanding of intellectual property and global development. Coincidentally, they will also bring us back to where the journal started when it was launched eight years ago. I hope you will enjoy reading these articles.

⁶⁰ Monica Horten, *A Copyright Masquerade: How Corporate Lobbying Threatens Online Freedoms* (London: Zed Books, 2013), pp.107–114.

Development and International Copyright: A History

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☞ Copyright; Developing countries; Economic development; Legal history; WIPO

In his 1949 inaugural address, US President Harry Truman called for a new era in world affairs emphasising support for the United Nations (UN) and a new programme for world economic recovery and scientific, industrial and technological development.¹ Within a few years his agenda for international development was almost universally embraced. A UN Department of Social and Economic Affairs (UN-DESA) report in 1951 suggested the total restructuring of “underdeveloped” societies.² Such plans to transform two-thirds of the world, while possibly arrogant and certainly naive, became hegemonic, making their way into the mandates of international institutions such as the UN, the World Bank, the International Monetary Fund (IMF) and even the World Intellectual Property Organization (WIPO).³

In this article, I examine the historical relationship between WIPO, international copyright and “development”. First, drawing on a content analysis of the records of international conferences to negotiate international copyright agreements, I trace the long roots of WIPO’s recent emphasis on development by examining the ways in which the concept of development has been used in diplomatic conferences to negotiate and revise international intellectual property treaties between 1884 and the present. The concept of “development”, I note, has been used in many contexts during the negotiation of international copyright norms, some of which continue to be emphasised, while others have fallen into relative disuse.

Secondly, I outline the rise of the Access to Knowledge (A2K) movement, the 2004–2007 battle that resulted in a formal Development Agenda for WIPO, and the battles, since 2007, over its implementation. The negotiation of a formal Development Agenda for WIPO has also brought to the surface a deep ideological divide relating to the relationship between WIPO and development in particular, and intellectual property and development more generally.

I argue that, while two newly-formed coalitions, the Friends of Development and the A2K movement, have had some significant successes in influencing WIPO’s relationship with development, strong forces inhibit the erasure of the particular concept of “development” that arose in the 1950s and 1960s, inspired by Truman’s vision. Ideas, interests and institutions interact in historical time to “lock in” an agenda of development that is rooted in the projects inspired by Truman’s vision of 1949.

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¹ Harry S. Truman, “Inaugural Address”, January 20, 1949.

² Arturo Escobar, *Encountering Development: The Making and Unmaking of the Third World* (Princeton: Princeton University Press, 1995), pp.3–5.

³ Escobar, *Encountering Development* (1995), pp.3–5.

WIPO and development: A history

The general assemblies of WIPO and the UN, on September 27 and December 17, 1974 respectively, approved an agreement that made WIPO a specialised agency of the UN.⁴ The groundwork for this move had been laid during the establishment of WIPO's founding convention in 1967, which came into effect in 1970, transforming the United International Bureaux for the Protection of Intellectual Property (BIRPI) into WIPO, a member-state-controlled international organisation. In adopting specialised agency status, WIPO followed organisations such as the United Nations Educational, Scientific and Cultural Organization (UNESCO), the Universal Postal Union and the International Telecommunication Union.⁵

The proposal for WIPO to become a UN specialised agency was put forward by the Brazilian delegation to WIPO, supported by developing and socialist country delegates, who prevailed over country delegations that objected based on concerns that such membership might mean a weakening of intellectual property laws.⁶ The success of this proposal laid important groundwork for attempts, 30 years later, to more fully incorporate “development” into the core of WIPO's mandate.⁷

In the 1970s, proponents of WIPO's incorporation into the UN system saw three advantages in the move. First, this status would allow WIPO to inherit the UN's worldwide recognition; secondly, it was felt that WIPO might also inherit many UN members, particularly developing country members; and finally, special agency status would allow WIPO to adopt the UN salary and pension system, relieving WIPO member states of the administrative burden of fixing salaries.⁸ While the third of these goals was achieved, the first two were not completely realised at the time; only following the negotiation of the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights 1994 (TRIPS Agreement), which required adherence to the substantive elements of WIPO's Berne Convention for the Protection of Literary and Artistic Works 1886 as amended in 1979 (Berne Convention) and Paris Convention for the Protection of Industrial Property 1883 as amended in 1979, did WIPO's membership or profile begin to approximate that of the UN.⁹ Putting intellectual property in the service of development was not among the primary stated objectives behind WIPO's transformation into a specialised agency of the UN.

Many feared that the move to join the UN, insofar as it encouraged developing countries to join WIPO, would “weaken” the WIPO intellectual property system. However, proponents felt that the possibility of such “weakening” was a worthwhile trade-off for the possibility of broader and more universal membership in WIPO treaties.¹⁰ Thus, differing state and institutional interests were in tension as parties agreed on WIPO's move to join the UN.

WIPO's move to join the UN system would mean grafting concepts of “development” from the UN system onto WIPO, where various concepts of “development” were already established. “Development” had begun to move from a peripheral to a central position in the WIPO system in the 1960s and 1970s. Prior to that, when the term *was* used, it was in more diverse and often different senses from the “development agenda” associated with Truman's project and the mission of the UN.

Method

Using computerised text analysis done with the software tool NVivo, I have analysed the official records of the conferences that took place between 1883 and 1997 to establish and revise the Berne Convention,

⁴ Agreement between the United Nations and the World Intellectual Property Organization 1974; Arpad Bogsch, *The First Twenty Five Years of the World Intellectual Property Organization from 1967 to 1992* (1992).

⁵ Bogsch, *The First Twenty Five Years of the World Intellectual Property Organization from 1967 to 1992* (Geneva: WIPO, 1992), p.29.

⁶ Geneva to Ottawa, teletext, May 7, 1973, in Library and Archives Canada, RG25, Vol.10902, file 55-19-WIPO 1970, Vol.5-2; Geneva to Ottawa, teletext, October 5, 1971, in Library and Archives Canada, RG25, Vol.10902, file 55-19-WIPO 1970, Vol.5-1.

⁷ For example, in 1928 the Brazilian and French delegations had together composed a *voeu* calling for the ultimate unification of the Berne and Havana conventions. *Actes de la Conference reunie a Rome du 7 mai au 2 juin 1928* (Berne: BIRPI, 1929), p.350.

⁸ Bogsch, *The First Twenty Five Years of the World Intellectual Property Organization from 1967 to 1992* (1992), p.28.

⁹ Bogsch, *The First Twenty Five Years of the World Intellectual Property Organization from 1967 to 1992* (1992), pp.29–30.

¹⁰ Bogsch, *The First Twenty Five Years of the World Intellectual Property Organization from 1967 to 1992* (1992), p.29.

the Universal Copyright Convention 1971, the WIPO Internet Treaties 1996 and the Anti-Counterfeiting Trade Agreement 2011 (ACTA).¹¹ NVivo was used to identify and count all instances in over 100 years of records where the words “develop”, “development” and the like appeared in these texts. The context of each appearance of the word “develop” and “development” was then analysed and categorised into types, thus revealing several “development agendas”, at differing levels of prominence, that were in play at each negotiating conference.

Development agendas

Recognising that visions of development are political and contested, and that dominant conceptualisations and theories of development have changed radically over time, we must also recognise that copyright and copyright normsetting institutions mediate in historically-situated ways between differing visions of development¹²—some dominant, some hegemonic and others contesting dominant and hegemonic views.¹³ Market visions compete with those of various state institutions; still others are the visions of those working in and with international institutions, involving the development of particular international institutions and their place in international relations. Others are based in civil society and relate to the objectives of various civil society groups.¹⁴ Visions of development and access to knowledge differ not just over time and between countries, but are also contested within the polity of each country, and within particular institutions.

Principles of access to knowledge have become increasingly important, not only to developing countries, but also to some developing technologies and business models. While Truman’s vision of 1949 was premised on an ideological notion that some countries—the United States, most particularly—were “developed”, having reached some end-goal of development, the digital revolution of the 1990s and 2000s has opened new internal and external frontiers. It has thrust the “developed” world into a somewhat revived awareness that “development” has not yet been achieved; that it is an ongoing process, rather than a goal; that new possible social and technological arrangements, whether better or worse than those presently in place, might await; and that high levels of copyright protection, or current concepts of how copyright works, may stand in the way, at times, of certain desirable technological and social developments. Here, firms invested in developing areas butt up against those invested in established business models, even as the two merge and integrate. Some consumer and public interest groups also see copyright in its existing form as a hurdle to new public projects and forms of culture. The state-centric approach, which divides developing from “developed” according to state boundaries, and which views developing country states as the primary actors in seeking access to knowledge and copyright works, seems ill-fitting in light of such changes.

The digital revolution has also brought awareness that “development” does not necessarily bring improvements to quality of life, human potential or solutions to the great environmental problems of our age. “Development” can be, but is not necessarily, coincident with social or economic improvements.

This alignment between developing technologies and developing countries has inspired, at the turn of the twenty-first century, a great deal of new reflection on copyright’s relationship with technology and history. Choices in the development of both law and history are political and path-dependent; neither is pre-determined. They are taken by political actors invested, both politically and ideationally, in particular mappings of moral and cultural norms, economic flows, world geographies, knowledge and expertise that

¹¹ In the case of ACTA, the leaked records of negotiations were used.

¹² Benjamin Knutsson, “The Intellectual History of Development: Towards a Widening Potential Repertoire” (April 2009) 13 *Perspectives* 2.

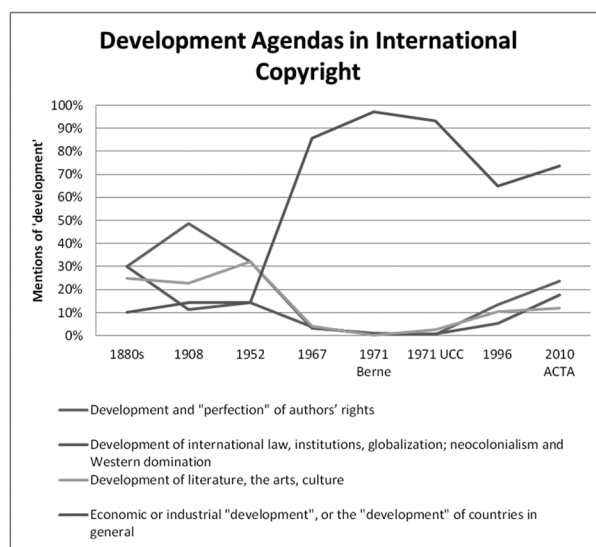
¹³ Knutsson, “The Intellectual History of Development” (2009) 13 *Perspectives* 2, 2.

¹⁴ Knutsson discusses development discourse as a product of competing visions held by state, market, and civil society, with wars of position ongoing between these three sectors as to whose vision of or role in development is dominant or hegemonic. Knutsson, “The Intellectual History of Development” (2009) 13 *Perspectives* 2, pp.5–7 and throughout.

shape legal and technological landscapes. The turn of the twenty-first century, therefore, has inspired a re-examination of the particular mappings in which copyright is rooted.

Turning to the history of international copyright, we can see several “agendas of development” rooted in the particular visions of economic, state and civil society actors. These “agendas” have shifted dramatically over time.

The Berne Convention itself, until 1967, contained only a single mention of the word “development”. It pertained not to “developing” countries or to economic, social or cultural development, but to the development of the Berne Union itself—a “Union” established by the member states of the Berne Convention “for the protection of the rights of authors over their literary and artistic works”.¹⁵ The convention stated that the improvement, *development* and perfection of the Union would be addressed in periodic revision conferences.¹⁶ Thus, the first “development agenda” with which international copyright was concerned—the one written into the Berne Convention itself—was the development and “perfection” of authors’ rights.



During the conferences in the 1880s which founded the Berne Convention, this first “development agenda” was evident. Numa Droz, in opening the 1886 conference at which the Berne Convention would be signed, noted that the text of the convention was open to further improvements, “capable, without substantive reworking, of being improved as experience and future developments might dictate”.¹⁷

At the same time, the first “development agenda” competed, in the first decades of international copyright, with several other “development agendas”. The second “development agenda” of the Berne Union—one that initially rivalled the first—was grounded in a concern with the formation of international law and institutions of globalisation. When the word “develop” or “developing” arose in the context of the initial negotiations that established the Berne Convention in the nineteenth century, it was most often in reference to the development of international norms relating to copyright and, secondly, in reference to the development of a spirit of international co-operation and international relationships—to the development of international relations. “Development” was undertaken by building international institutions which

¹⁵ Berne Convention for the Protection of Literary and Artistic Works 1886 arts 1 and 17.

¹⁶ Berne Convention for the Protection of Literary and Artistic Works 1886 art.17.

¹⁷ *Actes de la 3me Conférence internationale pour la protection des œuvres littéraires et artistiques* (Berne: K.J. Wyss, 1886), p.151 (translated by Ricketson and Ginsburg).

would “perfect” international law, which itself was seen, by those constructing it, as embodying “civilisation”.

It is worth noting that international copyright’s earliest institutions were built on terms that distinguished between civilised and “noncivilised” states, subordinating the latter while simultaneously expelling “uncivilised” countries from the “realm of legality”.¹⁸ International law, as formulated by European positivist jurists, first “purported to expel the non-European world from the realm of legality by insisting on the distinction between civilised and noncivilised states”, the latter not seen as having the requisite structures of governance, under the positivist legal paradigm, to produce law.¹⁹ The draft convention had circulated only to the “governments of civilized countries”.²⁰ The negotiations that founded the Berne Convention took place in the same years as the 1885 conference at Berlin that would divide up the African continent among European powers; no Africans were invited to the conference, nor were representatives of other colonies in other parts of the world. Neither were Asian countries initially invited.²¹ Thus, the second agenda of “development” was also an agenda of neocolonial domination that subordinated and excluded the peoples, laws and practices of much of the world as “uncivilised”.

The development of international institutions embodying self-proclaimed “civilisation” thus rivalled the development of authors’ rights at the establishment of the Berne Convention. After 1886, however, this second “development agenda” fell to the last priority among the four “development agendas” identified here, rising slightly to third place only during the negotiation of ACTA in 2010.

Thirdly, the term “development”, at the founding negotiations, was also used in reference to the development of literature, the arts and culture.²² Droz noted,

“the protection of authors’ rights is one of the best means of developing letters and the arts, which are the source of all civilization and the way to all real greatness”.²³

Such protection encompassed Western works of art and literature and failed, in many cases, to encompass traditional knowledge and culture.²⁴ This “development agenda” would remain as a significant presence during the Berne Union negotiations up to the 1940s, after which it would be demoted or relegated to the periphery of “development agendas” in light of the rise of more economic views of development.

UNESCO entered the field of copyright normsetting with the formation of the Universal Copyright Convention 1952 (UCC), and it did so with a different mandate and agenda of development than that of the Berne Union—one focused on contributing “to peace and security by promoting collaboration among the nations through education, science and culture”.²⁵ As a result, it placed the third “development agenda” just mentioned as its foremost development concern alongside the first: the development of authors’ rights. Emphasis was placed not primarily on the “development” of international institutions, nor of countries or industries, but rather on the development of Western culture, literature and the arts.

Finally, a fourth “development agenda”—one coinciding with Truman’s vision, focusing the efforts of international institutions on economic or industrial “development”, or the “development” of countries in general—played only a minor role in international copyright negotiations until after 1952. There were very few references to “developing countries” and the like even at the formation of the UCC in 1952.²⁶

¹⁸ Antony Anghie, “Finding the Peripheries: Sovereignty and Colonialism in Nineteenth-Century International Law” (1999) 40 Harv. Int’l L.J. 1, 31.

¹⁹ Anghie, “Finding the Peripheries” (1999) 40 Harv. Int’l L.J. 1, 31.

²⁰ Anghie, “Finding the Peripheries” (1999) 40 Harv. Int’l L.J. 1, 31.

²¹ Anghie, “Finding the Peripheries” (1999) 40 Harv. Int’l L.J. 1, 31.

²² These three were accompanied by occasional references to the development of education, domestic law and creative works themselves.

²³ *Actes de la 3me Conférence internationale pour la protection des œuvres littéraires et artistiques* (1886), p.152 (translated by Ricketson and Ginsburg).

²⁴ Bannerman, *International Copyright and Access to Knowledge* (2015), Chs 4 and 9

²⁵ UNESCO Constitution 1945 art.1(1).

²⁶ Lyng Nielsen, *Classifications of Countries Based on Their Level of Development: How It Is Done and How It Could Be Done* (Washington: International Monetary Fund, 2011), p.16.

While the UCC was aimed at the inclusion of “developing” countries in a system of multilateral copyright, such countries were not granted differential treatment under the UCC; its provisions originally applied uniformly to all its member states.

There are several possible reasons why, prior to the 1960s, the fourth “development agenda” was not strongly taken up in multilateral copyright institutions. First, it took time for the agenda of economic development espoused by the Truman vision to spread throughout the UN system, and to organisations outside of the UN. Secondly, it took time for concepts, typologies, categories, techniques, strategies, institutional programmes and so on to develop. Thirdly, and in the case of copyright in particular, copyright was primarily seen as a driver of cultural development and less as a driver of the economic and industrial development of countries as a whole. Many popular models of copyright intended to drive domestic economic or cultural development, such as copyright laws that required domestic printing or publishing, or that permitted the free translation or domestic reprinting of foreign works, were generally prohibited rather than encouraged by the Berne system of international copyright. Fourthly, efforts to encompass additional countries in multilateral copyright systems were not focused exclusively on developing countries; the United States was itself only just entering the field of copyright multilateralism, and arguments pertaining to the benefits of multilateral copyright systems were designed to appeal to all countries, industrialised or developing, rather than specifically focused on the development dimension.

This would all change following the post-war phase of decolonisation. The fourth “development agenda” would become primary, and would rise, by 1967, to be almost the sole “development agenda” with which international copyright negotiations were concerned, dwarfing all other development concerns. At the same time, views were polarised on the question of how the international copyright system should take into account economic and national development.

By the 1960s views were polarised between “developed” and developing countries on the appropriate standards of international copyright; the former were reluctant to permit the lower standards of copyright protection required by the latter. This divide led to the failure of the 1967 Stockholm revision of the Berne Convention, at which a compromise, the Stockholm Protocol for developing countries, had been drawn up. The reduced levels of copyright protection that were written into the Stockholm Protocol represented, according to the Indian delegate, “a concerted step forward in the diffusion of knowledge and culture in areas long deprived of them”.²⁷ However, the Stockholm Protocol never came into effect as a result of widespread rejection by “developed” countries.

This led to a crisis in international copyright; fears arose that the Berne system of international copyright would disintegrate as both developed and developing countries threatened to leave the Union.²⁸ However, a new settlement was reached in 1971, establishing an Appendix to the Berne Convention, which provided a more modest set of concessions to developing countries. It has been widely believed that, following what had threatened to be the “complete breakdown of the international copyright system”, the Berne Convention could never again be opened to revision.²⁹

The view that developing countries had interests different from those of “developed” countries prevailed at WIPO through the decades to follow, but with few concrete outcomes. During the negotiation of the WIPO Internet Treaties in 1996, concerns about technological developments prevailed over concerns that developing countries “were barely at the threshold of the digital revolution”.³⁰

During the negotiation of the 1996 WIPO Internet Treaties, concern with economic, industrial and state development was somewhat mitigated relative to the concern with the other three development agendas

²⁷ WIPO, *Records of the Intellectual Property Conference of Stockholm, June 11 to July 14, 1967* (1971), Vol.2, p.810, item 202.4.

²⁸ Sam Ricketson and Jane C. Ginsburg, *International Copyright and Neighbouring Rights: The Berne Convention and Beyond* (Oxford: Oxford University Press, 2006), pp.913–916.

²⁹ Ricketson and Ginsburg, *International Copyright and Neighbouring Rights* (2006), p.136.

³⁰ “Diplomatic Conference on Certain Copyright and Neighbouring Rights Questions: Summary Minutes, Plenary”, August 26, 1997, WIPO Doc. CRNR/DC/101, p.53, item 420.

(authors' rights; international law and institutions; and literature, culture and the arts), which rose somewhat, but the dominant "development agenda" continued to be that of economic, industrial and national development.

Intellectual property came increasingly to be seen at WIPO as "a power tool for economic growth" that was "not yet being used to optimal effect in all countries, particularly in the developing world".³¹ WIPO's vision of development saw intellectual property protection "an essential component of economic strategy for all countries, regardless of their state of economic development".³² WIPO's new approach to development was therefore

"to raise awareness—at all levels—of the value of intellectual property and of the potential positive impact that it can bring to society".³³

This approach stood in stark contrast to the visions of development that dominated WIPO up to the 1960s, which saw international copyright as furthering not *general* economic development, but the interests of authors, the building of international institutions, and the development of literature and the arts.

WIPO, holding the increasingly maximalist legislative models of the West up as "power tools", provided the institutional resources to propagate such models throughout the world through assistance to developing countries.³⁴ However, alternative visions of development, and concrete models by which they could be realised, were simultaneously forming. These would be promoted under what would come to be known as the A2K movement.

From access to medicine to access to knowledge and the development agenda

The A2K movement came about in reaction to increasing intellectual property maximalism at both WIPO and the WTO.³⁵ It followed on the heels of the access to medicine movement, which arose after the negotiation of the TRIPS Agreement in 1994, led by AIDS activists; nongovernmental organisations (NGOs), such as Médecins Sans Frontières, Oxfam and the Third World Network; and the African Group of countries.³⁶

Building on the successes of the access to medicine movement, some developing country and NGO representatives suggested that advocacy should go beyond a focus on access to medicine to address a broader range of issues in intellectual property, including access to educational and scientific material.³⁷ This would build on international mobilisations in the 1990s against copyright protection in databases, the free and open source software movement, the creative commons movement and the free culture movement.³⁸

A questioning of intellectual property's role in stimulating innovation and economic development, perhaps partly in response to the types of claims being made in Idris' publication, grew and attracted high-profile thinkers.³⁹ By the end of 2003, a greater number of NGOs, along with the Consumer Project on Technology (CPTech, now known as Knowledge Ecology International, or KEI), began to attend and participate more actively in WIPO meetings.⁴⁰ In 2004, at a meeting in New York organised by CPTech,

³¹ Kamil Idris, *Intellectual Property: A Power Tool for Economic Growth* (Geneva: WIPO, 2003), p.1.

³² Idris, *Intellectual Property* (2003), p.16.

³³ Idris, *Intellectual Property* (2003), p.33.

³⁴ Bannerman, *International Copyright and Access to Knowledge* (2015), Ch.7.

³⁵ Bannerman, *International Copyright and Access to Knowledge* (2015), Ch.9; Peter Drahos, "IP World—Made by TNC Inc." in Gaëlle Krikorian and Amy Kapczynski (eds), *Access to Knowledge in the Age of Intellectual Property* (New York: Zone Books, 2010), pp.197–216.

³⁶ Amy Kapczynski, "The Access to Knowledge Mobilization and the New Politics of Intellectual Property" (2008) 117 Yale L.J. 804.

³⁷ Ahmed Abdel Latif, "The Emergence of the A2K Movement: Reminiscences and Reflections of a Developing-Country Delegate" in Krikorian and Kapczynski (eds), *Access to Knowledge in the Age of Intellectual Property* (2010).

³⁸ Kapczynski, "The Access to Knowledge Mobilization and the New Politics of Intellectual Property" (2008) 117 Yale L.J. 804, 821–830.

³⁹ Also see Alan Story, "Burn Berne: Why the Leading International Copyright Convention Must Be Repealed" (2003) 40 Hous. L. Rev. 763.

⁴⁰ Latif, "The Emergence of the A2K Movement" in Krikorian and Kapczynski (eds), *Access to Knowledge in the Age of Intellectual Property* (2010), pp.108–109.

Ahmed Abdel Latif advocated the exclusive use of the term “access to knowledge” for the movement, and shortly thereafter James Love coined the term “A2K”.⁴¹ A movement was born.

Increased efforts by NGOs and by developing country delegates led to the proposal of a Development Agenda for WIPO. This also led to the Geneva Declaration on the Future of the World Intellectual Property Organization 2004, which declared that “humanity faces a global crisis in the governance of knowledge, technology and culture” and called on WIPO to take alternative approaches to knowledge governance, to the development of the draft Treaty on Access to Knowledge in 2005, to the signing of a new Marrakesh Treaty to Facilitate Access to Published Works for Persons Who Are Blind, Visually Impaired, or Otherwise Print Disabled 2013 (Marrakesh Treaty), and to additional initiatives relating to copyright exceptions and limitations that are, at time of this writing, still underway.⁴²

In 2004, a group of developing countries that would later call themselves the “Friends of Development”, led by Argentina and Brazil, presented a proposal at the WIPO General Assembly that questioned intellectual property’s contribution to international development, as well as WIPO’s mandate, the impartiality of WIPO’s core activities, and the transparency and openness of the organisation.⁴³ This proposal took issue with both the fourth “development agenda” itself—the basic assumption that intellectual property protection contributes positively and in a systematic manner to international development—and WIPO’s core mandate, which is “to promote the protection of intellectual property throughout the world through cooperation among States”.⁴⁴

This proposal led to a series of high-profile international meetings at WIPO in which WIPO’s mandate, impartiality, transparency and core activities, as well as intellectual property’s contribution to international development, were broadly questioned. As May notes,

“[a]t the centre of the Development Agenda is a critique of the WIPO that suggests it represents a narrowly focused set of political economic interests that seek to expand the realm of commodified knowledge and information for their own commercial advantage”.⁴⁵

The proposal of Friends of Development set in motion a series of debates centring on WIPO’s mandate and the role of the intellectual property system in promoting development objectives and “the public interest”. “Such a debate”, argued the delegation from Brazil, “was necessary for the sake of WIPO, for its legitimacy and credibility as an institution”.⁴⁶

Discussions of the proposed development agenda were highly polarised. The Friends of Development questioned the exclusive emphasis placed in WIPO’s mandate on intellectual property *protection*, arguing that there should be a corresponding emphasis on *development* in WIPO’s mandate and activities. Such a mandate would require WIPO to engage more fully on the question of whether, how and if intellectual property contributes to economic and national development. As May notes,

“this attempt to shift the WIPO’s priorities [was] underpinned by the argument that as the WIPO is a specialised agency of the UN it should share the UN’s focus on global developmental issues rather than a more technical focus on the governance and protection of [intellectual property rights]”.⁴⁷

⁴¹ Latif, “The Emergence of the A2K Movement” in Krikorian and Kapczynski (eds), *Access to Knowledge in the Age of Intellectual Property* (2010), pp.110–112.

⁴² CPTech, “Access to Knowledge”, available at <http://www.cptech.org/a2k/a2k-debate.html> [Accessed October 29, 2016].

⁴³ “Proposal by Argentina and Brazil for the Establishment of a Development Agenda for WIPO”, August 27, 2004, WIPO Doc. WO/GA/31/11; “Proposal to Establish a Development Agenda for WIPO: An Elaboration of Issues Raised in Document WO/GA/31/11”, April 6, 2005, WIPO Doc. IIM/1/4. The Friends of Development included: Argentina, Bolivia, Brazil, Cuba, the Dominican Republic, Ecuador, Egypt, Iran, Kenya, Peru, Sierra Leone, South Africa, the Republic of Tanzania and Venezuela.

⁴⁴ WIPO Convention Establishing the World Intellectual Property Organization 1967.

⁴⁵ Christopher May, *The World Intellectual Property Organization: Resurgence and the Development Agenda* (Abingdon: Routledge, 2006), p.4.

⁴⁶ WIPO, “WIPO General Assembly, Thirty-First (15th Extraordinary) Session, Geneva, September 27 to October 5, 2004”, October 5, 2004, WIPO Doc. WO/GA/31/15, Item 153.

⁴⁷ May, *The World Intellectual Property Organization* (2006), p.4.

Eventually, while some country delegates still bristled at the idea that intellectual property could be anything but beneficial to development, proposals that WIPO should take into account “a balance between costs and benefits” of intellectual property protection were allowed to go forward.⁴⁸ Development was raised to an important, if not central, concern at WIPO following the establishment of 45 agreed recommendations as the WIPO Development Agenda in 2007.⁴⁹

The rise and fall of development agendas

While some of the reasons for the rise and fall of the four “development agendas” that have concerned international copyright negotiators have already been indicated, they deserve a more systematic analysis. A traditional critical political economic analysis might suggest that economic factors—increasing industrialisation, the globalisation of capital and the strengthening of (intellectual) property rights—explain the rise and continuing dominance of the fourth “economic” development agenda and the dwarfing of concerns with authors’ rights, institutional development and cultural development. This analysis may, in broad strokes, be quite fair. However, it is possible to break the analysis down further, examining the ideas, interests and institutions that have played into the agendas of development that have dominated international copyright for the past 130-odd years.

Ideas

Historically situated conceptualisations and ideas about “development” have helped to set the “development agendas” that have dominated international copyright. When development was introduced into the vocabulary of intellectual property protection following Truman’s speech in 1949 and WIPO’s responses to the demands of developing countries in the 1960s, “development” became a contested term, inextricably linked to debates about political ideology, decolonisation and globalisation. WIPO and many international institutions, including the international unions established in the nineteenth century to globalise the regulation of copyright, patents, the postal services and telecommunications, had been founded before the project of “development” became hegemonic in international institutions. None had been established with development as a core mandate. Even the IMF, when established in 1944, did not distinguish between its members based on level of development.⁵⁰ When development was ultimately introduced into the vocabulary of intellectual property, it therefore existed in tension with a pre-existing mandate of protecting authors’ rights.

In some ways, the classification systems that have emerged remain fraught; how does one measure something as amorphous as “development”? The UN General Assembly has never established a taxonomy of development for its full membership; it established a list of least-developed countries (LDCs) in 1971, but otherwise has left precise definitions to other international organisations.⁵¹

While the term “developing country” was informally used prior to the mid-twentieth century, formal country classification systems related to the concept of “development” arose only after the Second World War, along with decolonisation and the rise of development economics tied to Truman’s vision.⁵² Various terms came to be used: “pioneers”, “latecomers”, “Third World”, “low-income”, “low-development”, “less developed” and “developing”, to name a few.⁵³

⁴⁸“Provisional Committee on Proposals Related to a WIPO Development Agenda (PCDA), Fourth Session, Geneva, June 11 to 15, 2007”, September 4, 2007, WIPO Doc. PCDA/3/3 Prov., Annex I, Items 10 and 18.

⁴⁹WIPO, “The 45 Adopted Recommendations under the WIPO Development Agenda”, available at <http://www.wipo.int/ip-development/en/agenda/recommendations.html> [Accessed October 29, 2016].

⁵⁰Nielson, *Classifications of Countries Based on Their Level of Development* (2011), p.14.

⁵¹Nielson, *Classifications of Countries Based on Their Level of Development* (2011), p.7.

⁵²Nielson, *Classifications of Countries Based on Their Level of Development* (2011), p.7.

⁵³Nielson, *Classifications of Countries Based on Their Level of Development* (2011), pp.7–16.

Such categories have become conceptual maps or regimes of representation that guide the work of actors in international affairs, including states, NGOs and international institutions, with complex implications and consequences. Insofar as they take “development” and related projects as their mission, international institutions, states and NGOs often work to foster coalitions and communities with common interests and endeavours in various visions of development. They also perpetuate not only the legal and economic dominance of countries considered to be “developed”, but also the hegemonic idea of those countries’ superiority and the superiority of their specific policies and ideas.⁵⁴

Thus, the rise of a particular concept of “development”, tied to decolonisation, to the project of decolonisation or neocolonialism, and to a whole set of categorisations and tools meant to serve these projects, has been critical. The hegemony of a concept of “development” that rose to dominance in the years following 1949 over other competing concepts of development continues to dominate the discourse of development on which the current WIPO Development Agenda is built.

Interests

It is clear that change in the structure and position of the interest groups implicated in international copyright relations has shaped the “development agendas” associated with international copyright. The globalisation and rising economic importance of key copyright industries has played a significant role, as has the globalisation of civil society actors and the rise of international regulatory institutions as actors in and of themselves.

Numerous studies have highlighted the significance and power of increasingly globalised industry groups in influencing the content and direction of international copyright normsetting.⁵⁵ The rising centrality of global business coalitions certainly plays a key role in the rise of the fourth “economic” development agenda in international copyright.

International copyright has, at the same time, also been shaped by its interactions with civil society actors.⁵⁶ The history of the negotiation of the Berne Convention exhibits a number of trends in this regard. First, the number and types of NGO participation has broadened. At the founding of the Berne Convention, a single NGO, the Association Littéraire et Artistique Internationale (ALAI), was foundational participated substantively and was foundational. Today, international copyright negotiation at WIPO entails the participation of many NGOs, representing a (somewhat) broader range of interest groups than the relatively narrow range of rights holder associations that dominated earlier negotiations. At the same time, industry groups have, since 1967, come to take up a dominant presence among the NGOs represented at WIPO, outnumbering the civil society and professional groups that were once far more central. The format of NGO participation has also changed: while early negotiations permitted NGOs to make advance written proposals, which were taken into account with the official programme of the conference, this practice ended in 1948. The reduced ability to have written proposals taken into account has been accompanied by a rise in NGO personal representation at negotiations, first within country delegations and then as independent delegations. This participation in independent delegations entails, however, a loss of influence and ability to speak and make written proposals compared with participation within country delegations.

As a result of these patterns, fundamental decisions made early on took place in an environment of extremely unbalanced and circumscribed NGO presence. Those NGOs that were party to negotiations, or whose views were collected by the international office of the Berne Union, were able to make detailed written proposals that were prominently presented in the preparatory documents for the conference. These

⁵⁴ Escobar, *Encountering Development* (1995), p.8.

⁵⁵ Peter Drahos with John Braithwaite, *Information Feudalism: Who Owns the Knowledge Economy?* (London: Earthscan, 2002); Susan K. Sell, *Private Power, Public Law: The Globalization of Intellectual Property Rights* (Cambridge: Cambridge University Press, 2003).

⁵⁶ For greater detail on the history of NGO engagement in international copyright negotiations, see Bannerman, *International Copyright and Access to Knowledge* (2015), ch.8.

were predominantly rights holder groups. The increased interest in both economic and technological development in the 1950s and 1960s coincided with the declining prominence of NGO written proposals, and the sidelining of many NGOs into independent delegations which could not make proposals and rarely, or only secondarily, spoke. These patterns have likely contributed to the continuous strengthening of the focus on economic, state and industrial development alongside the weakening of the direct focus on writers, artists and authors' rights and on literary, artistic and cultural development.

Recent trends have been towards greater influence on the part of NGOs seeking to enshrine principles of access in international law. One significant example is the success of the World Blind Union and others in establishing the Marrakesh Treaty in 2013. As of this writing, it remains to be seen whether the Marrakesh Treaty will be successful in establishing or improving access to works by the blind and visually impaired. However, the Marrakesh Treaty represents the first time an international copyright treaty has been established with a primary purpose of establishing a principle inspired and serving primarily a civil society group (in this case, those with visual impairments) other than intellectual property rights holders. The treaty thus signifies the rising involvement and success of civil society actors in international copyright.

Institutions

The institutional structures mediating the interactions of ideas and interested actors in international copyright are also significant in influencing the rise of particular "development agendas" in international copyright. May and Sell argue that the international mechanisms for balancing private interests "with some nascent notion of a (global) *public interest*" "remain difficult to enact at the global level".⁵⁷ As a result, May and Sell argue, "further harmonization of intellectual property rights at the global level is not only premature but is unlikely to be just".

Contributing to the problem are a number of practices and provisions adopted under the Berne Union that are historically rooted in a broader system of colonialism.⁵⁸ Most significantly, a number of provisions and practices have stood in the way of Union countries' ability to exit the convention, creating a ratcheting or trap-like effect that has prevented the development of alternative norms and models.⁵⁹ Further, WIPO plays a role in socialising, educating and building processes that can shift or alter the possibilities available to state actors, shifting the interests that may come to the forefront of state assessments of national interests and priorities.⁶⁰ WIPO has, in assisting, educating and socialising officials, diplomats and bureaucrats, played a role in shaping the construction and calculation of national interests. Its growing role in this regard, extended under the 2007 Development Agenda, may even out-pace its role as a forum for setting international intellectual property norms.⁶¹ Finally, the growing complexity of WIPO's governance structure, the number and range of bodies that make up the organisation, the number and range of topics of negotiation and discussion, and the rules and procedures involved in participating in the organisation all make the task of participation, especially by less powerful states and NGOs, difficult.⁶² Such institutional features have contributed to the underdevelopment of the institutional mechanisms of global polity in the field of copyright, and to the continued operation and path dependency of institutional structures that resist their further development. Such institutional features help to explain the extent to which the economic and industrial development agenda has become dominant and locked in at WIPO.

⁵⁷ Christopher May and Susan K. Sell, *Intellectual Property Rights: A Critical History* (Boulder: Lynne Rienner Publishers, 2006), p.218.

⁵⁸ For greater detail on the institutional aspects of international copyright negotiations, see Bannerman, *International Copyright and Access to Knowledge* (2015), ch.10.

⁵⁹ John Braithwaite and Peter Drahos, "Ratcheting Up and Driving down Global Regulatory Standards" (1999) 42 *Development* 109.

⁶⁰ Kathleen Ann Thelen and Sven Steinmo, "Historical Institutionalism in Comparative Politics" in Sven Steinmo, Kathleen Ann Thelen and Frank Longstreth (eds), *Structuring Politics: Historical Institutionalism in Comparative Analysis* (New York: Cambridge University Press, 1992).

⁶¹ May, *The World Intellectual Property Organization* (2006), p.35.

⁶² Center for International Environmental Law, *A Citizen's Guide to WIPO* (2007), p.6. Similar problems occur at the WTO: see Carolyn Deere Birkbeck, "Developing Country Coalitions in the WTO: Strategies for Improving the Influence of the WTO's Weakest and Poorest Members", available at <http://www.ideascentre.ch/wp-content/uploads/2013/10/Coalitions-paper-final.pdf> [Accessed October 29, 2016].

Conclusion

The concept of “development” once had a broad variety of usages in the WIPO context, signifying a number of different “development agendas”: the building of treaty norms, treaty membership, intellectual property institutions and a sense of international community. At WIPO, in part as a result of the Development Agenda established in 2007, the idea of “development” has narrowed in ways that, on the one hand, allow greater attention to be paid to crucial questions of public health, education, wealth and employment, while, on the other hand, obscuring types of development that had previously played a larger role, such as the development of international institutions, or the development of arts and culture.

The history of the concept of “development” in international copyright reveals that the development of markets—particularly transnational ones—has taken priority over the development of either the political community or the institutional mechanisms to respond to transnational publics concerned with various forms of development. The “development agenda” of market interests, as opposed to state and civil society interests, has come to be dominant.

The development of a sense of common cause or international community is currently inhibited by the strong ideological divides currently manifested in WIPO in debates about the links between economic development and intellectual property and WIPO’s mandate in general. Divisions over the links between intellectual property and development have always existed, but have come to the forefront during WIPO debates over the formation and implementation of a development agenda for WIPO. While there are also competing visions of development within the A2K movement itself, including the competing visions of states and NGOs, and “developed” and developing countries, these visions are tied together by the theme of A2K, and this has proven to be a powerful collective action frame.⁶³ The political, cultural and social dangers and potentials of new technologies have created opportunities for new technology companies, NGOs and A2K advocates to engage with and contest dominant concepts of development that arose after 1949 and that are still salient at WIPO.

⁶³ Kapczynski, “The Access to Knowledge Mobilization and the New Politics of Intellectual Property” (2008) 117 Yale L.J. 804.

Prioritising Human Development in African Intellectual Property Law

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☞ Access to medicines; Africa; Cultural identity; Developing countries; Education; Food; Intellectual property; International law; TRIPS

Introduction

The World Trade Organization (WTO) incorporated intellectual property into the trade regime through the Agreement on Trade-Related Aspects of Intellectual Property Rights 1994 (TRIPS).¹ Since then, various commentators have questioned whether the WTO standards for intellectual property are suitable for developing countries.² Concerns relating to health and access to medicines have generated a dialogue about the appropriate balance between the interests of intellectual property producers and the users of goods that are protected by intellectual property rights.³ Since most African nations are developing countries, the question of how the intellectual property standards, as harmonised through TRIPS, will affect developing countries is particularly salient for African nations.

The global intellectual property structure has been criticised for requiring developing nations to adopt intellectual property standards that are appropriate for industrialised countries.⁴ Some commentators have observed that industrialised nations, such as the United States, developed their economies by borrowing from others, but that through the use of globalised intellectual property standards, they have effectively limited other nations from doing the same.⁵ This article does not aim to revisit the question of the suitability of the existing intellectual property standards for developing countries. Nor does it seek to analyse whether, as a general proposition, intellectual property rights should be expanded or reduced in developing nations. Rather, the objective is to consider how, taking into consideration their existing international obligations, African countries can implement intellectual property laws that work for their citizens and that align with their development priorities.

Developing countries and least developed countries were given an additional five or 10 years respectively, before they had to implement their intellectual property obligations under TRIPS.⁶ Now, more than 20 years since TRIPS came into force, many African nations have implemented intellectual property laws that meet the WTO requirements. As they work to achieve the Sustainable Development Goals (SDGs),

* This article draws on research from my forthcoming article, J. Janewa OseiTutu, "Intellectual Property for Human Development" (2016) 105 Ky. L.J.

¹ TRIPS took effect on January 1, 1995.

² Peter K. Yu, "The International Enclosure Movement" (2007) 82 Ind. L.J. 828, 855–857.

³ Jeremy de Beer, Chidi Oguamanam and Tobias Schonwetter, "Innovation, Intellectual Property and Development Narratives in Africa" in Jeremy de Beer, Chris Armstrong, Chidi Oguamanam and Tobias Schonwetter (eds), *Innovation & Intellectual Property: Collaborative Dynamics in Africa* (Cape Town: Juta Academic, 2014), p.7.

⁴ Commission on Intellectual Property Rights, *Integrating Intellectual Property Rights and Development Policy: Report of the Commission on Intellectual Property Rights* (2002), pp.22, 162.

⁵ Llewellyn Joseph Gibbons, "Do as I Say (Not as I Did): Putative Intellectual Property Lessons for Emerging Economies from the Not So Long Past of the Developed Nations" (2011) 64 SMU L. Rev. 923, 936–937.

⁶ Agreement on Trade-Related Aspects of Intellectual Property Rights 1994 arts 66, 67. Developing countries were given a delayed implementation period of five years from the time TRIPS came into force. Least developed countries were given a delayed implementation period of 10 years, and they now have until 2021 to implement their intellectual property obligations. WTO, "Responding to Least Developed Countries' Special Needs in Intellectual Property", available at https://www.wto.org/english/tratop_e/trips_e/ldc_e.htm [Accessed October 27, 2016].

which were adopted in 2015, African nations must consider how to adjust their intellectual property laws to suit their development needs.⁷ African countries can contribute their own approaches to intellectual property so that the international intellectual property system evolves in a way that works for their developing economies. African nations could expressly state that human development is one of the objectives of their national intellectual property laws, and include similar language in any applicable regional instruments. This could help to ensure that African intellectual property laws and policies facilitate the critical objective of human development.

Human development is a flexible term that has evolved over the past 25 years.⁸ However, it is most commonly defined as “enlarging people’s choices”.⁹ Improving the health, education and living standards of the population consistently form part of this goal of enlarging people’s choices.¹⁰ The UN Human Development Index (HDI) assesses economic gains, as well as health and educational outcomes in determining how well a nation is doing in terms of its progress towards improving the human condition. Thus, human development, as it is used here, includes economic development, as well as progress in the areas of health and education. This article will argue that African countries should explicitly invoke human development as an objective of their intellectual property laws. This will enable better accounting for human development and other national priorities within the framework of implementing global intellectual property standards, such as those advanced by TRIPS.

This article will begin by describing some of the intellectual property concerns that pertain to African nations and to other developing countries. This will be followed by a discussion about why human development should be a priority for African nations in the development and implementation of their intellectual property laws and policies. Finally, the article will conclude with some preliminary strategies for incorporating human development into national African intellectual property laws and policies.

Human development and international intellectual property

Harmonised intellectual property standards have been a source of contention. Since the advent of the WTO, commentators have debated whether the intellectual property standards contained in TRIPS are beneficial for all nations. In particular, some commentators have observed that these standards may not be appropriate for developing countries. These minimum standards of protection include, for instance, a patent term of 20 years that must be available for all fields of technology.¹¹ In addition to other changes, TRIPS introduced minimum standards of protection for trademarks, geographical indications, integrated circuit topographies and copyright protection for databases.¹²

Among the predicted benefits of the WTO minimum standards to the developing countries was increased foreign direct investment, and therefore increased economic development. The effects of intellectual property rights in developing countries are not clear, with some empirical studies finding that stronger intellectual property protection does increase foreign direct investment and technology transfer.¹³ However, this appears to depend on a variety of factors, including the level of technological development; the evidence of benefit to developing countries is mixed. Whether globally harmonised intellectual property

⁷ Francis Gurry, “Intellectual Property for an Emerging Africa”, *WIPO Magazine*, November 2015.

⁸ The United Nations Development Programme has been producing *Human Development Reports* since 1990.

⁹ Sabina Alkire, “Background Paper for the 2010 Human Development Report” (2010) Oxford Poverty and Human Development Initiative, Working Paper No.36, p.36.

¹⁰ Alkire, “Background Paper for the 2010 Human Development Report” (2010) Oxford Poverty and Human Development Initiative, Working Paper No.36, p.37.

¹¹ Agreement on Trade-Related Aspects of Intellectual Property Rights 1994 arts 27(1), 33.

¹² Agreement on Trade-Related Aspects of Intellectual Property Rights 1994 arts 10, 15, 22.

¹³ Alexi Maxell and David Riker, “The Economic Implications of Strengthening Intellectual Property in Developing Countries” (2014) *J. Int’l Com. & Econ.*, p.8, available at https://www.usitc.gov/publications/332/journals/vol_vi_article5.pdf [Accessed October 27, 2016]; Anja Breitwieser and Neil Foster, “Intellectual Property Rights, Innovation and Technology Transfer: A Survey” (2012) Vienna Institute for International Economic Studies, Working Paper No. 88, pp.38–40, available at <http://wiiw.ac.at/intellectual-property-rights-innovation-and-technology-transfer-a-survey-dlp-2646.pdf> [Accessed October 27, 2016].

standards are more beneficial for developed or developing countries remains to be seen and goes beyond the scope of this article. Nonetheless, developing countries have the flexibility to devise intellectual property law with a view to prioritising the needs of their citizens.¹⁴

Advocates for human development and human rights have made inroads towards making global intellectual property bodies incorporate human development interests.¹⁵ This has largely been due to various critiques of the effect of harmonised standards on developing countries. The main points of criticism, as it pertains to human development, can be categorised as relating to access and to exploitation. These two issues are briefly described below.

Access concerns

Medicines

The effect of intellectual property rights on public health and access to medicines are among the main concerns about the international harmonisation of intellectual property standards for developing countries. For example, the health crisis relating to HIV and AIDS generated questions about the potential for increased costs and the limited availability of patented medicines for those consumers in developing countries who could not afford the high prices. When the South African Government decided to revise its laws to make the medications available to its citizens at a low cost, the pharmaceutical industry attempted to pressure the South African Government not to pursue that course of action.¹⁶ In response to some of the access concerns, the WTO membership issued the Doha Declaration on the TRIPS Agreement and Public Health 2001.¹⁷ This statement by the member states aimed to clarify that TRIPS cannot, and should not, interfere with member's attempt to protect and promote public health.¹⁸

Food and Agriculture

Another area that has generated criticism is in the area of food and agriculture. Large multinational companies, such as Monsanto, have been involved in litigation with farmers regarding the use of the offspring of their patented glyphosate-resistant seeds.¹⁹ From a development perspective, this raises concerns about traditional farming practices of harvesting and reusing seeds.²⁰ From the perspective of patent law, the farmer cannot plant the second-generation genetically modified seed, but must pay for new seeds.²¹ Beyond the technical analysis of patent law, these decisions have implications for farmers, and as the amount of genetically modified crops increases, there may be human development implications as it relates to access to food.²²

¹⁴ Agreement on Trade-Related Aspects of Intellectual Property Rights 1994 art.1.1.

¹⁵ This includes recognition of the right to health, the right to education and the right to culture.

¹⁶ Henri E. Cauvin, "Trial in AIDS Drug Lawsuit Opens in Pretoria", *New York Times*, March 6, 2001.

¹⁷ Doha Declaration on the TRIPS Agreement and Public Health 2001, November 20, 2001, WT/MIN(01)/DEC/2.

¹⁸ Doha Declaration on the TRIPS Agreement and Public Health 2001 art.4 provides: "We agree that the TRIPS Agreement does not and should not prevent members from taking measures to protect public health. Accordingly, while reiterating our commitment to the TRIPS Agreement, we affirm that the Agreement can and should be interpreted and implemented in a manner supportive of WTO members' right to protect public health and, in particular, to promote access to medicines for all."

¹⁹ *Bowman v Monsanto Co* 133 S. Ct. 1761 (2013).

²⁰ Chidi Oguamanam, "Agro-Biodiversity and Food Security: Biotechnology and Traditional Agricultural Practices at the Periphery of International Intellectual Property Regime Complex" (2007) *Mich. St. L. Rev.* 215, 244–245.

²¹ *Bowman v Monsanto Co* 133 S. Ct. 1761, 1764 (2013).

²² Oguamanam, "Agro-Biodiversity and Food Security" (2007) *Mich. St. L. Rev.* 215, 244–245.

Educational materials

Finally, some commentators have identified development concerns regarding copyrighted materials and education.²³ This is a less salient issue, in part because there are exceptions for fair use, as well as specific exceptions to copyright for educational uses.²⁴ However, the fair use exception allows a limited amount of the work to be reproduced, and it cannot interfere with the copyright owner's exploitation of the work.²⁵ In addition, materials that are online may be protected by technological measures that limit their availability.²⁶ Alternatively, the copyrighted works may be subject to notice and take down if there is an allegation of copyright infringement, thereby rendering them publicly inaccessible.²⁷

Exploitation concerns

The role of intellectual property in facilitating the exploitation of the culture and knowledge of African nations as well as other developing countries has also been a source of controversy. This section will briefly outline some examples of the problem. The article will first discuss the exploitation of culture, particularly as it relates to trademark and copyright law. Next, the discussion will turn to traditional knowledge, particularly in relation to patent law.

Cultural works and names

A recent example of cultural exploitation of an African group involves the Maasai.²⁸ The Maasai are an indigenous group based in Kenya and Tanzania.²⁹ The Maasai wear certain distinctive and identifiable traditional clothing and colours.³⁰ The famous designer, Louis Vuitton, received some criticism when he launched a "Maasai" clothing line that used colours, designs and styles that were based on traditional Maasai dress.³¹ The Maasai name has also been used by Land Rover, which makes automobiles, as well as by various other companies. These uses of the Maasai name and culture have occurred without the permission or collaboration of the Maasai.³²

In response to such developments, a non-governmental organisation called Light Years IP has launched a Maasai Intellectual Property Initiative.³³ Among other things, their goal is to help the Maasai regain control over the Maasai cultural brand, and to generate income from the brand in way that is acceptable to the Maasai people.³⁴ This involves educating the Maasai about ways that they can use intellectual property laws to protect their interests.³⁵

²³ Margaret Chon, "Intellectual Property from Below: Copyright and Capability for Education" (2007) 40 U.C. Davis L. Rev. 803, 821–823.

²⁴ Agreement on Trade-Related Aspects of Intellectual Property Rights 1994 art.13; Berne Convention for the Protection of Literary and Artistic Works 1886 (Paris Act 1971) arts 9, 10.

²⁵ Agreement on Trade-Related Aspects of Intellectual Property Rights 1994 art.13.

²⁶ WIPO Copyright Treaty 1996 art.11.

²⁷ Rebecca Alderfer Rock, "Fair Use Analysis in DMCA Takedown Notices: Necessary or Noxious?" (2014) 86 Temp. L. Rev. 691, 692.

²⁸ Tania Phipps Rufus, "Companies Accused of Exploiting Cultural Identity of the Maasai", *The Guardian*, August 8, 2013.

²⁹ For more information about the Maasai, see the Maasai Association at <http://www.maasai-association.org/maasai.html> [Accessed October 27, 2016].

³⁰ During my time in Tanzania, it was quite evident when someone was dressed in traditional Maasai clothing. The clothing is distinctive not only from Western clothing, but also from other traditional African outfits.

³¹ Tania Phipps Rufus, "Companies Accused of Exploiting Cultural Identity of the Maasai", *The Guardian*, August 8, 2013.

³² Cordelia Hebblethwaite, "Brand Maasai, Why Nomads Might Trademark Their Name", available at <http://www.bbc.com/news/magazine-22617001> [Accessed October 17, 2016]: "Those companies may be using the Maasai brand in ways that really do enhance their business, so it's reasonable for the Maasai to say, 'Well, why aren't you coming to talk to us? Why aren't you asking [for] our permission? Why don't you engage with us?'"

³³ Meg Brindle and Ron Layton, "The Maasai Intellectual Property Initiative: Reclaiming the Maasai IP for Kenyan and Tanzanian Maasai", available at <http://lightyearsip.net/files/maasai-workbook.pdf> [Accessed October 17, 2016].

³⁴ Brindle and Layton, "The Maasai Intellectual Property Initiative", available at <http://lightyearsip.net/files/maasai-workbook.pdf> [Accessed October 17, 2016], p.7.

³⁵ Brindle and Layton, "The Maasai Intellectual Property Initiative", available at <http://lightyearsip.net/files/maasai-workbook.pdf> [Accessed October 17, 2016], pp.15–16.

Instead of intellectual property laws facilitating this perceived cultural exploitation, intellectual property laws should work to improve the socio-economic condition of the Maasai, many of whom live in poverty. Clearly, this would be a use of intellectual property law that promotes human development. Trademark is one avenue that the Maasai could employ if they were to use their mark in commerce.³⁶ Scholars have also explored the use of geographical indications to promote and protect African goods, such as coffee and cocoa.³⁷

Traditional knowledge

For several years now, the World Intellectual Property Organization (WIPO) membership has discussed an international legal instrument to protect traditional knowledge and traditional cultural expressions.³⁸ Neither the efforts at WIPO nor the prior efforts at UNESCO have been successful.³⁹

Traditional knowledge is knowledge that is passed down within an identifiable community from one generation to another.⁴⁰ Traditional cultural expressions also pertain to an identifiable community and continue within the community through intergenerational transmission.⁴¹ Some examples of traditional knowledge include knowledge of the use of the hoodia cactus plant to stave off hunger. Traditional songs and dances, or fabrics, such as Ghanaian kente cloth or Maasai blankets, are examples of traditional cultural expressions.

Critics have noted that the international intellectual property laws are ineffective at preventing bio-piracy and cultural misappropriation.⁴² Indeed, intellectual property laws have been tools in facilitating cultural misappropriation. Traditional knowledge and traditional cultural expressions do not easily fit within the current intellectual property framework. This is because the knowledge pertaining to the genetic materials or practices, and the cultural works cannot always receive protection under intellectual property law because the knowledge is not novel in the patent law sense and the cultural works may not meet the requirements for originality under copyright law.⁴³ Hence, researchers and institutions have been able to acquire genetic materials and make use of the know-how or culture of traditional and indigenous communities without their consent and without sharing the benefits.⁴⁴

Commentators observe that the international intellectual property system has prioritised certain types of knowledge.⁴⁵ Intellectual property has expanded to protect information that benefits multinational corporations, while attempts to protect the knowledge generated by indigenous and local communities have been stalled. For example, TRIPS explicitly recognises protection for databases, and more recent agreements, such as the Trans-Pacific Partnership Agreement 2016, include provisions to protect

³⁶ TRIPS art.15.1 states: “Any sign, or any combination of signs, capable of distinguishing the goods or services of one undertaking from those of other undertakings, shall be capable of constituting a trademark” Article 16.1 further states: “The owner of a registered trademark shall have the exclusive right to prevent all third parties not having the owner’s consent from using in the course of trade identical or similar signs for goods or services which are identical or similar to those in respect of which the trademark is registered where such use would result in a likelihood of confusion.”

³⁷ Chidi Oguamanam and Teshar Dagne, “Geographical Indication (GI) Options for Ethiopian Coffee and Ghanaian Cocoa” in de Beer, Armstrong, Oguamanam and Schonwetter (eds), *Innovation & Intellectual Property* (2014), pp.99–101.

³⁸ J. Janewa Osei-Tutu, “A Sui Generis Regime for Traditional Knowledge” (2011) 15 Marq. Intell. Prop. L. Rev. 147.

³⁹ Daniel Wuger, “Prevention of Misappropriation of Intangible Cultural Heritage through Intellectual Property Laws” in J. Michael Finger and Phillip Shuler (eds), *Poor People’s Knowledge: Promoting Intellectual Property in Developing Countries* (Oxford: Oxford University Press, 2004), p.184.

⁴⁰ WIPO, “Traditional Knowledge”, available at <http://www.wipo.int/tk/en/tk/> [Accessed October 27, 2016].

⁴¹ “Traditional cultural expressions (TCEs), also called ‘expressions of folklore’, may include music, dance, art, designs, names, signs and symbols, performances, ceremonies, architectural forms, handicrafts and narratives, or many other artistic or cultural expressions.” WIPO, “Traditional Cultural Expressions”, available at <http://www.wipo.int/tk/en/folklore/> [Accessed October 27, 2016].

⁴² Keith Aoki, “Neocolonialism, Anticommons, and Biopiracy in the (Not So Brave) New World Order of International Intellectual Property Protection” (1998) 6 Ind. J. Global Leg. Stud. 11, 47–49.

⁴³ Osei-Tutu, “A Sui Generis Regime for Traditional Knowledge” (2011) 15 Marq. Intell. Prop. L. Rev. 147, 164.

⁴⁴ For a discussion of the hoodia cactus, neem, and other controversies, see Olufunmilayo B. Arewa, “TRIPS and Traditional Knowledge: Local Communities, Local Knowledge, and Global Intellectual Property Frameworks” (2006) 10 Marq. Intell. Prop. L. Rev. 155, 171–178.

⁴⁵ Olufunmilayo B. Arewa, “Intellectual Property and Conceptions of Culture” (2012) 4 WIPO J. 10, 13.

pharmaceutical data.⁴⁶ Bilateral investment treaties that include intellectual property in the meaning of investment allow companies to sue countries for placing limits on their intellectual property.⁴⁷

African countries and other developing countries may wish to protect their indigenous knowledge to generate wealth, and promote human development in their communities, but have been unable to secure international protection for this type of knowledge. From a human development perspective, it would make sense to protect and promote traditional knowledge, whereas databases and pharmaceutical data have utility primarily for private commercial enterprises.

These are a few of the areas where international intellectual property law has not supported human development, but rather has generated concerns about the implications of globally harmonised intellectual property laws for developing countries. The next section will discuss why promoting human development should be an integral aspect of African intellectual property laws.

Why prioritise human development in African intellectual property laws and policies?

According to certain studies, in 2010, intellectual property-intensive industries accounted for more than 27 million jobs in the United States and more than five trillion dollars in value added, or nearly 35 per cent of the US gross domestic product.⁴⁸ In other words, protecting intellectual property can be a source of wealth generation and economic development. However, it can also be a means for exclusion. The consequences for those who are excluded could include negative effects on health and education and a lower overall standard of living. Thus, intellectual property rights can have salutary and deleterious effects on human development.

Human development is critical for African countries

Human development matters for every nation. However, it is a priority for African nations.⁴⁹ Human development is critical for African countries because many of them score low on the HDI, with many people subsisting on very low incomes.⁵⁰

According to the United Nations Development Programme (UNDP), more than 40 per cent of the population in countries in sub-Saharan Africa live in extreme poverty.⁵¹ Africa also has a youthful population, which means that it is a continent with a tremendous amount of potential.⁵² The continent has more people under the age of 20 than any other place in the world. However, if the young people do not have opportunities to advance and improve their condition, this tremendous potential will be lost.⁵³ African innovations can help propel the continent forward. For these reasons, it is critical for African nations to ensure that their intellectual property laws facilitate human development.⁵⁴

⁴⁶ Agreement on Trade-Related Aspects of Intellectual Property Rights 1994 art.10; Trans-Pacific Partnership Agreement 2016 art.18.50.

⁴⁷ Cynthia M. Ho, "Sovereignty Under Siege: Corporate Challenges to Domestic Intellectual Property Decisions" (2014) 30 Berkeley Tech. L.J. 213, 216.

⁴⁸ US Patent and Trademark Office, "Intellectual Property and the US Economy", available at http://www.uspto.gov/sites/default/files/news/publications/IP_Report_March_2012.pdf [Accessed October 27, 2016].

⁴⁹ African Development Bank, *African Development Report 2015* (Abidjan: African Development Bank, 2015), p.214.

⁵⁰ African Development Bank, *African Development Report 2015* (2015), p.xxviii.

⁵¹ United Nations Development Programme (UNDP), "About Sub-Saharan Africa", available at <http://www.africa.undp.org/content/rba/en/home/regioninfo.html> [Accessed October 27, 2016].

⁵² Andrews Atta Asamoah, "Head to Head: Is Africa's Young Population a Risk or an Asset?", available at <http://www.bbc.com/news/world-africa-25869838> [Accessed October 27, 2016].

⁵³ Kingsley Ighobor, "Africa's Youth: A 'Ticking Time Bomb' or an Opportunity?", available at <http://www.un.org/africarenewal/magazine/may-2013/africa%E2%80%99s-youth-%E2%80%9Cticking-time-bomb%E2%80%9D-or-opportunity> [Accessed October 27, 2016].

⁵⁴ Organisations that work on African matters have already been engaging dialogue around this issue. For instance, in March 2014, the Economic Commission for Africa initiated an online conversation about Africa's youthful population, innovation and development. United Nations Economic Commission for Africa, "Youth and Innovation in Africa: Harnessing the Possibilities of Africa's Youth for the Transformation of the Continent: Summary Report of Online Discussion", available at <http://www.uneca.org/publications/youth-and-innovation-africa-harnessing-possibilities-africa%E2%80%99s-youth-transformation#> [Accessed October 27, 2016].

Human development can have different meanings. As discussed above, the term is used here as it is defined by the United Nations for the purposes of its *Human Development Report* and the HDI.⁵⁵ It is multi-faceted and includes progress in terms of health, education and economic wealth.⁵⁶ These objectives are aligned with the patent and copyright goals of promoting innovation, progress and economic development.

There are several African countries that are ranked at the mid-level of the HDI. This includes nations such as Botswana, Gabon, South Africa, Congo and Ghana.⁵⁷ However, the African continent is home to many of the nations that are categorised as “low” in terms of human development. Near or at the bottom of the low category are African nations such as Gambia, Sierra Leone, Guinea, Burkina Faso, Burundi, Chad, Eritrea, Central African Republic and Niger. Advancing human development cannot be a peripheral goal for these countries. It must be a central objective, including in their intellectual property policy.

Human development: An overlooked objective of intellectual property

The existence of a relationship between development and intellectual property is not a contentious point. The WIPO members have adopted a Development Agenda in recognition of the connection between intellectual property and development.⁵⁸ WIPO also recently hosted an international conference to discuss the role of intellectual property in economic, social and cultural development.⁵⁹ In addition, intellectual property scholars have analysed the role of intellectual property from a human development perspective.⁶⁰ However, academic analysis of the role of intellectual property as it relates to development has largely been about economic development.⁶¹ The Trans-Pacific Partnership Agreement 2016 has a chapter on development, which recognises the relationship between science, technology, education and development while establishing a committee on development.⁶²

International intellectual property law must place greater emphasis on human development, of which economic development is but one aspect.⁶³ This means explicitly accepting that national policies that promote human development are aligned with the goals of international intellectual property law. Despite the fact that there is a relationship between human development and intellectual property rights, human development concerns have been primarily accommodated in the international intellectual property regime by recognising flexibilities and exceptions to intellectual property protection in international trade agreements.⁶⁴ This is too narrow a conception of intellectual property.

For instance, when nations have attempted to implement national policies aimed at promoting human development in the area of health, it has led to WTO challenges on the basis that intellectual property

⁵⁵ UNDP, “Human Development Index”, available at <http://hdr.undp.org/en/content/human-development-index-hdi> [Accessed October 27, 2016].

⁵⁶ The UNDP defines human development and the human development approach as “expanding the richness of human life, rather than simply the richness of the economy in which human beings live. It is an approach that is focused on people and their opportunities and choices”. UNDP, “What Is Human Development?”, available at <http://hdr.undp.org/en/humandev> [Accessed October 27, 2016]. Amartya Sen, a leading scholar in the development field, defines development as the freedom, which requires that people be free from poverty, tyranny and social deprivation. Amartya Sen, *Development as Freedom* (New York: Knopf, 1999), p.3.

⁵⁷ UNDP, “Human Development Index”, available at <http://hdr.undp.org/en/content/human-development-index-hdi> [Accessed October 27, 2016].

⁵⁸ “Proposal by Argentina and Brazil for the Establishment of a Development Agenda for WIPO”, August 27, 2004, WIPO Doc. WO/GA/31/11; WIPO, “Development Agenda for WIPO”, available at <http://www.wipo.int/ip-development/en/agenda/> [Accessed October 27, 2016].

⁵⁹ The WIPO Development Conference was held on April 7–8, 2016 in Geneva, Switzerland. Information about the conference is available at http://www.wipo.int/meetings/en/2016/ip_development_conference.html [Accessed October 27, 2016].

⁶⁰ Madhavi Sunder, *From Goods to a Good Life: Intellectual Property and Global Justice* (New Haven: Yale University Press, 2012); Margaret Chon, “Intellectual Property ‘from Below’: Copyright and Capability for Education” (2007) 40 U.C. Davis L. Rev. 803; Peter K. Yu, “A Tale of Two Development Agendas” (2009) 35 Ohio N.U. L. Rev. 465.

⁶¹ William M. Landes and Richard Posner, *The Economic Structure of Intellectual Property Law* (Cambridge: Harvard University Press, 2003); Maxwell and Riker, “The Economic Implications of Strengthening Intellectual Property in Developing Countries” (2014) J. Int’l Com. & Econ.

⁶² Trans-Pacific Partnership Agreement 2016 Ch.23.

⁶³ UNDP, *Human Development Report 2015* (New York: Oxford University Press, 2015), pp.1–3.

⁶⁴ Agreement on Trade-Related Aspects of Intellectual Property Rights 1994 arts 7 and 8.

rights were not being respected.⁶⁵ Interestingly, the nations that have attempted to defend policies designed to promote public health in the face of TRIPS intellectual property standards have been industrialised countries, such as Canada and Australia. Both of these nations rank highly on the HDI.⁶⁶ If Canada and Australia are unable to adequately regulate with much flexibility in areas of public concern without attracting litigation, the scenario would seem dire for less developed countries. The fact that these nations have been challenged to defend policies that limit intellectual property rights in order to promote human development underscores the need for African nations to carefully craft their intellectual property laws and policies to incorporate human development as an express objective. In this way, African nations may help shift the understanding of the role of intellectual property rights as promoting human development rather than as potentially conflicting with human development objectives.

The Doha Declaration on the TRIPS Agreement and Public Health 2001 effectively recognises that intellectual property should promote some aspects of human development because it states that TRIPS obligations should be interpreted and implemented in a manner that supports public health.⁶⁷ Health is one measure of human development.⁶⁸ Health should not be accommodated by intellectual property law as “an exception” to protection. As I have argued elsewhere, even without using measures which provide “flexibility” to protect public health, intellectual property laws and policies should promote human development as the norm rather than as an exception to the norm.

The UN SDGs, which build on the earlier Millennium Development Goals (MDGs), are also relevant to global intellectual property law. The MDGs were adopted in 2000 when the world’s nations came together in 2000 to create a plan to eradicate global poverty.⁶⁹ They developed eight MDGs with a 15-year plan for global development. In addition to eradicating poverty, the participants committed to efforts to improve health and education and to develop a global partnership for development.

In September 2015, the world’s nations agreed upon post-2015 development goals.⁷⁰ Among the objectives of the SDGs are to end poverty, end hunger, promote food security and health, promote sustainable development and reduce inequality among countries. The SDGs build on the MDGs of advancing health, education, poverty eradication, and gender and income equality.⁷¹

The development goals are pertinent to global intellectual property law. SDG 9, for instance, aims to “build resilient infrastructure, promote sustainable industrialization and foster innovation”.⁷² There are eight targets for SDG 9. Three of these targets appear to be directly related to intellectual property rights. These include the target of enhancing scientific research, promoting infrastructure development through technological and technical support, and supporting domestic technology development, research and

⁶⁵ “Canada—Patent Protection of Pharmaceutical Products”, Complaint by the European Communities and Their Member States, March 17, 2000, WT/DS114/R; Peter Martin, “Australia Faces \$50m Legal Bill in Cigarette Plain Packaging Fight with Philip Morris”, *Sydney Morning Herald*, July 28, 2015.

⁶⁶ In 2015, Australia was ranked second and Canada was ranked ninth.

⁶⁷ Doha Declaration on the TRIPS Agreement and Public Health 2001 art.4.

⁶⁸ The HDI “was created to emphasize that people and their capabilities should be the ultimate criteria for assessing the development of a country, not economic growth alone. The index can also be used to question national policy choices, asking how two countries with the same level of gross national income per capita can end up with different human development outcomes. These contrasts can stimulate debate about government policy priorities.” UNDP, “Human Development Index”, available at <http://hdr.undp.org/en/content/human-development-index-hdi> [Accessed October 27, 2016].

⁶⁹ United Nations, *The Millennium Development Goals Report 2015* (2015), p.4.

⁷⁰ One hundred and ninety-three UN members came together to agree on these goals. These SDGs were unanimously adopted by the UN member states. UN Division of Sustainable Development, “Press Materials for Sustainable Development Summit”, available at https://sustainabledevelopment.un.org/content/documents/838ISummit%20Daily%20wrap-up_26%20Sep_for%20Media.pdf [Accessed October 27, 2016].

⁷¹ UNDP, “Sustainable Development Goals”, available at <http://www.undp.org/content/undp/en/home/mdgoverview/post-2015-development-agenda/> [Accessed October 27, 2016].

⁷² UNDP, “Goal 9: Industry, Innovation, Infrastructure”, available at <http://www.undp.org/content/undp/en/home/mdgoverview/post-2015-development-agenda/goal-9.html> [Accessed October 27, 2016].

innovation.⁷³ The Dakar Declaration on Intellectual Property for Africa, which was adopted in 2015, also emphasises the connection between development and intellectual property.⁷⁴

The next section will provide some preliminary suggestions about ways to make human development an integral part of intellectual property law and policy in African countries.

Intellectual property that aligns with African human development goals

As I have argued elsewhere, improving the human condition is an end goal that should be a factor in intellectual property policy and interpretation of intellectual property obligations.⁷⁵ This is important for not only African countries, but also other developing regions, where human development is equally critical. What is suggested here, therefore, is that part of what is required is a departure from the conventional and predominant approach to evaluating intellectual laws and policies fixated largely, or solely, on the economic aspects of intellectual property protection.

Guided by the African Union innovation strategy

The African Union (AU) has prepared an innovation strategy that was adopted by AU heads of state in 2014.⁷⁶ The AU is an important African organisation because, with the exception of Morocco, all African countries are members of the AU. The “AU Science, Technology and Innovation Strategy for Africa 2024” (AU Innovation Strategy) references development objectives.⁷⁷ The AU Innovation Strategy prioritises innovation and human development. In particular, the AU underscores the importance of achieving sustainable socio-economic growth, reducing poverty, achieving food security, promoting public health and protecting the environment.⁷⁸

Given the levels of development in many African countries, it is not surprising that human development is one of the goals of the AU Innovation Strategy. As African nations become further integrated into the world economy, they can be creative in developing intellectual property laws that help meet their human development objectives. Under the WTO, African nations are bound to the same international intellectual property standards as industrialised countries.⁷⁹ However, given their levels of development, they may not wish to adopt the same approach to their intellectual property laws and policies as the industrialised nations.

AU member states, with the assistance of the New Partnership for Africa’s Development (NEPAD)⁸⁰ and the African Development Bank, will implement the AU Innovation Strategy as they work to advance innovation on the continent.⁸¹ The goals that are set out in the AU Innovation Strategy can guide African nations in developing intellectual property laws that align with their national human development objectives.

⁷³ UNDP, “Goal 9: Build Resilient Infrastructure, Promote Sustainable Industrialization and Foster Innovation”, available at <http://www.un.org/sustainabledevelopment/infrastructure-industrialization/> [Accessed October 27, 2016].

⁷⁴ Adopted in Dakar, Senegal in November 2015, and recognising the SDGs, the AU Innovation Strategy states: “Recognizing the importance and relevance of Intellectual Property for innovation and creativity in the knowledge-based economy as highlighted in Pillar II of the Common African Position post-2015 development agenda related to [science, technology and innovation] as crucial contributory factors for socio-economic, scientific, technological, and cultural development of Africa.”

⁷⁵ Janewa OseiTutu, “Intellectual Property for Human Development” (2016) 105 Ky. L.J. (forthcoming).

⁷⁶ African Union, “Science, Technology and Innovation Strategy for Africa 2024”, p.8, available at <http://hrst.au.int/en/sites/default/files/STISA-Published%20Book.pdf> [Accessed October 27, 2016].

⁷⁷ African Union, “Science, Technology and Innovation Strategy for Africa 2024”, p.6, available at <http://hrst.au.int/en/sites/default/files/STISA-Published%20Book.pdf> [Accessed October 27, 2016].

⁷⁸ African Union, “Science, Technology and Innovation Strategy for Africa 2024”, pp.20–23, available at <http://hrst.au.int/en/sites/default/files/STISA-Published%20Book.pdf> [Accessed October 27, 2016].

⁷⁹ Rochelle Cooper Dreyfuss and Andreas F. Lowenfeld, “Two Achievements of the Uruguay Round: Putting TRIPS and Dispute Settlement Together” (1997) 37 Va. J. Int’l L. 275, 277.

⁸⁰ NEPAD is the technical body of the African Union. See NEPAD, “About NEPAD”, available at <http://www.nepad.org/content/about-nepad#aboutourwork> [Accessed October 27, 2016].

⁸¹ African Union, “Science, Technology and Innovation Strategy for Africa 2024”, pp.9–10, available at <http://hrst.au.int/en/sites/default/files/STISA-Published%20Book.pdf> [Accessed October 27, 2016].

Adopt express language in national laws

In addition to making policy decisions that promote human development, African countries may wish to consider including explicit language in their national legislation to clarify the purpose of their intellectual property laws.

The US Constitution, for instance, contains language about patents and copyrights promoting progress.⁸² This enables US courts, scholars and policy makers to refer back to the constitutional goal of promoting progress.⁸³ One critique of the US approach is that there is a tendency to equate progress with wealth maximisation.⁸⁴ However, nations can promote human progress and economic development without prioritising individual wealth maximisation.

This article does not propose that African nations should adopt the kind of language found in the US Constitution into their constitutions, or their national intellectual property laws. However, African nations may find it beneficial to expressly state in their intellectual property legislation or in their founding documents that human development is one of the goals of their intellectual property laws.

This is consistent with what some African states are presently doing. For example, Kenya has language in its constitution indicating that its intellectual property laws should prioritise Kenya's national interests. It does not make any express linkage between intellectual property and human development, but it contains language that supports development-oriented intellectual property. Article 11(1) of the Constitution of Kenya 2010 mentions intellectual property rights, requiring the state to

“recognise the role of science and indigenous technologies in the development of the nation; and ... promote the intellectual property rights of the people of Kenya”.

The constitution also contains language that requires the government to protect Kenyan culture, as well as Kenyan traditional knowledge, and language that suggests an obligation to share the benefits arising from such knowledge.⁸⁵

Language that expressly links human development to national intellectual property laws and policies may be useful for developing nations. First, it enables national courts to incorporate human development into their analyses of intellectual property disputes. Secondly, it would shift the understanding about the role of intellectual property laws from a wealth maximisation orientation to a human development orientation. Thirdly, if enough nations expressly state that human development is an objective of their intellectual property law, it could become state practice to implement the international intellectual property obligations in a manner that promotes human development. At a minimum, that practice—if widespread and sufficiently developed—could form the backbone of a claim to a regional practice in Africa. To the extent that this approach is taken on board by other developing countries, it could influence the development of international intellectual property law, providing a basis for TRIPS obligations to be interpreted in light of that subsequent African State practice.

⁸² US Constitution art.1 s.8 cl.8.

⁸³ Alina Ng, *Copyright and the Progress of the Science and the Useful Arts* (Cheltenham: Edward Elgar, 2011); J. Silbey, *The Eureka Myth: Creators, Innovators, and Everyday Intellectual Property* (Stanford: Stanford University Press, 2015); Malla Pollack, “What Is Congress Supposed to Promote? Defining Progress in Article 1 Section 8, Clause 8 of the U.S. Constitution, or Introducing the Progress Clause” (2002) 80 Neb. L. Rev. 754.

⁸⁴ Alfred C. Yen, “Restoring the Natural Law: Copyright as Labor and Possession” (1990) 51 Ohio St. L.J. 517, 551.

⁸⁵ Constitution of Kenya 2010 art.11 states:

- (1) This Constitution recognises culture as the foundation of the nation and as the cumulative civilization of the Kenyan people and nation.
- (2) The State shall (a) promote all forms of national and cultural expression through literature, the arts, traditional celebrations, science, communication, information, mass media, publications, libraries and other cultural heritage; (b) recognise the role of science and indigenous technologies in the development of the nation; and (c) promote the intellectual property rights of the people of Kenya.
- (3) Parliament shall enact legislation to (a) ensure that communities receive compensation or royalties for the use of their cultures and cultural heritage; and (b) recognise and protect the ownership of indigenous seeds and plant varieties, their genetic and diverse characteristics and their use by the communities of Kenya.”

Conclusion

The AU Innovation Strategy emphasises human development. As African nations work to achieve the SDGs, they should be creative in ensuring that their intellectual property laws prioritise human development. The relationship between intellectual property laws and human development is not new. However, in international intellectual property disputes, human development objectives, such as improving health outcomes, have been overlooked in order to protect intellectual property rights.⁸⁶

As African nations implement their innovation strategies with a view to promoting human development, they should consider including language in their national intellectual property laws or their founding documents, to clarify that promoting human development is an objective of their intellectual property laws. For example, the US Constitution expressly states that copyright and patent laws are promulgated to “promote progress”.⁸⁷ This language shapes the interpretation of American intellectual property law. Language such as that found in the Kenyan Constitution emphasises that Kenyan intellectual property law should prioritise Kenya’s national interests.⁸⁸ More specifically, African nations could adopt language in their domestic legislation or constitutions to emphasise that human development, which includes improved economic, health and educational outcomes, is an objective of their copyright, patent and trademark laws.

The African continent has a tremendous amount of potential. African nations, with their youthful populations and relatively high levels of poverty, are striving to promote human development. Intellectual property laws can contribute to this objective by prioritising human development and making development integral to African intellectual property laws and policies.

⁸⁶ E.g. “Canada—Patent Protection of Pharmaceutical Products”, Complaint by the European Communities and Their Member States, March 17, 2000, WT/DS114/R.

⁸⁷ US Constitution art.I s.8 cl.8.

⁸⁸ Constitution of Kenya 2010 art.11(1).

Decolonising Intellectual Property Law in Pursuit of Africa's Development

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☞ Africa; Colonial legislation; Intellectual property; Legal education; South Africa

Introduction

Since 2015 South African universities have resounded with a renewed call for the decolonisation of curricula.¹ This piece is a reflection on what the implementation of such a call means for intellectual property (IP) law in general and for the curricula of IP law courses specifically. Such ponderings about IP law are not new. For instance, Foster has considered the decolonisation of patent law in South Africa,² and Mann has written on the decolonisation of copyright.³ Other scholars have given comprehensive accounts and analyses of the colonial history of IP in Africa.⁴ This essay's first contribution is its contention that the decolonisation of IP consists of concerted efforts to sever African States' IP regimes from advancing colonial and neo-colonial⁵ interests to more closely align their IP systems with their development contexts and aspirations. Such efforts have been framed differently over time and have been articulated as "calibration",⁶ advancing the public interest in IP law⁷ and, in some cases, human rights arguments made to support developmental objectives.⁸ This essay argues that the decolonisation of IP law falls within the same tradition as it is primarily development-centred. It contends that calibration is an important decolonising tool as it enables states to craft IP regulatory systems that are best suited to their developmental conditions and aspirations.

¹ Francis B. Nyamnjoh, *#RhodesMustFall: Nibbling at Resilient Colonialism in South Africa* (Bamenda: Langaa Research & Publishing, 2016).

² Laura A. Foster, "Decolonizing Patent Law: Postcolonial Technoscience and Indigenous Knowledge in South Africa" (2016) 28 *Feminist Formations* (forthcoming).

³ Larissa K. Mann, "Decolonizing Copyright Law: Learning from the Jamaican Street Dance", PhD Thesis, University of California, Berkeley, 2012.

⁴ Caroline B. Ncube, "Three Centuries and Counting: The Emergence and Development of Intellectual Property Law in Africa" in Rochelle C. Dreyfuss and Justine Pila (eds), *The Oxford Handbook of Intellectual Property Law* (Oxford: Oxford University Press, 2016); Tshimanga Kongolo, "Historical Developments of Industrial Property Laws in Africa" (2013) 5 *WIPO J.* 105; Tshimanga Kongolo, "Historical Evolution of Copyright Legislation in Africa" (2014) 5 *WIPO J.* 163; Ruth L. Okediji, "Africa and the Global Intellectual Property System: Beyond the Agency Model" (2004) 12 *Afr. Y.B. Int'l L.* 207; Ruth L. Okediji, "The International Relations of Intellectual Property: Narratives of Developing Country Participation in the Global Intellectual Property System" (2003) 7 *Sing. J. Int'l & Comp. L.* 315; Tana Pistorious, "The Imperial Copyright Act 1911's Role in Shaping South African Copyright Law" in Uma Suthersanen and Ysolde Gendreau (eds), *A Shifting Empire: 100 Years of the Copyright Act 1911* (Cheltenham: Edward Elgar, 2013).

⁵ On the neo-colonial aspects of the current international intellectual property order, see Andreas Rahmatian, "Neo-Colonial Aspects of Global Intellectual Property Protection" (2009) 12 *J. World Intell. Prop.* 40.

⁶ E.g. Daniel J. Gervais, "IP Calibration" in Daniel J. Gervais (ed.), *Intellectual Property, Trade and Development: Strategies to Optimize Economic Development in a TRIPS Plus Era*, 2nd edn (Oxford: Oxford University Press, 2014); Katherine Connor Linton and Nicholas Corrado, "A 'Calibrated Approach': Pharmaceutical FDI and the Evolution of Indian Patent Law" (2007) *J. Int'l Com. & Econ.* 163.

⁷ E.g. Caroline B. Ncube, "Harnessing Intellectual Property for Development: Some Thoughts on an Appropriate Theoretical Framework" (2013) 16 *Potchefstroom Elec. L.J.* 370; "The Washington Declaration on Intellectual Property and the Public Interest", August 2011, available at <http://infojustice.org/washington-declaration.html> [Accessed October 28, 2016]; Isabella Alexander, *Copyright Law and the Public Interest in the Nineteenth Century* (Oxford: Hart 2010); Gillian Davies, *Copyright and the Public Interest* (London: Sweet & Maxwell, 2002); Anupam Chander and Madhavi Sunder, "Is Nozick Kicking Rawl's Ass? Intellectual Property and Social Justice" (2007) 40 *U.C. Davis L. Rev.* 563; Geoffrey Edwards, "Defining the Public Interest", PhD Thesis, Griffith University, 2007.

⁸ E.g. Laurence R. Helfer and Graeme W. Austin, *Human Rights and Intellectual Property: Mapping the Global Interface* (Cambridge: Cambridge University Press, 2011), pp.34, 44–47, 52–57, 125–126, 465–466; Peter K. Yu "Currents and Crosscurrents in the International Intellectual Property Regime" (2004) 38 *Loy. L.A. L. Rev.* 323, 374.

Secondly, the essay makes a novel contribution through its discussion of decolonised IP law curricula which includes a brief sketch of a model course which is being collaboratively developed and, upon completion, will be published as an open educational resource. There is a significant body of scholarship on the teaching of IP law,⁹ and there is scholarship that focuses on decolonising legal education generally,¹⁰ but there is virtually nothing on decolonising IP law curricula. This essay argues that a decolonised course is steeped in the African developmental context and is based on appropriate research and learning materials. Such curricula are vital to the creation and strengthening of a cohort of IP scholars, practitioners, government officials and state representatives who have a truly development-oriented approach to IP. Such expertise would then be harnessed to improve, and not impede, states' efforts at decolonising their IP systems.

The concept of development is key to both decolonising IP legal systems and IP curricula, as envisaged above. It is also the golden thread running through this special issue. Therefore, it is important to provide its definition in this introductory section of the essay. As noted by Gervais, development is a difficult concept to define but is accepted to consist of both human and economic markers, which are measured by indices such as the UN Human Development Index.¹¹ Founded on Sen's position, the prevailing understanding of development in the IP context is that it centres around human "freedoms and capabilities" to "have basic economic needs fulfilled".¹² IP law and the protection it provides is considered to be one of many factors that affect development. This version of development is markedly different from what has been called the "economic growth model for development", which focuses only on economic markers and views IP "as an essential driver or even pre-condition of economic growth and development in a country".¹³ Several scholars have questioned this claim for a direct correlation between strong domestic IP frameworks and the enhancement of development.¹⁴

The first half of the essay proceeds by considering the notion of decolonisation of law in general and of IP law specifically. It then canvasses how the position of the African Group amounts to efforts at the decolonisation of IP. This section also considers the usefulness of calibration as a decolonising tool. The second half of the essay briefly sets out the curriculum developed by the Open African Innovation Research Project (Open AIR) that is under development and is currently being piloted at the University of Cape Town as part of its postgraduate degree in IP law. Upon completion, the course will be a ready-made model open educational resource that can be customised to suit other institutions in the Global South. Due to the Afrocentric research that informs it, it would be most easily tailored to suit African contexts. Its Global South and Afrocentric perspectives set the course apart from other modules¹⁵ that have been published.

⁹ E.g. Yo Takagi, Larry Allman and Mpanzi Sinjela (eds), *Teaching of Intellectual Property: Principles and Methods* (Cambridge: Cambridge University Press, 2008); Kenneth L. Port, "Essay on Intellectual Property Curricula in the United States" (2005) 46 *IDEA* 165; Ruth Soetendorp, "Developing the Curriculum for Collaborative Intellectual Property Education" 2006 *J. Info. L. & Tech.*, available at https://www2.warwick.ac.uk/fac/soc/law/elj/jilt/2006_1/soetendorp [Accessed October 28, 2016]; Rebecca Tushnet, "Sight, Sound and Meaning: Teaching Intellectual Property with Audiovisual Materials" (2008) 52 *St. Louis U. L.J.* 891; Peter K. Yu, "Teaching International Intellectual Property Law" (2008) 52 *St. Louis U. L.J.* 923; WIPO, "Intellectual Property Teaching in Countries in Transition", available at http://www.wipo.int/dcea/en/tools/tool_07/ [Accessed October 28, 2016].

¹⁰ For such discussions, see Roderick A. Macdonald and Thomas B. Mcmorrow, "Decolonizing Law School" (2014) 51 *Alberta L. Rev.* 717; Larry Chartrand, "Indigenizing the Legal Academy from a Decolonizing Perspective" (2015) University of Ottawa Faculty of Law, Working Paper No.2015-22.

¹¹ Daniel J. Gervais, "TRIPS and Development" in Matthew David and Deborah Halbert (eds), *The SAGE Handbook of Intellectual Property* (London: SAGE Publications, 2014).

¹² Amartya Sen, "What Is the Role of Legal and Judicial Reform in the Development Process?", available at <http://siteresources.worldbank.org/INTLAWJUSTINST/Resources/legalandjudicial.pdf> [Accessed October 28, 2016].

¹³ Wong Tzen, "Intellectual Property through the Lens of Human Development" in Wong Tzen and Graham Dutfield (eds), *Intellectual Property and Human Development: Current Trends and Future Scenarios* (New York: Cambridge University Press 2010), p.2.

¹⁴ E.g. James Thuo Gathii, "Strength in Intellectual Property Protection and Foreign Direct Investment Flows in Least Developed Countries" (2015) 44 *Georgia J. Int'l & Comp. L.* (forthcoming); Gervais, "TRIPS and Development" in David and Halbert (eds), *The SAGE Handbook of Intellectual Property* (2014).

¹⁵ E.g. European Patent Academy, *Intellectual Property Course Design Manual* (Munich: European Patent Office, 2011); European Patent Office, "IP Teaching Kit", available at <http://www.epo.org/learning-events/materials/kit.html> [Accessed October 28, 2016].

Decolonising law

Formal decolonisation, in its strict sense, of the overthrow of direct colonial rule over territories across the globe, ended a significant time ago. However, vestiges of colonial influences remain in many countries' legal systems, and neo-colonial interests have also been grafted onto them. Therefore, calls for decolonisation remain valid and continue. For some, the concept of decolonisation conjures the spectre of seeking a violent return to a pre-colonial state, which includes a rejection of all colonial-linked development. This is a misperception. It is perhaps founded on the Fanonian concept of decolonisation,¹⁶ which Mbembe calls "decolonization as Africanization" and defines as

"relational, always a bundle of innate rights, capabilities and claims made against others, taken back from others and to be protected against others—once again, by force if necessary".¹⁷

The other is primarily the West or a Eurocentric hegemony but, in instances decried by Fanon, may sometimes be Africans from other states who are the subject of xenophobic attacks. Current calls for decolonisation are informed by wa Thiong'o's version that does not focus on the rejection or side-lining of Eurocentric hegemony but focuses on placing Africa at the centre of African education and endeavour.¹⁸ This localisation of the African condition and perspective at the centre of the continent's advancement is an attractive approach that has gained much traction in current decolonisation calls. The essay will return below to how this African-centred approach is applicable to IP and has been articulated in IP and development discourse.

In view of the above, this essay argues that the concept of decolonisation is more nuanced than being a mere longing for the violent return to pre-colonial Africa. In the legal field, it seeks to evaluate the status quo of a state's legal system and asks

"had our law developed with the national public interest at its core, rather than colonial and neo-colonial interests, what would it look like?"

Implicit in this question is the assumption that the colonial legacy of African legal systems has resulted in laws that continue to further colonial and neo-colonial interests.¹⁹ In other words, in wa Thiong'o's lexicon, it is not Africa-centred. One of the first steps of decolonising law would be to first examine current legal systems to determine to what extent they are influenced by colonial and neo-colonial interests. Such an examination would also entail a scrutiny of scholarship on those systems through "research process (and political practices) that seek to change the hegemonic ordering of knowledge production".²⁰ Such "decolonizing methodologies"²¹ are an essential tool in the deconstruction of "a canon that attributes truth only to the Western way of knowledge production".²²

Decolonising law extends to a number of legal subjects and fields, including law and human rights,²³ international law²⁴ and rape law.²⁵ In the IP law context, as stated above, it is an explicit move towards

¹⁶ Franz Fanon, *Wretched of the Earth* (New York: Grove Press, 1961), pp.310–315.

¹⁷ Achille Mbembe, "Decolonizing Knowledge and the Question of the Archive", p.12, available at <http://wiser.wits.ac.za/system/files/Achille%20Mbembe%20-%20Decolonizing%20Knowledge%20and%20the%20Question%20of%20the%20Archive.pdf> [Accessed October 28, 2016].

¹⁸ Ngũgĩ wa Thiong'o, *Decolonising the Mind: The Politics of Language in African Literature* (London: Heinemann, 1986), p.94; Mbembe, *Decolonizing Knowledge and the Question of the Archive* (2015).

¹⁹ Rahmatian, "Neo-Colonial Aspects of Global Intellectual Property Protection" (2009) 12 J. World Intell. Prop. 40.

²⁰ Foster, "Decolonizing Patent Law" (2016) 28 *Feminist Formations*.

²¹ Foster, "Decolonizing Patent Law" (2016) 28 *Feminist Formations* (referring to Linda Tuhiwai Smith, *Decolonizing Methodologies: Research and Indigenous Peoples* (London: Zed Books, 1999)).

²² Mbembe, *Decolonizing Knowledge and the Question of the Archive* (2015).

²³ Peter Fitzpatrick, "The Revolutionary Past: Decolonizing Law and Human Rights" (2014) 2 *Metodo Int'l Stud. in Phenomenology & Phil.* 117.

²⁴ Sundhya Pahuja, "Decolonizing International Law: Development, Economic Growth and the Politics of Universality" (2011) University of Melbourne, Legal Studies Research Paper No.520.

²⁵ Sarah Deere, "Decolonizing Rape Law: A Native Feminist Synthesis of Safety and Sovereignty" (2009) 24 *Wicazo Sa Rev.* 149; Andrea Smith, "Decolonizing Anti-Rape Law and Strategizing Accountability in Native American Communities" (2011–2012) 37(4) *Soc. Just.* 36.

Afrocentric developmental concerns and ambitions. The following sections discuss how this has manifested in the context of international norm-setting.

Decolonising IP—The African Group at international fora

The African Group has been instrumental in advancing Africa's developmental agenda at several fora including the World Trade Organization (WTO) and the World Intellectual Property Organization (WIPO).²⁶ At the former, the African Group unsuccessfully tried to influence the outcome of the negotiations of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS).²⁷ It argued that TRIPS provisions ran counter to their "development prospects" and that they lacked the capacity "to harness any purported benefits".²⁸ The African Group's discourse has consistently centred on unity, liberation ethics and developmental concerns.²⁹ Together as united, liberated sovereign African states with significant developmental challenges, the group members seek to advance positions that seek to ensure access to medicines, knowledge and other resources for their citizenry.

For instance, in its agitation for the adoption of the Doha Declaration on the TRIPS Agreement and Public Health 2001³⁰ at the WTO, the African Group was motivated by the desire to secure access to medicines in the face of a severe disease burden that included HIV/AIDS. In its interventions in support for Brazil and Argentina's proposal for the adoption of the WIPO Development Agenda, the African Group argued its case from a development perspective,³¹ in the same manner as it had at the TRIPS negotiations. Yu considers these two developments as part of the "new development agenda" which consists of several initiatives at various international forums.³² He also noted that the nature of international intellectual property norm-setting advances in cycles or waves, with these development agendas recurring at certain stages, followed by non-multilateralism and a return to multilateralism.³³

Be that as it may, at certain specific points in time, such as the above examples, African states have expressly articulated a pro-development vision. They have consistently held such an Afrocentric and development-oriented position, which is officially articulated in their Guiding Principles document as follows:³⁴

"The adoption of the Development Agenda (DA) at the General Assembly of the World Intellectual Property [Organization] (WIPO) in 2007 was a milestone in achieving the historic aspiration of developing countries for a paradigm shift in the international perspective of intellectual property (IP): a shift from viewing IP as an end in itself, to viewing it as a means to serve the larger public goals of social, economic and cultural development. This vision has refuted the universal applicability of 'one size fits all IP protection models' or the advisability of the harmonization of laws leading to higher protection standards in all countries irrespective of the levels of development."

²⁶ Tshimanga Kongolo, *African Contributions in Shaping the Worldwide Intellectual Property System* (Farnham: Ashgate Publishing, 2013).

²⁷ Carolyn Deere, *The Implementation Game: The TRIPS Agreement and the Global Politics of Intellectual Property Reform in Developing Countries* (Oxford: Oxford University Press, 2009), p.1.

²⁸ Deere, *The Implementation Game* (2009), p.1.

²⁹ Caroline B. Neube, "The Politics of National Intellectual Property Policy Design and the Provision of Health Services in South Africa" (2015) 3 S. Afr. Intell. Prop. L.J. 15.

³⁰ Doha Declaration on the TRIPS Agreement and Public Health 2001, November 20, 2001, WT/MIN(01)/DEC/2.

³¹ For an account of the adoption of the WIPO Development Agenda, see Christopher May, *The World Intellectual Property Organization: Resurgence and the Development Agenda* (London: Routledge, 2007); Jeremy de Beer, "Defining WIPO's Development Agenda" in Jeremy de Beer (ed.), *Implementing WIPO's Development Agenda* (Waterloo: Wilfred Laurier University Press, 2009), pp.3–6; Assafa Endeshaw, "Intellectual Property and the 'WIPO Development Agenda'" (2006) J. Info. L. & Tech., available at https://www2.warwick.ac.uk/fac/soc/law/elj/jilt/2006_1/endeshaw/ [Accessed October 28, 2016]; Peter K. Yu, "Déjà Vu in the International Intellectual Property Regime" in David and Halbert (eds), *The SAGE Handbook of Intellectual Property* (2014).

³² Peter K. Yu, "A Tale of Two Development Agendas" (2009) 35 Ohio N. U. L. Rev. 465, 511–522.

³³ Yu, "Déjà Vu in the International Intellectual Property Regime" in David and Halbert (eds) *The SAGE Handbook of Intellectual Property* (2014).

³⁴ "Information on the Development Agenda Group Guiding Principles", April 26, 2010, WIPO Doc. CDIP/5/9 Rev., Annex, 2.

These arguments are Afrocentric and seek to unravel the negative consequences of colonial and neo-colonial orientated IP regimes. As such, they are efforts at decolonisation.

As aptly put by Gervais, at both international and domestic IP norm-setting levels, “the current phase is a calibration phase”.³⁵ This calibration is informed by development goals at both levels and takes all other relevant factors such as education and infrastructure into account.³⁶ Its aim is to pursue the public interest in enhancing development. As states collectively and individually craft new IP laws or modify existing laws with their national conditions in mind, they continue to engage in a decolonising process of calibration. Such a stance expressly rejects a cookie-cutter approach that emphasises a single configuration of IP laws for all states, regardless of their developmental stage. These domestic calibration efforts are not always successful for a variety of reasons, which include undue influence from interested parties such as developed nations, sectors of multinational industries and a local IP fraternity steeped in Eurocentric and an economic growth model for development tradition.³⁷ The last factor is one of the reasons why there is an urgent need for decolonised IP law curricula, so that African states build IP expertise that is Afrocentric and truly development oriented.

At the international level, at multilateral negotiations space for calibration is secured by ensuring that there is sufficient policy leverage built into agreed minimum standards so that developing and least developed states can calibrate IP laws at the domestic level. This space is argued for on the basis of developmental concerns or may be couched in human rights arguments.³⁸ However, when African and other Global South states are engaged in multilateral negotiations, there are several ways in which their developmental position is hampered. One of these is the application of various negotiation strategies that place them on the back foot. An example of such a tactic has been described as “creating momentum” by “first unify[ing] the United States, then unify[ing] the North, next co-opt[ing] the middle, and finally isolat[ing] the implacable opponents”.³⁹ Such co-option tactics may involve appealing to the negotiating national governments and prevailing upon them to issue instructions to negotiating teams to soften pro-development positions, or simply to remain silent at negotiating sessions. The strengthening of developing and least developed country coalitions⁴⁰ and an awareness of these strategies will enable the resistance of such tactics and the advance of decolonisation efforts. The existence of decolonised IP law curricula will also add to the capacitation of those spearheading decolonisation efforts. The following section briefly outlines what form such curricula may take.

IP, innovation and development—A model decolonised course

The project of decolonising curriculum requires deep reflection about what is taught, from which perspective (Eurocentric or Afrocentric) it is taught and by whom it is taught.⁴¹ These aspects speak to the source and authorship of learning materials and its distribution models. These are important considerations because they infuse the learning materials with a particular worldview and impact the accessibility of the material. The perspective adopted has far-reaching consequences because it schools a future generation in a particular way about IP law and this in turn will impact society generally when those schooled in these perspectives take up positions in government, industry and other areas in the future.

³⁵ Gervais, “IP Calibration” in Gervais (ed.), *Intellectual Property, Trade and Development* (2014), p.87.

³⁶ Susy Frankel, *Test Tubes for Global Intellectual Property Issues: Small Market Economies* (Cambridge: Cambridge University Press, 2015), p.20.

³⁷ Caroline B. Ncube, *Intellectual Property Policy, Law and Administration in Africa: Exploring Continental and Sub-regional Co-operation* (Abingdon: Routledge, 2016), p.20; Deere, *The Implementation Game* (2009), pp.241–242.

³⁸ Amanda Barratt, “The Curious Absence of Human Rights: Can the WIPO Development Agenda Transform Intellectual Property Negotiation?” (2010) 14 L., *Democracy & Dev.* 14.

³⁹ Charan Devereaux, Robert Z. Lawrence and Michael D. Watkins, *Case Studies in US Trade Negotiation: Making the Rules* (Washington: Institute for International Economics, 2006), Vol.1, pp.37, 116.

⁴⁰ Sisule F. Musungu and Graham Dutfield, *Multilateral Agreements and a TRIPS-plus World: The World Intellectual Property Organisation (WIPO)* (Geneva: Quaker United Nations Office, 2003), p.23.

⁴¹ Mbembe, *Decolonizing Knowledge and the Question of the Archive* (2015).

This section offers some preliminary thoughts on a post-graduate course offered at the University of Cape Town, entitled “IP Law, Development and Innovation”. As indicated in the introduction, this course is being developed by the Open AIR project. The project is a long-term partnership of IP experts and researchers, the majority of whom are Africa-based, who have an express interest in African IP systems that commenced in 2008 and is now in the third phase of its research. The first phase (2007–2011) focused on copyright and access to learning materials in eight African studies.⁴² The second phase (2011–2014) focused on open innovation and development in nine African countries.⁴³ The development of the course curricula began towards the end of this phase. The third and current phase, which commenced in 2015, focuses on “new problems related to the role of open, proprietary, and blended models for scaling up knowledge-based businesses”.⁴⁴

The course consists of the following modules:

- innovation, development and intellectual property rights;
- globalisation;
- patents;
- copyright;
- communal trademarks;
- traditional knowledge;
- intellectual property rights and agriculture; and
- intellectual property rights from the Publicly Financed Research and Development Act 2008.

Each module was informed by case studies undertaken in phase 2 of the research project.⁴⁵ It consists of an overview of the topic, learning objectives, topics to be covered, points of discussion and a list of materials to be read. Once the development of the model course is completed, an openly licensed course syllabus and the modules will be made accessible free of charge from the project website and other online platforms.

Each institution offering the course will determine the formative and summative evaluation of the course in accordance with its rules and procedures. Similarly, decisions about who presents the course will be made at the institutional level. The primary contribution of the model course is its provision of modules that are informed by empirical research undertaken on the continent by scholars and researchers who have a strong understanding and experience of the African context. Using wa Thiong'o's criterion that focuses on Afrocentric content, perspective and delivery, this course is a good model of a decolonised IP law course. An institution adopting the course would be at liberty to use all, or only some, of the modules.

Since 2015, the University of Cape Town has been running a 12-week course that incorporates all nine modules with the necessary adjustments for the South African context. This is a pilot project and learnings gathered from the experience will inform the final model course. The necessary institutional processes for the introduction of a new course were followed in order to obtain the required approvals. The course offering at the University of Cape Town has emerged as a highly successful and well-received course. The student and external examiner evaluations of the course have been very positive. The course is currently delivered by University of Cape Town lecturers, but funds permitting, it is intended to invite the case study researchers and book chapter authors to personally or virtually lead some of the seminars in the

⁴² This phase of the research resulted in a book, Chris Armstrong, Jeremy de Beer, Khaled Fourati, and Sisule Musungu (eds), *Access to Knowledge in Africa: The Role of Copyright* (Claremont: UCT Press, 2010), and executive policy briefs for all the eight countries studied: see ACA2K, “Welcome to ACA2K: African Copyright and Access to Knowledge”, available at <http://www.aca2k.org/> [Accessed October 28, 2016].

⁴³ This phase resulted in two books, Jeremy de Beer, Chris Armstrong, Chidi Oguamanam and Tobias Schonwetter (eds), *Innovation & Intellectual Property: Collaborative Dynamics in Africa* (Cape Town: Juta Academic, 2014); Shirin Elahi and Jeremy de Beer (eds) *Knowledge and Innovation in Africa: Scenarios for the Future* (Cape Town: Open AIR Network, 2014), and several briefing notes, all available at Open AIR, “Pathbreaking Research (2011 to 2014)”, available at <http://www.openair.org.za/pathbreaking-research-2011-to-2014/> [Accessed October 28, 2016].

⁴⁴ Open AIR, “History of Open AIR”, available at <http://www.openair.org.za/history-of-open-air/> [Accessed October 28, 2016].

⁴⁵ de Beer, Armstrong, Oguamanam and Schonwetter (eds), *Innovation & Intellectual Property* (2014).

future. In this way, both course content and delivery have a very strong African context, extending beyond South Africa's borders.

“We have been having it!”

Several years ago, the South African telecommunications company Vodacom released a television advertising campaign that featured a wealthy African man, possibly a politician, with the tagline “We have been having it!”⁴⁶ The essence of the ads was that the featured politician exclaimed that he had already had (or been having) whatever telecommunications innovation that was being touted as new. This essay has argued that, to use the advertisements' nomenclature, the idea of decolonising IP is a notion that global South governments, some scholars and some sectors of civic society have had for a significant period of time. This is an important point to underscore in an environment that is perturbed and perplexed by the meaning of decolonisation and the perceived violence accompanying it. For an African state, decolonising IP means placing the nation's conditions and developmental aspirations centre-stage and calibrating its regulatory framework in a way that advances its public interest. For law schools seeking to teach decolonised IP law curricula, it means using methodologies and learning materials that disrupt Eurocentric hegemonies. As has been shown above, a model for what this may look like for African law schools has been developed by the Open AIR project and is currently offered at the University of Cape Town.

⁴⁶ Shareef Blankenberg, “Good Advertising—We’ve Been Having It!”, available at <http://thoughtleader.co.za/shareefblankenberg/2008/06/06/good-advertising-weve-been-having-it/> [Accessed October 28, 2016]

Drugs, Drugs Everywhere but Just Not for the Poor

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☞ Access to medicines; Compulsory licensing; Developing countries; TRIPS; United States; WIPO

Introduction

In 2009, Ramesh, a highly-paid executive in India, was diagnosed with a rare form of cancer. His hope lay in the compound soranafib tosylate marketed as Nexavar, and the patent in the drug was owned by the German pharmaceutical company, Bayer AG. In India, Nexavar was cleared for marketing in 2007, followed by the grant of a patent in 2008.¹ Although Ramesh's net worth placed him in the top 20 per cent of the annual average income by quintile in India, he was devastated to learn that the treatment regimen for Nexavar cost approximately US \$5,000 (INR 2,80,428) per month.² The egregious price of Nexavar was nearly five times higher than the median *annual* income in India.³ In India, individuals earning US \$5,000 *per year* would consider themselves fairly well-employed.⁴ Thus, Bayer's Nexavar had the distinction of creating have-not out of the haves!

At the time Ramesh was considering his treatment options, India housed approximately 20,000 patients with liver cancer and about 9,000 patients with kidney cancer. So, when Natco, an Indian generic drug company, petitioned the controller general of patents to compel Bayer to issue a licence in its favour, the evidence overwhelmingly favoured Natco. The generic Nexavar from Natco was priced at approximately US \$200 (INR 10,000) per month. The controller's order concluding that Bayer's action warranted a compulsory licence was affirmed on appeal by Sridevan J at the Intellectual Property Appellate Board.⁵

The highpoint of the above incident was the United States' visceral reaction following the issuance of the compulsory licence in India. On August 2, 2013, the pharmaceutical industry's lobbying effort translated into a request from the chairman of the US Senate Committee on Finance and the House Committee on Ways and Means to the US International Trade Commission to institute an investigation on India's trade practices,⁶ using powers under Tariff Act of 1930 s.1332(g).⁷ The Special 301 Report of the Office of the United States Trade Representative (USTR), on which India is usually featured, specifically identified the *Bayer* decision as "concerning" both in the 2012 and 2013 reports.⁸

India was no lone ranger. In fact, the United States established a similar pattern of response in Colombia following the issuance of Resolution 2475 of 2016 on June 17, 2016 by the Minister of Health, Alejandro

¹ "India Grants First Compulsory License to Generic Drug Producer", available at <http://www.icts.org/bridges-news/bridges/news/india-grants-first-compulsory-license-to-generic-drug-producer> [Accessed October 31, 2016].

² Insurance coverage in India broadly covers about 5–20 per cent of the population. Generally, government sponsored schemes have a cap of INR 30,000 (approximately US \$500) and is limited to hospitalisation. In addition, domiciliary treatment (medication) is not covered as part of most insurance in India. Email from Professor Surupa Gupta, University of Mary Washington, February 12, 2014.

³ Mike Palmado, "Graphics on U.S. Pharmaceutical Exports to India, Patents, the Compulsory License, and Prices", available at <http://infojustice.org/archives/32249> [Accessed October 31, 2016].

⁴ Srividhya Ragavan, "Patients Win over Patents", *The Hindu*, March 7, 2013.

⁵ *Bayer v Natco* M.P. Nos 74–76 of 2012 and M.P. No.108 of 2012.

⁶ International Trade Commission Investigation, Notice for Investigation No.332-543, August 29, 2013 (on issues relating to trade, investment, and industrial policies in India, with particular reference to its effects on the US economy and US jobs).

⁷ 19 USC s.1332(g).

⁸ 79 Fed. Reg. 421 (January 3, 2014); see also Office of the United States Trade Representative, *Special 301 Report* (2012, 2013).

Gaviria.⁹ Resolution 2475 was a declaration by the Government to issue a compulsory licence to lower the price of imatinib, a leukaemia drug, marketed as Glivec. The patent in Glivec was owned by the Swiss pharmaceutical company, Novartis AG.¹⁰ Resolution 2475 was a response to a petition submitted by the Colombian non-governmental organisations to compulsorily license Glivec with a view to reduce the cost of the medication.¹¹ At that time, Novartis priced 400mg of Glivec at COP 129,000 (approximately US \$43).¹² The total annual cost of 400mg of Glivec in Colombia, amounting to US \$15,000 per patient per year, represented nearly twice the average annual income of Colombians.

Meanwhile, on August 24, 2016, Colombia celebrated a historic moment when the Colombian Government and the Revolutionary Armed Forces of Colombia (FARC), a guerrilla group, ended an armed conflict that began in 1964.¹³ The United States pledged US \$450 million in support of the peace plan—Paz Colombia—to provide for programmes to retrain members of FARC and to eradicate the drug trade that has ravaged Colombia.¹⁴

The US response to Colombia followed a predictable pattern when the USTR, citing Resolution 2475, indicated that Paz Colombia may be at risk!¹⁵ The outrageousness of the USTR's response can be best understood considering that it caused the House Democrats to express serious concern over the USTR's actions in a letter addressed to Ambassador Michael Froman, the US Trade Representative.¹⁶ The letter pointed out that the United States would derogate from its obligations as a signatory to the Agreement on Trade-Related Aspects of Intellectual Property Rights 1994 (TRIPS) of the World Trade Organization (WTO). TRIPS and the Doha Declaration on the TRIPS Agreement and Public Health 2001 (Doha Declaration)¹⁷ expressly authorise the use of such licences for exactly the same situations for which it was used by Colombia.¹⁸ Interestingly, when the USTR cited India for the *Bayer* decision in the Special 301 Report, it carefully suggested that India's actions will be weighed in the light of the Doha Declaration.¹⁹

The simple objective for this article is to understand the legitimacy and limitations of US involvement in another country's sovereign actions taken expressly in the public interest, or to protect public health,

⁹ Andrew Goldman, "Colombia Issues Public Interest Declaration to Lower Price of Glivec", available at <http://keionline.org/node/2601> [Accessed October 31, 2016]; Ministry of Health and Social Protection Resolution Number 2475 of June 14, 2016, available at https://www.minsalud.gov.co/Normatividad_Nuevo/Resoluci%C3%B3n%20de%202475%20de%202016.pdf [Accessed October 31, 2016].

¹⁰ Novartis was involved in a huge dispute in India to patent imatinib mesylate, whose patent would have given the drug new life once the patent on imatinib expires. *Novartis AG v Natco Pharma* Application No.1602/MAS/1998 (2005) (India), available at <http://indiankanoon.org/doc/1352538/> [Accessed October 31, 2016]; Indian Patent Application No.1602/MAS/1998.

¹¹ Ministro de Salud y Protección Social, "Solicitud de una declaración de interés público en el acceso al medicamento imatinib bajo condiciones de competencia", available at <https://www.minsalud.gov.co/sites/rid/Lists/BibliotecaDigital/RIDE/VS/MET/Solicitud-de-una-declaracion-en-el-acceso-al-medicamento-IMATINIB.pdf> [Accessed October 31, 2016].

¹² Knowledge Ecology International, "Background FAQ on Glivec (imatinib) Compulsory License in Colombia", available at <http://keionline.org/colombia-imatinib-FAQ> [Accessed October 31, 2016].

¹³ WOLA, "Excerpts from the August 24 Announcement of a Final Peace Accord between the Colombian Government and the FARC: The Joint Communiqué", available at <http://colombiapace.org/2016/08/25/excerpts-from-the-august-24-announcement-of-a-final-peace-accord-between-the-colombian-government-and-the-farc/> [Accessed October 31, 2016]. The conflict with FARC ended after more than 50 years. Unfortunately, Paz-Colombia was never implemented because the deal was rejected in a referendum. See Sibylla Brodzinsky, "Colombia referendum: voters reject peace deal with Farc guerrillas," *The Guardian*, available at <https://www.theguardian.com/world/2016/oct/02/colombia-referendum-rejects-peace-deal-with-farc> [Accessed October 31, 2016].

¹⁴ Stephanie Burgos, "Does Colombia Really Have to Choose between Poverty and Public Health", available at <http://politicsofpoverty.oxfamamerica.org/2016/05/does-colombia-really-have-to-choose-between-peace-and-public-health/> [Accessed October 31, 2016].

¹⁵ Andrew Goldman, "15 House Dems Press USTR to Clarify Position on Compulsory Licensing of Cancer Drug Patent in Colombia", available at <http://keionline.org/node/2577> [Accessed October 31, 2016].

¹⁶ The letter was led by Ways and Means Committee Ranking Member Sander Levin (D-Michigan). Letter to Ambassador Michael Froman, available at <https://democrats-waysandmeans.house.gov/sites/democrats.waysandmeans.house.gov/files/documents/Colombia%20Compulsory%20License%20Letter.pdf> [Accessed October 31, 2016]; Zach Carter, "Colombia Fears U.S. May Reject Peace Plan to Protect Pharma Profits", http://www.huffingtonpost.com/entry/colombia-gleevec_us_5733d4ece4b077d4d6f224ee [Accessed October 31, 2016]; Carolyn Y. Johnson and Karen DeYoung, "Dispute with Swiss Drug Maker Has Colombian Officials Worried about U.S. Peace Funding", available at https://www.washingtonpost.com/business/economy/dispute-with-swiss-drugmaker-has-colombian-officials-worried-about-us-peace-funding/2016/05/18/6f1903ee-1c5e-11e6-8c7b-6931e66333e7_story.html [Accessed October 31, 2016].

¹⁷ Doha Declaration on the TRIPS Agreement and Public Health 2001, November 20, 2001, WT/MIN(01)/DEC/2.

¹⁸ Goldman, "15 House Dems Press USTR to Clarify Position on Compulsory Licensing of Cancer Drug Patent in Colombia" available at <http://keionline.org/node/2577> [Accessed October 31, 2016]; Ed Silverman, "House Democrats Blast US Trade Rep for Pressuring Colombia over Novartis", available at <https://www.statnews.com/pharmalot/2016/05/25/novartis-gleevec-patents-cancer/> [Accessed October 31, 2016].

¹⁹ Sean Flynn, Brook K. Baker and Srividhya Ragavan, "Trade, Investment, and Industrial Policies in India: Effects on the U.S. Economy", International Trade Commission, 2013, on file with author.

such as the compulsory licensing of pharmaceuticals. The first section takes the example of compulsory licensing as a legitimate sovereign action and delineates its scope in the light of the international trade obligations under TRIPS. The second section discusses the rights and obligations of the USTR vis-à-vis the United States' sovereign trading partners and how international trade obligations intersect with the rights of the USTR. The third section outlines the legality of the USTR's actions in light of the United States' international obligations. The fourth section discusses the question of whether—and if so, how—the other international organisations, particularly the World Intellectual Property Organization (WIPO), can be involved in restoring the legitimacy of sovereign actions taken in the public interest. The article's conclusion outlines the importance of co-ordination amongst international organisations as a critical element to achieve the objectives of the trade and developmental agenda.

International trade obligations and legitimate sovereign actions

Pharmaceuticals and life-saving medications hold a unique significance in the marketplace. Unlike consumer products, where demand is dependent on affordability, the demand for life-saving medications is independent of affordability. Thus, in markets with low per capita income, such as developing countries, high prices sustain or even increase the demand as access becomes limited. As the number infected with a disease increases, productivity of the economy can be adversely affected. Under these circumstances, ensuring access to life-saving medicines becomes an important sovereign responsibility. Discharging judiciously such a responsibility in a manner that would protect public health, preserve economic productivity and maintain socio-economic balance forms a part of the legitimate expectations from any government. The following details how international agreements and national laws are structured to enable a sovereign to discharge the function of protecting public health.

Pharmaceuticals and sovereign actions

Compulsory licensing is an example of a unique tool legitimately deployable by a sovereign government. The term “compulsory licensing” refers to the mandatory licensing of a patented technology used for specific reasons under limited circumstances. Such licences are specifically used to reduce the price of a patented product by forcing the patent holder to license the technology to third parties, thus creating competition. Compulsory licences are unique because they serve to balance the patent owner's right with the societal need for the product. They operate where public interest concerns outweigh the patent holder's rights.²⁰ Such licences are legitimate, especially in the context of inventions involving pharmaceuticals, food and national security concerns. In the case of pharmaceuticals, the use of compulsory licences represents a legitimate sovereign action for two reasons: first, because the rights to life and health are constitutional guarantees in countries such as Brazil and Colombia, they prompt governmental action to ensure access to medication;²¹ secondly, compulsory licences represent the negotiated exclusion to patent rights under international trade agreements, as discussed below.

Article 30 of TRIPS provides for compulsory licences as an outlined exclusion to patent rights. The provision allows countries to determine the grounds for issuing compulsory licences. Furthermore, the Doha Declaration explicitly clarified the determination in art.30 of TRIPS that WTO members may provide

²⁰ Srividhya Ragavan, “The Jekyll and Hyde Story of International Trade: The Supreme Court in *Phirma v. Walsh* and the TRIPS Agreement” (2004) 38 Rich. L. Rev. 777, 784; Rafael V. Baca, “Compulsory Patent Licensing in Mexico in the 1990's: The Aftermath of NAFTA and the 1991 Industrial Property Law” (1994) 35 IDEA 183, 184–185; David J. Henry, “Multi-National Practice in Determining Provisions in Compulsory Patent Licenses” (1977) 11 Geo. Wash. J. Int'l L. & Econ. 325.

²¹ Brazilian Constitution art.196 establishes the right to health. Brazil also established the National Unified Health Care System (*Sistema Único de Saúde*) to guarantee universal health care coverage to all Brazilian citizens. Law 8.080/90 (Brazil). See also Law 8.142/90; Law 1751/2015 (Colombia) (regulating the fundamental right to health).

limited exceptions to the rights conferred by a patent. This declaration represents WTO members' commitment to enable access to medication. It affirms that TRIPS can and should be interpreted

“in a manner supportive of WTO members' right to protect public health and, in particular, to promote access to medicines for all”.²²

In so doing, the Doha Declaration emphasises that TRIPS should be a part of the developing country members' efforts to address the public health problems. It adds that, although intellectual property rights are essential for medical innovation, the prices of medication should not impede access in developing nations. Thus, the Doha Declaration establishes the sovereign right and legitimacy of WTO members to protect public health by compulsorily licensing patents and the freedom to determine the grounds of compulsory licensing.

Importantly, the TRIPS compulsory licensing provisions represent a balance that forms the crux of the principles and objectives enshrined in arts 7 and 8 of the TRIPS Agreement. In essence, art.7 outlines that protection and enforcement of intellectual property rights should contribute to technological advancements in a manner conducive to “social and economic” welfare of member states and to the mutual advantage and benefit of producers and users. Article 8 discusses the principles under which the objectives of art.7 will be satisfied. Thus, the “principles” under art.8 recognises members' rights to adopt public interest or public health measures in sectors vital to social, economic and technological development of the WTO member. The narrative in arts 7 and 8 bears wide social and political consequences for developing nations and allows member nations to tailor measures facilitating global trade while also achieving national goals.²³ For instance, poorer nations may be able to use compulsory licences in vital technologies such as life-saving medications to promote downstream innovations otherwise blocked often by rigid definition of intellectual property rights. Such use can also be consistent with TRIPS, especially if the reduced price results in increased volume sales. For example, when Nexavar was subject to a compulsory licence in India, causing a reduction of price, Bayer benefited from increased volume sales of the drug from the lowered price.²⁴ The increased volume sales offset revenue losses that Bayer feared would ensue from the licence.²⁵

Compulsory licence provisions in local laws

Several countries have translated the general prescription in TRIPS into statutory provisions in national laws with a view to be in conformity with international obligations. For instance, s.84 of the Indian patent statute allows the Government to compulsorily license a patent three years after the grant.²⁶ Applicants seeking compulsory licences should attempt to negotiate a licence with the patent owner (as required under TRIPS) for a minimum period of six months. The grounds for third parties to a compulsory licence are:

- the reasonable requirements of the public with respect to the patented invention have not been satisfied;
- the patented invention is not available to the public at a reasonably affordable price; or
- the patented invention is not worked within the territory of India.

The grounds are fully in accordance with art.5(A) of the Paris Convention for the Protection of Industrial Property 1883. Further, in India, a compulsory licence can be granted under s.92 if there is a national emergency, such as a public health crisis or where the Government intends to use the patent for non-commercial public use.

²² Doha Declaration on the TRIPS Agreement and Public Health 2001 para.4.

²³ Srividhya Ragavan, *Patents and Trade Disparities in Developing Countries* (Oxford: Oxford University Press, 2012), p.366.

²⁴ *Bayer Corp v Union of India* M.P. Nos.74–76 of 2012 and No.108 of 2012; OA/35/2012/PT/MUM (Intellectual Property Appellate Board, India).

²⁵ Sean Flynn, Brook K. Baker and Srividhya Ragavan, “Justifying India's Patent Position to the United States International Trade Commission and the Office of the United States Trade Representative” (2014–2015) 7 *Indian J. Intell. Prop. L.* 1, 5.

²⁶ Patents Act of 1970 (as amended by Act 15 of April 4, 2005) s.84.

In Colombia, Law 1751 of 2015 provides that right to health is a fundamental human right.²⁷ Access to health care is characterised as a mandatory essential public service. The right to health is read to include the right to access to medication, diagnosis, treatment and rehabilitation of every Colombian.²⁸ Considering this, art.1 directs the Government to establish mechanisms to facilitate health care for Colombians. Further, the right to health was firmly recognised in Decision T/760 of 2008, rendered by the Constitutional Court of Colombia.²⁹ The decision was a response to a special *tutela* action under which citizens may request a court to determine whether a fundamental right has been violated. Thus, the *tutela* actions represent a special writ to protect fundamental rights of citizens and are automatically subject to discretionary review by the Constitutional Court of Colombia. In T/760, the Constitutional court consolidated 22 petitions to determine whether the individual cases showed systemic regulatory failures resulting in a violation of a fundamental right. The court's judgment established the right to health as a fundamental right and directed competent authorities to adopt necessary measures to fulfil an outlined mandate to meet health care needs.³⁰ In this regard, the right of the government to compulsorily license patents in the public interest to protect public health falls within Decree 4302 of 2008.³¹ A patent can be subject to a compulsory licence by the national office on the grounds that the patent has never been worked in the country or has not been worked for at least a year without legitimate reasons. The existence of the public interest, emergency or national security considerations may also be a good cause for issuing a compulsory licence. Under art.7, if a public interest exigency is established, a Technical Committee should recommend whether a compulsory licence can be granted under art.4. Once the recommendation is made by the Technical Committee, the Superintendencia de Industria y Comercio is legally obligated to process the licence.³² The procedure for requesting a compulsory licence is outlined in Ch.24 of Decree 1074 of 2015.³³ Under this decree, a request for a compulsory licence should be sent to the National Commission for Medications and Medical Devices to determine if a licence is mandated. The compulsory licensing provisions in Colombian law are subject to Ch.VII of Decision 486 of the Commission of the Andean Community.³⁴

The most recent grant of compulsory licensing involved a European patent for an anti-viral compound possessing integrase inhibitor activity, raltegravir.³⁵ Such compounds are effective as anti-HIV agents to prevent or reduce side effects from reverse transcriptase inhibitors used to treat AIDS.³⁶ In Germany, Merck marketed raltegravir as Isentress. The patent owner, a Japanese pharmaceutical company, Shionogi & Co Ltd, sought a preliminary injunction preventing Merck from marketing the drug. When an offer to Shionogi to provide a worldwide licence on the patent was rejected, Merck requested a compulsory licence under s.24 of the German Patent Act. The German Federal Court granted Merck's request considering the health consequences to which HIV patients already using Isentress would be subjected.³⁷ Under s.24 of the German patent statute, a non-exclusive authorisation to commercially use an invention shall be granted on a case-by-case basis by the Federal Patent Court based on public interest considerations established under s.65. The statute does not define the term "public interest" and thus preserves the sovereign discretion

²⁷ Law 1751/2015 (Colombia).

²⁸ Law 1751/2015 art.2 (Colombia).

²⁹ Decision T760 of 2008, July 2008, available at https://www.escri-net.org/sites/default/files/English_summary_T-760.pdf [Accessed October 31, 2016].

³⁰ Decision T760 of 2008, p.4.

³¹ Decreto 4302 of 2008, November 13, 2008 (Colombia), available at http://www.wipo.int/wipolex/en/text.jsp?file_id=190459 [Accessed October 31, 2016].

³² Decreto 4302/2008 of November 13, 2008 art.2.2.2.24.7 (Colombia); Goldman, "Colombia Issues Public Interest Declaration to Lower Price of Glivec", available at <http://keionline.org/node/2601> [Accessed October 31, 2016].

³³ Ministerio de Comercio, Decreto 1074, Por medio del cual se expide el Decreto Único Reglamentario del Sector Comercio (May 26, 2015).

³⁴ Andean Community, Decision 486 Establishing the Common Industrial Property Regime, Ch.VII, art.62; James Love and Andrew S. Goldman, "Colombia Asked to Declare Excessive Price for Cancer Drug Contrary to Public Interest", available at <http://www.ip-watch.org/2015/12/03/colombia-asked-to-declare-excessive-price-for-cancer-drug-contrary-to-public-interest-grounds-for-compulsory-license/> [Accessed October 31, 2016].

³⁵ European Patent No.1,422,218 (DE: (DE 602 42 459.3).

³⁶ "German Federal Patent Court Issues Compulsory License on Patents for HIV Drug Raltegravir", Email from Priti Radhakrishnan via IP-health Listserv, September 8, 2016.

³⁷ This decision is subject to appeal.

to determine whether and when such a licence may be granted. Just like in India and Colombia, a compulsory licence may be granted under German law to ensure an adequate supply of the patented product for the German market, even if by only importation.

Statutory provisions that preserve the Government's right to interfere with the private property in patents are not alien to the United States. For instance, the objective of the Bayh-Dole Act is for the government to retain sufficient rights over federally funded inventions to protect the public against non-use or unreasonable use of inventions.³⁸ Health or safety needs are legitimate grounds under the statute for the federal agency funding the research to exercise the march-in right to compel a licence. The federal government also retains a non-exclusive, non-transferable, royalty-free licence to use the invention. Similarly, under the Judicial Procedure Act, the US Government retains the right to make, use or manufacture a patented product or process "without license" provided the patent holder is duly compensated.³⁹ The Energy Storage Competitiveness Act is yet another example where the secretary is vested with the discretion to compel the patent owner to negotiate "nonexclusive licenses, and royalties on terms that are reasonable, as determined by the Secretary" in the field of energy storage.⁴⁰ Further, the secretary may require that the development of a new invention funded under the enactment be subject to terms deemed necessary by the secretary to "advance the capability of the United States to successfully compete in global energy storage markets".⁴¹ Another example is the Clean Air Act under which a compulsory licensing may be granted upon an application made by the administrator and based on a determination that a patent is not "reasonably available" and thereby hinders the implementation of the objectives of the title.⁴²

Unilateral actions and multilateral dispute settlement obligations

The discussion above details how every country uses the support from the international trade regime to statutorily sanction sovereign action to deal with exceptional public interest situations. However, it does not clarify the credence of the US position with reference to the discussion on India and Colombia when these countries exercised the sanctioned rights to compulsorily license medication. The following discussion deals with statutes that authorise the USTR's intrusion into other countries' policies.

Section 182 and the USTR

The United States' intrusion into sovereign policies and legitimate actions in the public interest, such as the granting of compulsory licences in other countries, is authorised under s.182 of the Trade Act of 1974 (Trade Act), commonly referred to as the Special 301 provision.⁴³ This provision authorises the USTR to identify countries that are perceived to deny adequate and effective protection of intellectual property rights or deny fair and equitable market access to US industries or entities that rely on intellectual property protection to compile the Special 301 Report. The USTR forms a part of the executive office of the president and is the agency tasked with negotiating trade agreements and conducting unilateral reviews of policies of other sovereign countries as part of the responsibilities to enforce US trade policy, including intellectual property policy. Thus, the USTR identifies the "act, policy, or practice" of foreign countries that, in its opinion, burdens or restricts US commerce by denying adequate intellectual property protection. Similarly, the USTR identifies a country as denying market access when access to that foreign national market is affected or denied for US industries. The term "market access" is construed broadly to cover

³⁸ 35 USC s.200.

³⁹ 28 USC s.1498.

⁴⁰ 42 USC s.17231(h).

⁴¹ 42 USC s.17231(h)(7).

⁴² 42 USC s.7608.

⁴³ 19 USC s.2242.

any subject matter and without giving any accord or deference to the circumstances that caused the policy. For instance, when India's National Manufacturing Policy discussed promoting green technologies as part of its environmental protection programme, it was identified as an area of concern by the USTR in its 2013 Special 301 Report because of its potential to affect US investments into India (and because of the possibility of the compulsory licence prevailing in protected technologies)!⁴⁴

Once identified, the USTR designates the countries within specific groups before the Special 301 Report is submitted to the House and the Senate.⁴⁵ The most egregious identified violators are featured as Priority Foreign Countries, serious offenders are featured in the Priority Watch List, and the less serious offenders are included in the Watch List. A *priority* designation for a country by the USTR results in the greatest scrutiny of the sovereign nation followed by an investigation and threat of either unilateral sanctions,⁴⁶ the denial of benefit under the Generalised System of Preferences (GSP), or both.⁴⁷ Over the years, the USTR has clearly increased the number of countries that are put on the Priority Watch List.

Multilateral dispute settlement

Amidst the above, the establishment of the WTO and the US commitment to the multilateral dispute settlement process remains a significant event. The significance is derived from the fact that the WTO provides a forum—the Dispute Settlement Body (DSB)—to adjudicate and enforce trade related grievances of individual members. The enforcement mechanism borrows its basic features from the General Agreement on Tariffs and Trade 1994 (GATT).⁴⁸ The establishment of the DSB necessitates member states to strictly observe and implement trade obligations, part of which is the dispute settlement process. Thus, all disputes between member states involving compliance with any of the WTO agreements, including TRIPS, are subject to the integrated dispute settlement process of the WTO.

Article 23 of the WTO Understanding on Rules and Procedures Governing the Settlement of Disputes 1994 (DSU) specifically outlines the redress mechanism for members with respect to any violation, nullification or impediment of benefits preventing the attainment of trade agreement objectives. Article 23(2)(a) outlines that the DSU procedures remain the unitary mechanism that can be used for findings that lead to the “suspension of concessions or other obligations” under GATT. Numerous WTO disputes have reiterated the preference for settlement of disputes using multilateral forum as opposed to sovereign nations unilaterally taking action against other trading partners. For example, in “Canada—Aircraft Credits and Guarantees”, the panel observed that “Members shall resolve all disputes through the multilateral dispute system, to the exclusion of unilateral self-help”.⁴⁹ Similarly, in “United States—Import Measure on Certain EC Products”, the panel noted that the general obligation in art.23(1) required members to seek redress of any violation only within the WTO institutional framework and pursuant to the rules and procedures of the DSU.⁵⁰ Further, art.23(2) prohibits unilateral redress preventing members from making determinations on violations, nullification or impairment of benefits, except through recourse to the DSB.⁵¹

In short, the DSU's emphasis on the multilateral dispute settlement process is meant to prevent unilateral resolution of disputes by countries with more trade muscles to flex. The strength of the DSU is the DSB's juridical nature wherein a panel is constituted to hear both parties if consultations fail.⁵² The process also

⁴⁴ Office of the United States Trade Representative, *2013 Special 301 Report* (2013).

⁴⁵ 19 USC s.2411.

⁴⁶ 19 USC s.2411(d)(3)(VB)(ii).

⁴⁷ 19 USC s.2462(c). The GSP programme provides preferential tariff, including duty-free entry, to goods from developing and least developed countries with the objective of promoting economic growth.

⁴⁸ Adrian Otten and Hannu Wager, “Compliance with TRIPS: The Emerging World View”, 29 *Vand. J. Transnat'l L.* 391, 411–413 (1996).

⁴⁹ “Canada—Aircraft Credits and Guarantees”, Report of the Panel, January 28, 2002, WT/DS222/R, para.7.170.

⁵⁰ “United States—Import Measure on Certain EC Products”, Report of the Panel, January 10, 2001, WT/DS165/R, para VI.20 (opining that art.23(1) of DSU prohibits “unilateral redress” and the prohibition is more directly provided for under art.23(2)).

⁵¹ “United States—Import Measure on Certain EC Products”, Report of the Appellate Body, December 11, 2000, WT/DS165/AB/R, para.111.

⁵² Understanding on Rules and Procedures Governing the Settlement of Disputes 1994 arts 6, 7, 12.

provides for an appeal by either party, in which case the DSB will not adopt the panel report.⁵³ Appeals from the panel's opinions are heard by an appellate body whose findings, once adopted by the DSB, are final.⁵⁴ Importantly, the DSB is authorised to take action against non-complying parties.⁵⁵

The structure of the DSB's process enables countries, including the United States, to commit to multilateral dispute settlement. Considering that imposing unilateral threats would violate the US obligations to the WTO, the Trade Act states that the USTR is not required to take action in any case in which the DSB has adopted a report or in a ruling that US rights under a trade agreement have not been violated or denied, nor have the benefits due to the United States under a trade agreement been nullified.⁵⁶ This and perhaps the DSB's ruling on the US Special 301 process, discussed below, explains why the USTR has hesitated to designate a trading partner with Priority Foreign Country status, a status, which, if proven in an investigation, would lead to unilateral sanction by the United States.

Scrutiny of the US Special 301 process

When the US Congress failed to repeal s.301 in the Uruguay Round Agreements Act of 1994, which was the WTO implementation legislation, the European Union requested consultation as required under the DSU with the United States.⁵⁷ When initial consultations failed, a panel was established.⁵⁸ The European Union claimed that

“by imposing specific, strict time limits within which unilateral determinations must be made and trade sanctions must be taken, Sections 306 and 305 of the Trade Act of 1974”

violated the US commitment to the WTO to resolve multilateral disputes through the DSB's process.⁵⁹ Thus, the legality of the Special 301 process came under scrutiny by the DSB in “United States—Sections 301–310 of the Trade Act of 1974” to determine whether it violated the US obligations under art.23(1) and 23(2) of the DSU. The panel opined that the statutory language of s.304 constituted a serious threat to multilateral dispute resolution. Nevertheless, a “Statement of Administrative Action” (SAA) from the US administrative authorities, the Panel held, alleviated the concerns.⁶⁰ The SAA was treated as an “authoritative expression” by the United States on the subject of reconciling its domestic laws with the country's international trade obligations.⁶¹ The SAA was effectively a pledge by the United States promising that the USTR will:

- invoke DSU dispute settlement procedures, as required under current law; or
- base any s.301 determination of violation or denial of US rights under a relevant WTO agreement on a panel or Appellate Body findings adopted by the DSB.⁶²

Considering the SAA, the panel held that the Special 301–310 provisions did not violate the United States' international trade obligations so long as the country does not repudiate or remove its SAA undertakings.

⁵³ Understanding on Rules and Procedures Governing the Settlement of Disputes 1994 art.16. The DSB may also unanimously reject the proposed resolution.

⁵⁴ Understanding on Rules and Procedures Governing the Settlement of Disputes 1994 art.17.

⁵⁵ Understanding on Rules and Procedures Governing the Settlement of Disputes 1994 art.22.

⁵⁶ 19 USC s.2411(2)(A).

⁵⁷ Understanding on Rules and Procedures Governing the Settlement of Disputes 1994 art.6; “United States—Sections 301–310 of the Trade Act of 1974”, European Communities' Request for the Establishment of a Panel Pursuant to Article 6 of the DSU, December 22, 1999, WT/DS152/11.

⁵⁸ “United States—Sections 301–310 of the Trade Act of 1974”, Report of the Panel, December 22, 1999, WT/DS152/R, para.4.8. The European Communities asserted that its own WTO implementation mechanism conformed in letter and spirit with art.23 of the DSU. Trade Barriers Regulation, Council Regulation 3286/94 laying down Community procedures in the field of the common commercial policy in order to ensure the exercise of the Community's rights under international trade rules, in particular those established under the auspices of the World Trade Organization [1994] OJ L349/71.

⁵⁹ “United States—Sections 301–310 of the Trade Act of 1974”, Report of the Panel, December 22, 1999, WT/DS152/R, para.1.3, 1.4.

⁶⁰ H.R. Doc. No.103-316, p.1029.

⁶¹ H.R. Doc. No.103-316, p.364.

⁶² H.R. Doc. No.103-316, pp.365–366.

However, the panel noted that even a *mere threat of trade sanction* could be perceived as a threat to the WTO. The panel report notes that the threat alone can enable a member to exert undue leverage. It can

“disrupt the very stability and equilibrium which multilateral dispute resolution was meant to foster and consequently establish, namely equal protection of both large and small, powerful and less powerful Members through the consistent application of a set of rules and procedures”.⁶³

Does the United States exert undue unilateral pressure?

The validity of US actions relating to other countries exercising sovereign rights is the focus of the discussion below. This discussion is important considering that poorer nations find the Special 301 process a yearly intrusion by the United States into sovereign actions. Some of these nations may even consider taking the United States to the DSB to determine whether the USTR’s actions amount to a threat violating the spirit of art.23 of the DSU and the SAA, in light of the prescriptions and limitations outlined in art.23 as well as the limitations imposed by “United States—Sections 301–310 of the Trade Act of 1974”.

The USTR’s actions can be construed as amounting to unilateral threats over sovereign nations for the following reasons:

Historic pattern

The United States, historically and to date, has regularly exerted pressure on its trading partners. For example, Chile and Thailand have featured on the Priority Watch List since 2007; China, Russia, Venezuela and Argentina have featured on the Priority Watch List since 2006; Bolivia, Belarus, Peru, Romania, the Philippines, Costa Rica, Colombia, Turkmenistan, Uzbekistan and Vietnam have all been regularly featured on the Watch List.⁶⁴ Another great example, India, has featured in every Special 301 process since its first inception in 1989, even after it has fully complied with TRIPS. Such yearly badgering of trading partners amount to a clear, unequivocal and unilateral threat to adjudicate issues outside the multilateral forum such as through the DSB.

Unfair pressure

The USTR regularly designates trading partners as having inadequate intellectual property protection “notwithstanding the fact that the foreign country may be in compliance” with specific trade and intellectual property obligations.⁶⁵ For example, despite full compliance with TRIPS after 2005, India in 2013 alone was designated as a notorious market, was threatened that its status would be elevated to a Priority Foreign Country which entailed a loss of trade benefits, was subjected to an out-of-cycle review and was taunted in two successive Special 301 reports (in 2012 and 2013) for granting a compulsory licence to Bayer’s egregiously priced Nexavar. Thus, the USTR unfairly determines practices that are in compliance with trade obligations as “an unjustifiable burden amounting to inadequate [intellectual property] protection and unduly restrictive of US commerce”. It is unfair because the pressure from the USTR’s imposition causes trading partners to reconsider a nationally favourable policy to instead institute a policy that is friendly to US domestic economic interests.

⁶³ “United States—Sections 301–310 of the Trade Act of 1974”, Report of the Panel, December 22, 1999, WT/DS152/R, para.7.89.

⁶⁴ “Special 301 Report”, available at https://en.wikipedia.org/wiki/Special_301_Report [Accessed October 31, 2016].

⁶⁵ 19 USC s.2411(d)(3)(VB)(ii).

The United States unilaterally threatens to punish trading partners

The Trade Act retains the right of the USTR to enforce retaliatory punitive trade-related measures. Notably under the Act, the USTR, based on the identification in the Special 301 Report, is authorised to “suspend, withdraw, or prevent the application of benefits of trade agreement concessions” as well as “impose duties or other import restrictions on the goods” for such time as the USTR determines appropriate.⁶⁶ For instance, in 2013, the Special 301 Report cited the *Bayer* decision in India to suggest that the United States would withdraw GSP benefits and impose sanctions on India.⁶⁷ In reality, no country can alter GSP or other benefits that accrue to a trading partner unless the trading partner falls within an applicable exception. Altering the GSP benefits for any one country would affect the WTO’s most favoured nation clause which requires that tariff treatments provided to one member be extended to all, subject to limited exceptions.⁶⁸ Further, the WTO Appellate Body in “European Communities—Conditions for the Granting of Tariff Preferences to Developing Countries” stressed that GSP criteria must be tailored to the needs of *developing countries* to strike down an EU programme that, like Special 301, was justified by domestic economic interests rather than the “non-reciprocal” development interests of other countries.⁶⁹

USTR uses public law to further private interests

The USTR’s scrutiny is an undue threat because it is based on domestic and self-claimed interests of private organisations. In fact, the USTR’s Special 301 Report is largely dependent on representations from private companies. Susan Sell highlights that most countries included on the Priority Watch List and Watch List between 1996 and 2000 were requested by the Pharmaceutical Research Manufacturers of America or the International Intellectual Property Alliance.⁷⁰ In fact, the Special 301 process has been criticised by Peter Drahos as “a public law devoted to the service of private corporate interests”.⁷¹ It is an example of an US administrative body wielding questionable legal powers to unduly influence sovereign governments to protect private interests. American trade lobbyists regularly “boast” about how they “fixed” other countries’ intellectual property laws.⁷² Such methods reek of the use of undue threat by a country that regularly flexes its muscles while preaching against it in public.

Lack of deference

The unilateral, univocal Special 301 determinations of the USTR have never historically been given any deference to public policy, public health or similar human rights, based on constitutional limitations or other compelling conditions. For example, in 2013, Ukraine’s status was elevated to Priority Foreign Country for intellectual property law violations, and the status was sustained in 2014 despite the fact that the country suffered the consequences of Russian invasion several times!⁷³ In 2015, the USTR downgraded Ukraine to the Priority Watch List with the following note:

⁶⁶ 19 USC s.2171.

⁶⁷ 19 USC s.2242.

⁶⁸ General Agreement on Tariffs and Trade 1947 art.1; “Differential and More Favorable Treatment Reciprocity and Fuller Participation of Developing Countries”, Decision of 28 November 1979, WTO Doc. L/4903.

⁶⁹ “European Communities—Conditions for the Granting of Tariff Preferences to Developing Countries”, Report of the Appellate Body, April 7, 2004, WT/DS246/AB/R, para.163.

⁷⁰ Susan K. Sell, *Private Power, Public Law: The Globalization of Intellectual Property Rights* (Cambridge: Cambridge University Press, 2003), pp.126–129.

⁷¹ Peter Drahos with John Braithwaite, *Information Feudalism: Who Owns the Knowledge Economy?* (London: Earthscan, 2002), p.89.

⁷² Drahos with Braithwaite, *Information Feudalism* (2002), p.87 (detailing a lobbyist noting, “Jamaica had no intellectual property law, but they wrote one (with our help). Similarly the Dominican Republic. I sat down with their lawyer and together we wrote their copyright law.”).

⁷³ But the USTR determined that no action will be taken considering the political unrest in Ukraine. Office of the United States Trade Representative, *2014 Special 301 Report* (2014), p.30.

“[T]he United States appreciates that the Ministry of Internal Affairs’ Cybercrime Division and Economic Crimes Division have both been willing to work closely with the U.S. Department of Justice on online piracy and that Ukrainian enforcement personnel have participated in training and engagement on this issue, including a workshop on Combating Digital Piracy by the Commercial Law Development Program of the United States Department of Commerce.”⁷⁴

Thus, the United States uses the Special 301 process and the USTR to impose its version of intellectual property policies in complete disregard of the targeted country’s local political and economic realities.

Traditionally, the WTO and the DSB have failed to position themselves to appreciate local realities that genuinely impede intellectual property implementation requiring legitimate sovereign intrusions. For example, in stark contrast to the deference that the SAA received, the DSB—both the WTO panel and the Appellate Body—in “India—Patent Protection for Pharmaceutical and Agricultural Chemical Products” refused to accept India’s rationale that administrative orders are treated as a legally tenable tool to implement certain aspects of the statute in question.⁷⁵ This dispute is a great example of how the DSB has tended to easily ignore domestic systems and refuse to consider domestic rationales in determining perceived derogations from international obligations.⁷⁶ Deference to domestic lawmakers’ wisdom has been difficult to generate at the WTO, particularly the DSB, when the wisdom is from a developing country.

Trade Facilitation and Trade Enforcement Act of 2015 increases scrutiny

That the USTR will be relentless in exerting pressure is clear from the terms of the Trade Facilitation and Trade Enforcement Act of 2015. Under the Act, the position of “Chief Innovation and Intellectual Property Negotiator” has been created within the USTR specifically to increase the level of scrutiny over other countries and to

“take appropriate actions to address acts, policies, and practices of foreign governments that have a significant adverse impact on the value of United States innovation”.⁷⁷

The statute creates a Trade Enforcement Trust to fund enforcement actions against foreign countries.

In reality, the deference that the DSB panel extended to the SAA undertakings is exceptional. The DSB’s reliance on the SAA of a powerful member has been detrimental to less powerful nations. It has left an impression of a system that has merely worked to reinforce the balance of power inequities. In any event, the DSU has been consistently criticised for lacking important paradigms required to appreciate the complexities involved in establishing an intellectual property regime.⁷⁸ The DSU’s inability to appreciate local realities and over-reliance on the TRIPS negotiations during which the balance of powers were even more skewed than what exists currently, are all internal barriers that have impeded the WTO from achieving the spirit of the overall objectives. They have also created the dire need for other international organisations such as WIPO, the World Health Organization (WHO) and the United Nations to provide the required humane angle to balance the trade agenda.

⁷⁴ Office of the United States Trade Representative, *2015 Special 301 Report* (2015), p.56.

⁷⁵ “India—Patent Protection for Pharmaceutical and Agricultural Chemical Products”, Report of the Panel, September 5, 1997, WT/DS50/6; “India—Patent Protection for Pharmaceutical and Agricultural Chemical Products”, Report of the Appellate Body, December 19, 1997, WT/DS50/AB/R.

⁷⁶ Ragavan, *Patents and Trade Disparities in Developing Countries* (2012), p.366.

⁷⁷ 19 USC s.4301.

⁷⁸ Thomas Cottier, “The Agreement on Trade-Related Aspects of Intellectual Property Rights” in P.F.J. Macrory, A.E. Appleton and M.G. Plummer (eds), *The World Trade Organization: Legal and Political Analysis* (New York: Springer, 2005) Vol.1, p.1063.

WIPO's Role

WIPO is closely linked to TRIPS in the trade regime. The incorporation of the WIPO treaties into TRIPS has created a link between the WTO and WIPO with a common objective. The following discussion expounds the link between the two organisations to determine whether there is scope for larger involvement.

The DSB has periodically consulted WIPO and sought inputs. For instance, in “China—Measures Affecting the Protection and Enforcement of Intellectual Property Rights”,⁷⁹ WIPO responded to the Panel’s request and submitted factual information from the official records of the various diplomatic conferences regarding the interpretation of arts 5(1), 5(2) and 17 of the Berne Convention for the Protection of Literary and Artistic Works 1886.⁸⁰ Yet, the involvement has been limited to seeking factual information. Further, the DSB has traditionally provided limited deference to WIPO even in instances where it has sought input.⁸¹ In “United States—Section 211 Omnibus Appropriations Act of 1998”, for instance, the Appellate Body mentions the response of the Director-General of WIPO to a request for information by the DSU Panel.⁸² But, the report notes that “the Panel did not discuss this ... [and] the Panel seems to have taken [a different] view”.⁸³ WIPO also has limited powers to intervene in the DSB’s process when inputs are not sought except by filing an amicus brief. Unfortunately, most amicus briefs, while accepted, are not taken into account.⁸⁴ The need is for a platform for institutional involvement of international organisations.

WIPO’s adoption of the Development Agenda in 2007 sets the right forum and provides an opportunity to assume leadership in these matters. The evolution of WIPO as a negotiator for the developing nations with the WTO will contribute to the restoration of the rather relatively weaker image of WIPO in the post-WTO era. The Committee on Development and Intellectual Property which was established by the WIPO General Assembly in 2008 has the objective of implementing the Development Agenda recommendations.⁸⁵ These recommendations set the right tenor for WIPO to work on issues relating to development in the intellectual property context.⁸⁶ For example, Recommendation 40 requests WIPO “to intensify its cooperation on intellectual property-related issues with United Nations agencies”, including the WHO and other relevant international organisations, especially the WTO. Similarly, Recommendation 45 outlines that intellectual property enforcement should be contextualised within “broader societal interests and especially development-oriented concerns” outlined in art.7 of TRIPS. Unfortunately, there is no specific mention on issues relating to intellectual property and access to life-saving medications, but the recommendations are commendable for outlining larger public interest concerns and for implicating the work of the United Nations, the WTO and the WHO. In turn, the WHO’s specific objective on the trade and health diplomacy agenda includes a commitment to support countries on implications of international trade and trade agreements on health. The WHO also hopes to build the capacity of countries to negotiate the support of collective action to address global health challenges, with which WIPO should be involved. The newly released report of the UN Secretary-General’s High-Level Panel on Access to Medicines also

⁷⁹“China—Measures Affecting the Protection and Enforcement of Intellectual Property Rights”, Report of the Panel, January 26, 2009, WT/DS362/R.

⁸⁰“China—Measures Affecting the Protection and Enforcement of Intellectual Property Rights”, Report of the Panel, January 26, 2009, WT/DS362/R, p.4.

⁸¹ These cases include “United States—Section 211 Omnibus Appropriations Act of 1998”, Report of the Panel, August 6, 2001, WT/DS176/R; “United States—Section 110(5) of the U.S. Copyright Act”, Report of the Panel, June 15, 2000, WT/DS160/R; “China—Measures Affecting the Protection and Enforcement of Intellectual Property Rights”, Report of the Panel, January 26, 2009, WT/DS362/R; and “European Communities—Protection of Trademarks and Geographical Indications for Agricultural Products and Foodstuffs”, Report of the Panel, March 15, 2005, WT/DS174/R. Thomas Cottier and Marina Foltea, “Global Governance in Intellectual Property Protection: Does the Decision-making Forum Matter?” (2012) 3 WIPO J. 139, 158.

⁸² Understanding on Rules and Procedures Governing the Settlement of Disputes 1994 art.13.

⁸³“United States—Section 211 Omnibus Appropriations Act of 1998”, Report of the Appellate Body, January 2, 2002, WT/DS176/AB/R, para.189.

⁸⁴ E.g. “Mexico—Tax Measures on Soft Drinks and Other Beverages”, Report of the Appellate Body, October 7, 2006, WT/DS308/AB/R.

⁸⁵ WIPO, “Committee on Development and Intellectual Property”, available at <http://www.wipo.int/policy/en/cdip/> [Accessed October 31, 2016].

⁸⁶ WIPO, “The 45 Adopted Recommendations under the WIPO Development Agenda”, available at <http://www.wipo.int/ip-development/en/agenda/recommendations.html> [Accessed October 31, 2016].

calls on WTO members to “commit” at the highest political levels, to the letter and spirit of the Doha Declaration and refrain from actions that limit the use of TRIPS flexibilities.⁸⁷

Greater coordination among international organisations would streamline objectives to ensure that trade and intellectual property objectives be not achieved at the cost of human lives and human rights. WIPO’s commitment to the intellectual property and development agenda, the United Nations’ involvement in this area, sets the right platform to create concrete steps in this area. At a general level, systems to incentivise research should be streamlined to achieve a balance between innovation and access. As public funding for research increases, the terms for private returns and incentives from publicly funded research deserves closer scrutiny. For poorer nations, the term access should be defined to include investments into research to treat diseases that disproportionately prevails in and affects poorer nations.

Conclusion

International organisations have an obligation to carefully act on behalf of all its members. Such an obligation entails a careful consideration of local realities to generate co-operation to international efforts at harmonisation. Neither international organisations nor individual member states can afford to be blind to global effects from local crisis in other nations. The outbreak of Ebola in one part of the world, for example, affected other parts of the world. Airlines, diversion of resources for screening and tourism are just samples of industries that are immediately affected. Similarly, national economies affect global trade when a loss of labour productivity ensues from a deteriorating public health, which, in turn, can affect unrelated industries vital to international trade. Prioritising harmonisation at the cost of local economic, political or social crisis is a misguided policy. So is allowing a powerful member to dominate and interfere unduly with sovereign legitimate actions of other countries. Tools like compulsory licensing are critical to restore national economies and to prevent a country’s deteriorations from affecting global trade. Global responsibilities of developed nations should include an expectation to not unduly and unilaterally impose itself on sovereign actions of other countries, especially to please local private actors.

⁸⁷ United Nations Secretary-General’s High-Level Panel on Access to Medicines, *Report of the United Nations Secretary-General’s High-Level Panel on Access to Medicines Report: Promoting Innovation and Access to Health Technologies* (2016).

The Never-ending Story of Access to Medicines

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☞ Access to medicines; Brazil; Compulsory licensing; Developing countries; Diseases and disorders; Pharmaceuticals; Research and development; TRIPS

Ever since the Agreement on Trade-Related Aspects of Intellectual Property Rights 1994 (TRIPS) entered into force, countries have been struggling to adequately implement the agreement while at the same time keeping national interests in sight. This struggle has led countries seeking national growth and access to foreign markets to negotiate free trade agreements containing stricter standards of intellectual property protection and enforcement. These agreements have contributed to the already extensive list of challenges posed to countries seeking to provide adequate and affordable access to essential medicines.

Although neglected diseases, tropical diseases or the like are common among both the developing and least-developed worlds, finding treatments for these diseases does not seem to have been a priority for either the pharmaceutical industry or other relevant stakeholders. The recent outbreaks of the Ebola and Zika viruses remind us of the speed with which diseases can spread, affecting all of us regardless of a country's level of development. These outbreaks have also brought to the spotlight the need to carry out further research and development (R&D) within the field of neglected diseases, both communicable and non-communicable. In principle, the patent system as established by TRIPS should have sufficed to provide the pharmaceutical industry with the incentives needed for carrying out the aforementioned research. Several studies, however, have pointed out the system's failure to create a sustainable financial model for supporting innovation in all the niches required by society.¹

This article has two main goals. First, it analyses and comments on the *Report of the UN Secretary-General's High-Level Panel on Access to Medicines* (HLP Report), which was released in September 2016.² Secondly, the article explores the need for creating a side system of incentives to complement the current patent system in fostering R&D and innovation in the much-needed field of neglected diseases. To achieve these goals, the analysis will begin by examining the current discourse on patents and access to medicines. After reviewing the proposals advanced in the *HLP Report*, this article concludes with some challenges embedded in the creation of a new international intellectual property framework.

Background

In principle, patents are rewards to inventors for contributing their inventions to society. At the same time, society is rewarded with knowledge unknown to its members until the moment when the patent discloses

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¹ The patent system, as a system for financing R&D, has been regarded as flawed due to the high costs transferred to the end product (medicine). Contributing to deterring access to medicines. James Love and Tim Hubbard, "The Big Idea: Prizes to Stimulate R&D for New Medicines" (2007) 82 *Chj.-Kent L. Rev.* 1519, 1520.

² UN Secretary-General's High-Level Panel on Access to Medicines, *Report of the UN Secretary-General's High-Level Panel on Access to Medicines: Promoting Innovation and Access to Health Technologies* (2016).

the protected information or knowledge.³ Some scholars have challenged the success of the patent system based on its ability to foster innovation. For example, treatment or health technologies addressing neglected diseases and orphan diseases seem to be lacking.⁴

The pharmaceutical industry is highly dependent on patent protection and its 20 years of exclusivity to recoup its investment. This period has been highlighted as the incentive necessary to carry out R&D within the field. When TRIPS became mandatory for nations joining the World Trade Organization (WTO) in 1994, patent rights were extended to inventions in all fields of technology without discrimination.

Neglected and tropical diseases, which are common among both the developing and least-developing worlds, seem to have been forgotten. In terms of access to medicines, the general discourse addresses the need to ensure availability and affordability of essential medicines, or medicines in general.⁵ In this respect, patents have been pointed out as one of the reasons deterring access to medicines.

The market size seems to be a main driver for R&D and innovation in the field of neglected and tropical diseases. It influences the pharmaceutical companies' willingness to carry out R&D in these fields.⁶ The cost of developing a new drug in 2002 was estimated at US \$802 million.⁷ In 2011, the R&D expenditure per new molecules that had reached the market was estimated at a staggering US \$1.5 billion.⁸

Finding a viable option for stakeholders to commit to carrying out this kind of R&D is paramount to improving society's access to certain medicines and quality of life as a whole. On the one hand, the patent system can continue to play its role in incentivising the pharmaceutical industry to come up with innovative products and processes. On the other hand, governments will be able to provide affordable and top-of-the-line medicines to tackle pressing health needs. Because several studies have already assessed the impact of TRIPS implementation and the limitation and possibilities in making use of TRIPS flexibilities within the access-to-essential-medicines context, this article will not discuss these issues, even though they are important.

Previous research has denoted the need to not only balance the potential policy incoherence, but also find a suitable, or side, system of incentives⁹ to further promote R&D and to increase access to medicines. "How to promote innovation and increase access to medicines, vaccines, diagnostics and related health technologies in low, middle, and high-income countries?"¹⁰ is the central question motivating the UN Secretary-General's High-Level Panel on Access to Medicines (HLP) to find solutions.

The HLP Report in a nutshell

The HLP was appointed by UN Secretary-General Ban Ki-moon on November 19, 2015¹¹ to tackle the policy incoherence between intellectual property rights, human rights, trade rules and public health.¹² In the same press release, the secretary-general stressed the need to incentivise not only innovation and the development of new health technologies, but also the duty to ensure everyone's access to quality and affordable medicines. The scope of the *HLP Report* is set out on the basis of Sustainable Development

³ Debora Andrade Capp, "A Propriedade Intelectual Na Constituição" in Sergio Fabris (ed.), *Limites Jurídicos da Regulação e Defesa da Concorrência* (Porto Alegre, 2003), p.52.

⁴ Love and Hubbard, "The Big Idea" (2007) 82 Chi.-Kent L. Rev. 1519.

⁵ Dhanay Cadillo Chandler, *The Role of Patents in the Latin American Development: Models of Protection of Pharmaceutical Patents and Access to Medicines in Brazil, Chile and Venezuela* (Helsinki: Hanken School of Economics, 2014).

⁶ Michael Kremer, "Pharmaceuticals and the Developing World" (2002) 16 J. Econ. Persp. 4.

⁷ Joseph A. DiMasi, Ronald W. Hansen and Henry G. Grabowski, "The Price of Innovation: New Estimates of Drug Development Costs" (2003) 22 J. Health Econ. 151.

⁸ Jorge Mestre-Ferrandiz, Jon Sussex and Adrian Towse, *The R&D Cost of a New Medicine* (London: Office of Health Economics, 2012).

⁹ Chandler, *The Role of Patents in the Latin American Development* (2014), p.220.

¹⁰ U.N. Secretary-General's High-Level Panel on Access to Medicines, *Background Paper: International Legal Norms: The Right to Health and the Justifiable Rights of Inventors* (2016) (by Richard Elliott).

¹¹ U.N. Department of Public Information, "Secretary-General Appoints Two Former Presidents, 14 Others as Members of High-Level Panel on Access to Medicines", available at <http://www.un.org/press/en/2015/sga1608.doc.htm> [Accessed November 3, 2016].

¹² U.N. Secretary-General's High-Level Panel on Access to Medicines, *Background Paper* (2016).

Goal 3 as provided in the 2030 Agenda for Sustainable Development. Aiming to leave no one behind by 2030, this goal provides as follows:

“Goal 3. Ensure healthy lives and promote well-being for all at all ages

...

- 3.3 *By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases*
- 3.4 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being
- 3.8 Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all
- 3.b *Support the research and development of vaccines and medicines for the communicable and non-communicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines, in accordance with the Doha Declaration on the TRIPS Agreement and Public Health, which affirms the right of developing countries to use to the full the provisions in the Agreement on Trade-Related Aspects of Intellectual Property Rights regarding flexibilities to protect public health, and, in particular, provide access to medicines for all*
- 3.d Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks”.¹³

The HLP’s preparatory work builds on the recommendations by the Global Commission on HIV and the Law,¹⁴ the Commission on Intellectual Property rights,¹⁵ the Commission on Intellectual Property Rights, Innovation and Public Health,¹⁶ among others. Before releasing the awaited report, the HLP received about 180 contributions from academia, the industry, civil society and other stakeholders. In addition, hearings and global dialogues took place in London and Johannesburg in March 2016. An Expert Advisory Group also supported the discussions and the development of the *HLP Report*.

Scholars and other stakeholders have labelled this report¹⁷ as a landmark document, since it acknowledged the policy incoherence concerning access to medicines on the one hand and provides important recommendations calling for governmental accountability and transparency on the other. An important shift within the report is the discourse itself. Previously, the discourse focused on access to medicines. Now, the focus is on access to health technologies. This shift may be a step forward in modelling the right incentives to prompt R&D and innovation in certain fields, such as neglected diseases.

The *HLP Report* was structured with four chapters covering health technology innovation and access, intellectual property laws and access to health technologies, new incentives for R&D of health technologies, and governance, accountability and transparency. Each chapter provides a set of recommendations unanimously agreed by the panellists. The end of the report also includes the panellists’ comments in the form of annexes.

Several issues have been raised by contributors and the panellists—namely, the lack of investment in R&D of health technologies for important health needs, the different and perhaps contradicting objectives with which public health, trade, human rights and intellectual property policies have been developed, the lack of preparedness and readiness in the case of future outbreaks that affect everyone, and the need to

¹³“Transforming Our World: The 2030 Agenda for Sustainable Development”, October 21, 2015, U.N. Doc. A/RES/70/1 (emphasis added).

¹⁴Global Commission on HIV and the Law, *HIV and the Law: Risk, Rights and Health* (2012).

¹⁵Commission on Intellectual Property Rights, *Integrating Intellectual Property Rights and Development Policy* (2002).

¹⁶World Health Organization, *Public Health, Innovation and Intellectual Property Rights: Report of the Commission on Intellectual Property Rights, Innovation and Public Health* (2006).

¹⁷Catherine Saez, “UN High-Level Panel on Access to Medicines Issues ‘Landmark’ Report” *Intellectual Property Watch*, September 14, 2016.

tailor or allow for further use of TRIPS flexibilities.¹⁸ Even when the report is its central focus, this article covers only a few of its recommendations, all of which could ignite the discussion on the use of TRIPS flexibilities in Brazil.

Reigniting the fire: Validating the prior consent mechanism in Brazil?

Within the first chapter, entitled “Intellectual Property Laws and Access to Health Technologies”, the recommendations for future policy development call for respect of the letter and spirit of the Doha Declaration on the TRIPS Agreement and Public Health 2001. This chapter signals the need for redefining the patentability criteria in a more “public-health sensitive”¹⁹ manner, such as by making use of art.27 of TRIPS.

A wider use of compulsory licences has also been suggested as a plausible mechanism enabling countries to obtain better prices for critical medicines. This recommendation could validate the confusing and lengthily contested prior consent mechanism in Brazil. Previous research has shown in good light those efforts made by the Brazilian legislators when implementing the prior consent mechanism as well as the use of compulsory licences to alleviate the country’s public health needs.

Despite Brazil’s having implemented TRIPS through the Intellectual Property Law (Law 9.279/96) and a following amendment (Law 10.196) in a manner consistent with its national interest, Bill 5402/2013 was submitted to Congress for discussion in 2013. This Bill proposed a legislative amendment to the current Intellectual Property Law, creating far-reaching mechanisms to ensure access to medicines.²⁰ Discussing this amendment in 2014, the reform’s proponents suggested to interpret or look at intellectual property through the human rights lens in an effort to balance exclusivity and competition while at the same time promoting technological development.²¹

On the same note, art.5 of the Brazilian Constitution foresees a social function²² to be fulfilled or complied with as part of the trade-off between the state and the inventor’s period of exclusivity. These concepts seem to have not only inspired the letter and spirit of the reform, but its purpose has also paved the way for an environment adequate for innovation in countries aiming to increase productivity and to achieve sustainable development.²³

The interpretation given to TRIPS flexibilities by the Brazilian Government has not been free of controversy. Strong criticism or scepticism towards the prior consent mechanism has led to a separation in competences between the National Health Institute (ANVISA) and the Patent Office (INPI) where the impact or effect on public health assessment before granting patents for determined pharmaceutical products or processes is no longer clear. Even when the Procuradoria-Geral Federal clarified these competences in 2009,²⁴ the Bill proposing to reform the current patent system moves forward, providing recommendations to ANVISA on how it could verify whether patent applications have fulfilled patentability requirements in light of the public health context.²⁵ In this regard, the *HLP Report* would validate the intention of Brazilian policy makers to introduce patentability criteria that are friendlier to public health. If the HLP

¹⁸ UN Secretary-General’s High-Level Panel on Access to Medicines, *Report of the United Nations Secretary-General’s High-Level Panel on Access to Medicines* (2016), p.7.

¹⁹ UN Secretary-General’s High-Level Panel on Access to Medicines, *Report of the United Nations Secretary-General’s High-Level Panel on Access to Medicines* (2016), p.7.

²⁰ Chamber of Duties, Center for Strategic Studies and Debates, *Brazil’s Patent Reform: Innovation Towards National Competitiveness* (2013) Vol.1, p.9.

²¹ Amy Nuun, *The Politics of AIDS Treatment in Brazil* (New York: Springer, 2009).

²² Article 5 provides: “[E]veryone are equal before the law, without distinction whatsoever, guaranteeing to Brazilians and foreigners residing in the country the inviolable right to life, liberty, equality, safety and property, as follows: . . . XXIX—The law shall ensure temporary privileges for the use of industrial inventions by their authors, as well as the protection of industrial creations, ownership of trademarks, company names and other distinctive signs, taking into consideration the social and technological interests and the country’s economic development.”

²³ Chandler, *The Role of Patents in the Latin American Development* (2014), p.210.

²⁴ Procuradoria-Geral Federal, “Procuradorias Federais junto ao INPI e à ANVISA”, Parecer N:210/PGF/AE/2009.

²⁵ Chamber of Duties, Center for Strategic Studies and Debates, *Brazil’s Patent Reform* (2013).

recommendation were to be taken into consideration for future developments, this validation could give countries room to complain before the WTO Secretariat during the Trade Policy Review of Members about the retaliation by a trading partner.²⁶

In the fight against HIV/AIDS, Brazil has implemented a series of measures aiming to provide access to affordable, if not free, medicines through the Popular Pharmacy Programme. This programme has reduced the patients' out-of-pocket expenditure to only 10 per cent of the full cost of medicine, with the other 90 per cent being subsidised by the government.²⁷ Brazil is considered to be a key player with the weight to potentially influence global health-care policy-making. Their success has partially been attributed to the use of the human rights doctrine to shape internal policies on access to essential medicines,²⁸ the close co-operation or development of both public health policies and intellectual property legislation,²⁹ and the linkage between prevention and treatment.

Another important aspect of the Brazilian intellectual property framework is the use of compulsory licences to correct anticompetitive practices or to protect public health. Both the compulsory licence regime and the prior consent mechanism were implemented to address public health concerns. Moreover, art.68 s.1°(I) of Law 9.279/96 envisages compulsory licences in cases where the local working requirement has not been fulfilled. Accordingly, if the patent holder has not made use of the patented process or manufacture the patented product within three years of the patent grant, the government will have a right to issue a compulsory licence to satisfy the needs of the national market.³⁰ The use of compulsory licences within the *HLP Report* was controversial, since some of the panellists advocated for “effectively automatic” implementation of compulsory licences within national and regional systems, while others advocated for a conservative use of this policy tool. In this regard, the panel did not reach consensus—and understandably so. After all, compulsory licensing remains a complex mechanism that has withstood considerable opposition or scepticism.

Weighing on the human-rights approach, governance, accountability and transparency

“The rights-based approach to development describes situations not simply in terms of human needs, or of developmental requirements, but in terms of society’s obligation to respond to the inalienable rights of individuals. It empowers people to demand justice as a right, not as charity, and gives communities a moral basis from which to claim international assistance where needed.”³¹ — Kofi Annan, former UN Secretary-General

Access to medicines has been recognised by the general discourse on this matter, with several important academic contributions. The relevant international framework is undeniably part of the human right to health. Defining this right requires us to look at art.12(1) of the International Covenant on Economic, Social and Cultural Rights (ICESCR), which provides

²⁶ UN Secretary-General’s High-Level Panel on Access to Medicines, *Report of the United Nations Secretary-General’s High-Level Panel on Access to Medicines* (2016), p.27.

²⁷ See further Cláudia du Borage Santos Pinto, Silva Miranda, Isabel Cristina Martins Emmerick, Nilson do Rosário Costa, Claudia Garcia Serpa Osorio de Castro, “Medicines Prices and Availability in the Brazilian Popular Pharmacy Program” (2010) 44 *Revista de Saúde Pública* 1.

²⁸ A. Nunn, E. Da Fonseca and S. Gruskin, “Changing Global Essential Medicines Norms to Improve Access to AIDS Treatment” (2009) 4 *Global Pub. Health* 131, 134–138.

²⁹ Jane Galvão, “Brazil and Access to HIV/AIDS Drugs: A Question of Human Rights and Public Health” (2005) 95 *Am. J. Pub. Health* 1110.

³⁰ This provision within art.68 of Brazil Law 9.279/96 is also consistent with art.5(A)(II) of the Paris Convention for the Protection of Industrial Property 1883 (Stockholm Act 1969).

³¹ “Annual Report of the Secretary-General on the Work of the Organization”, September 21, 1998, UN Doc. A/53/1, para.174.

“the right of everyone to the enjoyment of the highest attainable standard of physical and mental health including treatment, prevention and control of epidemic, endemic, occupational and other diseases”.³²

Recognising the human right to health places a legal obligation on governments to fulfil its realisation by not only allocating sufficient financial resources,³³ but also by increasing accountability mechanisms aiming at “the creation of inter-ministerial bodies to coordinate laws and policies that may have an impact in health technology innovation and access”.³⁴

Thus far, the diverse interests in the interplay among intellectual property, trade and public health policies have created an overlap where the objectives of each of these policies are not necessarily aligned.

“Analysing the current international intellectual property framework through the lens of human rights, despite fears of ambiguity and elasticity in terms of intellectual property protection invoked by the State”³⁵

could shed light on the need to complement intellectual property and public health policy implementation related to access, research and pharmaceutical innovations. Patents provide the inventor with not only an incentive, but also a period of exclusivity, which in the case of pharmaceutical products may limit their availability while increasing their price. Patents therefore deter both access to medicines and contribute to the “global drug gap”.³⁶ Admittedly, governments need to comply with their dual commitments encompassing trade and human rights, such as those relating to access to medicines. Such compliance translates to the implementation of TRIPS flexibilities, as highlighted by prominent scholars.³⁷

Making use of “compulsory licenses, exceptions to exclusive rights and limitations to protectable subject matter”³⁸ facilitates an interpretation of TRIPS through the lens of human rights. It shows how human rights organisations are focusing on the balancing mechanisms available within the intellectual property system.³⁹ Particularly the *HLP Report* has highlighted the use of compulsory licences as a powerful tool for governments to promote access to health technologies. However, even when compulsory licences are useful for reducing the costs of determined medicines, they do not solve the drug gap in its totality, since those licences can only be applied to medicines that already exist.⁴⁰ Integrating compulsory licences within a national policy could potentially increase a country’s bargaining power vis-à-vis its trading partners. Nevertheless, the abuse of these licences with an aim to fulfil the human right to health could induce innovation-related fears concerning the inventor’s ability to recoup costs and investments.

Thus, the human rights approach may be used instead as a limit or a ceiling to the protection and enforcement of intellectual property rights.⁴¹ One way to use this approach, especially before concluding free trade agreements, is to conduct human rights and public health impact assessments as outlined by the *UN Guiding Principles on Business and Human Rights*.⁴² This recommendation from the HLP stresses the need for further shadow reporting and civil society involvement. It not only calls for greater

³² International Covenant on Economic, Social and Cultural Rights 1966, preamble and art.12(1) (emphasis added).

³³ Judith Asher, *The Right to Health: A Resource Manual for NGOs* (London: The Commonwealth Medical Trust, 2004), pp.22–23.

³⁴ UN Secretary-General’s High-Level Panel on Access to Medicines, *Report of the United Nations Secretary-General’s High-Level Panel on Access to Medicines* (2016), p.36.

³⁵ Laurence R. Helfer, “Mapping the Interference between Human Rights and Intellectual Property” in Christophe Geiger (ed.), *Research Handbook on Human Rights and Intellectual Property* (Cheltenham: Edward Elgar, 2015).

³⁶ Laurence R. Helfer and Graeme Austin, *Human Rights and Intellectual Property: Mapping the Global Interface* (New York: Cambridge University Press, 2011) pp.140–141.

³⁷ Henning Grosse Ruse-Khan, *The Protection of Intellectual Property in International Law* (Oxford: Oxford University Press, 2016), p.260.

³⁸ Grosse Ruse-Khan, *The Protection of Intellectual Property in International Law* (2016), pp.260–261.

³⁹ Grosse Ruse-Khan, *The Protection of Intellectual Property in International Law* (2016), pp.260–261.

⁴⁰ Helfer and Austin, *Human Rights and Intellectual Property* (2011), p.141.

⁴¹ Grosse Ruse-Khan, *The Protection of Intellectual Property in International Law* (2016), p.211.

⁴² Office of the United Nations High Commissioner for Human Rights, *Guiding Principles on Business and Human Rights: Implementing the United Nations “Protect, Respect and Remedy” Framework* (2011).

transparency, but also calls on governments not to negotiate TRIPS-plus provisions behind closed doors or in complete secrecy.

Independently of the tools aiming or attempting to support the realisation of the human right to health, the question on the effectiveness of the intellectual property system in creating sufficient incentives to prompt R&D and innovation in field of neglected diseases still remains open. The report questions the patent system while at the same time acknowledging the need for further incentives and solutions to address the health challenge.⁴³

New incentives for R&D of health technologies

While the patent system has worked to incentivise R&D and innovation of health technologies, it is also true that some areas have not been sufficiently developed—namely, rare or neglected diseases, which do not promise a high return for investment even when they affect large portions of the population. In this regard, the *HLP Report* brought to the spotlight three important aspects: first, the need to create a mechanism for setting priorities on health R&D; secondly, the need to delink the costs of R&D from the end products; and thirdly, the need to increase and allocate funding for R&D on antimicrobial resistance.⁴⁴

Establishing a mechanism for defining health R&D priorities in a similar fashion as the World Health Organization (“WHO”) R&D Blueprint⁴⁵ could potentially increase government accountability as well as the level of preparedness and response to the outbreaks of the Ebola and Zika viruses. The HLP considered it alarming that the high risk of major health crises is currently being underestimated worldwide.⁴⁶ Thus, the allocation of greater funding for R&D in antimicrobial resistance is among the priorities within the report.

Such allocation gained considerable momentum the week after the release of the *HLP Report*. On September 21, 2016, the President of the UN General Assembly convened a one-day high-level meeting at the UN Headquarters in New York on antimicrobial resistance with the purpose of increasing and improving awareness on antimicrobial resistance. This meeting was consistent with both the *HLP Report* and the World Health Assembly Resolution WHA 68.7, which

“reflects a global consensus that antimicrobial resistance poses a significant public health challenge, and emphasizing the paramount significance of achieving the five strategic objectives of the WHA Global Action Plan”⁴⁷.

Delinking the costs of R&D from the end products was jointly analysed with the possibility of using different funding tools to provide new incentives to address neglected diseases. At this point, it is important to note that the suggested mechanisms are outside the scope of the patent system—namely, push, pull, pooling, open collaborative research and public and private partnerships. Suggestions to create a side or parallel system of incentives are not new. In fact, they have been around for a while, and some of them were submitted to the HLP for consideration as part of the panel’s call for contributions.

⁴³ UN Secretary-General’s High-Level Panel on Access to Medicines, *Report of the United Nations Secretary-General’s High-Level Panel on Access to Medicines* (2016), pp.53–64.

⁴⁴ UN Secretary-General’s High-Level Panel on Access to Medicines, *Report of the United Nations Secretary-General’s High-Level Panel on Access to Medicines* (2016), pp.29–32.

⁴⁵ “68th World Health Assembly: Decisions and List of Resolutions”, June 5, 2015, WHO Doc. A68/DIV.3.

⁴⁶ Both Zika and Ebola crises in 2015 and 2014, respectively, demonstrated the speed with which certain diseases can shift from neglected diseases to health priorities that affect everyone regardless of a country’s level of development.

⁴⁷ “High-level Meeting on Antimicrobial Resistance,” available at <http://www.un.org/pga/71/event-latest/high-level-meeting-on-antimicrobial-resistance/> [Accessed November 3, 2016].

Plausible solutions

Joseph Stiglitz has suggested a prize award model as a possible solution to prompt innovation and R&D in the field of neglected diseases. Under this model, a medical prize fund will be granted, aiming to reward the discovery of a cure or treatment for a neglected disease. This model could allocate enough resources for the R&D and innovation in a specific area through a special call—something that the current patent system is unable to do.⁴⁸ This model focuses on promoting research on neglected diseases. Ideally, once an innovation is developed, it will be subsequently licensed. The proponents of this model have emphasised how a considerable amount of money has been spent on marketing and the invention of lifestyle drugs, since those medicines allow the pharmaceutical industry to focus on recouping R&D through their commercialisation. The proponents therefore have taken away important resources that could be spent on other type of research.

The other alternative models noted within the report are push and pull models. In this regard, push models encourage R&D by using and investing public funding in research carried out by either public or private institutions. The pull model encourages innovation by offering a prize or some other financial incentive, similar to Stiglitz’s concept of a prize fund.⁴⁹ Either model presents an innovative, or at least “tempting”, opportunity to encourage R&D and innovation in needed areas. It does not leave the inventor to the market alone, as such an approach has not worked thus far.

An out-licensing model grants voluntary licences to generic manufacturers who would agree to manufacture and supply medicines to only least developed and developing countries.⁵⁰

“These legally binding agreements will allow generic manufacturers to compete with each other in [these] countries, but will not allow them to compete with the original patent holder in developed countries. Thus, prices will be considerably reduced by encouraging competition.”⁵¹

Out-licensing could be implemented as long as the terms and conditions are clearly defined. These terms and conditions can include medicine, country of sale, production, enforcement measures, rights granted to the manufacturer and royalties to be paid.

Pooling and open collaborative models were also assessed by the HLP. Among these, the Medicines Patent Pool established by UNITAID seems to have provided countries with an efficient alternative. Pools in general facilitate the sharing of data and expertise under concrete terms and conditions. This particular pool has reached several licensing agreements between originators and generic manufacturers for the production of antiretrovirals for hepatitis C and tuberculosis.⁵² Their model is largely dependent on the willingness of the patent holders—the pharmaceutical industry, that is—to co-operate with the generic industry by committing their intellectual property to the pool.⁵³

Conclusion

From the *HLP Report*, it becomes clear that no one-size-fits-all solution can be given to address, or even attempt to eliminate, the access-to-medicines disparities worldwide. Nevertheless, joint efforts to minimise the effects of policy incoherencies can and should take place. Regardless of the model chosen to create

⁴⁸ Joseph E. Stiglitz, “Prizes, Not Patents”, available at <http://www.projectsyndicate.org/commentary/stiglitz81/English> [Accessed November 3, 2016].

⁴⁹ Jed Odermatt, “Investigating New Models of Pharmaceutical Innovation to Protect the Human Right to Health” (2009) 40 *Int’l Rev. Intell. Prop. & Competition L.* 173.

⁵⁰ Michael A. Friedman, Henk den Besten and Amir Attaran, “Out-Licensing: A Practical Approach for Improvement of Access to Medicines in Poor Countries” (2003) 361 *The Lancet* 341.

⁵¹ Chandler, *The Role of Patents in the Latin American Development* (2014).

⁵² Medicines Patent Pool, “The Medicines Patent Pool Expands Mandate to Hepatitis C and Tuberculosis Treatment”, available at <http://www.medicinespatentpool.org/the-medicines-patent-pool-expands-mandate-to-hepatitis-c-and-tuberculosis-treatment/> [Accessed November 3, 2016].

⁵³ Jorge Bermudez and Ellen ‘t Hoen, “The UNITAID Patent Pool Initiative: Bringing Patents Together for the Common Good” (2010) 2 *Open AIDS J.* 37.

incentives to foster R&D, it is important to remember both the value of the patent system as a reward system for inventors and the need for a sustainable source of funding to carry out R&D and innovation on neglected diseases. The report emphasises the sustainable aspect of any system intending to replace or complement the current intellectual property system.

The other relevant distinction is the shift in the discourse from, first, access to medicines in general to access to essential medicines and, then, from access to essential medicines to access to health technologies most recently. This shift within the discourse is indicative of both the evolution and influence brought by different stakeholders. A reason may lie in the fact that most of the medicines listed within the WHO's List of Essential Medicines are not under patent protection. Hence, generic and affordable versions of these medicines should be readily available. Moreover, ensuring access to health technologies expands the notion of access from access to just the medicine itself to prevention, diagnosis and treatment of illnesses.

Even when most of the essential medicines on the list are without valid patents at the moment, "a third of the world's population"⁵⁴ is still lacking in access to these medicines. The challenge is to ensure that no one is left behind by 2030. The *HLP Report* therefore examines whether this disparity in access is caused by high drug prices or by the lack of availability of the needed drugs, together with the close to non-existence of health-care infrastructure. Admittedly, the current patent system as the venue prompting R&D and innovation for all health needs is questionable, and most likely imperfect. However, condemning the system on its own for the lack of access, R&D and innovation in determined fields is as counterproductive as it is to encourage the notion that the system provides the only plausible incentive for innovators.

The *HLP Report* reiterated several times the "intention and need" to negotiate a R&D convention that delinks the costs of R&D from end prices, with an aim to promote access to good health.⁵⁵ However, the caveat of encouraging the negotiation of global agreements on the co-ordination, financing and development of health technologies is the risk in creating yet another one-size-fits-all framework or intellectual property constitutional pillar.⁵⁶ Creating a new pillar of intellectual property law could contribute to policy overlaps when the current international intellectual property framework is juxtaposed with a new one. Almost 20 years after the implementation of TRIPS in most WTO Members, we are still assessing the feasibility of tailoring TRIPS implementation to national interests, taking advantage of the flexibilities provided by the agreement on the one hand and attempts to minimise government responsibility or the lack thereof in the realisation of the human right to health on the other.

Developing new health technologies and providing adequate access to them has to be a joint effort between all stakeholders. Integrating and reconciling the human rights and intellectual property rights approaches presents a solution to implementing the minimum standards of protection in a manner consistent with public health needs. Making use of TRIPS flexibilities should be done in light of the agreement to avoid plausible abuses. Thus far, the discussion over the regulation related to pharmaceutical products and access to these products has been dealt mainly through the lens of intellectual property law. Little attention has been paid to creating a comprehensive sustainable international intellectual property regime combined with human rights and public health perspectives on access to medicines and research and innovation. The scattered approach has, for example, led to several different, and at times colliding,

⁵⁴ UN Secretary-General's High-Level Panel on Access to Medicines, *Report of the United Nations Secretary-General's High-Level Panel on Access to Medicines* (2016), p.56.

⁵⁵ UN Secretary-General's High-Level Panel on Access to Medicines, *Report of the United Nations Secretary-General's High-Level Panel on Access to Medicines* (2016), p.32.

⁵⁶ In the context of the UN Secretary-General's High-Level Panel on Access to Medicines, the Global Health Law Committee of the International Law Association put forward the proposal for the adoption of a Framework Convention on Pharmaceutical Innovation. Global Health Law Committee of the International Law Association, "Submission from the Global Health Law Committee of the International Law Association", available at <http://www.unsgaccessmeds.org/inbox/2016/2/22/contributionxavier-seubaon-behalf-of-global-health-law-committee-of-the-international-law-association> [Accessed November 3, 2016] (by Xavier Seuba).

proposals. These proposals in turn have led to an unfair balance of rights in many concrete contexts. In some cases, the approach has led to a total isolation of the patent system and the implementation of trade and public health rules in a manner that ignores the complementariness needed to enable these rules to coexist and to function adequately.

This article was written on the basis of previous research carried out by the author, where an analysis on a case-by-case basis has shown to be an adequate approach when reviewing policy overlaps in terms of access to medicines. After reviewing the *HLP Report*, the author believes that a side system of incentives to address R&D and innovation in the field of neglected diseases should reflect the human rights approach. That system should also include accountability and transparency mechanisms to ensure that all stakeholders are committed to the process of finding a cure for a disease that ultimately could affect us all.

Intellectual Property, Climate Change and Development

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☞ Climate change; Developing countries; Intellectual property; Technology transfer

Introduction

Since the wave of independence that swept former European colonies in the middle to late twentieth century, access to technology and knowledge has been at the core of demands for restitution and aid by developing countries. The demands found their strongest expression in the Declaration on the Establishment of a New International Economic Order (NIEO) 1974¹ which sought, among other things:

“Giving to the developing countries access to the achievements of modern science and technology, and promoting the transfer of technology and the creation of indigenous technology for the benefit of the developing countries in forms and in accordance with procedures which are suited to their economies.”²

This demand for transfer of technology as a means of achieving development was central to the vision of the NIEO and was adamantly resisted by developed countries.³ A core part of this demand was a restructuring of the international intellectual property framework, primarily at WIPO, to better provide access to technology and knowledge for developing countries. A modest success was achieved in the 1967 Stockholm Intellectual Property Conference in the inclusion of an appendix in to the Berne Convention for the Protection of Literary and Artistic Works 1886, but no such success was achieved for the Paris Convention for the Protection of Industrial Property 1883 or the other treaties operating under the WIPO umbrella. Developing countries reacted by resisting any new norm-setting at WIPO, and this may have contributed to the impasse that led developed countries to seek other venues. This impasse culminated in the inclusion of intellectual property into the Uruguay Round of Multilateral Trade Negotiations that led to the formation of the World Trade Organization and the entry into force of the Agreement on Trade-Related Aspects of Intellectual Property Rights 1994 (TRIPS Agreement). Intellectual property has been at the core of the “development” discourse since the middle of the twentieth century. Developing countries have believed that technology transfer was crucial to economic development and “modernisation” and very quickly identified intellectual property protection as a barrier to achieving access to the best available technologies. Developing countries argue that the international intellectual property system, and

* This article is adapted and updated from portions of Dalindyebo Shabalala, “Climate Change, Technology Transfer and Intellectual Property: Options for Action at the UNFCCC”, PhD Thesis, Maastricht University, 2014, available at <https://dalishabalala.files.wordpress.com/2014/10/shabalala-climate-change-tech-transfer-and-ip.pdf> [Accessed November 1, 2016].

¹ “Declaration on the Establishment of a New International Economic Order”, May 1, 1974, U.N. Doc. A/RES/S-6/3201.

² “Declaration on the Establishment of a New International Economic Order”, 1974, art.4.

³ For more on the history, see Padmashree Gehl Sampath and Pedro Roffe, “Unpacking the International Technology Transfer Debate: Fifty Years and Beyond” (2012) International Centre for Trade and Sustainable Development, Issue Paper No.36.

specifically the TRIPS Agreement, unduly restricts their ability to take measures to encourage and enable technology transfer.⁴

This article argues that this historical pattern has not only leaked into the climate change discussions, but has also reached its apotheosis as a “development” issue in the climate change negotiations. The article is made up of two key parts that explain:

- 1) how intellectual property and technology transfer became environmental and climate issues; and
- 2) how the climate challenge (in scope and timing) of technologies is essentially a development challenge.

How intellectual property and technology transfer became environmental and climate issues

In the decades following norm-setting impasse at WIPO in the early 1970s, technology transfer provisions became the pivotal elements of the increasing number of multilateral environmental agreements (MEAs) that were concluded in the period following the 1972 UN Stockholm Conference on the Human Environment.⁵

An emerging pattern in MEAs was that significant global problems such as cross-border pollution by power plants creating acid rain, or ozone depletion, were intimately linked to historical and continuing production and consumption patterns by developed countries. Action to address these problems required developing countries to forgo production and consumption pathways from which developed countries had already benefited. Such patterns continuously raised issues of fairness, justice, equity and historical responsibility, issues that may have reached their apotheosis in the climate change negotiations.

One of the ways that developing countries sought to address the issue of adjustment costs and equity was to gain assurances that they would be assisted financially with any adjustment costs, and that they would be provided with the best available technologies, on grant or concessional terms, in making the adjustments required by the MEA. For example, there is strong evidence that India joined the Montreal Protocol on Substances That Deplete the Ozone Layer (Montreal Protocol) precisely on the understanding that alternative technologies would be made available on grant or concessional terms. At the time, the Multilateral Fund was replenished with this precise aim in mind.⁶

The demand for technology transfer has remained one of the strongest bargaining chips for convincing developing countries to participate in MEAs, but it has also remained the one that has been perceived to be the least fulfilled element of such MEAs, except for the notable exception of the Montreal Protocol. Developed countries’ insistence on increased intellectual property protection has come to be seen by many developing countries as either emblematic of this failure, or the key reason why technology transfer has not occurred to any significant level.

The United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol are examples of this pattern. Developed countries took the greenhouse gas (GHG) emissions-intensive path to development. To convince developing countries to forgo such development, they had to promise significant financial support and access to technology. On one side, developed countries would take the first steps to reduce GHG emissions.⁷ Under the Kyoto Protocol, they would move towards low-carbon or carbon-free economies, while they received credits for emissions they helped to reduce in developing

⁴ South Centre, *Submission by the South Centre to the Technology Executive Committee (TEC) on Ways to Promote Enabling Environments and Address Barriers to Technology Development and Transfer and the Role of the TEC* (2012), p.6.

⁵ “Report of the United Nations Conference on the Human Environment”, June 5–16, 1972, A/CONF.48/14, para.2 and Corr.1.

⁶ Veena Jha and Ulrich Hoffman (eds), *Achieving Objectives of Multilateral Environmental Agreements: A Package of Trade Measures and Positive Measures Elucidated by Results of Developing Country Case Studies* (Geneva: United Nations Conference on Trade and Development, 2000), pp.6, 35.

⁷ United Nations Framework Convention on Climate Change 1992 art.4.

countries, through flexibility mechanisms such as the Clean Development Mechanism.⁸ These and other mechanisms were meant to enable technology transfer to create endogenous capacity in developing countries to mitigate and adapt to climate change.⁹ The effective implementation of these mechanisms has been an arena of contestation between developed and developing countries in the UNFCCC.

Intellectual property has been an issue since the very first UNFCCC Conference of the Parties (COP). In the first meeting of the Subsidiary Body on Scientific and Technological Advice in September 1995, China identified a need for renewable energy technologies as well as for the identification of adaptation technologies.¹⁰ Access to technologies protected by intellectual property was raised almost immediately as a concern by the Alliance of Small Island States. Intellectual property became a larger part of the debate as developing countries came to believe that they were going to have to take unilateral action to achieve technology transfer. The technology transfer debate became particularly acute by the time of the 2007 Bali Conference. No agreement regarding intellectual property was reached at Bali. Negotiations on technology transfer were a major stumbling block and were among the last issues to be resolved.¹¹

At COP 15 in Copenhagen in 2009, states reached no agreements on draft decisions on technology transfer that were put forward.¹² Those drafts contained bracketed language on intellectual property in para.6(f) on purchasing of licences and other intellectual property issues,¹³ para.10(j) on the mandate of the technology mechanism to address intellectual property issues, and a whole section on intellectual property based on the G77 and Bolivia proposals. The COP decided to forward the draft decision into the Ad Hoc Working Group on Long-term Cooperative Action under the Convention in 2010 for further negotiations which resulted in the text being forwarded to the COP in Cancun. The 2010 negotiating text¹⁴ reflects the importance of intellectual property to developing countries, both substantively and as a bargaining chip.

The Cancun Agreements flowing from COP 16 established a Green Climate Fund as an operating entity of the Convention and developed countries committed to providing US \$100 billion per year by 2020 to meet the mitigation and adaptation needs of developing countries.¹⁵ The Cancun Agreements also decided on the establishment of a Technology Mechanism consisting of a Technology Executive Committee and a Climate Technology Centre and Network. No mention of intellectual property remained in the text. The same pattern has repeated itself in the lead up to COP 17 in Durban in 2011¹⁶ and COP 21 in Paris in 2015, at which the Paris Climate Change Agreement 2015 was signed. In the absence of greater financial support and active transfer of technologies, developing countries continue to seek changes in the intellectual property framework to facilitate unilateral action to transfer technology. In this sense, despite the consistent failure to address it in final agreements, intellectual property remains central to the outcomes that developing countries seek at the UNFCCC to enable an alternative, non-GHG emissions-intensive development path.

⁸ Kyoto Protocol to the United Nations Framework Convention on Climate Change 1997 art.12.

⁹ Kyoto Protocol to the United Nations Framework Convention on Climate Change 1997 art.10.

¹⁰ International Institute for Sustainable Development, “Summary: 1st Session SBSTA & SBI”, available at <http://www.iisd.ca/download/pdf/enb1223e.pdf> [Accessed November 1, 2016].

¹¹ International Institute for Sustainable Development, “Summary of the Thirteenth Conference of the Parties to the UN Framework Convention on Climate Change and Third Meeting of the Parties to the Kyoto Protocol”, p.5, available at <http://www.iisd.ca/download/pdf/enb12354e.pdf> [Accessed November 1, 2016].

¹² “Draft decision -/CP.15. Enhanced Action on Technology Development and Transfer”, February 5, 2010, U.N. Doc. FCCC/AWGLCA/2009/17, available at <http://unfccc.int/resource/docs/2009/awglca8/eng/17.pdf> [Accessed November 1, 2016].

¹³ “Draft decision -/CP.15”, 2010, para.6.

¹⁴ “Negotiating Text”, August 13, 2010, U.N. Doc. FCCC/AWGLCA/2010/14, p.46, available at <http://unfccc.int/resource/docs/2010/awglca12/eng/14.pdf> [Accessed November 1, 2016].

¹⁵ “Decision 1/CP.16: The Cancun Agreements: Outcome of the Work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention”, March 15, 2011, FCCC/CP/2010/7/Add.1, para.102.

¹⁶ “Outcome of the Work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention to be Presented to the Conference of the Parties for Adoption at Its Seventeenth session—Draft Conclusions Proposed by the Chair”, December 9, 2011, U.N. Doc. FCCC/AWGLCA/2011/L.4.

How the climate challenge becomes a development challenge

The Earth continues to experience record-breaking temperatures caused by increased atmospheric concentrations of carbon dioxide (CO₂) and other GHGs.¹⁷ The impacts of this unprecedented warming include: increased floods and drought; rising sea levels; the spread of deadly diseases such as malaria and dengue fever; and increasing numbers of violent storms and weather-related catastrophes.¹⁸ Climate change presents a challenge to almost all areas of human economic activity because of our reliance on GHG emitting fossil fuels and fossil fuel products, the key driver of global modernisation in the twentieth century.¹⁹

The most recent data suggests that the current emissions trajectory results in the high probability of 3.7°C of warming with catastrophic effect.²⁰ Factoring current pledges under the Paris Agreement still leaves a high probability of reaching 2.7°C. To keep warming well below 2°C, and to maintain the possibility of stabilising at the safe level of 1.5°C within reach, it may be necessary for global emissions to peak by 2020.²¹ Projections based on past emissions suggest that the Earth is already locked into a baseline increase in temperature that makes some impacts unavoidable by 2100.²² None of the associated costs of climate change between now and 2050 are likely to be avoided because of this lock-in. At the least, the available projections of necessary reductions suggest that a peak of emissions will have to take place by 2020, depending on the extent of cuts later in the lead-up to 2050.²³

The challenge of adaptation is also quite clear, from sea-level rise to changes in the hydrological cycle leading to increased dryness in some areas and increased wetness in others. There is also a significant chance of shifts in geographical bands in which specific diseases and disease vectors proliferate.²⁴

For adaptation, the first thing to note is the lock-in effect of 1°C warming by 2100 based on past emissions.²⁵ Such warming will have to be adapted to, and the slower the reduction in emissions, the quicker the 1°C threshold will be reached. The faster and more extensive GHG mitigation action takes place, the lower the likely cost of action to address adaptation will be.²⁶ Of course, the lower and slower the mitigation, the more adaptation that will be needed. However, due to the delay inherent in mitigating GHGs, temperatures are still likely to increase well into the middle of the twenty-first century even if all appropriate mitigation action is taken. Thus, the impacts that are already taking place and are projected to take place in the lead-up to 2050 will still need to be adapted to.²⁷ This entails increasing adaptive capacity in the near term by providing a means of sustainable development to a minimum level of per capita GDP to cope with existing climate variability and development challenges and then a focus on specific systems and tools to address specific climate impacts relevant to a region for the period after that. The Intergovernmental Panel on Climate Change (IPCC) analysis of timing of impacts and mitigation peaking dates suggests that much of the initial work for addressing vulnerability and resilience, even under the most optimistic scenarios, will have to be carried out almost immediately in order to be prepared to respond to impacts caused by the inevitable increase of temperatures to at least 1°C above pre-industrial levels that will occur up to 2050.²⁸

¹⁷ Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2014: Synthesis Report: Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (2014), p.40 (core writing team: R.K. Pachauri and L.A. Meyer).

¹⁸ IPCC, *Climate Change 2014* (2014), pp.50–53.

¹⁹ David Stern and Custer J. Cleveland, “Energy and Economic Growth” (2004) Rensselaer Polytechnic Institute, Department of Economics, Working Paper in Economics No.0410, available at <http://www.economics.rpi.edu/workingpapers/rpi0410.pdf> [Accessed November 1, 2016].

²⁰ According to the Climate Action Tracker, available at <http://climateactiontracker.org/> [Accessed November 1, 2016].

²¹ IPCC, *Climate Change 2014* (2014), p.82.

²² IPCC, *Climate Change 2014* (2014), pp.78–79.

²³ IPCC, *Climate Change 2014* (2014); Paul Baer, Tom Athanasiou and Sivan Kartha, *The Right to Development in a Climate Constrained World* (Berlin: Heinrich Böll Foundation, 2007), p.15.

²⁴ IPCC, *Climate Change 2014* (2014), pp.64–73.

²⁵ IPCC, *Climate Change 2014* (2014), p.60.

²⁶ IPCC, *Climate Change 2014* (2014), p.67.

²⁷ Nicholas Stern, *The Economics of Climate Change: The Stern Review* (Cambridge: Cambridge University Press, 2007), p.284.

²⁸ IPCC, *Climate Change 2014* (2014), p.60.

For both mitigation and adaptation, the scenarios above have implications for the nature and scope of technology transfer and thus intellectual property. The first thing to note is that the peaking dates and climate impacts require the diffusion of existing technologies into the majority of developing countries within a very short period of time. For mitigation, the aim would be sometime between 2015 and 2018 but no later than 2020 of the best available technologies, both products and processes, that can be introduced and integrated into developing country economies. For adaptation, this means increasing the capacity to adapt in the lead-up to 2050, while ensuring the availability of current technologies for catastrophic climate events in the near term such as extreme weather events. The scope of technologies implied and the speed at which they need to be diffused therefore is vast.

In mitigation, several key short-term technology areas have been identified by scenarios at the IPCC, the International Energy Agency (IEA), as well as through Technology Needs Assessments from developing countries themselves.²⁹ These suggest that the following technological shifts will be needed.

- Electricity generation (almost entirely de-carbonised by 2050):
 - carbon capture and storage;
 - nuclear;
 - wind;
 - solar—concentrated solar power (CSP) and photovoltaic;
 - integrated gasification combined cycle combustion;
 - super-critical and ultra-supercritical coal;
 - hydro;
 - biomass and waste;
 - gas efficiency;
 - biofuels; and
 - smart electricity grids and networks (hard infrastructure and software).
- Industrial energy use efficiency and fuel switching:
 - iron and steel production (e.g. top gas recycling furnaces; highly reactive material additives to lower reducing agents; molten oxide electrolysis for iron production);
 - cement (e.g. substitutes for clinker additives);
 - chemicals and petrochemicals (e.g. improved catalytic processes; novel membrane technologies for separation processes; bio-based polymers to create new plastics);
 - paper (advanced water removal systems); and
 - aluminium (new inert and wetted cathode technologies; new methods for chemical reduction of kaolin).
- Building (construction and operation):
 - modern heat access (e.g. natural gas appliances, improved cook stoves (especially for biomass));
 - renewables for heat; and
 - thermal heat efficiency (e.g. combined heat and power, advanced building envelope seals and insulation).
- Appliances (appliances are a significant portion of global electricity end-use—a significant portion of end-use is in electric motors (found in most large appliances, compressors, fans, mechanical systems) at about 40 per cent of all global electricity end-use), e.g.:
 - dishwashers, clothes washers and clothes dryers;
 - lighting, including solar powered led lighting operating off-grid; and

²⁹ Stern, *The Economics of Climate Change* (2007); International Energy Agency (IEA), *Energy Technology Perspectives 2010: Scenarios and Strategies to 2050* (2010); IEA, *Energy Technology Perspectives 2012: Pathways to a Clean Energy System* (2012); IEA, *Tracking Clean Energy Progress: Energy Technology Perspectives 2012 Excerpt as IEA Input to the Clean Energy Ministerial* (2012).

- software and hardware, especially for managing active and standby power.
- Transport, e.g.:
 - hydrogen fuel cells;
 - plug-in hybrids and electric vehicles (PHEVs);
 - batteries and storage;
 - biodiesel and biofuels; and
 - fuel efficiency of petrol or diesel vehicles.
- Agriculture, e.g.:
 - plant varieties that are less reliant on GHG emissions-intensive fertilizers;
 - animal variants and breeds less likely to produce methane during digestion; and
 - better management of animal waste, including recycling into biogas and other biomass for energy generation.

In discussing the scope of action and technologies needed for the 2°C scenarios, one basic principle seems to apply: that no single technology or small subset of technologies will be sufficient. Policy will have to be brought to bear on all the identified technology sectors to achieve mitigation goals.³⁰ Given the longer-term challenge, existing technologies may be insufficient to meet the targets and that R&D will be required to reach 41–72 per cent reduction target by 2050.³¹ This will require immediate and large-scale investments in R&D.³² This confirms some of the earlier work done by *The Stern Review*, which argued that since no one technology is capable of providing the reductions needed, the development, deployment, diffusion of a broad portfolio of technologies is required.³³

The need to essentially transform the energy production system targets one of the most crucial aspects of development, in terms of economic growth. The most basic and most important input into economic growth is energy. Thus, keeping the cost of energy production, distribution and consumption as low as possible is crucial to enable such growth in developing countries.³⁴ At present, access to electricity is limited to 20 per cent of the global population and approximately 15 per cent have only intermittent access.³⁵ Without a transformation in electricity production, almost all of that increase in developing countries is likely to come from coal-powered electricity generation. In 2008, developing countries produced over 70 per cent of electricity from fossil fuels, with coal at 46 per cent.³⁶ Thus use of renewable and sustainable energy is a fundamental element of addressing adaptation and development in developing countries.³⁷ It requires access to the full suite of best available technologies in energy production and consumption and will transform the entire energy use chain in developing countries. This makes energy access not just a development challenge, but one that is fundamentally the same as the climate challenge for developing countries.

Adaptation capacity is unevenly distributed, both across and within societies. This is co-extensive with uneven distributions of capacity to produce food, provide for health and create economic surpluses that can be reinvested in hard and soft infrastructure.³⁸ The majority of people in developing countries live in

³⁰ IEA, *Energy Technology Perspectives 2012* (2012), p.39.

³¹ IPCC, *Climate Change 2014* (2014), p.82.

³² IEA, *Energy Technology Perspectives 2012* (2012), p.56.

³³ Stern, *The Economics of Climate Change* (2007), p.211.

³⁴ UNEP, *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication* (2011), p.208. See also Shardul Agrawala (ed.), *Bridge over Troubled Waters: Linking Climate Change and Development* (Paris: Organisation for Economic Co-operation and Development, 2005); Shardul Agrawala and Samuel Fankhauser, *Economic Aspects of Adaptation to Climate Change: Costs, Benefits and Policy Instruments* (Paris: Organisation for Economic Co-operation and Development, 2008).

³⁵ IEA, *Advantage Energy: Emerging Economies, Developing Countries and the Private-Public Sector Interface* (2001), p.27, available at https://www.iea.org/publications/freepublications/publication/advantage_energy.pdf [Accessed November 1, 2016].

³⁶ IEA, *Advantage Energy* (2001), p.33.

³⁷ Global Network on Energy for Sustainable Development, *Reaching the Millennium Development Goals and Beyond—Access to Modern Forms of Energy as a Prerequisite* (2007).

³⁸ Global Network on Energy for Sustainable Development, *Reaching the Millennium Development Goals and Beyond* (2007).

climate-vulnerable environments and ecosystems.³⁹ Technology and innovative capacity are clearly co-extensive with adaptive capacity.⁴⁰ Increased technological capacity can decrease vulnerability by enabling deployment and use of relevant technologies and enable the development of new technologies to address the specific challenges of adapting to climate change impacts.⁴¹

One of the most important interventions that can be made in these developing countries to reduce vulnerability, while laying the groundwork for increasing adaptive capacity, are ones that increase economic growth as quickly and in as sustainable and equitable a manner as possible.⁴² As a focus for the areas necessary to reduce such vulnerability, *The Stern Review* suggested that the key areas are:

- economic wealth;
- infrastructure and technology;
- information knowledge and skills;
- equity; and
- social capital.⁴³

Infrastructure, technology, information, knowledge and skills are precisely those areas that can be best addressed by ensuring technology transfer. Developing countries are also significantly dependent on agriculture for economic growth (up to 64 per cent participation in South Asia and sub-Saharan Africa). They are thus more sensitive to climate variability.⁴⁴ A stable and sustainably growing framework for agricultural production and distribution is a necessity for reducing vulnerability and enabling adaptive capacity in developing countries.⁴⁵ Health interventions to deal with chronic diseases, both communicable and non-communicable, in developing countries are also a necessity to reduce vulnerability and adaptive capacity.⁴⁶ This implicates not only general health infrastructure and health management systems, but also the opportunity costs associated with prices of medical products, devices and services.

In essence, adaptation really addresses two core issues: reduction of vulnerability and increasing capacity to adapt. The overlap with poverty reduction strategies and other core development frameworks is significant. This means that the adaptation challenge is essentially a development challenge⁴⁷ and thus covers *all* sectors of technology relevant to ensuring rapid, non-fossil fuel dependent economic development. This implies not only a continuation of existing best practices⁴⁸ on ensuring transfer of technology, but also ramping up and introducing policies to speed up the process of development focused on technological transformation at an unprecedented speed and scale.

The implications of the framework for adaptation, especially to ensure adaptive capacity, suggest a far broader range of technologies and economy-wide action in developing countries that goes beyond simply energy. In addition, the time frames suggest actions must take place almost immediately to have an effect in the lead-up to 2050. Any solutions to reduce vulnerability and address adaptive capacity for developing countries must ensure access to the best environmentally sustainable technologies for:

³⁹ Agrawala (ed.), *Bridge over Troubled Waters* (2005); UNEP, *Towards a Green Economy* (2011), p.19; Gordon McGranahan, Deborah Balk and Bridget Anderson, "The Rising Tide: Assessing the Risks of Climate Change and Human Settlements in Low Elevation Coastal Zones" (2007) 19 *Env't & Urbanization* 17.

⁴⁰ W.N. Adger, S. Agrawala, M.M.Q. Mirza, C. Conde, K. O'Brien, J. Pulhin, R. Pulwarty, B. Smit and K. Takahashi, "Assessment of Adaptation Practices, Options, Constraints and Capacity" in *Climate Change 2007: Impacts, Adaptation and Vulnerability: Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge: Cambridge University Press, 2007), p.728.

⁴¹ Agrawala and Fankhauser, *Economic Aspects of Adaptation to Climate Change* (2008).

⁴² World Bank, *World Development Report 2010: Development and Climate Change* (2010), p.12. See also Baer, Athanasiou and Kartha, *The Right to Development in a Climate Constrained World* (2007); Stern, *The Economics of Climate Change* (2007), p.12; UNEP, *Towards a Green Economy* (2011).

⁴³ Stern, *The Economics of Climate Change* (2007), p.94.

⁴⁴ UNEP, *Towards a Green Economy* (2011), p.38. See also Stern, *The Economics of Climate Change* (2007), p.95.

⁴⁵ UNEP, *Towards a Green Economy* (2011), pp.38–40.

⁴⁶ UNEP, *Towards a Green Economy* (2011), pp.208–209.

⁴⁷ Stern, *The Economics of Climate Change* (2007), p.430. See also Agrawala (ed.), *Bridge over Troubled Waters* (2005).

⁴⁸ Stern, *The Economics of Climate Change* (2007), p.432.

- energy production, distribution and consumption;
- agricultural inputs, including seeds (e.g. flood and drought resilient varieties), low emissions fertilizers, and methods and processes;
- health infrastructure, including medicines, diagnostic and treatment tools; and
- water infrastructure for capture, treatment, distribution and recycling.

Thus the adaptation challenge is a bifurcated development challenge: the specific need to ensure near-term adaptation in agriculture, health, water as well as disaster preparedness while building longer-term economic growth to prepare for the deeper impacts in the post-2050 period. The climate adaptation challenge, much as in mitigation, essentially collapses into the development challenge that developing countries have faced since the middle of the twentieth century.

The urgency of the climate or development challenge seems to bring us back full circle to the broader arguments about what role intellectual property has in encouraging technology transfer. While this seems to suggest that we have no option but to fall back on the same, tired old arguments, I argue that the structure of the climate challenge leaves few options but to truly transform the system for technology generation and diffusion if we are to meet mitigation and adaptation goals. The scale of technologies required, combined with the need to ensure distribution of those technologies within an extremely short time frame, means that business as usual in the intellectual property framework is not a tenable position. This is true even where it can be argued that significant portions of the technologies implicated are not patented in middle-income and least developing countries, because they are patented in key developing countries such as China and India, which serve as key developers, adapters and distributors of technologies to smaller developing countries.⁴⁹

This presents a very different structural challenge for the international intellectual property system than the traditional development frame. Whereas in traditional development discourse developed countries have been able to argue that, over time, investment-friendly measures and higher intellectual property protection are the best way for developing countries to ensure that firms are willing to sell products and licence into their markets, climate change turns such arguments on their head. There is no more “time”.

For the distribution of existing mitigation technologies within the 2015–2018 time frame to enable peaking by 2020 at the latest, it seems inappropriate to rely on the relatively slow-moving process of existing trade and licensing patterns to encourage transactions and technology diffusion. It will require deliberate policies to encourage massive diffusion in the near term that both increase supply and demand for technologies.⁵⁰ For adaptation, especially in human health and agriculture, given the near-term impacts of climate change and extreme weather events, the need to diffuse technologies as quickly as possible to underpin economic development also suggests that a wholesale restructuring of technology markets will be needed.

The other side of the argument is that, in the absence of significant breakthrough technologies in areas such as battery storage, the longer-term challenge of mitigation in the post-2050 period is unlikely to be

⁴⁹ John Barton, “Intellectual Property and Access to Clean Energy Technologies in Developing Countries: An Analysis of Solar Photovoltaic, Biofuel and Wind Technologies” (2007) Trade and Sustainable Energy Series, Issue Paper No.2. See also Copenhagen Economics and the IPR Company, “Are IPRs a Barrier to the Transfer of Climate Change Technology?”, available at http://trade.ec.europa.eu/doclib/docs/2009/february/tradoc_142371.pdf [Accessed November 1, 2016]; Antoine Dechezleprêtre, Matthieu Glachant, Ivan Haščič, Nick Johnstone and Yann Ménière, “Invention and Transfer of Climate Change-Mitigation Technologies: A Global Analysis” (2011) 5 Rev. Envtl. Econ. Pol’y 109; Ivan Haščič, Nick Johnstone, Fleur Watson and Christopher Kaminker, “Climate Policy and Technological Innovation and Transfer: An Overview of Trends and Recent Empirical Results” (2010) Organisation for Economic Co-operation and Development, Environment Working Paper No.30; Meir Perez Pugatch, “The Role of Intellectual Property Rights in the Transfer of Environmentally Sound Technologies” (2011); Kristina M. Lybecker and Sebastian Lohse, *Global Challenges Report* (Geneva: WIPO, 2015); UN Environment Programme, European Patent Office and International Centre for Trade and Sustainable Development, *Patents and Clean Energy: Bridging the Gap between Evidence and Policy: Final report* (2010); Bernice Lee, Ilian Iliev and Felix Preston, *Who Owns Our Low Carbon Future: Intellectual Property and Energy Technologies* (London: Chatham House, 2009).

⁵⁰ Christian Egenhofer, Lew Milford, Noriko Fujiwara, Thomas L. Brewer, Monica Alessi, *Low-Carbon Technologies in the Post-Bali Period: Accelerating Their Development and Deployment* (Brussels: European Climate Platform, 2007), p.3.

met.⁵¹ The need to provide dynamic incentives for the generation of such technologies is thus also very significant. It will be crucial to provide incentives for innovation in a broad portfolio of technologies, especially those with significant network and public goods characteristics. While a significant chunk of incremental innovation can come from the private sector, the risk premium and investment analysis for breakthrough innovation may require significant and co-ordinated public funding to create many Manhattan project-like research paths in multiple sectors.⁵²

A fundamental restructuring of international technology markets, including intellectual property rules, is clearly implied by this article's understanding of the climate challenge. However, any structural reform of the international intellectual property system to address climate change will have to differentiate in terms of intellectual property action and time frames between existing technologies and those to be developed and implemented in the post-2050 period.

A response to the argument that I have laid out about the need for fundamental restructuring of the international intellectual property system is that, given enough money, the problem of intellectual property costs will disappear and nothing structural will have to change in the system. That argument runs into a major problem: there may not be enough funding from developed countries to make technology access a reality for developing countries. The extent of public funding available, in particular, may not be anything close to what is actually required to address the full scope of action needed to develop, deploy and diffuse technologies. Looking just at mitigation scenarios, the IEA projected that from 2010 to 2020, over US \$2.3 trillion annually would be needed to be invested, the majority of which was private flows.⁵³ The share of developing countries was US \$1.3 trillion annually, of which China represented US \$500 billion. In contrast to the scale of the projected need, total investment flows in 2010 and 2011 were US \$247 billion and US \$260 billion, respectively.

Within the climate change negotiations, developed countries in Copenhagen at COP 15 committed to provide US \$100 billion annually by 2020 in investment (from a wide variety of sources, including public funds).⁵⁴ A significant portion is meant to flow through the Green Climate Fund (GCF), which implies direct cash or other instruments under the control of the fund, rather than financial instruments operating outside of the remit of the GCF. The IEA estimated in 2012 that climate mitigation-related flows from developed to developing countries amounted to somewhere between US \$70 and US \$199 billion per year.⁵⁵ The majority of this consisted of private flows (US \$37–72 billion), and the public funds (through bilateral and multilateral mechanisms) amounted to a potential maximum of US \$43 billion. Olbrisch, Haites, Savage, Dadhich and Shrivastava reviewed the range of estimates for incremental investment in the literature noting significant variations for 2030 projections for annual financing needs in developing countries: from US \$177 to US \$565 billion per annum.⁵⁶ They did not provide estimates of the portion that would be from private flows, but their estimate of current funding at the time suggested that private flows would be the largest proportion of funding amounting to at least US \$65 billion per year.

Thus, in terms of direct support, it is unlikely that existing and future public funds will suffice to meet the need in developing countries.⁵⁷ As the IEA notes, they will have to also mobilise a significant amount of finance domestically.⁵⁸ This is all before funding for adaptation is taken into account, which under the GCF should take up half of the planned disbursements. The IEA and others have difficulty finding an

⁵¹ M.I. Hoffert, Ken Caldeira, Gregory Benford, "Advanced Technology Paths to Global Climate Stability: Energy for a Greenhouse Planet" (2002) 298 Sci. 981. See also Egenhofer, Milford, Fujiwara, Brewer, Alessi, *Low-Carbon Technologies in the Post-Bali Period* (2007), p.1.

⁵² UNEP, *Towards a Green Economy* (2011), p.233.

⁵³ IEA, *Energy Technology Perspectives 2012* (2012), p.139, Table 4.3.

⁵⁴ B. Childs Staley and Casey Freeman, "Tick Tech Tick Tech: Coming to Agreement on Technology in the Countdown to Copenhagen" (2009) World Resources Institute, Working Paper, p.13.

⁵⁵ IEA, *Energy Technology Perspectives 2012* (2012), p.152.

⁵⁶ Susanne Olbrisch, Erik Haites, Matthew Savage, Pradeep Dadhich and Manish Kumar Shrivastava, "Estimates of Incremental Investment for and Cost of Mitigation Measures in Developing Countries" (2011) 11 Climate Pol'y 970, 974.

⁵⁷ A. Bowen, "Raising Climate Finance to Support Developing Country Action: Some Economic Considerations" (2011) 11 Climate Pol'y 1020.

⁵⁸ IEA, *Energy Technology Perspectives 2012* (2012), p.152.

argument that investment flows for climate will differ in any significant way from existing patterns of investment into developing countries.⁵⁹ The prescriptions for providing a proper enabling environment replicate the same tried and true axioms of:

- reducing regulatory uncertainty;
- enabling policies for competitive, open markets and greening infrastructure investment;
- sound investment policies: market-based and regulatory policies to “put a price on carbon” and correct for environmental externalities;
- removing barriers and disincentives for innovation and investment; and
- financial policies and instruments to attract private sector participation.

However, these axioms can be applied specifically to climate change sectors. Other than a broader faith that these interventions will work, there is no little analysis of how these recommendations, as a broader matter, will shift the risk and investment calculus in economies that are not already attractive investment destinations—for domestic, but primarily foreign capital.

While attractive regulatory and market environments are clearly necessary conditions, they may not be sufficient to mobilise foreign investment at the scale required in markets that simply do not present a sufficient rate of return and may present, even at their best, more risk than the potential worth of returns. The policy prescription here essentially tells developing countries to transform their economies as a necessary condition for being able to transform their economies, without any of the necessary financial and technological support for doing so. These policy transformations are meant to substitute for financial support, and, hopefully, make it possible for private sector money to flow. How that presents a different, new or additional solution to the broader development challenge is not explained. In order to develop, developing countries must therefore “develop”. Where they do so, this will obviate the need for significant public money and support.

In the end, the vast majority of financing and transfer will have to come from private sector action. Developed countries hope that the public finance shortfall will somehow be made up by private sector actors, as long as markets are created and regulatory incentives are put in place. However, where there is insufficient public finance to provide support to developing country actors and firms in accessing technology hardware and knowledge, a reliance on private finance leaves the additional costs of accessing knowledge in the hands of developing country firms and institutions. The only way therefore for developing countries to respond is to take regulatory action to restructure the market in knowledge and knowledge products so that the costs of action are borne by developed country actors. Such action leads us back to the government interventions aimed at regulating prices of products, and regulations aimed at regulating prices for accessing knowledge. This is why intellectual property intervention continues to be a major structural issue at the core of the climate change negotiations: there is not enough money, even were there political will, to provide all the public financial support that developing countries need to take action to address climate change mitigation and action.

There is a long-running and ongoing debate on the ways in which developing countries should best ensure their broader economic development.⁶⁰ Reflecting this debate is the recommendation for developing countries to transform their economies to become more open to investment, have better, more predictable legal structures, be more open to trade, and provide more room for the private sector. To a significant extent, these are exactly the same policy prescriptions that have been given to developing countries by multilateral financing and development institutions for much of the past three decades. It is an ongoing debate about which economic model is best suited to ensure development and reflects the broader

⁵⁹ N. Niziramasanga, “Implementing NAMAs under a New Climate Agreement That Supports Development in Southern Africa” in Karen Holm Olsen, Jergen Fenhann and Soren Lütken, *Elements of a New Climate Agreement by 2015* (Roskilde: UNEP Risoe, 2013).

⁶⁰ E.g. E. Helpman, *The Mystery of Economic Growth* (Cambridge: Belknap Press of Harvard University Press, 2004).

development challenge for developing countries. In that sense, it is only realistic to realise that climate change is indeed congruent with the broader development challenge. The paucity of direct public funding for climate change essentially throws developing countries back into the broader set of policy choices regarding how best to ensure economic development more broadly. In the technology arena, this therefore involves asking what are the best ways for countries to ensure that they can move up the technology value chain,⁶¹ what tools have been historically successful for other countries, and are those tools available to developing countries today? This then is the structural reason why intellectual property becomes such an important issue in the climate change debate and why financial support is insufficient as a solution to what is fundamentally the problem of a technology market unsuited to the climate or development challenge.

This article does not aim to discuss what the solutions to this predicament should be.⁶² However, clarity as to the nature of the challenge is crucial for any reasonable set of answers and it may be that a certain complacency regarding whether climate change requires any change in the international intellectual property framework has set in. What seems clear is that tinkering around the edges of the system is an insufficient response. More energy on the part of intellectual property policymakers needs to be devoted to addressing this fundamental challenge to the functioning, and in the end the legitimacy, of the intellectual property system as a development tool in the age of climate change.

⁶¹ A.N. Agarwala and S.P. Singh (eds) *The Economics of Underdevelopment* (Oxford: Oxford University Press, 1979); Helpman, *The Mystery of Economic Growth* (2004); A. Santos-Paulino and G. Wan (eds), *Southern Engines of Global Growth* (Oxford: Oxford University Press, 2010); W.W. Rostow, *The Stages of Economic Growth: A Non-Communist Manifesto* (Cambridge: Cambridge University Press, 1990); M. Trebilcock and M. Mota Prado, *What Makes Poor Countries Poor? Institutional Determinants of Development* (London: Edward Elgar, 2011); R. Prebisch, "The Role of Commercial Policies in Underdeveloped Countries" (1959) 49 *Am. Econ. Rev.* 251.

⁶² Matthew Rimmer presents some key proposals that have been under discussion in various fora in his chapter: Matthew Rimmer, "Intellectual Property and Global Warming: Fossil Fuels and Climate Justice" in Matthew David and Debora Halbert (eds), *The SAGE Handbook of Intellectual Property* (London: Sage Publications, 2014), pp.727–753.

Fundamental Rights, Development and Cultural Inclusion: The Marrakesh Treaty in Brazil

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♻ Accessible copies; Brazil; Constitutional reform; Copyright; Human rights; Permitted acts; Ratification; Treaties; Visually impaired persons

Introduction

Prodigious in length, content as well as in high goals and values, the Brazilian Constitution of 1988¹ sets citizenship and human dignity as two of its founding principles.² It also establishes as objectives of the Republic “to build a free, just and solidary society”, among others.³

On the same wave that swept post-dictatorial regimes in Europe and Latin America, the Brazilian Constitution has the fundamental rights at its very core. At the very top in the legal hierarchy, it enjoys the highest status among all norms within the system, and there cannot even be a legislative project to suppress any of the fundamental rights already established⁴—a real prohibition of step-backs. The long list of individual guarantees is primarily established in art.5.⁵ Other fundamental rights are set in art.6⁶ and others.⁷ Furthermore, international human rights treaties are incorporated into the Brazilian legal system, and their provisions enjoy a special place, as we will see further below.

During the following dozen years, Brazil has seen a phenomenon some called the “constitutionalisation of the law”,⁸ whereby the entire system and all its legal rules become progressively affected and directly impregnated with constitutional reasoning and references and their interpretation and meanings bound by the possibilities and constraints of constitutional principles and rules.

The legal penetrability of the fundamental rights has reached beyond the traditional areas of public law and exercised its influence on to private relations in general.⁹ No legal area was shielded from the renewing influence of constitutional fundamental rights: from family to company law, from the regime of civil

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¹ The English version of the Brazilian Constitution made by the Chamber of Deputies is available at the Supreme Court’s website: http://www.stf.jus.br/repositorio/cms/portals/StfInternacional/portals/StfSobreCorte_en_us/anexo/constituicao_ingles_3ed2010.pdf [Accessed November 1, 2016].

² Federal Constitution of 1988 (Brazil) art.1.

³ Federal Constitution of 1988 (Brazil) art.3.

⁴ Federal Constitution of 1988 (Brazil) art.60, para.4.

⁵ Federal Constitution of 1988 (Brazil) art.5°.

⁶ Federal Constitution of 1988 (Brazil) art.6°.

⁷ Such as Title VIII (Social Order), especially arts 215 and 216, which establish cultural rights.

⁸ For a more detailed description of the process and its theoretical foundations, see Daniel Sarmento and Claudio Pereira de Neto e Souza, *A constitucionalização do Direito: Fundamentos Teóricos e Aplicações Específicas* (Rio de Janeiro: Lumen Juris, 2007); Luis Roberto Barroso, “A Constitucionalização do Direito e o Direito Civil” in Gustavo Tepedino (ed.), *Direito Civil Contemporâneo: Novos Problemas à Luz da Legalidade Constitucional* (Sao Paulo: Atlas, 2008).

⁹ For a broad perspective on the process of constitutionalisation of private law in Brazil, see Pietro Perlingieri, *Perfis do Direito Civil: Introdução ao Direito Civil Constitucional*, trans. Maria Cristina de Cicco, 3rd edn (Rio de Janeiro: Renovar, 2007); Maria Celina Bodin de Moraes, “A caminho de um direito civil constitucional” (1993) 65 *Revista de Direito Civil* 21; Gustavo Tepedino, “Premissas metodológicas para a constitucionalização do direito civil” in *Temas de Direito Civil* (Rio de Janeiro: Renovar, 2004).

capacities to property law and from contracts to inheritance. It is no different from intellectual property in general and copyright specifically, especially considering that both industrial¹⁰ and author's rights¹¹ are included among the fundamental rights in the constitution.¹²

There has been a constant influx of influence from the constitutional rights towards the different sectors of the legislation. There has also been an ever greater presence of fundamental rights reasoning in judicial cases, both from the parties' arguments as well as in the decisions themselves. All of these changes have brought the dilemmas and theoretical issues surrounding the application and effectiveness of fundamental rights to the central stage. At this point in time, these questions include:

- Which rights are to be classified as fundamental rights?
- How to resolve collision among rights of equal stature?
- Whether or not intermediary legislation is needed for the rights' efficacy?
- Whether such rights are to be applied to private relations?

It is within this scenario that we should understand the incorporation of the Marrakesh Treaty to Facilitate Access to Published Works by Visually Impaired Persons and Persons with Print Disabilities 2013 (Marrakesh Treaty) in Brazil and its effects on copyright law.

The Marrakesh Treaty, the first to establish mandatory limitations, entered into force on September 30, 2016. By October 5, 2016, 24 countries have already ratified the treaty. Brazil, one of the leading proponents and negotiators of this Treaty at the World Intellectual Property Organization (WIPO), deposited its ratification on December 11, 2015, following a year of internal legislative process. Relevant and interesting in this process of ratification is the fact that the treaty has been ratified as a constitutional amendment, in line with the contemporary provisions of the Federal Constitution. However, before we proceed to verify the ratification of the Marrakesh Treaty in Brazil, it will be important to address the question concerning the role played within the national legal system of the international human rights treaties.

International human rights treaties in the Brazilian legal system

In order to settle the doctrinal and jurisprudential debate about the hierarchy of international human rights treaties in the Brazilian legal system,¹³ there has been a constitutional amendment¹⁴ adding a third paragraph to art.5¹⁵ and establishing the procedures for granting these treaties the status of fundamental rights. Since then, those international human rights treaties and conventions have been internalised as constitutional amendments in accordance with the following procedure:

- signing of the treaty by the president (art.84(VIII))¹⁶;
- approval by the House of Representatives and the Senate, in two rounds each, by three-fifths of the votes of all its members, with the enactment of the corresponding legislative decree (art.5 s.3 and art.49(I))¹⁷;
- ratification by the president; and finally,
- promulgation and publication of the treaty via presidential decree.

¹⁰ Federal Constitution of 1988 (Brazil) art.5°(XXIX).

¹¹ Federal Constitution of 1988 (Brazil) art.5°(XXVII).

¹² For a summary presentation of copyright cases at the Supreme Court, see Allan Rocha de Souza, Vitor de Azevedo Almeida Jr. and Wemerton Monteiro Souza, "Os direitos autorais na perspectiva civil-constitucional" (2016) 8(April–June) *Revista Brasileira de Direito Civil* 9.

¹³ J.J. Gomes Canotilho, Gilmar Ferreira Mendes, Ingo Wolfgang Sarlet, Lenio Luiz Streck and Léo Ferreira Leoney, *Comentários à Constituição do Brasil* (Sao Paulo: Saraiva/Almedina, 2013), p.519.

¹⁴ Constitutional Amendment 45 of December 2004 (Brazil).

¹⁵ Federal Constitution of 1988 (Brazil) art.5 s.3°.

¹⁶ Federal Constitution of 1988 (Brazil) art.84.

¹⁷ Federal Constitution of 1988 (Brazil) art.49.

Questions have been raised about the need of such procedures, since it only adds formal effects to these treaties. Considering that art.5 s.2¹⁸ already provides for what is known as the “block of constitutionality”,¹⁹ the qualified quorum only adds a

“formal constitutional stature to those treaties, providing for the ‘formal constitutionalisation’ of human rights treaties in the domestic legal framework”.²⁰

From this perspective, international human rights treaties ratified by Brazil are materially constitutional regardless of the quorum for its approval. Since fundamental rights are corollaries of the very dignity of the person, the recognition of these rights “cannot be left to the convenience the ordinary legislator”.²¹ Such understanding is supported by four main arguments:

- 1) the systematic interpretation of the Constitution in order to engage the ss.2 and 3 of art.5, since the latter has not revoked the first, but should, in reverse, be interpreted in the light of the constitutional system;
- 2) the logic and rationality of materiality that should guide the hermeneutics of human rights;
- 3) the need to avoid interpretations that point to acute anachronisms of the legal order; and
- 4) the general theory of reception of international human rights treaties within the Brazilian system.²²

Until recently, however, the ratified international treaties were considered by the Supreme Court to have the same hierarchical level of any ordinary federal legislation. As a consequence, human rights treaties did not have primacy over infra-constitutional legislation.²³ This legislation could even revoke these treaties. It did not seem plausible to attribute to the treaties the status of ordinary federal law, given that the material guarantees expressed in the legislation shall prevail over formal ones, in a democratic state whose founding value is the prevalence of human dignity:

“[T]he hierarchy of values must match a hierarchy of norms, and not the other way around. That is to say that material preponderance of a legal right—as is the case of fundamental rights—shall condition the formalities, and not be conditioned by it.”²⁴

Nevertheless, the Supreme Court’s position with respect to the status of international human rights treaties was reinforced in several cases,²⁵ even after the new Constitution was enacted in 1988.

The court has gradually abandoned equating international human rights treaties to ordinary legislation. Its general direction and perspective has turned mainly to protect the human being as such above all other values. The understanding that international treaties and conventions on human rights play a key role in consolidating the humanitarian rights and guarantees was essential to overcome the prior position by the court, since attributing to such treaties the same rank as ordinary federal legislation would in fact reduce the level of the protection given to the persons within the legal system.

¹⁸ Federal Constitution of 1988 (Brazil) art.5° s.2°.

¹⁹ On this matter, Justice Celso de Melo states: “International Treaties and Conventions on Human Rights assume, in the internal legal order, constitutional qualification and must be accentuated that International Treaties and Conventions on Human Rights ratified before Constitutional Amendment 45/04 are materially constitutional, composing, under this perspective, the conceptual notion of the block of constitutionality.” Brazilian Supreme Court, Recurso Extraordinário No.466.343/SP, 2008, Opinion of Justice Celso de Melo, p.129, available at <http://redir.stf.jus.br/paginadorpub/paginador.jsp?docTP=AC&docID=595444> [Accessed November 1, 2016].

²⁰ Brazilian Supreme Court, Recurso Extraordinário No.466.343/SP, 2008, Opinion of Justice Celso de Melo, p.136.

²¹ Gilmar Ferreira Mendes and Paulo Gustavo Gonet Branco, *Curso de Direito Constitucional*, 7th edn (Sao Paulo: Saraiva, 2012), p.195.

²² Flávia Piovesan, *Direitos Humanos e o Direito Constitucional Internacional*, 7th edn (Sao Paulo: Saraiva, 2006), p.73.

²³ Until this case became the prevailing understanding, such treaties were akin to ordinary federal legislation. This position is based on the paradigmatic case: Recurso Extraordinário No.80.004, 1977, available at <http://redir.stf.jus.br/paginadorpub/paginador.jsp?docTP=AC&docID=175365> [Accessed November 1, 2016].

²⁴ Brazilian Supreme Court, Recurso Extraordinário No.466.343/SP, 2008, Opinion of Justice Celso de Melo, p.136.

²⁵ Until the standard position was reversed in Recurso Extraordinário No.466.343/SP, 2008, other Supreme Court decisions maintained the position held by Recurso Extraordinário No.80.004, 1977, such as HC No.72.131/RJ, 2003; ADI-MC No.1.480/DF, 2001; HC No.79.870/SP, 2000; HC No.77.053/SP, 1998; RE No.206.482/SP, 2003; RHC No.80.035/SC, 2001.

The position was finally reviewed in the face of a new case filed with the Supreme Court in 2008. The decision on the appeal No.466.343 was led by Judge Gilmar Mendes, as the rapporteur, and Judge Celso de Mello. Reversing the understanding previously held by the court, this case now establishes that international human rights treaties shall have a supra-legal status within the national legal system, in which it is situated under the constitutional norms but above all infra-constitutional legislation. It was a tight decision, with five votes for the supra-legal status and four in favour of a constitutional status for such treaties.²⁶

The combination of Constitutional Amendment 45/04 (which establishes procedures for the internalisation of international human rights treaties as core constitutional rights) and the decision on the case described above (which sets as supra-legal all human rights treaties ratified before 2004) reinforces the strength of the fundamental rights within the legal system and brings into play art.5 s.1,²⁷ which guarantees to all fundamental rights “immediate applicability at the national and international levels, from the act of ratification, eliminating the need for any legislative intermediation”.²⁸

The ratification of the Marrakesh Treaty

On January 16, 2014, the Ministry of Foreign Affairs, the Ministry of Culture, and the Human Rights Secretariat of the Presidency forwarded to the presidency a joint memoir containing the justifications and exposing the need for ratification of the Marrakesh Treaty:

“[F]rom the political and legal perspectives, [the treaty has] been based on the United Nations Convention on the Rights of Persons with Disabilities [UN Convention]”.²⁹

It was emphasised that this treaty is meant to reduce the shortage of works distributed in accessible formats for people with visual disabilities, a problem that prevents the supportive social growth and is known as “hunger for books”:

“less than 5% of published works are available in accessible formats for the use of those people. In developing countries—where, according to the World Health Organization (WHO), home to more than 90% of the 314 million people with visual impairment—this percentage is only 1%.”³⁰

In order to facilitate the availability of works in accessible formats, the treaty establishes two exceptions to copyright:

- 1) free production and distribution of works in accessible formats; and
- 2) their cross-border exchange.

According to the president’s message to Congress, the cross-border exchange will contribute to expand significantly the access to knowledge for the visually impaired, since it allows for the sharing of accessible formats between parties.³¹

²⁶ Voted for the supra-legal status of the International Treaties on Human Rights were Justices Gilmar Mendes (majority opinion leader), Carlos Ayres Britto, Carmén Lúcia, Carlos Alberto Menezes Direito and Ricardo Lewandowski. Supporting the constitutional equivalence were Justices Celso de Mello (minority opinion leader), Cesar Peluso, Ellen Gracie and Eros Grau.

²⁷ Federal Constitution of 1988 (Brazil) art.5°.

²⁸ Brazilian Supreme Court, Recurso Extraordinário No.466.343/SP, 2008, Opinion of Justice Celso de Melo, p.136.

²⁹ President’s Office (Brazil), Message No.344 from the President to the National Congress Requesting the Ratification of the Marrakesh Treaty, pp.1–2.

³⁰ President’s Office (Brazil), Message No.344 from the President to the National Congress Requesting the Ratification of the Marrakesh Treaty, pp.1–2.

³¹ President’s Office (Brazil), Message No.344 from the President to the National Congress Requesting the Ratification of the Marrakesh Treaty, pp.1–2.

Finally, arguing that the treaty aims to “promote the full realization of the rights of persons with disabilities, in line with international standards of human rights”,³² the presidency suggested to Congress the ratification of the Marrakesh Treaty with status of a constitutional amendment, pursuant to Constitutional Amendment 45/04 and along the lines of the UN Convention.

On May 25, 2015, in the opinion report of the Committee on the Rights of People with Disabilities (CPD), the federal representative Aelton Freitas suggested and voted for the adoption of Legislative Decree 57/15, noting that the ratification implies the adherence of Brazil to the founding principles of the UN Convention. In his words, these principles are those of “non-discrimination; respect for the inherent human dignity; individual autonomy, including the freedom to make their own choices and for their independence; full and effective participation and inclusion in society; equal opportunities and accessibility”.³³

The report also highlights the discrimination and historical exclusion suffered by people with visual impairments and other disabilities that affect reading, due to the shortage in the production and distribution of works in accessible formats, noting as well that people with disabilities are not claiming privileges or special treatment, but

“aim, in fact, that society allows them the conditions for the exercise of their citizenship rights on an equal basis with all others”.³⁴

The treaty is one way to realise the principle of equality and to provide access to printed texts and publications in accessible formats. As such, it offers disabled people more opportunities in the pursuit of individual improvement and consequent inclusion in more qualified professional demands, thereby reducing the so-called “hunger for books”. The treaty therefore

“puts an end to the heinous discrimination that keeps these people from accessing the knowledge that can contribute to improving their living conditions and expands their autonomy and conditions for the exercise of their right of choice on the publications they want to access”.³⁵

Once approved by the CPD, the proposal moved on to be analysed by the Committee on Culture (CCULT). The proposal was then reported on May 29, 2015 by Congressman Leo Brito, who also suggested and voted for the adoption of Marrakesh Treaty which, above all, “recognizes the right of persons with disabilities to participate in cultural life on an equal basis with others”.³⁶

He stressed the “notorious relevance of books in the dissemination of information and culture”, claiming the primary objective of the treaty is to combat the so-called “hunger for books” caused by the lack or restriction of access to printed materials for the visually impaired. Such restriction unfairly enhances the “social and economic constraints that people with disabilities face, creating a socio-economic exclusion”.³⁷

On the report, one of the important questions raised concerns about the barriers copyright laws have caused in the production and distribution of works in accessible formats. The insufficiency of copyright limitations and exceptions in Brazilian Law “hinders the expansion of access to cultural materials by persons with visual impairments”, thereby generating disparity in relation to people who do not have disabilities or difficulty. Interestingly noted on the report is that, in Brazil,

³² President’s Office (Brazil), Message No.344 from the President to the National Congress Requesting the Ratification of the Marrakesh Treaty, pp.1–2.

³³ House of Representatives (Brazil), *Report by the Committee on the Rights of People with Disabilities*, pp.5–6, available at http://www.camara.gov.br/proposicoesWeb/prop_mostrarintegra;jsessionid=54F81D3EBEF0552939869CD5F57E2476.proposicoesWeb1?codteor=1340006&filename=Tramitacao-PDC+57/2015 [Accessed November 1, 2016] (Rapporteur: Representative Aelton Freitas).

³⁴ House of Representatives (Brazil), *Report by the Committee on the Rights of People with Disabilities*, pp.5–6, available at http://www.camara.gov.br/proposicoesWeb/prop_mostrarintegra;jsessionid=54F81D3EBEF0552939869CD5F57E2476.proposicoesWeb1?codteor=1340006&filename=Tramitacao-PDC+57/2015 [Accessed November 1, 2016].

³⁵ House of Representatives (Brazil), *Report by the Committee on Persons with Disabilities*, pp.5–6.

³⁶ House of Representatives (Brazil), *Report by the Committee on Culture*, p.4, available at http://www.camara.gov.br/proposicoesWeb/prop_mostrarintegra;jsessionid=54F81D3EBEF0552939869CD5F57E2476.proposicoesWeb1?codteor=1342276&filename=Tramitacao-PDC+57/2015 [Accessed November 1, 2016] (Rapporteur: Representative Leo de Brito).

³⁷ House of Representatives (Brazil), *Report by the Committee on Culture*, p.4.

“there are only two civic institutions that make accessible formats available. Unsurprisingly all reading material available (to the visually impaired) accounted for mere 2,000 works in 2009”.³⁸

Another key point of the treaty, as reported by the Committee on Culture, is the trans-border exchange issue. Such exchange promises to facilitate the international movement of free copies, but faces obstacles from the principle of territoriality of copyright. So, under such circumstances, the

“specialized agencies of different countries who share the same language must go through the same process of transforming the same work in an accessible format”,³⁹

generating a duplication of costs and efforts in the transformation of the work.

At the end, the report states that the ratification of the treaty is a key step in improving copyright law. The treaty will bring greater balance between the public and author interests, since

“the rights granted to authors are not only ends in themselves but also aims to promote cultural and artistic progress of society”.

The report concludes by stating that, first,

“the treaty contributes to the cultural development, as it enables the amplification of access to intellectual works for people who are unjustly deprived of them in the present situation. Secondly, the text of the treaty also presents a series of norms which safeguard the rights of authors. Its approval is, therefore, fundamental to the balance and the democratisation of (the right of) access to culture.”⁴⁰

The House of Representatives, which is composed of 513 federal representatives as provided in the constitution, voted for the treaty in two rounds. At the first round of voting on August 20, 2015, the House reached 341 votes in favour and only one against. At the second round on September 8, 2015, the Legislative Decree Bill 57/2015 was finally approved unanimously by the 452 lawmakers present.

Once in the Senate, after the approval at the House of Representatives, the proposal was sent to the Committee on Foreign Relations and National Defence. The rapporteur was Marta Suplicy, the Minister of Culture at the conclusion of the treaty. In her report, the senator suggested the adoption of the treaty as a constitutional amendment in order to give it greater effectiveness and to promote access to “reading, education, personal development and work on an equal basis” for the visually impaired.⁴¹

The senator also stresses that, although the provisions in the Marrakesh Treaty have the intention of diminishing the importance of the copyright protection, they create a balance between copyright protection and the general public interest. The treaty

“establishes limitations and exceptions to copyright, so as to provide access for people with visual disabilities or other difficulties to the printed texts and works in accessible formats”.⁴²

It is also clear that this treaty is a significant milestone in the conquest of rights by persons with visual impairment, since copyright restrictions “prevent them from reading and also compromises their personal development, access to education and, as a result, qualified professional work”.⁴³

On November 24, 2015, the Marrakesh Treaty ratification was approved at the Senate, which holds 81 seats. It was approved by 57 senators at the first round and by 52 at the second. Finally, on December 1, 2015, the president ratified the treaty with the constitutional amendment status.

³⁸ House of Representatives (Brazil), *Report by the Committee on Culture*, p.4.

³⁹ House of Representatives (Brazil), *Report by the Committee on Culture*, p.5.

⁴⁰ House of Representatives (Brazil), *Report by the Committee on Culture*, p.6.

⁴¹ Federal Senate (Brazil), *Report by the Committee on Foreign Relations and National Defence*, p.2, available at <http://legis.senado.leg.br/mateweb/arquivos/mate-pdf/182434.pdf> [Accessed November 1, 2016] (Rapporteur: Senator Marta Suplicy).

⁴² Federal Senate (Brazil), *Report by the Committee on Foreign Relations and National Defence*, p.5.

⁴³ Federal Senate (Brazil), *Report by the Committee on Foreign Relations and National Defence*, p.4.

The Marrakesh Treaty and the UN Convention

Related to the Marrakesh Treaty in terms of its content, the UN Convention was the first to be submitted and ratified according to the constitutional amendment process.⁴⁴ The UN Convention interacts with the Marrakesh Treaty in promoting its goals.

Article 30 of the UN Convention obliges the parties to ensure access to cultural material in accessible formats. In this sense, the convention establishes duties that go beyond the restricted goals of the Marrakesh Treaty, since it does not limit itself to printed material or the benefit of the visually impaired. The convention includes basically all sorts of cultural expressions and disabilities.

The preamble of the Marrakesh Treaty at once makes an explicit link to the UN Convention and the Universal Declaration of Human Rights.⁴⁵ It also stresses the relevance of the limitations and the restrictions copyright imposes on other fundamental rights, such as education and freedom of expression. The treaty emphasises the importance of

“enhancing opportunities for everyone, including persons with visual impairments or with other print disabilities, to participate in the cultural life of the community, to enjoy the arts and to share scientific progress and its benefits”.

The treaty also recognises the relevance of access to culture for the development of one’s personality.

On the one hand, the UN Convention provides for the higher goals of comprehensive inclusion of people with disabilities, from physical access to technological, educational, political and cultural access. On the other hand, the Marrakesh Treaty details the proceeding for the specific cases of printed material for the visually impaired. Furthermore, the federal legislation enacted to assure the convention’s full implementation puts boundaries on intellectual property maximalism arguments and imposes accessible formats for all cultural products in relation to all sorts of disabilities.

Following the approval of the UN Convention, the legislation for the broad inclusion of people with disabilities was enacted and entered into force on January 4, 2016, reaching also the cultural and technological realms. The Law 13.146/15 guarantees in art.42 the right of access to cultural products in accessible formats.⁴⁶ Even more interestingly, para.1 states that

“it is forbidden to refuse to offer intellectual works in accessible formats to people with disabilities, under any argument, including under the allegation of intellectual property rights protection”.

Since human rights are the core of the Brazilian Constitution and of the entire legal system, both the UN Convention and the Marrakesh Treaty are constitutional amendments of a special kind. As such, it is unconstitutional to even have legislative projects that restrict or abolish any of the established rights (art.60 s.4°(IV)).⁴⁷ The two instruments will necessarily interact with and reinforce each other, enhancing the normative power of both. Furthermore, as constitutional amendments with immediate application within the legal system, the two instruments will directly impact any federal legislation, including copyright law, deeming unconstitutional norms and interpretations that conflict with it.

The reading of both international instruments, in different passages as well as in their principles and motifs, show the upgrading—in terms of its recognition—of the right of access to culture to a fundamental rights status. Not that the right, broadly speaking, could not or was not conceived as such, but its inscription on the texts helps to gather normative strength for its application by the courts. All of these converge

⁴⁴ Decree No.6949/07 (Brazil), available at http://www.planalto.gov.br/ccivil_03/_ato2007-2010/2009/decreto/d6949.htm [Accessed November 1, 2016].

⁴⁵ The preamble of the Marrakesh Treaty “[r]ecall[s] the principles of non-discrimination, equal opportunity, accessibility and full and effective participation and inclusion in society, proclaimed in the Universal Declaration of Human Rights and the United Nations Convention on the Rights of Persons with Disabilities”.

⁴⁶ Law 13.146/15 (Brazil), available at http://www.planalto.gov.br/ccivil_03/_Ato2015-2018/2015/Lei/L13146.htm [Accessed November 1, 2016].

⁴⁷ Federal Constitution of 1988 (Brazil) art.60.

within the Brazilian legal system to assure a fundamental status to the right of access to culture and, by consequence, the limitations to copyright as infra-constitutional expression of such a right. Such limitations therefore oblige an equal balance in the face of copyright protection.

Hopefully, the combined instruments will not only have prompted the right of access to culture to a new status within the system, but they will also have necessarily affected judicial interpretation in regard to the full recognition of unabridged access to culture as an integral and substantial part of the copyright system.

Copyright limitations

The current Brazilian Copyright Act—Law 9.610/1998⁴⁸—covers both author’s rights and neighbouring rights. It derives from a Senate Proposal submitted in 1989, which, after substantial changes, was approved in both houses in December 1997, sanctioned by the president on February 19, 1998, and came into effect on June 20, 1998, 120 days after publication.

The limitations and exceptions in the Brazilian Copyright Act are set forth on Title III, Ch.IV, under the heading “Limitations”. The legislation expressly sets out, in arts 46–48, a series of situations in which users may use copyrighted works free of charge and without authorisation.

Article 46 states: “The following shall not constitute violation of copyright” and expressly allows for:

- the reproduction for the dissemination of news, crediting the source⁴⁹;
- the reproduction of public speeches on the news⁵⁰;
- the reproduction of photos or visual representations made for hire by the contractor, as long as there is no opposition by the person represented⁵¹;
- the reproduction of works for personal use by the blind, for non-commercial purposes⁵²;
- partial reproduction of any work for private use, without intent of profit⁵³;
- citations for the purposes of study, criticism or controversy, as long as the source is credited and the amount used is necessary for those purposes⁵⁴;
- class notes by students—not including the reproduction of such notes⁵⁵;
- reproduction in commercial establishments for demonstration of the equipment being sold⁵⁶;
- dramatic representation and music execution in homes and within classrooms⁵⁷;
- reproduction to produce administrative and judicial proof⁵⁸; and
- partial reproduction of any protected work, or a full copy of visual art works, to include it in a new work, as long as the reproduction is not the main purpose of the new work, does not harm the normal exploitation of the reproduced work, and does not cause unjust prejudice to the authors’ legitimate interests.⁵⁹

Article 47 allows for parodies, as long as they are not simple reproductions of the original work and do not discredit it.⁶⁰ Article 48 makes room for the representation of works located in public spaces.⁶¹ Set on

⁴⁸ Copyright Act, Law 9.610/1998 (Brazil), available in Portuguese at http://www.planalto.gov.br/ccivil_03/leis/L9610.htm. Av and in English at http://www.wipo.int/wipolex/en/text.jsp?file_id=125393 [Accessed November 1, 2016].

⁴⁹ Law 9.610/90 (Brazil) art.46(I)(a).

⁵⁰ Law 9.610/90 (Brazil) art.46(I)(b).

⁵¹ Law 9.610/90 (Brazil) art.46(I)(c).

⁵² Law 9.610/90 (Brazil) art.46(I)(d).

⁵³ Law 9.610/90 (Brazil) art.46(II).

⁵⁴ Law 9.610/90 (Brazil) art.46(III).

⁵⁵ Law 9.610/90 (Brazil) art.46(IV).

⁵⁶ Law 9.610/90 (Brazil) art.46(V).

⁵⁷ Law 9.610/90 (Brazil) art.46(VI).

⁵⁸ Law 9.610/90 (Brazil) art.46(VII).

⁵⁹ Law 9.610/90 (Brazil) art.46(VIII).

⁶⁰ Law 9.610/90 (Brazil) art.47.

⁶¹ Law 9.610/90 (Brazil) art.48.

a different chapter, the Copyright Act establishes in art.30 a limitation for temporary or ephemeral reproduction done in the course of a use permitted by the right holders.⁶²

One important consideration for the scarcity of limitations in the current Brazilian Copyright Act is the intellectual ambience surrounding its making. Starting in the 1970s and until the end of the 1990s, most academic work was highly influenced by two poles of academic discourse (the Brazilian states Sao Paulo⁶³ and Rio Grande do Sul⁶⁴) and one concentrating industry advocacy (Rio de Janeiro). All these sources had been explicitly influenced by perspectives on the 1957 French law and by the writings of Henri Debois. The proposed view was one of restrictive interpretation of user's rights. Such a view caught on people's minds as the truth on copyright law and became an almost homogeneous song played over and over. Its main defenders were industry lawyers and lobbyists.

In the last decade, however, Brazil has seen a broadening of the critical reflection on copyright, coming primarily from the universities. The new researchers either stated that the interpretation of the limitations must already be extensive, since the system is under the fundamental rights umbrella, which requires balance and harmonisation among different rights or changes in the law to expand its limitations or to open it up.⁶⁵

The courts have also taken a more moderate position on the limitations, and we may find some hope for balance within the current Act here. In 2011, the Superior Court of Justice, responsible for the harmonisation of interpretations on federal legislation, faced an interesting and relevant case on the interpretation of the limitations on current copyright law.⁶⁶ In the decision, the court states:

- the limitations need to be interpreted in a systematic and teleological manner;
- such interpretation must ensure the satisfaction of those fundamental rights that have collided with author's rights;
- the scope of author's rights protection is only achieved after the consideration of their limitations and exceptions, applied according to fundamental rights; and
- the three-step test works as a cap to the expansion of these limitations and exceptions.

Most importantly, the court states that if the limitations in arts 46, 47 and 48 of Law 9.610/98 represent the appreciation by the ordinary legislator of fundamental rights and guarantees against the right to copyright ownership (art.5(XXVII) of the constitution)—also a fundamental right—and are the result of harmonisation of these values in certain situations, you cannot consider them the total existing limitations.

The official summary of the decision reads as follows:

- “I— The controversy rests on the possibility of charging musical public performance fees for a school-year opening ceremony in an educational facility of a religious institution: religious event, not-for-profit and free admission;
- II— Need for systematic and teleological interpretation of article 46 of Law 9.610, 1998 (Copyright Act) in the light of the established limitations in the law, ensuring the satisfaction of fundamental rights and constitutional principles that have collided with author's rights, such as intimacy, privacy, cultural, educational and religious rights;

⁶² Law 9.610/90 (Brazil) art.30.

⁶³ This was primarily led by Professor Antônio Chaves of the University of Sao Paulo Law School.

⁶⁴ This was primarily led by Professor Bruno Hammes of UNISINOS (Universidade do Vale do Rio dos Sinos) Law School.

⁶⁵ For further reading, see Allan Rocha de Souza, *A Função Social dos Direitos Autorais: Uma interpretação civil-constitucional dos limites da proteção jurídica: Brasil: 1988–2005* (Campos dos Goytacazes: Faculdade de Direito de Campos, 2006); Sérgio Vieira Branco Júnior, *Direitos autorais na internet e o uso de obras alheias* (Rio de Janeiro: Lumen Iures, 2007); Guilherme Carboni, *Função social do direito de autor* (Curitiba: Juruá Editora, 2006); Bruno Costa Lewicki, *Limitações aos direitos de autor: releitura na perspectiva do direito civil contemporâneo*, PhD Thesis, Centro de Ciências Sociais, Faculdade de Direito, Universidade do Estado do Rio de Janeiro, 2007; Carlos Afonso Pereira de Souza, *Abuso do direito autoral*, PhD Thesis, Centro de Ciências Sociais, Faculdade de Direito, Universidade do Estado do Rio de Janeiro, 2009.

⁶⁶ Superior Court of Justice (Brazil), Recurso Especial No.964.404, 2011, available at https://ww2.stj.jus.br/revistaeletronica/ita.asp?registro=200701444505&dt_publicacao=23/05/2011 [Accessed November 1, 2016].

- III— The effective scope of author’s rights are made clear only after consideration of their restrictions (exceptions) and limitations, based on examples stated in articles 46, 47 and 48 of the Copyright Act, interpreted and applied according to the fundamental rights;
- IV— The use, as a criterion for the identification of the exceptions and limitations, of the three-step test, disciplined by the Berne Convention and the TRIPS Agreement;
- V— Recognizing, in the case, under the international treaties conditions, that the limitation ‘does not harm the normal commercial exploration of the work’ and ‘does not unjustifiably damages author’s interests’”.

Extremely important, the judges unanimously decided in this case that the limits contained in the legislation are not to be interpreted restrictively. They further decided that analogy must be applied to cases equivalent to those expressed in the law in order to account for the balance between the interests of right holders and those of society. The judges made explicit reference to other fundamental rights such as education, culture and privacy, which must be considered in order to reach the proper balance.

The court also stated that the content of copyright protection cannot be revealed until the protection is confronted with its restrictions, meaning that the scope of the protection cannot be revealed until the proper consideration of its prescribed limitations. At the end of the day, the court decided that the use of musical works free of charge in a school-year opening ceremony in an educational facility of a religious institution does not conflict with the three-step test. Such use reflects the incidence of other fundamental rights with which copyright must be harmonised.

Since then, there have been other decisions by the same court restating the principles set forth by the first precedent.⁶⁷ This precedent is expected to influence state court decisions that follow in the same direction. It seems clear at this stage that the courts have focused on checking the balance of rights incorporated into author’s rights legislation and is seeking to harmonise the conflicting interests, referring to fundamental rights for guidance and the three-step test as an international limit on the national limitations.

Final considerations

As shown earlier in this article, since human rights are the core of the Brazilian Constitution and of the entire legal system, both the UN Convention and the Marrakesh Treaty are constitutional amendments of a special kind. They will necessarily interact with and reinforce each other, enhancing the normative power of both. One such interaction was the enactment of Law 13.146/15 for the broad inclusion of people with disabilities, following the approval of the UN Convention. That law entered into force on January 4, 2016, and art.42 guarantees the right of access to cultural products in accessible formats.

The reading of both international instruments, in different passages as well as in their principles and motifs, show the upgrading—in terms of its recognition—of the right of access to culture to a fundamental rights status. Moreover, the preamble of the Marrakesh Treaty makes an explicit link to the UN Convention and the Universal Declaration of Human Rights. The treaty also stresses the relevance of the limitations and the restrictions copyright imposes on other fundamental rights, such as education and freedom of expression. When both international instruments are read together, in different passages as well as in their

⁶⁷ Some decisions that followed this precedent were Recurso Especial No.1.320.007/RS, Tribunal Pleno, June 4, 2013, available at https://ww2.stj.jus.br/processo/revista/documento/mediado/?componente=MON&sequencial=16964076&num_registro=201001026510&data=20110816&tipo=0 [Accessed November 1, 2016] (Rapporteur: Ministro Nancy Andrighi); Recurso Especial No.270.923/SP, Tribunal Pleno, May 21, 2015, available at https://ww2.stj.jus.br/processo/revista/documento/mediado/?componente=MON&sequencial=48149151&num_registro=201202555669&data=20150527&tipo=0 [Accessed November 1, 2016] (Rapporteur: Ministro Raul Araújo); Recurso Especial No.1.343.961/RJ, Tribunal Pleno, October 6, 2015, available at https://ww2.stj.jus.br/processo/revista/documento/mediado/?componente=ATC&sequencial=54408164&num_registro=201101063040&data=20151109&tipo=5&formato=PDF [Accessed November 1, 2016] (Rapporteur: Ministro Luis Felipe Salomão); Recurso Especial No.818.567/SP, Tribunal Pleno, April 29, 2016, available at https://ww2.stj.jus.br/processo/revista/documento/mediado/?componente=MON&sequencial=60433077&num_registro=201502769649&data=20160505&tipo=0 [Accessed November 1, 2016] (Rapporteur: Ministro Luis Felipe Salomão).

principles and motifs, the combined instruments have upgraded the right of access to culture to a new status within the system.

Such an upgraded status is prone to affect judicial interpretation. The first likely impact will be on the interpretation of copyright limitations by courts. It is fair to expect the consolidation of the judicial interpretation establishing that copyright limitations in Brazil must be interpreted extensively, since they represent a balance between copyright exclusivity and other fundamental human rights. There has not been a case at the Supreme Court under this constitution that addresses questions concerning the interpretation of copyright limitations. At the court's current formation, the balancing of rights against opposing fundamental rights is central to decisions, with a tendency to opt for freedom instead of restrictions. So, the probabilities of having the interpretation set forth by the Superior Court of Justice from 2011 onwards and by the Supreme Court itself at an earlier phase—before fundamental rights were central to the system—are high, even if only for coherence's sake.

One of the key issues that could arise in courts regards the larger possibility of format shifting for the benefit of the disabled as an implicit limitation, even without any change to current copyright law. The arguments need go no further than the established paradigmatic decision: where the limits were assumed to be a reflex of those fundamental rights that have collided with author's exclusivity. Assuming that this repeated view is kept, there should be no reason to stop third parties from making available works in accessible formats, as long as the use is non-profit and directed for the benefit of people with disabilities.

Likewise, the copyright contracts may be affected by the legal incorporation of such treaties. Contracts are regulated very softly by the Copyright Act. Nonetheless there are general principles set in the Civil Code—such as “good faith”, “social function of contracts” and “contractual balance”—that apply to all private contracting. Article 42 of the legislation for the inclusion of people with disabilities, in combination with the private contract principles on the Civil Code and the hierarchical level of the treaties, established that contractual clauses that prevent the making available of works in accessible formats shall be deemed null, and deals that do not anticipate that possibility shall be interpreted as to include such permission.

Whatever is the case to come, the approval of both the UN Convention and the Marrakesh Treaty as constitutional amendments and their consolidation as fundamental rights is historical. The right of access to culture, and copyright limitations thereof, gained new, precious and solid ground. The arguments should focus on the immediate application of such a right to the interpretation of the existing limitations and the urgent need to review and expand copyright limitations established in the Copyright Act. Academics, public interest organisations and advocates must explore these new possibilities while they are fresh.

It is clear that Brazil has embraced the broad social development goals of supporting and providing for cultural inclusion of all people with disabilities. What is not so clear is how the cultural industry lobby is going to react and how successful they will be in restraining, through regulation and ordinary legislation, the access to cultural products and expressions in accessible formats, as well as the expansion of the limitations, thereby reducing the practical scope of the treaties and their effects.

Brazil is internationally recognised at WIPO as being one of the leading delegations in the promotion and approval of the treaty, as witnessed at the 2013 Diplomatic Conference in Marrakesh. Such recognition came formally as the new Minister of Culture of Brazil was named the chair of the Marrakesh Assembly. Before then, Brazil also played an important role in the approval of the Development Agenda, changing WIPO's path towards a more balanced and inclusive attitude. The Marrakesh Treaty is a pragmatic result of this effort.

However, as widely noticed in the international press, Brazil is going through a turbulent political process by which the incumbent president was ousted, and the new incumbent representatives have repeatedly stated their objectives does not comprise social and cultural inclusion. These incumbents have proclaimed in their discourses that fostering the industry and economic activity is their main intention.

Instead, the plan looks more like one that replaces the public interest with an all-for-corporate-interests defence. In this scenario, citizenship, democracy and the public interest would be the main victims.

Even worse for copyright and the healthy treatment of the limitations is the strong suspicion that the Minister of Culture represents the worldview and interests of the corporations that consistently opposed the Marrakesh Treaty. The emphasis given by the Minister of Culture at the Marrakesh Treaty Assembly is symptomatic. He focused on the interests of the right holders, giving a secondary dimension to the limitations and the public interest represented by the treaty. My personal bet is that Brazil will try to use the chair's position not to foster the implementation of the treaty, but instead to slow it down and empty it out while at the same time having a discourse of enhancing it.

The legal system set by the constitution is powerfully based on fundamental rights, with the high goals of fighting poverty and exclusion, promoting human dignity and building a "free, just and solidary society". This is the framework upon which public policies are to be built and made effective. Development is to occur under this structure and account for broad human development, including but not limited to economic growth. If there are no further assaults on the constitution by the incumbent representatives, the effects pursued by the Marrakesh Treaty and supported by the UN Convention are to be felt immediately. However, this will not happen if the public interest-oriented people, associations and organisations do not pressure for it, take actions to make it real and denounce the setbacks. Whatever the case, we foresee interesting times ahead!

Patent as a Development Target? Dilemma of China's Patent-Indicated Innovation Incentive Strategy

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☞ China; Patent applications

Quantity or quality: Patent dilemma in China

The last decade witnessed a “great leap forward” of Chinese patents. When the Chinese Government started to provide incentive to technological innovation to transform its industry from labour-intensive to technology-intensive—and its economic development model from resource-dependent to innovation-driven—patents started to get more and more attention. Various measures have been adopted to encourage patent applications and registrations, and they have achieved a significant effect.

In its *11th Five-Year Patent Examination Work Plan* (2006–2010), the State Intellectual Property Office (SIPO) set 3,400,000 patent applications in five years as the minimum target.¹ At the end of this five-year period in 2010, China received more than 1,220,000 patent applications, including more than 391,000 invention patent applications. These figures not only exceeded the state plan, but also enabled China to overtake Japan as the second largest patent filer in the world. In 2011, China further topped the United States to become the country having the world's most patent filings.²

In the twelfth five-year period (2011–2015), the quantity of patents was included in the *12th Five-Year National Economic and Social Development Plan*, which set a target of 3.3 invention patents in force for each 10,000 head of population.³ At the end of this period in 2015, invention patent applications in China for the first time exceeded one million. More than 1.71 million patents were granted, and invention patents in force per capita reached 6.3 for each 10,000 head of population. The *13th National Economic and Social Development Plan* (2016–2020) further set the quantitative target as 12 invention patents for each 10,000 head of population.⁴

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¹ State Intellectual Property Office (SIPO), *11th Five-Year Patent Examination Work Plan* (2006).

² SIPO, *2015 SIPO Annual Report* (2015), pp.92–94.

³ State Council (China), *12th Five-Year National Economic and Social Development Plan of the PRC* (2011).

⁴ State Council (China), *13th Five-Year National Economic and Social Development Plan of the PRC* (2016).

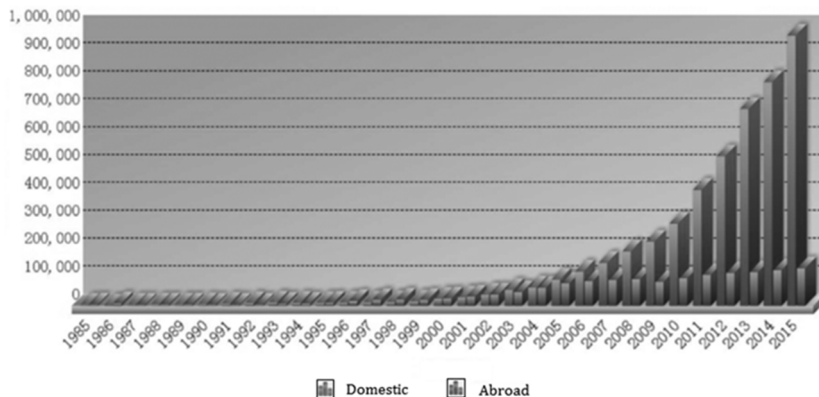


Figure 1 Domestic and foreign invention patent filings in China⁵

Despite the impressive achievement in patent quantity in China, such quality has long been doubted.⁶ A study sponsored by the European Chamber of Commerce observed:

“while patents are exploding in China and certain innovation is also on the rise, patent quality has not proportionately kept up and in fact the overall strength of China’s actual innovation appears overhyped”.⁷

The study further predicted that,

“while patent filings in China will likely continue to notably grow in the future, patent quality may continue to lag these numbers”.

After measuring the patent quality based on the quality of invention, the quality of application document, the quality of examination and the quality of commercialisation, Song Hefa’s research concludes that “China lags far behind ... developed countries in quality of invention, application document and commercialization”.⁸ Research on the quality of Chinese applications under the Patent Cooperation Treaty (PCT) finds that “the quality level of Chinese PCT applications achieves only 34% of the quality level of international PCT applications and decrease over time”. This research suggests that “China’s rise in international patenting was achieved to the detriment of quality”.⁹ Research sponsored by the Organisation for Economic Co-operation and Development (OECD) also confirms this conclusion: China is ranked as the second last among 28 countries.¹⁰

The Chinese Government has also become aware of the problem of patent quality and has taken various measures to solve it. In the words of the State Council, “the scale of intellectual property in China is large but not powerful, and the quantity of intellectual property is high but the quality is low”.¹¹ SIPO issued a policy to improve the quality of patent applications at the end of 2013 and started an action called “defoaming action” to squeeze the patent bubble. According to this policy, the patent office should strictly implement the standards of patent examination, especially strengthening the examination of utility model

⁵ SIPO, *2015 Report of Patent Statistics* (2015), p.1.

⁶ “Are Ambitious Bureaucrats Fomenting or Feigning Innovation?”, *The Economist*, Dec 13, 2014; “Patents, Yes; Ideas, Maybe?”, *The Economist*, October 14, 2010.

⁷ Dan Prud’homme, *Dulling the Cutting-Edge: How Patent-Related Policies and Practices Hamper Innovation in China* (2012), p.1.

⁸ Song Hefa and Li Zhenxing, “Patent Quality and the Measuring Indicator System: Comparison among China Provinces and Key Countries”, available at https://www.law.berkeley.edu/files/Song_Hefa_IPSC_paper_2014.pdf [Accessed November 17, 2016].

⁹ Philipp Boeing and Elisabeth Mueller, “Measuring Patent Quality in International Comparison: Index Development and Application to China” (2015) Center of European Economic Research, Discussion Paper No.15-051 ZEW.

¹⁰ OECD, *OECD Science, Technology and Industry Scoreboard 2011* (2011), p.190.

¹¹ SIPO, *Several Opinions on Further Promoting the Quality of Patent Application* (2013).

and design patent applications.¹² For the first time in more than a decade, the quantity of patent applications and patents granted dropped. In 2014, the growth rate of patent applications and patents granted dramatically dropped to -1.1 per cent and -1.5 per cent. Facing this undesirable result, the bubble-squeezing policy was soon forgotten, and the importance of patent quantity was again emphasised. The growth rate of patent applications returned to a relatively high level. In 2015, the growth rate of invention patents granted reached 61.9 per cent, which was the highest in 10 years. The growth rates of utility model and design patents were respectively 24.1 per cent and 34 per cent, also the highest in the twelfth five-year period. Apparently, the patent office no longer tightens patent examination standards.¹³

It seems that the Chinese patent authority is stuck with the dilemma concerning the impossibility of balancing the dual targets of patent quantity and patent quality. When it focuses on patent quality and tightens standards, patent quantity will drop to an unacceptable level; when it releases the brake, patent quantity will bounce back, but the quality problem is still there. Although the director general of SIPO recently announced that more actions would be taken to reconcile the quantity and quality of patents, it is far too early to say whether China may step out of this dilemma in the near future.¹⁴ Therefore, this paper is going to investigate the real cause of China's patent dilemma by studying the driving force behind patent growth in China and the actual role played by SIPO in this growth.

Patent growth: Driven by state policies or market forces?

The purpose of China to encourage patent applications and registrations is to harvest innovation. The growth of patent quantity without the support of real innovation is meaningless. To evaluate the quality of China's recent patent growth, it is very important to know whether there is corresponding growth of innovation that forms the basis of such patent growth.

The comparison of the patent growth rate and the growth rate of gross domestic product (GDP) and research-and-development (R&D) investment in the same period may indicate the relationship between patent growth and innovation growth. In the twelfth five-year period, the average annual growth rates of domestic patent applications and domestic patents granted were respectively 19.6 per cent¹⁵ and 17.4 per cent,¹⁶ while the average annual growth rate of GDP was 7.8 per cent.¹⁷ In the same period, the average annual growth rates of domestic invention patent applications and domestic invention patents granted were respectively 27.4 per cent¹⁸ and 28.8 per cent,¹⁹ while the average annual growth rate of R&D investment was 15 per cent. In 2015, the annual R&D investment only reached 2.1 per cent of the GDP and did not achieve the target of 2.2 per cent set by the twelfth five-year plan, while the invention patents in force per capita reached 6.3 for each 10,000 head of population, greatly exceeding the target of 3.3 set by this five-year plan.²⁰ The divergence between the growth rate of patent and the growth rate of GDP and R&D investment suggests that the dramatic patent growth in the last decade may lack a corresponding growth of innovation as its basis.

An analysis of the structure of China's GDP and R&D investment may further demonstrate the driving force behind innovation in China. Various statistics have shown that state-owned enterprises (SOEs) contributed more than half of the GDP in China. In 2015, the annual total revenue of SOEs was CNY

¹² SIPO, *Several Opinions on Further Promoting the Quality of Patent Application*. Shen Changyu, the director general of SIPO, also acknowledged that the adjustment of patent subsidies was the partial cause of negative patent growth in 2014. Shen Changyu, Speech in the National Conference of Directors of Intellectual Property Offices, January 15, 2015.

¹³ SIPO, *2015 SIPO Annual Report* (2015), pp.92–94.

¹⁴ Shen Changyu, Speech in the National Conference of Directors of Intellectual Property Offices, 2015.

¹⁵ SIPO, *2015 SIPO Annual Report* (2015), pp.92–94.

¹⁶ SIPO, *2015 SIPO Annual Report* (2015), pp.92–94.

¹⁷ State Council (China), *13th Five-Year National Economic and Social Development Plan of the PRC* (2016).

¹⁸ SIPO, *2015 SIPO Annual Report* (2015), pp.92–94.

¹⁹ SIPO, *2015 SIPO Annual Report* (2015), pp.92–94.

²⁰ National Bureau of Statistics, Ministry of Science and Technology and Treasury Department, *Statistical Bulletin of National Science and Technology Expenditure 2011–2015* (2015).

454.704 billion,²¹ which was 67.17 per cent of the annual GDP (CNY 676.708 billion).²² The proportion of state R&D investment was also quite high. In 2014, 45.59 per cent of annual R&D investment was from state revenue.²³ In 2015, R&D investment from SOEs was 48.72 per cent of the total R&D investment, and 62.01 per cent of the total R&D investment were from enterprises. If the R&D investment from state-owned research institutes and universities were taken into account, the R&D investment from SOEs would probably exceed 70 per cent of annual total R&D investment.²⁴ The contribution of state-owned entities to the GDP and R&D investment illustrates that the state plays a more important role than the market system in promoting technological innovation in China.

It is natural that the patent applications generated from state R&D investment would be based more on non-market incentives than on market considerations. In China, various non-market incentive policies have been taken by the central and local governments to encourage researchers working for state-owned entities to apply for patents. Patent applications and registrations are linked to the promotion of professional ranks, the award of degree and performance ratings, which are all controlled by government agencies. In order to encourage more patents, patent registration is even set as an important parameter used to determine criminal penalty reduction, entrance into a higher school grade, and household registration in big cities like Shanghai.²⁵

In 2015, 33.5 per cent of the domestic service invention patent holders were state-owned non-profit entities, such as universities, research institutes and government agencies and organisations, and 66.5 per cent were enterprises.²⁶ An investigation of patent exploitation also shows that the ratio of exploitation of patents held by universities and research institutes was much lower than that of exploitation of patents held by enterprises.²⁷ Although it is unclear what percentage of invention patent holders are SOEs, it is clear at least more than one-third of the total invention patent holders are state-owned non-profit entities, which are sensitive to state policies but insensitive to market signals.

The patents generated from state incentives surely are of a different nature from the patents based on market considerations. The average lifespan of a patent as an indicator to reflect the willingness of the patent holder to maintain its patent may indicate the economic utility of a patent to its owner. In 2011, the average lifespan of a domestic invention patent was 6.9 years.²⁸ In 2014, the average lifespan of an invention patent owned by a domestic enterprise dropped to 6.4 years. The average lifespan of an invention patent owned by a domestic university was even shorter: only five years.²⁹ The relatively short lifespan of a domestic patent in China suggests that a considerable volume of patents in China is not for market operation and has a relatively low market value.

²¹ Statistics published by the Treasury Department on January 26, 2016.

²² Statistics published by the National Bureau of Statistics on January 18, 2016.

²³ National Bureau of Statistics, Ministry of Science and Technology and Treasury Department, *Statistical Bulletin of National Science and Technology Expenditure 2011–2015* (2015).

²⁴ National Bureau of Statistics, Ministry of Science and Technology and Treasury Department, *Statistical Bulletin of National Science and Technology Expenditure 2011–2015* (2015).

²⁵ Five credits for an invention patent holder, one for a utility model holder, one for a design patent holder, and three for a design patent holder working for the design or creative industry. Shanghai University Graduates Employment Joint Commission, *Policy for University Graduates Applying Household Registration in Shanghai* (2012).

²⁶ SIPO, *2015 SIPO Annual Report* (2015), p.43.

²⁷ SIPO, *2015 Report on the Investigation of Patent Exploitation* (2016), p.9.

²⁸ SIPO, *2011 Annual Report of Patents in Force* (2011).

²⁹ SIPO, *2014 Annual Report of Patents in Force* (2014).

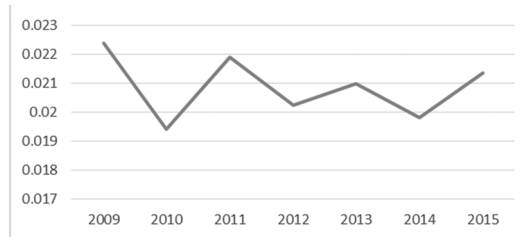


Figure 2 *The ratio of patent transfer*

The above-mentioned conclusion may also be confirmed by the ratio of patent transfer in China. In 2009, around 2.23 per cent of patents in force were transferred. The ratio of patent transfer had never exceeded this number in the next six years. After having fluctuated between 1.9 per cent and 2.2 per cent for five years, the ratio of patent transfer finally rested on 2.14 per cent in 2015.³⁰ This indicator may at least reflect the status of patent transaction and that the overall market value of patents in China has not improved in the last seven years.

Statistics exhibited in this section suggest that China managed to achieve dramatic growth of patent applications and registrations without corresponding growth of technological innovation. They also suggest that a considerable volume of patents may have been generated from reaction to state policies rather than to market signals. The anomalous variation in patent growth in the last three years may provide forceful evidence to back up this conclusion.

The growth rate of domestic design patent applications dropped to 0.3 per cent in 2013 and -14.9 per cent in 2014. Compared with the growth rates of 24.1 per cent in 2011 and 26.6 per cent in 2012, and considering the lack of an obvious change in economic growth, the abovementioned change is quite sudden.³¹ However, if the change in patent subsidy policy—especially the one concerning design patents—is taken into account, this change would be more understandable. In late 2012 and early 2013, when SIPO paid more attention to improving patent quality, many local governments started to adjust their patent subsidy policy, and cut or eliminate design patent subsidies.³² A news report shows that patent applications filled by elementary and middle school students in Shanghai dropped by 80 per cent after the policy change.³³

Another anomalous variation in patent growth was in 2014. After SIPO issued a policy to improve the quality of patent applications at the end of 2013, for the first time in more than a decade, the quantity of patent applications and patents granted dropped. When the patent office no longer tightened patent examination standards, the growth of patent quantity was restored. The growth rate of invention patents granted reached 61.9 per cent, which was the highest in 10 years.

The abovementioned anomaly illustrates that the variation in patent growth is positively correlated to the variation in patent incentive policy. The growth rate dropped immediately after the patent examination was tightened up and bounced back after the examination was loosened. The director general of SIPO attributed the negative patent growth partially to the slowdown of economic growth.³⁴ However, in 2015, the growth rates of GDP and R&D investment were both lower than those in 2014, and yet SIPO still managed to achieve a much higher patent growth rate. The director general's explanation for the rally in 2015 was that "patent structure ha[d] become more reasonable and optimized" after policy adjustment,

³⁰ Intellectual Property Publishing House, *2015 China Report of Patent Operation* (2015), p.3. The annual ratio of patent transfer is calculated by the author.

³¹ SIPO, *2015 SIPO Annual Report* (2015), pp.92–94.

³² Shanghai Intellectual Property Office, *Patent Subsidizing Method of Shanghai* (2012).

³³ "Tightening Examination, Reducing Subsidy; It's Time to Squeeze Patent Bubbles", *Wen Wei Po*, February 12, 2014.

³⁴ Shen Changyu, Speech in the National Conference of Directors of Intellectual Property Offices, 2015.

and “essential, original, sophisticated and high-value patents ha[d] markedly increased”.³⁵ However, it is hard to believe such optimisation of a deep economic structure could happen in such a short period of time. The only possible and reasonable explanation might be that the nature of patent growth in China was policy-driven rather than endogenous.

The role of SIPO: A gatekeeper or an omnipotent government?

Statistics and other evidence have revealed that state policies have played a very important role in promoting patent growth in China. The question is: why do positive economic policies that are widespread in almost every area only result in outstanding growth in the patent field? It is thus necessary to have a close look at the structure and mechanism of the patent system, especially the unique operation of the patent system in China.

The selection mechanism of the patent system

The patent examination system may be regarded as a selection mechanism, through which patent applications (input) are filtered and those that have passed the process will be granted patents. Under ideal conditions, technological innovations that have met the substantive patent requirements will be chosen and granted patents, while pseudo-innovation will be blocked. However, even if we are to ignore utility model patents, which do not involve substantive examinations, the patent examination system still cannot be treated as a reliable innovation selection mechanism.

Examination of invention patent applications is based on a legal fiction—a person skilled in the art—which the *SIPO Guidelines for Patent Examination* defined as:

“a fictional ‘person’ who is presumed to be aware of all the common technical knowledge and have access to all the technologies existing before the filing date or the priority date in the technical field to which the invention pertains, and have capacity to apply all the routine experimental means before that date”.³⁶

This presumption implies that there is a person or a group of people who may possess all the relevant information, and thus substantive patent examinations could be carried out by a central office.

If this presumption were true, then patent examination would be pure logical calculation. However, the knowledge “of which we must make use never exists in concentrated or integrated form”, but is only possessed by separate individuals in dispersed and incomplete form.³⁷ Due to this knowledge problem, patent examination could never be concluded without any doubt. Patents granted are not patent applications that have met the substantive requirements, but only patent applications that have not yet been proven contradictory to the requirements.³⁸

The inherent defect of the centralised patent examination mechanism cannot be corrected within the system or by another centralised system. Even if the patent office takes various measures to improve the patent examination skill and quality, and checks the result afterwards, it still cannot make the knowledge problem disappear. The only way to solve this problem is to connect the patent examination system with other decentralised systems, which may make better use of dispersed knowledge. The market as an information-gathering institution, which “enable[s] us to use such dispersed and unsurveyable knowledge”,³⁹ might be part of the solution.

³⁵ Shen Changyu, Speech in the National Conference of Directors of Intellectual Property Offices, 2015.

³⁶ SIPO, *SIPO Guidelines for Patent Examination* (2010), p.194.

³⁷ F.A. Hayek, “The Use of Knowledge in Society” (1945) 35 Am. Econ. Rev. 519.

³⁸ As the *WIPO Intellectual Property Handbook* emphasised, “novelty is not something which can be proved or established; only its absence can be proved”. World Intellectual Property Organization, *WIPO Intellectual Property Handbook: Policy, Law and Use*, 2nd edn (2004), p.19.

³⁹ F.A. Hayek, *The Fatal Conceit: the Errors of Socialism* (Chicago: University of Chicago Press, 1988), p.15.

Patent is not only a matter of technology, but also a matter of marketing and commercialisation. The purpose of the patent system is not to grant an award to advanced technology selected by the government, but to supply “the economic incentive to create and disseminate” technological innovation by “establishing a marketable right to the use of one’s” invention.⁴⁰ Through this institutional arrangement, the patent system may connect with the market system, and patent applications and registrations may work for the purposes of business operation.

The market system plays the role of a pre-application selection mechanism for filtering applications on the input side of the patent system. Making a decision to apply for a patent is an economic action based on the consideration of future commercial value and on cost-benefit analysis. Patent applicants gather information separately through the market system and utilise the individual knowledge to make their own decisions. If this decision-making process is not intervened by patent incentive policies, it may improve the quality of patent application, thereby effectively blocking the false input into the patent examination system.

The market system may also play the role of a post-grant selection mechanism for the patent system and for filtering low-quality patents. After patent registration, the right holder may decide whether and how long to maintain the patent according to the knowledge gathered from the market system, such as its market value, commercial prospect and so on. The patent holder may abandon an unwanted patent by stopping the payment of a maintenance fee.

The patent challenge system is also a part of the post-grant filtering mechanism. Separate individuals may challenge the patent granted through a decentralised court system based on the consideration of market competition. Through the decentralised process, the patent office may acquire information that is only possessed by the parties of patent validity and infringement litigations. Such information, in turn, enables the office to reconsider the legal status of the patent in question. Through the self-selection of patent holders, the component of patents in force may be further optimised.

From the above point of view, the patent examination system is just a part of the patent selection process, the input and output of which must be filtered through the market system. An ideal patent system must work with the market system, not replace or distort it. Actually, the market is more than a pre-application and post-grant filter; it is also an ecosystem. Research and development, patent licence and transfer, and patent financing are all market behaviours. Technological innovation is a decentralised evolutionary process, which matches better to the market system than to the centralised patent system. Within the ecosystem of innovation, the patent office should stay as modest as possible, only play the role of a passive examiner, and let the market system do the work beforehand and afterwards. An overzealous or omnipotent patent office may be helpful in achieving a “great leap forward” of patent quantity in the short term, but may not be good news for fostering innovation in the long term.

The role of China’s patent office

The role of the patent office in China is much more than a passive gatekeeper who accepts patent applications and a neutral examiner who processes them. SIPO not only controls the examination (filter), but also encourages patent applications (input). The office is even responsible for the result of patent quantity (output). More than that, SIPO’s tasks cover every aspect of the life cycle of a patent—from application to examination and grant to management, protection and exploitation.⁴¹ The patent office is not just providing instruction concerning these tasks,⁴² but is also promoting these tasks through active

⁴⁰ *Harper & Row v Nation Enterprises* 471 U.S. 539 (1985).

⁴¹ On SIPO’s main responsibility, see “Introduction of SIPO”, available at http://english.sipo.gov.cn/about/basicfacts/200904/t20090415_451001.html [Accessed November 17, 2016].

⁴² In the last five years, SIPO released the *Guidelines for Patent Examination*, the *Intellectual Property Management Standards for Enterprises*, the *Guidelines on Patent Licence Agreements*, the *Guidelines on Patent Infringement Judgements* and the *Guidelines for Patent Administrative Enforcement*.

policies, and even by investing public funds into certain areas.⁴³ Along with the extension of SIPO's policy tools, the ecosystem of patents has been undergoing a subtle change.

At the beginning of the eleventh five-year period, the incentive policy launched by SIPO was mostly on the input side, focusing on encouraging patent applications.⁴⁴ The most immediate result is the dramatic increase in patent applications starting from 2005–2006. The contrast between the high growth rate of patent applications and relatively low growth rates of GDP and R&D investment shows that the growth of patent applications was driven not by market forces, but by state incentives, though it is impossible to fully assess the impact of patent-encouraging policies on the pre-application filtering function of the market system.

Another result of the growth of patent applications is a bigger patent office. In order to cope with the dramatic growth of patent applications, SIPO enlarged its examination department. In the eleventh five-year period, SIPO recruited 3,477 new examiners, and the total number of examiners reached 5,525 in 2010.⁴⁵ In the twelfth five-year period, the total number of examiners further exceeded 10,000. SIPO also established seven Patent Examination Co-operation Centres around the country.⁴⁶

A bigger patent office certainly means bigger capacity. When SIPO can sustain more patent applications, it may produce more patents in relatively limited time. However, bigger capacity may also mean bigger ambition. A bigger stomach needs more food to fill. SIPO then needs patent applications to be maintained on a higher level to fulfil the enhanced examination capability. Therefore, the current steady growth of patent applications is not only a target of the *National Economic and Social Development Plan*, but also in line with SIPO's self-interests.

During the twelfth five-year period, statistics have shown that the policy orientation selected by SIPO might have been the major factor deciding the variation in patent growth rate. The rate dropped immediately after the patent examination was tightened up and bounced back after the examination was loosened. The synchronous variations in patent policy and patent growth rate suggest that SIPO is capable of manipulating the patent examination system to serve its policy objective.

In addition to taking measures to control the pre-application selection and the examination mechanism, there are signs that SIPO started to make policy to influence the post-grant stage. Statistics in 2015 have shown that more than 50 per cent of domestic invention patents have been maintained for less than six years, while more than 50 per cent of foreign invention patents have been maintained for more than nine years.⁴⁷ Although Qiao Yongzhong's research suggests that a high rate of patent maintenance fee may take the main responsibility for the short lifespan of domestic patents,⁴⁸ a longer lifespan of foreign patents under the same rate of patent fee suggests that quality and market value could also be important factors affecting the patent holders' decisions to maintain or abandon patents. This suggests that the post-grant filtering mechanism of the market still functions and that the patent holders' decisions to abandon unwanted patents based on market signals have not been affected by policy orientation very much by 2015.

⁴³ State Council (China), *Several Opinions of the State Council on Accelerating the Establishment of a Powerful Intellectual Property Nation in the New Circumstances* (2015).

⁴⁴ SIPO, *11th Five-Year Patent Examination Work Plan* (2006).

⁴⁵ SIPO, *12th Five-Year Patent Examination Work Plan* (2011).

⁴⁶ The seven Patent Examination Co-operation Centres are located in Beijing, Jiangsu, Tianjin, Henan, Guangdong, Sichuan, Hubei and Wuyuan.

⁴⁷ "The Patent Examination Capacity in China Further Enhanced", *China Intellectual Property News*, May 18, 2015.

⁴⁸ SIPO, *2015 Report of Patent Statistics* (2015), p.15.

⁴⁸ Qiao Yongzhong, "The Analysis of the Investigation into the Implementation Status of the Patent Annual Fee System", *China Intellectual Property*, Issue 115, 2016.

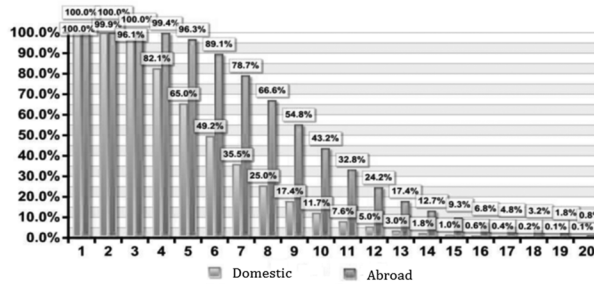


Figure 3 Ratio of lifespan of domestic and foreign invention patents in force⁴⁹

The patent maintenance fee deduction policy launched recently by SIPO suggests that the patent office started to target its policy at the average lifespan of a patent in the thirteenth five-year period. This new policy expands the deduction range from the annual fee of the first three years after the patent grant to the annual fee of the first six years.⁵⁰ Considering the lifespan of more than 50 per cent of domestic invention patents is less than six years, it is apparent that the policy targets the short-life problem of China’s domestic patents and tries to provide government incentives to encourage patent holders to maintain their patents longer. Compared with improving patent quality, deducting patent fee seems to be a prompter and more convenient solution to extend the lifespan of a patent.

When the market system works, the lifespan, the average compensation and win rate in patent litigation and the exploitation ratio are just indicators of the market value of a patent. The increase in patent quantity may change the supply and demand in the patent market. Even if all patents are of high quality, their market value would decline. Needless to say, a large proportion of the patents stimulated by state policies are of low value or valueless. When the indicators are unsatisfactory, the right choice would be to reduce the supply of patents, especially the low-value ones, or to let the market selection mechanism clean out those unwanted patents.

However, the choice of SIPO is just the opposite. When the market indicators are unsatisfactory, it changes those indicators. The patent fee deduction policy actually reflects a typical attitude of SIPO towards the post-grant selection of the market system. When the lifespan of a patent is too short, SIPO deducts the patent fee. When the compensation is too low, SIPO needs more law enforcement power. When the patent management ability of enterprises is too weak, SIPO will make intellectual property management standards and launch more incentive policies to push enterprises to adopt them. When the patent exploitation ratio is too low, SIPO will invest public funds to establish more intellectual property trading platforms. The solution provided by SIPO is not to let the market play a more important role in patent selection and exploitation, but to expand government intervention into the area originally governed by the market. Except for making the market indicators no longer reflecting patent value, the policy seems to have brought no other material change.

The patent system in China caught between the state and the market

Innovation is the outcome of the combination of entrepreneurship and technological ingenuity as well as a reaction to market competition. Although patent is deemed an incentive to innovation, this incentive is granting a marketable right and the potential to make profit in the market through the commercialisation of the patented invention, instead of granting a direct award to the patent holder. Within a reasonable and feasible patent system, the market mechanism and the state-controlled patent examination system must

⁴⁹ SIPO, *2014 Report of Patent in Force* (2014), p.11.

⁵⁰ SIPO, *The Methods for Deduction of Patent Fee* (2016).

reach a delicate balance and form a benign cycle. Innovation generated from the market after being selected by the patent office may have more opportunity to make profit, partly as a feedback to the innovator, as well as to generate more innovation and relevant patent applications. The conditions of this delicate balance and benign cycle are limiting the power of the patent office to only processing patent filings, leaving the selection and the award to the market.

China's economy is a combination of the state-owned sector and the private sector. After having marketisation and internationalisation reforms for more than 30 years, market forces and the private economy have become a force not to be ignored in social and economic development in China. Nevertheless, the state has remained dominant through the state-owned sector, which controls the lifeline of the national economy. For the patent system, the positive side of this mixed pattern of economy is that the market starts to play a significant role in economic growth and generate endogenous innovation, which constitutes the necessary input into, and the basis of, a healthy patent system. The negative side, however, is that the state always attempts to intervene in the process of market selection and to impede the formation of the abovementioned balance and benign cycle.

In a mixed economy, the side of the centralised information-processing mechanism within the patent system will be amplified. The patent office tends to extend its power through launching more positive policy to encourage patents. The state policy to encourage patent applications and registrations may change the nature of the patent system, damaging its unique mechanism for providing innovation incentives. When the patent system attaches to more and more governmental subsidies and tax reduction and exemption, it is getting more and more similar to a state award system, and less and less relevant to the market. In a short period, such a patent system is going to be more efficient in producing patents. However, without market selection, the patent system will become a purely centralised information-processing mechanism. No matter how many patents are being produced, it may have little to do with innovation. To a certain extent, the patent system may lose its market value and be abandoned by the participants of market competition.

Is this going to be the end of China's patent system? Maybe not. The patent encouragement policy is not sustainable and will eventually lose its ability to maintain continuous patent growth. Then, state intervention may be gradually removed, and the market may start to function again in the patent field.

Intellectual Property and Development: Patents, Mass Innovation and the Xiaokang Society

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[✉] China; Jurisprudence; Patents

Introduction

The interpretation of intellectual property norms has been a fascinating topic especially when cutting across legal jurisdictions where social, historical and cultural perceptions of ownership vary. The issue of development presents a kaleidoscopic view of intellectual property rights. It begs the basic question whether Western justification for intellectual property is still legitimate at the receiving end of the regime. Classic justification for intellectual property rights is rooted in purely Western values of labour theory, individual ownership, personality right theory and economic and utilitarian rationales, yet when replicating this in other civilisations where communal values traditionally outweigh private ownership, such justification appears to be lame and fraught with contradiction.

This contradictory nature of intellectual property rights lies in the presumption that a limited period of artificial static market competition is instituted for the purpose of promoting greater innovation. This calculation, however, needs constant weighing and balancing to counteract adverse effects of abusive market power and stifling creativity. For example, the Médecins Sans Frontières' (MSF) Access to Medicines Campaign challenges the legitimacy of drug patent monopolies, new emerging digital technologies constantly disrupt and reconfigure the boundaries of copyright, and bio-piracy exposes the unfair nature of intellectual property rules in international development—to name just a few.

One of the prominent features of contemporary intellectual property rights is that the majority are owned by legal persons or big corporations instead of individual creators.¹ This compels us to reconsider the personality justification for intellectual property and the hypothesis of intellectual property as a “human” right.

There have been several initiatives reflecting upon the shadow of intellectual property. For example, the General Assembly of the World Intellectual Property Organization (WIPO) expressed the need for a development-oriented intellectual property regime which aims to promote creativity and technology transfer.² Peter Yu considers the role of geography in shaping intellectual property, highlighting the uneven sub-national development in developing countries.³ He further consults the traditional Chinese philosophy of the Yin-Yang school in order to adapt intellectual property norms to the information economy by

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¹ “Top 300 Organizations Granted U.S. Patents in 2015: Are More Patents Better?”, available at <http://www.ipo.org/wp-content/uploads/2016/06/2015-Top-300-Patent-Owners.pdf> [Accessed November 1, 2016].

² WIPO, “Committee on Development and Intellectual Property (CDIP)”, available at <http://www.wipo.int/policy/en/cdip/> [Accessed November 1, 2016].

³ Peter K. Yu, “Intellectual Property Geographies” (2014) 6 WIPO J. 1.

“striking an appropriate non-linear, dynamic balance in a pluralistic order”.⁴ He is of the view that such a non-binary Yin-Yang approach would better accommodate multi-stakeholders’ interests in intellectual property, the complexities of which have been compounded by emerging disruptive technologies.

Granted, intellectual property rights and flexibilities of intellectual property could be deemed as the two equal forces of yin and yang, which constantly redefine and carve out each other in an organic manner. One of the key restrictions to patent monopolies is compulsory licensing, which is a decisive instrument for regulating patents on the grounds of protecting the public interest under certain circumstances. It could be used to promote development.⁵ In my other works I consider the role and legal status of compulsory licensing being not an exception but a conditional right of a member of the World Trade Organization (WTO). By treating compulsory licensing as a “right” instead of an “exception”, the burden of proof is shifted to the complaining party, and the invoking state is deemed right to do so until proven otherwise.⁶ There needs to be a dynamic balance between rights and flexibilities, and rights and responsibilities, of intellectual property. The monopolies of intellectual property are expected to discharge the associated responsibilities of disseminating and diffusing technologies as stated in the principles of the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights 1994 (TRIPS Agreement).⁷ As an Indian judge expresses in the 2013 compulsory licensing decision:

“[A] right cannot be absolute. Whenever conferred upon a patent holder, the right also carries accompanying obligations towards the public at large. These rights and obligations, if religiously enjoyed and discharged, will balance out each other. A slightest imbalance may fetch highly undesirable results”.⁸

Nevertheless, the trigger for a compulsory licence has always been under heated debate in developing countries which have been susceptible to a troubled intellectual property discourse. Intellectual property rights and flexibilities appear to be two disjointed forces, and big corporations’ strategic intellectual property entrenchment has resulted in greater inequalities in society. It is thus desirable to harness the two forces of intellectual property from the viewpoint of development. Against this backdrop, this article will consider the role of development in intellectual property and, conversely, the role of intellectual property in development.

Notably, the Nobel Prize winner and economist Joseph Stiglitz, has urged China to foster a development-oriented intellectual property regime, and to be cautious about blindly adopting an inefficient intellectual property regime that has proven to be stifling for innovation.⁹ It is thus desirable to build an indigenous intellectual property regime taking development into consideration.

I will take China as a case study, examining how in recent years the country has striven to make a transition from a manufacturing power to an innovation power. Intellectual property is inherently not an indigenous system in China. Though some form of monopoly could be traced back in history, mainstream Confucianism views free dissemination of knowledge as a key factor for social progress, and familial and communal values as outweighing individual rights.¹⁰ Creativity and innovation were not viewed as individual

⁴ Peter K. Yu, “Intellectual Property, Asian Philosophy and the Yin-Yang School” (2015) 7 WIPO J. 1.

⁵ Joseph E. Stiglitz, “Creating the Institutional Foundations for a Market Economy” in David Kennedy and Joseph E. Stiglitz (eds), *Law and Economics with Chinese Characteristics: Institutions for Promoting Development in the Twenty-First Century* (Oxford: Oxford University Press, 2013), p.266.

⁶ Phoebe Li, *Health Technologies and International Intellectual Property: A Precautionary Approach* (Oxon: Routledge, 2014).

⁷ Agreement on Trade-Related Aspects of Intellectual Property Rights 1994 art.8; Phoebe Li, “Rights and Responsibilities of Patents: A Precautionary Patent Regime in WTO Law” (2013) 35 Eur. Intell. Prop. Rev. 216.

⁸ India Compulsory Licence, Application No.1 of 2011, p.2.

⁹ Stiglitz, “Creating the Institutional Foundations for a Market Economy” in Kennedy and Stiglitz (eds), *Law and Economics with Chinese Characteristics* (2013), p.249.

¹⁰ Peter K. Yu, “Intellectual Property and Confucianism” in Irene Calboli and Srividhya Ragavan (eds), *Diversity in Intellectual Property: Identities, Interests, and Intersections* (New York: Cambridge University Press, 2015).

property. Hence there exist discussions that the underlying reason for low intellectual property protection and enforcement is due to Confucianism.

In relation to copyright, in a quote from the *Analects (Lunyu)*—selected sayings of Confucius—the master mentions that he had only “transmitted what was taught to [him] without making up anything of [his] own”. He was of the view that new knowledge was made transformative use of pre-existing works.¹¹ Another famous defence is illustrated in William Alford’s book *To Steal a Book Is an Elegant Offense*.¹² In addition to the Confucian implications for copyright, the Confucian approach also has a profound impact on patents—specifically on the interpretation of “public interests” in the patent regime.

In the following sections, I will introduce the traditional concept of “*xiaokang*” (moderately prosperous) to facilitate the smooth transition from corporate elite innovation to mass entrepreneurship and innovation (crowd or public innovation),¹³ with a view to building an innovation power and an equitable differentiated intellectual property regime. I will then discuss the recent Chinese patent law reform for meeting the needs of such a transition. We next should ask: how do we make a smooth transition from corporate to mass innovation for intelligent manufacturing? How could such a unique market economy deal with the ramifications of development and inequalities in intellectual property? How could the slogans and the government’s agenda realise the vision of a socialist market with Chinese characteristics? What lessons are to be learned, and could be learned, from the Chinese characteristics in regulation? This article will examine to what extent Chinese characteristics could contribute to interpreting a sustainable intellectual property regime, and to relieving the social divide brought about by intellectual property monopolies.

In this article I will argue that in the digital economy it is no longer satisfactory to engage the elite few in innovation, and that a customised intellectual property regime is essential for the transition to mass innovation. The next step for consolidating an innovation power is to bridge the gap between the two spectrums of the market. In transition from elite corporate innovation to mass innovation, a sophisticated or differentiated intellectual property regime aiming at promoting equality and enhancing the public’s access to science is necessary. I will examine the interpretations of selected key terms in the development of contemporary patent law in China. I will further explore what intellectual property is with Chinese characteristics and, particularly, the implications of “harmonious society”, “*xiaokang* society” and the “public interest” in the Chinese context.

This article is divided into four parts. The first section will illustrate why the development agenda is critical for building intellectual property institutions in developing countries. The second section will review the rationale for technological regulation in China by looking into the traditional values of “equilibrium”, “harmony” and “*xiaokang* society”. The third section will apply the preceding rationale in contemporary patent law-making, considering the recent amendment to the Patent Law of the People’s Republic of China 1984 (Patent Law) and the pressing need for fostering mass innovation towards intelligent manufacturing. The final section will conclude by providing signposts for future work.

The new intellectual property power and development

China has emerged as the world’s second largest economy and ranked third in international applications through the Patent Cooperation Treaty (PCT) since 2013.¹⁴ Yet, the clash between socialism and capitalism introduced after the opening up of the market in 1978 is demonstrated by growing inequality, disparities and social divide in many contexts. A high degree of inequality is now a prominent feature in China’s

¹¹ Peter K. Yu, “The Confucian Challenge to Intellectual Property Reforms” (2012) 4 WIPO J. 1.

¹² William P. Alford, *To Steal a Book Is an Elegant Offense: Intellectual Property Law in Chinese Civilization* (Stanford: Stanford University Press, 1995).

¹³ Liu Wei, “Entrepreneurs Get Ahead in Chinese Business”, available at <http://www.telegraph.co.uk/sponsored/china-watch/business/11621036/entrepreneurs-get-ahead-in-business.html> [Accessed 9 September, 2016]; Emma Boyde, “The Rise of the Asian Entrepreneur”, available at <http://www.ft.com/intl/cms/s/0/41b9ac52-ef85-11e4-ab73-00144feab7de.html> [Accessed November 1, 2016].

¹⁴ WIPO, *Patent Cooperation Treaty Yearly Review: The International Patent System* (2014).

market economy, and is demonstrated by income inequality,¹⁵ education inequality, innovation inequality,¹⁶ and regional inequality¹⁷ where rural-urban and inland-coastal divides are widening.¹⁸ The country now comprises developed, developing and under-developed regions. Even with the government's "go west" strategy in 2000, which aimed to bridge the gaps across regions, disparities are still prominent.¹⁹ It is surprising to learn that income and regional disparities are now greater in China than those in the United States,²⁰ and that income inequality has led to one per cent of the Chinese population possessing one-third of the country's wealth.²¹

The current challenge in China is not under-development but rather fair, equitable, justifiable and all-round balanced development. China's former leader, Deng Xiaoping, once revealed that "we permit some people and some regions to become prosperous first, for the purpose of achieving common prosperity faster".²² Following on from Deng Xiaoping's strategic view that some people should be allowed to get rich before others, how could the intermediate goal of "getting a handful rich" be transformed into the promise of a "well-off, prosperous (*xiaokang*) society" enjoyed by all?

Recently, the Chinese Government announced the 13th Five-Year Economic and Social Development Plan (2016–2020) (135 Plan) which mandates the building of a manufacturing power by integrating intelligent manufacturing.²³ It is stressed that promoting shared development is necessary for developing a "*xiaokang*" society in all respects, which is the end target for mass and crowd innovation. It is proposed that development should be people-centred—that is, development is for the people, development is reliant on the people, and the people should share the results of development.²⁴ Sharing is the essence of socialism with Chinese characteristics, and thus five goals are put forward: innovative development, harmonious development, green development, open development and shared development. In so doing, an equitable intellectual property regime is key to innovation in the market economy.

In this article I will argue that the way to combating inequality in intellectual property institutions is by means of enhancing mass entrepreneurship and innovation, and that the transition from elite innovation to mass entrepreneurship and innovation is ultimately dependent upon the huge task of reducing disparities in access to infrastructure and access to knowledge. The following section will reflect on the unique Chinese approach to technological regulation set in the historical, philosophical and socio-political context.

Approaches to regulation of technologies with Chinese characteristics

According to *Historical Records (Shiji)* there were six dominant schools in Chinese philosophy: Yin-Yang, Confucianism (*Rujia*), Mohism (*Mojia*), School of Names, Dialecticians or Logicians (*Mingjia*), Legalism (*Fajia*) and Daoism. Yet in traditional Chinese society, the three mainstream philosophies are Buddhism, Confucianism and Daoism, collectively named as *Sanjiao* (three schools).²⁵ In modern society, we can

¹⁵ "Gini out of the Bottle", *The Economist*, January 26, 2013.

¹⁶ Fan Peilei and Wan Guanghua, "China's Regional Inequality in Innovation Capability: 1995–2004" in Wan Guanghua (ed.), *Inequality and Growth in Modern China* (New York: Oxford University Press, 2008), p.144.

¹⁷ Xie Yu and Zhou Xiang, "Income Inequality in Today's China" (2014) 111 Proc. Nat'l Academy Sci. 6928, available at <http://www.pnas.org/content/111/19/6928.full.pdf> [Accessed November 1, 2016].

¹⁸ Liu Xielin and Liu Fianbing, "Science and Technology and Innovation Policy in China" in Jose Eduardo Cassiolato and Virginia Vitorino (eds), *BRICS and Development Alternatives: Innovation Systems and Politics* (London: Anthem Press, 2011), p.154.

¹⁹ Liu and Liu, "Science and Technology and Innovation Policy in China" in Cassiolato and Vitorino (eds), *BRICS and Development Alternatives* (2011), p.157.

²⁰ Xie and Zhou, "Income Inequality in Today's China" (2014) 111 Proc. Nat'l Academy Sci. 6928.

²¹ Institute of Social Science Survey, Peking University, 2014.

²² Xie and Zhou, "Income Inequality in Today's China" (2014) 111 Proc. Nat'l Academy Sci. 6928; "Gini out of the Bottle", *The Economist*, January 26, 2013.

²³ "The 13th Five-Year Economic and Social Development Plan of the People's Republic of China", available at http://m.thepaper.cn/newsDetail_forward_1445312?from=groupmessage&isappinstalled=0 [Accessed November 1, 2016].

²⁴ "The 13th Five-Year Economic and Social Development Plan of the People's Republic of China", Ch.4, available at http://m.thepaper.cn/newsDetail_forward_1445312?from=groupmessage&isappinstalled=0 [Accessed November 1, 2016].

²⁵ Yu, "Intellectual Property and Confucianism" in Calboli and Ragavan (eds), *Diversity in Intellectual Property* (2015).

see the convergence of Buddhism and Daoism in people's religious life, whilst Confucianism remains the foundation of social and intellectual values.

Daoism was founded by Lao Zi in the sixth century BC. Lao Zi saw Dao (the way of heaven) as a natural law. His main teaching was that of “*wu wei*” which means “non-action” or “not acting”. One typical saying is that “we shape clay into a pot, but it is the emptiness inside that holds whatever we want”. It could be interpreted that Daoism holds a laissez-faire approach to regulation and expects that Dao will automatically redress abnormalities in due course.

Confucianism was founded by Master Kong (Kong Zi) in 551–479 BC. Compared to Daoism, Confucianism holds a humanistic view to life and establishes Confucius' ideal of social control through moral education (that is, a rule of Li without laws). It could be interpreted that the Confucian approach to regulation would depend on evaluating whether technologies could relieve pain and how actions should be adopted to avoid abuse of human worth and dignity.²⁶

It is also noteworthy that Legalism played a deciding role in the Qin Dynasty when China experienced its first technological feat in its innovation of military technologies. The first Emperor of Qin (Qin Se Huangdi, 246 BC) relied on Legalism established by Han Feizi (280–283 BC), who was of the view that man is born evil and thus the state can only rule by rigid command and by severe punishment and reward. As such, *fa* (law), *shu* (method) and *shi* (legitimacy) are the means of achieving this rigid command. Under the Legalism regime, China celebrated its technological feat in building its world-famous terracotta armies and their lethal weapons with strict control and organisation of artisans and workmanship.²⁷

Chinese approaches to technological regulation are still deeply rooted in the combined rationale of Daoism (laissez faire), Confucianism (humanistic) and Legalism (rigid control). Considering the balance of the Yin-Yang forces, the optimal approach would be a balance of these three schools, acting in accordance with specific features of the technologies at issue and their unique societal implications. Chinese approaches appear to be dominated by more government intervention in steering, guiding, planning and co-ordination, compared with the Western liberal approach to the market and to regulation. The volume, pace, frequency, intensity and efficiency of the Chinese Government's policy-making in relation to fostering technological development and industry upgrade is very impressive.

Science and technology (S&T) and innovation are the main enablers for building a prosperous society set out in the *Chinese National Plan 2006–2020*. The government has thus set forth the “Special Industrial Policy” in order to foster strategic industries. Key innovative companies were given direct support by the mandates of the *National Programme 2006–2020* for the development of science and technology in the medium and long term.²⁸ There are agendas for decentralised innovation policy which gives regional government more autonomy in strategic innovation, albeit that evidence shows this further widens the regional gap.²⁹

Alongside the philosophical underpinning, China is unique in her adoption of a wide range of slogans that accompany social and legal transformation. Although these slogans seem resolute, concise, succinct and punchy, they nevertheless often appear vague and puzzling to Western readers. It is, therefore, essential to understand the historical and cultural context of the ideologies behind them. In the following paragraphs, I will introduce selected key phrases the government used in the context of development.

For example, “harmonious society” has been a key target for economic development and emphasises “balance” with the following parameters: limited disparities between urban and rural areas, between the

²⁶ Fan Ruijing, *Reconstructionist Confucianism: Rethinking Morality after the West* (New York: Springer, 2010).

²⁷ Marco Martinon-Torres, Li Xiuzhen Janice, Andrew Bevan, Xia Yin, Zhao Kun and Thilo Rehren, “Forty Thousand Arms for a Single Emperor: From Chemical Data to the Labor Organization behind the Bronze Arrows of the Terracotta Army” (2014) 21 *J. Archaeological Method & Theory* 534.

²⁸ Liu and Liu, “Science and Technology and Innovation Policy in China” in Cassiolato and Vitorino (eds), *BRICS and Development Alternatives* (2011), pp.133–134.

²⁹ Liu and Liu, “Science and Technology and Innovation Policy in China” in Cassiolato and Vitorino (eds), *BRICS and Development Alternatives* (2011), p.148.

advanced and less advanced regions, between the rich and poor as well as a balance between government and society and balance across all sectors of the economy.³⁰ Such balance is anticipated to minimise the socio-economic disparities in development which can be traced back to the book of Zhongyong (*Doctrine of the Mean*), where the state of “equilibrium” is dubbed as the key to the state of “harmony”:

“While there are no stirrings of pleasure, anger, sorrow, or joy, the mind may be said to be in the state of equilibrium. When those feelings have been stirred, and they act in their due degree, there ensues what may be called the state of harmony. This equilibrium is the great root from which grow all the human actions in the world, and this harmony is the universal path which they all should pursue”.³¹

Based upon this rationale, everything needs to be done in moderation. An extreme, drastic approach has rarely been deemed appropriate or sustainable in the history of China. Everything needs to be acted in proportion to their due degree.

As mentioned above, the present Chinese Government, as a goal for development, has picked up the concept of “*xiaokang*” in the recent 135 Plan.³² A “*xiaokang*” society refers to a well-off, moderately prosperous society in which people lead a fairly comfortable life. The term “*xiaokang*” originates from two sources: the first, from *Shi Ji* (Book of History), implies an ideal living standard of ordinary people which refers to a *medium living standard* between “keeping warm and full (*wenbao*)” and “rich (*fu*)”;³³ the second, from *Li Ji* (*The Book of Rites*) (551–479 BC), was identified by intellectuals as a secondary ideal society being compared to Utopia, namely “*tatong*”.³⁴ *Tatong* is the ultimate ideal utopia shared by the public in which people enjoy social civilisation, stable order and security, yet without social class and exploitation. *Xiaokang* is a level lower than *tatong*, in which private ownership and social class exist but are harnessed by “*li*” (rites) to maintain social order and social life.

Tatong is the perfect world of equality, fraternity, harmony, welfare and justice that is described as “*tianxia* as the public”:

“When the Grand course was pursued, a public and common spirit ruled all under the sky; they chose men of talents, virtue, and ability; their words were sincere, and what they cultivated was harmony. Thus men did not love their parents only, nor treat as children only their own sons. A competent provision was secured for the aged till their death, employment for the able-bodied, and the means of growing up to the young. They showed kindness and compassion to widows, orphans, childless men, and those who were disabled by disease, so that they were all sufficiently maintained. Males had their proper work, and females had their homes. (They accumulated) articles (of value), disliking that they should be thrown away upon the ground, but not wishing to keep them for their own gratification. (They laboured) with their strength, disliking that it should not be exerted, but not exerting it (only) with a view to their own advantage. In this way (selfish) schemings were repressed and found no development”.³⁵

While *xiaokang* is depicted as “*tianxia* as family”:

“Now that the Grand course has fallen into disuse and obscurity, the kingdom is a family inheritance. Everyone loves (above all others) his own parents and cherishes (only) his own sons. People

³⁰ Stiglitz, “Creating the Institutional Foundations for a Market Economy” in Kennedy and Stiglitz (eds), *Law and Economics with Chinese Characteristics* (2013), p.75.

³¹ Zhongyong, available at “The Internet Classics Archive”, <http://classics.mit.edu/Confucius/doctmean.html> [Accessed October 28, 2016].

³² “The 13th Five-Year Economic and Social Development Plan of the People’s Republic of China”, available at http://m.thepaper.cn/newsDetail_forward_1445312?from=groupmessage&isappinstalled=0 [Accessed November 1, 2016].

³³ *Shi Ji* (“Greater Odes of the Kingdom”), available at “Chinese Classics & Translations”, <http://wengu.tartarie.com/wg/wengu.php?l=Shijing&m=NQzh&no=253> [Accessed October 28, 2016] (“The people indeed are heavily burdened, but perhaps a little ease may be good for them.”).

³⁴ *Li Ji* Bk.VII.

³⁵ “Chinese Text Project”, trans. James Legge, available at <http://ctext.org/liji/li-yun> [Accessed October 28, 2016].

accumulate articles and exert their strength for their own advantage. Great men imagine it is the rule that their states should descend in their own families. Their object is to make the walls of their cities and suburbs strong and their ditches and moats secure. The rules of propriety and of what is right are regarded as the threads by which they seek to maintain in its correctness the relation between ruler and minister; in its generous regard that between father and son; in its harmony that between elder brother and younger; and in a community of sentiment that between husband and wife; and in accordance with them they frame buildings and measures; lay out the fields and hamlets (for the dwellings of the husbandmen); adjudge the superiority to men of valour and knowledge; and regulate their achievements with a view to their own advantage”.³⁶

In a “*tatong*” society individuals will see others as their own family without differentiation, yet in a “*xiaokang*” society they will treat others in accordance with the approximation to the self which reflects that the love for self and family overrides the love for society. Confucian philosophers at that time saw the main difference between *tatong* and *xiaokang* as the lowering of social morality. Yet the ideal “*tatong*” society reflected a nostalgic and reminiscent description of humanity’s original society in ancient epochs. Establishing a “*xiaokang*” society was an intermediate means of restoring the selfless world of Utopia in the long run. In other words, *xiaokang* is a realistic, practical and achievable stepping stone to the ultimate Utopia of *tatong*.

The “*xiaokang*” value sensibly recognises the frailty of mankind to differentiate self and family from the society, from which individual ownership of property emerges to form the backdrop of society. Considering both interpretations, it should be borne in mind that “*xiaokang*” is an intermediate means for achieving the ultimate “*tatong*” world where the “public and common spirit” under the sky belittles individual advantage and ownership. The corollary of the “*xiaokang*” patent regime could then be described as patents granted to mass entrepreneurs in order to build a moderately prosperous society in which people lead a fairly comfortable life, and yet various forms of public interests should be embedded in the intellectual property regime to strike a balance between public and private interests. In some circumstances, private interests should be restrained for the protection of the greater good. This view resonates with the presumption that intellectual property rights are granted as an intermediate means for the ultimate goal of promoting innovation in society. Intellectual property is a tool instituted for promoting the public interest and the public’s access to the benefits arising from scientific research. Following on from the discussion on the “*xiaokang*” characteristic of patents, the next section will elaborate further on the patent regime with Chinese characteristics.

Patent power with Chinese characteristics

Contemporary Chinese patent law-making is a product of external pressure and internal push.³⁷ Peter Yu describes the establishment of the modern Chinese Patent Law as “building the ladder” of development, which comprises five stages: creation; imitation and transplantation; standardisation and customisation; indigenisation; and “what next”.³⁸

The “creation” stage was triggered in the late 1970s after China re-opened the market to the world in 1978, followed by its accession to WIPO. The first Patent Law was enacted in 1984, followed by the first revision in 1992. Before the accession to the WTO, the Patent Law was again amended in 2000, with a focus on standardisation and customisation with a view to providing sufficient intellectual property protection compliant with the TRIPS Agreement. In 2008, the State Council introduced the third amendment to the Patent Law and the *National Intellectual Property Strategy Action Plan (2014–2020)* to provide a

³⁶ “Chinese Text Project”, trans. James Legge, available at <http://ctext.org/liji/li-yun> [Accessed October 28, 2016].

³⁷ Peter K. Yu, “Intellectual Property, Economic Development, and the China Puzzle” in Daniel J. Gervais (ed.), *Intellectual Property, Trade and Development: Strategies to Optimize Economic Development in a TRIPS Plus Era*, 1st edn (New York: Oxford University Press, 2007), p.173.

³⁸ Peter K. Yu, “Building the Ladder: Three Decades of Development of the Chinese Patent System” (2013) 5 WIPO J. 1.

comprehensive plan for protecting intellectual property and to highlight the need for an independent (or self-control, self-master) intellectual property system (*zizhu zhishi chanquan*, independent intellectual property),³⁹ in which an indigenous innovation (*zizhu chuangxin*) policy is set forth.

The first two revisions of the Patent Law were outward-looking, focusing on building intellectual property capacity to attract foreign investment and meeting international requirements from the PCT and the WTO TRIPS Agreement. Yet from the third revision onwards, there has been a shift towards meeting internal needs—developing the patent system in the Chinese context in accordance with its own economic, technological and cultural interests.⁴⁰ Considering the need for indigenisation, the third revision of the Patent Law thus introduced the absolute novelty standard,⁴¹ provisions concerning the protection of genetic resources,⁴² the strengthening of compulsory licensing,⁴³ parallel importation and the Chinese equivalent of Bolar exemption.⁴⁴ The third revision of the Patent Law was then concluded in 2010.

Following on from the recent government's agenda on building an innovation power for the transition to intelligent manufacturing, I name the above "what next" stage the "mass innovation" stage, whereby the development agenda for a "*xiaokang*" society is a critical theme in striking a balance in intellectual property monopolies. The primary goal for this nascent phase is therefore not to blindly transplant foreign intellectual property infrastructure but to conscientiously build a development-oriented intellectual property institution that reflects local characteristics.⁴⁵ A "mass innovation" patent regime should be able to redress the disparities and to balance the interests of big corporations with those of mass entrepreneurs. It should differentiate certain fields of technologies for the purpose of safeguarding the public interest and not be compromised by private patent monopolies. Joseph Stiglitz elaborates on the idea that a development-oriented intellectual property regime requires special consideration to ensure effective competition, access to lifesaving medicines, the transfer of technology, and protection of traditional knowledge and genetic resources.⁴⁶

Following the self-reliance innovation agenda, Chinese scholars have explored an intellectual property system with Chinese characteristics by proposing the "inspired self-reliance innovation theory", "state strategic theory", "interests balance theory", "institution protection theory" and the "cultural pass-on theory".⁴⁷ It is argued that a mature intellectual property system needs to be based in the Chinese context, to solve Chinese problems, to form Chinese languages, to have Chinese expressions, to voice Chinese viewpoints and to follow a Chinese path in order to form a Chinese model by amending the current Western-centric international legislative trend.⁴⁸ A socialist intellectual property system focuses on humanism, all-round equilibrium, and sustainable and harmonious development and insists that a localised intellectual property system would consist of socialist values including "fairness and justice", "honesty and trustworthiness" and "harmony and fine-management".⁴⁹

In the search of a sustainable Chinese intellectual property system, it is highlighted that the main problem of economic and social development lies in imbalance or inequality rather than under-development. It is self-evident that the geographical disparities between urban and rural areas, east and west, and amongst

³⁹ State Intellectual Property Office, *National Patent Development Strategy (2011–2020)* (2010), available at <http://graphics8.nytimes.com/packages/pdf/business/SIPONatPatentDevStrategy.pdf> [Accessed November 1, 2016].

⁴⁰ Stefan Luginbuehl, "China's Patent Policy" in Stefan Luginbuehl and Peter Ganea, *Patent Law in Greater China* (Cheltenham: Edward Elgar, 2014).

⁴¹ Chinese Patent Law 2008 art.22(5).

⁴² Chinese Patent Law 2008 arts 5 and 16(5).

⁴³ State Intellectual Property Office, *National Patent Development Strategy (2011–2020)* (2010), para.20; Chinese Patent Law 2008 arts 48–58.

⁴⁴ Chinese Patent Law 2008 art.69.

⁴⁵ Stiglitz, "Creating the Institutional Foundations for a Market Economy" in Kennedy and Stiglitz (eds), *Law and Economics with Chinese Characteristics* (2013).

⁴⁶ Stiglitz, "Creating the Institutional Foundations for a Market Economy" in Kennedy and Stiglitz (eds), *Law and Economics with Chinese Characteristics* (2013), pp.266–267.

⁴⁷ Wu Handong, "Institutionalisation of Intellectual Property Theories and Chinese Localisation Research" (2014/6) *L. & Soc. Dev.* 107.

⁴⁸ Wu, "Institutionalisation of Intellectual Property Theories and Chinese Localisation Research" (2014/6) *L. & Soc. Dev.* 107.

⁴⁹ Wu, "Institutionalisation of Intellectual Property Theories and Chinese Localisation Research" (2014/6) *L. & Soc. Dev.* 107.

fields of industry suggest that intellectual property trajectories will not follow a one-size-fits-all but a differentiated path in relation to fields of technology and location.

The scope of the granted patent right has a direct impact on free dissemination of knowledge in society. The relevant limitations to patentability set out in the Chinese Patent Law include: “inventions-creations” violating the law or social morality, or harming the public interest;⁵⁰ those being deemed as scientific discoveries; rules and methods for intellectual activities; methods for the diagnosis or treatment of diseases; and animal or plant varieties.⁵¹ Patents may be granted for production methods of animal or plant varieties.⁵²

Social morality refers to ethical and moral norms generally recognised and accepted by the public, which is a fluid concept dependent on the cultural and geographical background.⁵³ Inventions-creations detrimental to the public interest means the use of an invention that may cause detriment to the public or may disrupt the normal order of society, examples of which may be inventions that seriously pollute the environment, seriously waste energy or resources, disrupt the ecological balance or impair public health.⁵⁴ Interestingly, subjective limitations are set out in the *Patent Examination Guidelines* indicating that patents would not be granted for applications concerning

“an important political event of the State or a religious belief, hurting the sentiments of the people or of an ethnic group, or advocating superstition”.⁵⁵

Again, the interpretation of such an iteration could be extremely broad. It suggests that the social element of the public’s perception to patent monopolies could play a major part in patent granting.

Currently, the fourth amendment to the Chinese Patent Law has been underway since 2014 following a range of goals the State Intellectual Property Office of China (SIPO) set out in the *National Patent Development Strategy (2011–2020)*. Major policy measures determined by the strategy include revising and improving the Patent Law, increasing *zizhu chuangxi* (indigenous innovation) and improving the enforcement of patent rights.

Zizhu chuangxi means innovation activities that are able to select new innovative goals independently, to dominate the innovation process and to own and utilise innovative outcomes.⁵⁶ In a market economy, an innovative state with Chinese characteristics refers to strong innovative capacity, high innovative efficiency, excellent innovative environment and abundant innovative talents.⁵⁷ It is believed that in order to improve the efficiency of resource allocation, the government’s leadership would need to combine organically with the functions of the market.⁵⁸ It is stressed that the role of the government to co-ordinate resources for technological innovation is particularly vital for spurring market vitality and social creativity. Key industries that require the central government’s involvement are those connected to the state’s strategic technologies and public interest-related technologies (*minsheng* technologies that are closely connected to the population’s livelihood and fundamental frontier technologies).⁵⁹

Evidently, the fourth amendment to the Patent Law aims to build an intellectual property power with Chinese characteristics and socialism. The main agenda includes broadening patent protection, promoting the implementation and utilisation of patents, implementing government services, perfecting patent

⁵⁰ Chinese Patent Law 2008 art.5.

⁵¹ Chinese Patent Law 2008 art.25.

⁵² Chinese Patent Law 2008 art.25.

⁵³ State Intellectual Property Office, *Patent Examination Guidelines* (2010), Pt II Ch.1 art.3.1.2.

⁵⁴ State Intellectual Property Office, *Patent Examination Guidelines* (2010), Pt II Ch.1 art.3.1.2. Examples of inventions contrary to social morality or detrimental to the public interest include: a process for modifying the germ line genetic identity of human beings; a process for cloning human beings or a cloned human being; use of human embryos for industrial or commercial purposes; a process for modifying the genetic identity of animals likely to cause them suffering without any substantial medical benefits to human beings or animals.

⁵⁵ State Intellectual Property Office, *Patent Examination Guidelines* (2010), Pt II Ch.1 art.3.1.2.

⁵⁶ Chinese Academy of Sciences, *Technological Revolution and Modernisation of China—Innovation 2050: Science and Technology and the Future of China* (Beijing: Science Press, 2009), p.116.

⁵⁷ Chinese Academy of Sciences, *Technological Revolution and Modernisation of China* (2009), p.116.

⁵⁸ Chinese Academy of Sciences, *Technological Revolution and Modernisation of China* (2009), p.129.

⁵⁹ Chinese Academy of Sciences, *Technological Revolution and Modernisation of China* (2009), p.129.

examination for quality patents and perfecting patent agency systems.⁶⁰ In order to facilitate the implementation of new technologies, the new proposed Patent Law incorporates an implied licensing mechanism for standard essential patents. A patent holder should not grant an exclusive licence or file for an injunction during the period of licensing rights.⁶¹

It is noteworthy that, whilst enlarging the scope of patent protection is a key objective, it sets out a separate principle clause with a view to regulating the abusive use of patents as well as balancing private and public interests, reflecting the objectives and purpose clauses of the TRIPS Agreement. The proposed art.14 on the purpose of patents reads:

“The implementation of patent rights shall abide by the good faith principles, shall not harm the public interest, shall not improperly exclude or restrict competition, shall not impede the advancement of technology”.

The interpretation of “good faith” and the “public interest” is again vague and broad.

In recent years, there has been an increasing emphasis on constructing an intellectual property power and an innovative country for a “*xiaokang*” society in the *Action Plan for Carrying out the National Intellectual Property Strategy (2014–2020)*.⁶² A corollary to the “*xiaokang*” approach in the intellectual property regime is the suggestion that intellectual property is never absolute, but should be weighed against other diverse interests for achieving equilibrium and harmony.⁶³ This is where the Yin-Yang school comes into play. Alongside the Yin-Yang school, the “*xiaokang*” spirit demonstrates the intermediate and self-restraining characteristic of patents, which will serve well to balance the diverse stakeholders’ interests, particularly the transition from elite corporate innovation towards mass entrepreneurship and innovation, as required by the government’s intelligent manufacturing agenda. In an economy aiming to foster mass entrepreneurship and innovation, consideration should be taken in striking a balance between the tension arising from the clash of interests of big corporations and those of individual entrepreneurs.

The next section delineates a differentiated intellectual property regime customised for socially valued inventions that are closely related to people’s livelihood.

A differentiated approach to intellectual property for socially valued inventions

Technologies that result in significant social impacts and that are fundamental to addressing societal values are what I call “socially valued inventions” (SVI), or what the Chinese call “*minsheng* (people’s livelihood) technologies”. They have a direct impact on societal needs in terms of human rights and equality which, in my view, merit a distinct “public goods” approach to incentivising innovation.⁶⁴ Subjecting SVI to free market competition without government planning and co-ordination would likely result in market failure, as seen in the access to medicines and orphan drugs scenarios.

There are increasing concerns over the monopolistic power on key innovation in a free market. The view that creativity and innovation are not individual property but “public goods” is also expressed in the debate amongst leading economists on the ramifications of privatising knowledge about key technologies which are to serve societal interests. For example, Keith Maskus considers intellectual property rights in response to the governance of technologies that are vital in serving the public interest in health, climate

⁶⁰ China IPR, “Translation of the Draft Patent Law Amendment” and *SIPO’s Explanations about the Draft Amendment to the Patent Law*, available at <https://chinaipr.com/2015/12/17/translation-of-draft-patent-law-amendment/> [Accessed November 1, 2016].

⁶¹ Draft Fourth Amendment to the Chinese Patent Law art.83.

⁶² State Council of China, *Action Plan for Carrying out the National Intellectual Property Strategy (2014–2020)* (2014), para.64; State Intellectual Property Office, *National Intellectual Property Strategy Action Plan (2014–2020)* (2014); Office of the Inter-Ministerial Joint Meeting for Implementation of the National Intellectual Property Strategy, *Promotion Plan for the Implementation of the National Intellectual Property Strategy 2015* (2015).

⁶³ Shi Ji (“Greater Odes of the Kingdom”).

⁶⁴ Phoebe Li, “3D Bioprinting Technologies: Patents, Innovation and Access” (2014) 6 L. Innovation & Tech. 282.

change, genetic resources and traditional knowledge.⁶⁵ He proposes a “comprehensive approach” to innovation which incorporates broader elements of intellectual property,⁶⁶ with a view to minimising the negative effects of patents on society. Such a comprehensive approach is proposed for

“regulating the use of [intellectual property rights] that help bring these poorer regions and groups more fully into the modern commercial system”.⁶⁷

Furthermore, Joseph Stiglitz proposed a similar “portfolio approach” to assessing China’s innovation strategy.⁶⁸ Both share the view that strong intellectual property rights alone are insufficient for further technological development. Wider drivers for innovation, such as government funding, prize systems, competition, trade secrets and human capital, are playing a vital role in efficient innovation.

The differentiated approach to intellectual property is demonstrated in different industries and technological sectors in China. While patents play an important role in digital communication,⁶⁹ they are not a critical element for the software industry, and the Chinese Patent Law provides a relatively narrower scope of protection for biotech and pharmaceutical patents,⁷⁰ partly due to a successful agricultural biotechnology industry that is mainly in the public sector.

Efforts to build a differentiated intellectual property regime are overarching and diverse. For example, the Chinese Government aims to strengthen intellectual property in key technologies and sets out the mechanism of “preferential examination of invention patent applications” for strategic emerging industries such as energy saving and environmental protection, the new-generation information technology, biology, high-end equipment manufacturing, new energy, new materials and green technologies.⁷¹ Stronger protection for innovative pharmaceutical technologies, new varieties of plants and geographical indications for farming produce (Golden farming engineering)⁷² have also been noted. Key fields in relation to living security (*minsheng* or people’s livelihood) and high-tech industry given intellectual property enforcement include food, pharmaceuticals, medical apparatus and environmental protection. As to the innovation of a universal health system, the Chinese Academy of Sciences sets out the goals of shifting the current medical model from disease therapy to diagnostic prevention and intervention and combining contemporary life sciences and traditional medicine.⁷³

Another example of realising mass entrepreneurship and innovation is through fostering digital intelligent manufacturing in 3D printing. The Chinese Government is now keen to facilitate mass entrepreneurship and innovation by means of promoting the development of makerspaces in specific pilot sectors such as information, biotech, modern agriculture, high-end device manufacture, new energy, new materials, energy efficiency and modern service industry.⁷⁴ Small and medium-sized enterprises (SMEs) may benefit from certain government policy in fostering new start-up businesses, yet still find it difficult to compete against big corporations in securing funding. SMEs are also less resourceful in managing a healthy intellectual

⁶⁵ Keith E. Maskus, *Private Rights and Public Problems: The Global Economics of Intellectual Property in the 21st Century* (Washington: Peterson Institute for International Economics, 2012), pp.233–312.

⁶⁶ Keith E. Maskus, “Intellectual Property Rights in the WTO Accession Package: Assessing China’s Reforms” in Deepak Bhattasali, Li Shantong and Will Martin (eds), *China and the WTO: Assessing, Policy Reform, and Poverty Reduction Strategies* (Oxford: Oxford University Press, 2004), p.66.

⁶⁷ Maskus, “Intellectual Property Rights in the WTO Accession Package” in Bhattasali, Li and Martin (eds), *China and the WTO: Assessing, Policy Reform, and Poverty Reduction Strategies* (2004), p.66.

⁶⁸ Joseph E. Stiglitz, “Institutional Design for China’s Innovation System: Implications for Intellectual Property Rights” in Kennedy and Stiglitz (eds), *Law and Economics with Chinese Characteristics* (2013).

⁶⁹ WIPO, *Patent Cooperation Treaty Yearly Review* (2014).

⁷⁰ Li Yahong, “Intellectual Property and Innovation: A Case Study of High-tech Industries in China” (2010) 13 Or. Rev. Int’l L. 263.

⁷¹ Office of the Inter-Ministerial Joint Meeting for Implementation of the National Intellectual Property Strategy, *Promotion Plan for the Implementation of the National Intellectual Property Strategy 2013* (2013).

⁷² Office of the Inter-Ministerial Joint Meeting for Implementation of the National Intellectual Property Strategy, *Promotion Plan for the Implementation of the National Intellectual Property Strategy 2013* (2013).

⁷³ Chinese Academy of Sciences, *Technological Revolution and Modernisation of China* (2009), p.42.

⁷⁴ Council of the People’s Republic of China, “State Council Encourages Development of Makerspaces”, available at http://english.gov.cn/policies/latest_releases/2016/02/18/content_281475292128478.htm [Accessed November 1, 2016].

property portfolio due to insufficient awareness or capacity to do so. Intellectual property is generally not recognised as an effective company asset. Some feel uneasy about applying patent monopolies on the “knowledge taught by teachers”; others may use patent applications solely as a means of securing government funding.⁷⁵ In order to build the intellectual property infrastructure for crowd and mass innovation, strategic considerations for fostering mass innovation should be given priority over corporate innovation. For example, customising the patent regime for SMEs in relation to patent application, licensing platforms and mechanisms for maintaining rights.

Following the Yin-Yang school and the “*xiaokang*” objectives, an optimal patent regime inherently carries a self-restraining force, expected to be complemented by other innovation initiatives. The current patent regime appears to be archaic for emerging technologies. One prominent example is the multi-faceted challenge posed by grassroots open innovation in 3D printing, whereby consumers are becoming “prosumers” by engaging in product development and content generation.

One of the prominent features of 3D printing is decentralisation of the production chain. Localisation, or re-distributed manufacturing in 3D printing, creates opportunities for grassroots local production and potentially offers the solution to reducing disparities in development. Yet, 3D printing not only disrupts the legal norms of intellectual property, but also the broader legal context such as risk regulation and safety, product liability, consumer protection and insurance policy. The disruptive nature of emerging technologies requires a holistic and interdisciplinary approach to customising the intellectual property regime. It is thus insufficient to consider patents within the traditional domain of the intellectual property castle.

There are four steps of development in indigenous innovation: imitation and reverse engineering; re-innovation (improved invention); collective innovation (combined invention); and original innovation. Only those inventions that reach the original innovation level can be granted patent monopoly. Yet inventions developed from mass entrepreneurship and innovation are mostly incremental, and typically lower than the standard “novelty” requirement. The rise of aesthetic functional objects also blurs the traditional dichotomy between patents and copyright. The quick turn-around rate of consumer products does not fit neatly into the lengthy patent term. Furthermore, in response to the above challenges posed to patents, alternative proposals for a differentiated patent regime should be considered by accommodating micro-patents,⁷⁶ partial patents,⁷⁷ quasi-patents and semi-patents, weakening patents⁷⁸ that are tailored for mass innovation in the digital economy.

Future Patent Law amendment: A “*xiaokang*” patent regime for mass innovation

In an intelligent manufacturing era, an intellectual property power is defined by the ability to foster mass entrepreneurship and innovation as opposed to the entrenched monopolies granted to corporate innovation. The patent system will need to reflect the need for public access to scientific innovation which strikes an optimal balance between public and private interests. Following the rationale of equilibrium and harmony, intellectual property rights are not absolute and should be self-restraining specifically in matters relating to socially valued innovation. Patents are an intermediate means of achieving prosperity for all in society.

I have introduced the “*xiaokang*” characteristic of the patent system tailored for mass entrepreneurship and innovation. It is proposed in this article that a patent power is the ability to empower the mass public and not only the elite few, and that a “*xiaokang*” approach to intellectual property is fit for purpose and for redressing the widening inequality in society.

⁷⁵ Findings from my interviews with Chinese 3D printing industry in 2016.

⁷⁶ Hod Lipson and Melba Kurman, *Fabricated: The New World of 3D Printing* (Indianapolis: Wiley, 2013), pp.237–238.

⁷⁷ Gideon Parchomovsky and Michael Mattioli, “Partial Patents” (2011) 111 Colum. L. Rev. 207.

⁷⁸ Lucas Osborn, Joshua M. Pearce and Amberlee Haselhuhn, “The Case for Weaker Patents”, available at http://ssrn.com/abstract_id=2585764 [Accessed November 1, 2016].

Fine-tuning the Intellectual Property Approaches to Fostering Open Science: Some Insights from India

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Introduction

“Science is the systematic enterprise of gathering knowledge about the universe and organizing and condensing that knowledge into testable laws and theories.

The success and credibility of science are anchored in the willingness of scientists to:

1. Expose their ideas and results to independent testing and replication by others. This requires the open exchange of data, procedures and materials.
2. Abandon or modify previously accepted conclusions when confronted with more complete or reliable experimental or observational evidence.”¹

This definition of science, suggested by the American Physical Society, is one of the most comprehensive definitions, highlighting the importance of certain fundamental values in scientific research. The uniqueness of this definition is its ability to highlight those values in any discipline, including the ones that do not fall under disciplines traditionally considered as science.²

Given the critical role of science in political, economic, social and technological development, we as a society need to introspect whether the current research practices reflect the fundamental norms of science. As Robert Merton highlighted, there are four important norms that constitute the ethos of modern science: universalism, communism, disinterestedness and organised scepticism.³ One of the important common threads that connects all four major ethos emphasised by Merton is openness. However, as illustrated in detail in the next section, this aspect is being compromised many a times, affecting the credibility of science. This crisis has led to the need for an intervention to regain the core values of science. Open science is an attempt in this regard, wherein researchers from across the world, cutting across different disciplines, are increasingly getting a part of.

* This work was supported by a grant from Qualcomm Inc. to CIIPC. We would like to thank Kuhuk Jain, Shreyashi Ray and Srishti Singhanian for their insightful comments on the first draft. Views expressed herein are personal.

¹ American Physical Society, “What Is Science?”, available at https://www.aps.org/policy/statements/99_6.cfm [Accessed November 11, 2016].

² On what science is, see Sundar Sarukkai, “Defining Science” in *What Is Science?*, 1st edn (New Delhi: National Book Trust, 2012), pp.1–28.

³ Robert K. Merton, “The Normative Structure of Science” in *The Sociology of Science* (Chicago: University of Chicago Press, 1979), pp.270–278.

Some researchers fear that the primary beneficiaries of open science may not be the Global South. Hence, we need to analyse the role of open science, its potential benefits and challenges in the Global South. Another aspect to be looked at is how the intellectual property system in the Global South approaches this issue. As both intellectual property rights (IPRs) as well as open science have important implications on the innovation ecosystem, it is pertinent to identify the optimal balance between the two. This article analyses these issues in the context of India—one of the countries in the Global South. Despite this primary focus, many of the discussions in this article will be relevant to other countries in the Global South.

The first section of this article examines in detail the current crisis in science. The second section introduces how open science emerged as a movement to counter this crisis. It also discusses the diverse benefits and challenges of practising open science. The third section analyses the implications of open science for the Global South. It maps the evolution of the open movements in India. The fourth section discusses how the approaches towards IPRs could be modified to foster the open science movement in India. This article concludes by highlighting some areas for future research.

Crisis in science

Science is going through a severe crisis. There is an increasing realisation amongst the scientific community that many of the research findings that are published in even the most prestigious journals cannot be replicated.⁴ In addition, according to a recent survey conducted by *Nature*, more than 70 per cent of the researchers have failed to reproduce the findings of the experiments of other researchers.⁵ This is one of the many indicators of the severity of the crisis.

We conceptualise this crisis as arising in two stages of research: production stage and consumption stage. Lack of transparency in research is one of the major challenges on the production side of research. This can be seen from a study regarding the transparency in clinical trials.⁶ Similarly, lack of collaboration is also a serious issue, which often leads to wastage of scarce resources. As noted by G.P.S. Raghava, this is a particularly serious issue in the context of countries with limited resources, like India.⁷ The irony of this is that modern technologies offer better opportunities for collaborative research.⁸

Another important issue on the production side is the lack of inclusiveness. Gender disparity is a serious crisis in most disciplines, and participation of women in research is far below optimal levels.⁹ A recent study conducted by the National Science Foundation (NSF) shows that, in the field of engineering, representation of women among the employed researchers and scientists is less than 20 per cent.¹⁰ Similarly, there is the lack of inclusion of persons with disabilities. The NSF study reports that one in nine scientists and engineers has a disability.¹¹ Most of the disciplines and institutions are still seeing persons with disabilities only as consumers, not producers, of information. As Moses Chowdary Gorrepati highlighted during one of our interviews, there is a systemic gap—right from the education stage—and science is neither inclusive nor disabled-friendly.¹² A lack of representation results in a lack of diversity in perspectives. In the Indian context particularly, the disparities could also reflect the urban-rural divide, caste and class.

⁴ Florian Prinz, Thomas Schlang and Khusru Asadullah, “Believe It or Not: How Much Can We Rely on Published Data on Potential Drug Targets?” (2011) 10 *Nature Reviews Drug Discovery* 712, 712–713.

⁵ Monya Baker, “1,500 Scientists Lift the Lid on Reproducibility” (2016) 533 *Nature* 452, 453.

⁶ See generally Jorge H. Ramirez, “Lack of Transparency in Clinical Trials: A Call for Action” (2013) 44 *Colombia Médica* 243.

⁷ Interview with G.P.S. Raghava, Head, Bioinformatics Centre, Institute of Microbial Technology, Council of Scientific and Industrial Research in Chandigarh, August 5, 2016.

⁸ Leanord Casutto, “The Changing Face of Scientific Collaboration”, *The Chronicles of Higher Education*, August 14, 2016.

⁹ Eileen Pollack, “Why Are There Still So Few Women in Science?”, *New York Times*, October 3, 2013.

¹⁰ “Employed Scientists and Engineers, by Occupation, Highest Degree Level, and Sex: 2013”, available at <http://www.nsf.gov/statistics/2015/nsf15311/tables/pdf/tab9-5.pdf> [Accessed November 7, 2016].

¹¹ National Science Foundation, “Women, Minorities, and Persons with Disabilities in Science and Engineering 2015”, available at <https://www.nsf.gov/statistics/2015/nsf15311/digest/nsf15311-digest.pdf> [Accessed September 20, 2016].

¹² Telephonic Interview with Moses Chowdary Gorrepati, Employability Trainer, EnAble India, July 30, 2016.

In India, many scholars are also of the opinion that research is not given due importance.¹³ For example, Shamnad Basheer highlighted that research in law schools is not incentivised enough.¹⁴ Similarly, in the context of medical research, Arvind Kasthuri pointed out that research in India is mainly publication-driven, as opposed to driven by an interest in solving a general researchable question.¹⁵ Moreover, there have been many reported cases of retractions due to fraud and plagiarism.¹⁶ All these factors are collectively contributing to quality issues in the production stage of research.

Similar challenges can be seen in the consumption stage of research. The most important challenge is with regard to the accessibility of research outputs, in which two important issues need to be highlighted. The first one is the existence of pay-walls around most research outputs. A recent study shows that 65 of the 100 most cited articles are behind pay-walls.¹⁷ Even the most liberally funded universities in the west are finding it difficult to subscribe to all journals.¹⁸ One can then imagine the situation of the libraries and researchers in the Global South.

Even worse is the case regarding accessibility for persons with disabilities. Most countries do not have disability-related exceptions within their copyright laws.¹⁹ Even though countries like India are now a party to the Marrakesh Treaty to Facilitate Access to Published Works for Persons Who Are Blind, Visually Impaired or Otherwise Print Disabled 2013, accessibility to all research outputs remains an unfulfilled dream for the disabled. Last but not the least, there is a strong disconnect between science and society. Science is hierarchical, wherein citizens are perceived just as consumers of knowledge.²⁰ As Anil Gupta pointed out during an interview, there is an immense need for democratising science, the absence of which often results in research being disconnected from societal needs.²¹ According to him, there are various barriers preventing people from participating in science, and these include institutional, linguistic, financial and pedagogical barriers.²² The need of the time is scientised citizens and democratised science.²³

We view the crisis at the production stage and the consumption stage as part of a vicious cycle, one influencing the other. A lack of access to the research outputs and research data will affect the quality of research produced, which in turn prevents the possibilities of replication while also reducing transparency. Absence of inclusive participation and collaboration will reduce the diversity of perspectives, which in turn will further affect the quality of research (including a failure to identify socially relevant research issues).

It is also important to view this crisis from the broader context in which research is produced. While it is easy to blame scientists for the current crisis, it is also important to ask whether we can overlook the present incentive structure and how it contributes to the crisis. As Arvind Kasthuri noted in the context of medical research, research remains very publication-oriented.²⁴ This often forces researchers to chase

¹³ For example, a study from the field of medical research shows that 57 per cent of medical colleges in India had not published even a single research paper between 2005 and 2014. Dinesh C. Sharma, "Poor Research Output from India's Medical Schools" (2016) 387 *The Lancet* 28, 28.

¹⁴ Interview with Shamnad Basheer, Founder, Spicy IP in Bangalore, July 23, 2016.

¹⁵ Interview with Arvind Kasthuri, Professor, Department of Community Health, St. Johns Medical College in Bangalore, July 23, 2016.

¹⁶ E.g. Jagdeep Singh Deep, "Three Scientists Caught in Plagiarism Row, Top Publisher Retracts Article after 14 Years", *Indian Express*, July 11, 2016; K.S. Jayaraman, "Indian Science Adviser Caught up in Plagiarism Row", available at <http://www.nature.com/news/indian-science-adviser-caught-up-in-plagiarism-row-1.10102> [Accessed November 7, 2016]; Pushkar, "In India, You Can Plagiarize and Flourish", *The Wire*, June 5, 2015.

¹⁷ The Authorea Team, "65 out of the 100 Most Cited Papers Are Paywalled", available at https://authorea.com/users/8850/articles/125400/_show_article [Accessed November 7, 2016].

¹⁸ Ian Sample, "Harvard University Says It Can't Afford Journal Publishers' Prices", *The Guardian*, April 24, 2012.

¹⁹ The Marrakesh Treaty to Facilitate Access to Published Works for Persons Who Are Blind, Visually Impaired or Otherwise Print Disabled 2013 is intended to address this challenge. But as of September 7, 2016, only 20 countries have ratified the Marrakesh Treaty.

²⁰ Rolf Lidskog, "Scientised Citizens and Democratised Science. Re-assessing the Expert-lay Divide" (2008) 11 *J. Risk Res.* 69.

²¹ Interview with Anil K. Gupta, Professor, Indian Institute of Ahmedabad in Ahmedabad, July 1, 2016. See also "Useless Research—an Expensive Waste of Time?", *The Guardian*, July 13, 2007.

²² Anil Gupta highlighted this with the example of how buoyancy could be better taught by using cooking *poori* as an illustration. Such approaches may help in making science more accessible. Interview with Anil Gupta.

²³ Lidskog, "Scientised Citizens and Democratised Science" (2008) 11 *J. Risk Res.* 69.

²⁴ Interview with Arvind Kasthuri.

attractive results and suppress negative or less desirable results.²⁵ The “publish or perish” situation also leads to plagiarism, which is a particularly serious crisis in countries like India.²⁶

All this points towards a serious need for intervention in scientific research. Openness with regard to both the acknowledgement of the crisis as well as the adoption of comprehensive solutions is extremely important. Open science is a global movement, which presents a plausible solution in this regard.

Open science as a response to the crisis in science

While many of the past “open” movements like open access and open data have attempted to change the way knowledge is accessed and disseminated, not much attention has been given to the way scientific knowledge is produced. Many of the problems we highlighted in the previous section show the need for urgent interventions in the knowledge creation sphere, and the open science movement is a step in this regard.

In this context, it is important to understand what open science is and what its key characteristics are. While there is a general consensus that open science is a movement aiming to open up science and bring in more transparency, there is no comprehensive definition. According to Michael Nielsen,

“[o]pen science is the idea that scientific knowledge of all kinds should be openly shared as early as is practical in the discovery process”.²⁷

In the context of Horizon 2020 projects, the European Union has defined open science as

“the way research is carried out, disseminated, deployed and transformed by digital tools, networks and media. It relies on the combined effects of technological development and cultural change towards collaboration and openness in research. Open science makes scientific processes more efficient, transparent and effective by offering new tools for scientific collaboration, experiments and analysis and by making scientific knowledge more easily accessible.”²⁸

Recently, in the Dakar Declaration on Open Science in Africa, the signatories agreed that

“[o]pen science is a means and not an end in itself and it is much more than just open access to publications or data; it includes many aspects and stages of research processes thus enabling full reproducibility and re-usability of scientific results”.²⁹

In our survey of definitions of “open science” as used in different disciplines, we came across more than 30 definitions, each with its own contributions and characteristics.³⁰ While the general understanding is that it encompasses the prior open movements, such as open access and open data, open science goes beyond these movements to address the more fundamental problems with the global scientific inquiry.

A broad and inclusive definition that can retain the flexibilities required to cover diverse disciplines can make enormous differences to the discussions and debates surrounding this movement. Without a

²⁵ Brian A. Nosek, Jeffrey R. Spies and Matt Motyl, “Scientific Utopia II. Restructuring Incentives and Practices to Promote Truth over Publishability” (2012) 7 *Persp. on Psychol. Sci.* 615, 617; Hannah Devlin, “Cut-Throat Academia Leads to ‘Natural Selection of Bad Science’, Claims Study”, *The Guardian*, September 21, 2016.

²⁶ E.g. Deepak Juyal, Vijay Thawani and Shweta Thaledi, “Rise of Academic Plagiarism in India: Reasons, Solutions and Resolution” (2015) 32 *Lung India: Official Organ of Indian Chest Society* 542, 542; K. Satyanarayana, “Plagiarism: A Scourge Afflicting the Indian Science” (2010) 131 *Indian J. Med. Res.* 373, 373; R. Ramachandran, “The Physics of Plagiarism”, available at <http://www.frontline.in/static/html/11922/stories/20021108003508400.htm> [Accessed November 7, 2016]. There is also a Wikipedia page listing some instances of plagiarism in India: “Scientific Plagiarism in India”, available at https://en.wikipedia.org/w/index.php?title=Scientific_plagiarism_in_India&oldid=738676735 [Accessed November 7, 2016].

²⁷ Michael Nielsen, “[Open-Science] Definitions of Open Science?”, available at <https://lists.okfn.org/pipermail/open-science/2011-July/000907.html> [Accessed November 7, 2016].

²⁸ European Commission, “Open Science”, available at <https://ec.europa.eu/digital-single-market/en/open-science> [Accessed November 7, 2016].

²⁹ “Dakar Declaration on Open Science in Africa”, available at <http://www.sci-gaia.eu/dakar-declaration/> [Accessed November 7, 2016].

³⁰ We have tried to map the key characteristics highlighted in each of those definitions. The data in this regard is available at https://docs.google.com/spreadsheets/d/1FcoBGUmZKbcEcnsvxTBOYOIFasoMLuGueOZ8_ry_RX0/edit#gid=0 [Accessed November 7, 2016].

common language, particularly for a term with several different connotations, there can be challenges for policy changes.³¹ In this regard, we have attempted to evolve a more comprehensive definition based on the key characteristics of existing definitions of open science, as used in different fields and by different scholars:

“Open science broadly refers to scientific inquiries wherein the characteristics of openness, collaboration, transparency, availability, accessibility, replicability, constant and continuous transfer of knowledge between producers and users of knowledge, prioritisation of research and innovation based on social needs, and non- or minimal existence of IP restrictions are perceptible and exist throughout all stages of research.”³²

Since the terms used in our definition have been used several times in several definitions, it is pertinent to understand how we have characterised these terms. The term “open science” is inclusive, encompassing all the “open” movements like open access to scholarly publications, open data, open lab notes and open research tools.

“Transparency” in the context of our definition means transparency in methodology, research tools, research data, and generation, communication or presentation of results. Transparency in scientific communication is extremely important as it enables reproducibility.³³ Secrecy and opacity are against the basic tenets of science.³⁴

“Accessibility” has two important elements—first, availability in online or digital formats at marginal costs; and secondly, accessibility in terms of disabled-friendly scientific inquiry. Though many people use availability and accessibility interchangeably, it is important to note that not all available data is necessarily accessible. For instance, data made available by many researchers may not be in usable formats, hence failing the “accessibility” requirement. Moreover, as stated before, science is still viewing disabled persons only as consumers, not producers, of information.³⁵ The barrier to participation emerges at the education level and continues to exist till the point of dissemination of research.³⁶ It is important for science to address these practical hurdles to enable representation and participation of persons with disabilities.

Finally, the term “open data” in the context of open science includes availability and accessibility of data for reuse and redistribution, particularly through integration and connection of data as well as proper metadata. This implies that the data from any research should be published immediately upon its generation or as early as is practical.

It is also important to see the benefits as well as the challenges of practising open science. While it is difficult to quantify the benefits, they can be broadly categorised into five clusters: better research, better research processes, benefits to the scientific community, societal benefits and economic benefits.

The first and most important is better research. By making all the research publicly available, it increases public scrutiny, and as a result, it also increases the chances of errors being found.³⁷ Ironically, this is also

³¹ Michael Clemens, “A Clear Distinction Is Needed between Replication Tests and the Evaluation of Robustness in Social Science Literature”, available at <http://blogs.lse.ac.uk/impactofsocialsciences/2015/04/15/the-meaning-of-replication-and-robustness/> [Accessed November 7, 2016]; Thomas Leeper, “What’s in a Name? The Concepts and Language of Replication and Reproducibility”, available at <http://thomasleeper.com/2015/05/open-science-language/> [Accessed November 7, 2016].

³² More details on the definitions upon which we relied to develop our own definition are available at https://docs.google.com/spreadsheets/d/1YJzHX6_ERhjh4mW4liDDZi3kLdHW7VZmXlpx7A4fxUI/edit#gid=0 [Accessed November 7, 2016].

³³ Story C. Landis, Robert B. Darnell, Stanley E. Lasic, Malcolm R. Macleod and Shai D. Silberberg, “A Call for Transparent Reporting to Optimize the Predictive Value of Preclinical Research” (2012) 490 *Nature* 187, 187–190.

³⁴ David Inglis, John Bone and Rhoda Wilkie, *Nature: Reconfiguring the Social* (London: Routledge, 2005), p.89.

³⁵ Interview with Swaraj Paul Barooah, Executive Vice-President, IDIA in Bangalore, July 21, 2016.

³⁶ Interview with Moses Chowdary Gorrepati.

³⁷ Stephanie E. Hampton, Sean Anderson, Sarah C. Bagby, Corinna Gries, Xueying Han, Edmund Hart, Matthew B. Jones, W. Christopher Lenhardt, Andrew MacDonald, William Michener, Joseph F. Mudge, Afshin Pourmogharian, Mark Schildhauer, Kara H. Woo and Naupaka Zimmerman, “The Tao of Open Science for Ecology” (2015) 6 *Ecosphere* 1, 2; Erin C. McKiernan Philip E. Bourne, C. Titus Brown, Stuart Buck, Amye Kenall, Jennifer Lin, Damon McDougall, Brian A. Nosek, Karthik Ram, Courtney K. Soderberg, Jeffrey R. Spies, Kaitlin Thaney, Andrew Updegrave, Kara H. Woo and Tal Yarkoni, “How Open Science Helps Researchers Succeed” (2016) 5 *eLife* e16800, pp.10–11; Jelte M. Wicherts, Marjan Bakker and Dylan

one of the reasons why all scientists may not embrace open science. For example, during one of our interviews, G.P.S. Raghava noted that one of the reasons for a lack of momentum towards open science in India is a lack of confidence among scientists in their own research.³⁸

Open science also allows various perspectives to be drawn from the same research which may encourage new ideas.³⁹ Several people from different backgrounds and fields looking at the same research enable identification of new research questions.⁴⁰ Openness therefore not only facilitates more research, but facilitates more *quality* research.⁴¹ Recognising and breaking the inherent flaws in the closed peer review system can also improve the quality.⁴² The foundation of science rests on verifiability, and open science helps in verifiability through more scrutiny.⁴³

Secondly, open science also contributes to better research processes by increasing the efficiency of the scientific inquiry method, both in terms of cost and effort. Open access to research outputs can lower the cost of research.⁴⁴ Additionally, collaborations allow the possibility of using the same resources, including data and scientific tools for multiple purposes.⁴⁵ Open science values collaborations within the scientific community, among the disciplines and also between the community and society, thus allowing for more efficient use of resources.

The third cluster of benefits pertains to how open science benefits the scientific community as a whole. It is observed that with openness, researchers gain citation advantage.⁴⁶ Openness also provides opportunities to signal one's own skill sets to external parties, which in turn may induce more collaboration.⁴⁷

The fourth important facet of open science is its probable impact on society. Open science can strengthen the relationship between science and society by increasing awareness of community needs, public engagement and transfer of knowledge to society.⁴⁸ Scholars like Anil Gupta consider open science as a prelude to a more rational society.⁴⁹ Open science can also improve the scientific literacy of the public.⁵⁰ With more scientific engagement with citizens, better and more relevant research may emerge, which in turn will contribute to a better relationship between science and society.

Molenaar, "Willingness to Share Research Data Is Related to the Strength of the Evidence and the Quality of Reporting of Statistical Results" (2011) 6 *PLOS ONE* e26828, pp.1-7.

³⁸ Interview with G.P.S. Raghava.

³⁹ Ann Grand, Clare Wilkinson, Karen Bultitude and Alan Winfield, "On Open Science and Public Engagement with Engineering", available at <http://eprints.uwe.ac.uk/1354> [Accessed November 7, 2016].

⁴⁰ Angus Whyte and Graham Pryor, "Open Science in Practice: Researcher Perspectives and Participation" (2011) 6 *Int'l J. Digital Curation* 199, 202.

⁴¹ Sascha Friesike, Bastian Widenmayer, Oliver Gassmann and Thomas Schildhauer, "Opening Science: Towards an Agenda of Open Science in Academia and Industry" (2014) 40 *J. Tech. Transfer* 581, 597.

⁴² Research Information Network and National Endowment for Science, Technology and the Arts, *Open to All? Case Studies of Openness in Research* (2010), p.12; Richard Smith, "Peer Review: A Flawed Process at the Heart of Science and Journals" (2006) 99 *J. Royal Soc'y Med.* 178, 179.

⁴³ Organisation for Economic Co-operation and Development, "Making Open Science a Reality" (2015) OECD Science, Technology and Industry Policy Paper No.25, p.10.

⁴⁴ Susan Mayor, "Open Access Could Reduce Cost of Scientific Publishing" (2004) 328 *Brit. Med. J.* 1094.

⁴⁵ Interview with Jayant Murthy, Senior Professor, The Indian Institute of Astrophysics, Bangalore in Bangalore, July 21, 2016.

⁴⁶ For example, one of the studies shows a two-fold increase in citations when an article is shared through ArXiv. Travis S. Metcalfe, "The Rise and Citation Impact of Astro-Ph in Major Journals" (2005) *Bull. Am. Astronomical Soc'y* 555, 555-557. However, some studies show that citation advantages can vary with disciplines. For example, McVeigh shows that citation advantage exists for medicine, engineering, physics and mathematics but was not perceptible in the fields of life sciences and chemistry. Marie E. McVeigh, "Open Access Journals in the ISI Citation Databases: Analysis of Impact Factors and Citation Patterns: A Citation Study from Thomson Scientific", p.7, available at <http://ip-science.thomsonreuters.com/m/pdfs/openaccesscitations2.pdf> [Accessed November 7, 2016]. Some scholars argue that the citation advantages could also be attributed to other factors such as quality bias, as researchers may publish only their best works through open access modes. Organisation for Economic Co-operation and Development, "Making Open Science a Reality" (2015) OECD Science, Technology and Industry Policy Paper No.25, 24.

⁴⁷ Simcha Jong and Kremena Slavova, "When Publications Lead to Products: The Open Science Conundrum in New Product Development" (2014) 43 *Res. Pol'y* 645, 645.

⁴⁸ Ann Grand, Clare Wilkinson, Karen Bultitude and Alan Winfield, "Open Science: A New 'Trust Technology'?" (2012) 34 *Sci. Comm.* 679; William K. Michener and Matthew B. Jones, "Ecoinformatics: Supporting Ecology as a Data-Intensive Science" (2012) 27 *Trends in Ecology and Evolution* 85, 91; Organisation for Economic Co-operation and Development, "Making Open Science a Reality" (2015) OECD Science, Technology and Industry Policy Paper No.25, 18-19.

⁴⁹ Citing the example of the mass hysteria created by certain religious leaders in India, Anil Gupta pointed out during his interview that, with open science and constant communication between science and society, more rationality can be brought into society.

⁵⁰ Sarah Currier, *Open Science Project: Final Report* (Lenton Lane: Centre for Research Communications, University of Nottingham, 2011), p.14.

The final cluster of benefits relate to the long term effects of open science on the economy. Besides encouraging optimal use of scarce resources, open science can increase the economic and social impact of research, foster economic growth and induce knowledge spillovers.⁵¹ Open science institutions may also provide alternatives to IPRs, which are generally used to address certain market failures.⁵² For example, Zakir Thomas discussed the importance of open science in the context of developing drugs for neglected and rare diseases, wherein IPRs have failed to provide incentives for research and development (R&D).⁵³ Finally, open science can also foster innovation and creativity in the economy.⁵⁴

While the benefits of open science are numerous and far-reaching, some practical and implementation challenges, which exist at both the individual and institutional levels, need to be addressed. These challenges include issues relating to costs, existing mindset, information overload and a lack of incentives within the current research ecosystem.

Setting up infrastructures that are able to implement open science principles in full requires investment, both in terms of time and money. It might require new infrastructures or modifications in the existing infrastructures.⁵⁵ In several countries, the implementation of open science may have to start with the very basic step of getting proper internet access or even electricity. In some, it might have to start with setting up repositories or providing adequate training programmes for researchers.⁵⁶ Dissemination of research outputs openly may also involve substantial costs. For example, many of the open access journals impose article processing charges (APCs) which may not be affordable for many researchers, particularly those from the Global South. One study that has analysed 1,370 journals listed in the Directory of Open Access Journals (DOAJ) shows that the APCs vary between US \$8 and US \$3,900.⁵⁷

Another related challenge is breaking the misconceptions and fears regarding openness in science, which manifest in several ways. An inherent feeling of ownership over research resources and outputs creates a fear of free-riding among many scientists.⁵⁸ This in turn results in a general reluctance to share research and data openly.⁵⁹ A study on data sharing among the genomic research community shows that many researchers are also of the belief that, as creators of data, they must be able to complete all research based on their data before others.⁶⁰ They tend to believe that they can share data publicly only when all potential publications are derived from the data. Some scientists also think that spending time on sharing their research outputs through non-traditional channels takes time away from their “real” work.⁶¹ For example, in the context of genomic research data sharing, a lack of time to do the required quality

⁵¹ Currier, *Open Science Project* (2011), p.4; Research Information Network and National Endowment for Science, Technology and the Arts, *Open to All? Case Studies of Openness in Research* (2010), p.11; Paul A. David, “The Economic Logic of ‘Open Science’ and the Balance between Private Property Rights and the Public Domain in Scientific Data and Information: A Primer” in National Research Council (ed.), *The Role of Scientific and Technical Data and Information in the Public Domain: Proceedings of a Symposium* (Washington: The National Academies Press, 2003), pp.19–33; Jim Sensenbrenner, “Give the Public What It Pays for: Scientific Research”, *Forbes*, June 10, 2016.

⁵² David, “The Economic Logic of ‘Open Science’ and the Balance between Private Property Rights and the Public Domain in Scientific Data and Information” in National Research Council (ed.), *The Role of Scientific and Technical Data and Information in the Public Domain* (2003), pp.19–33.

⁵³ Interview with Zakir Thomas, Former Project Director, Open Source Drug Discovery in New Delhi, July 6, 2016.

⁵⁴ Peter Krakerand, Derick Leony, Wolfgang Reinhardt, Günter Beham, “The Case for an Open Science in Technology Enhanced Learning” (2011) 3 *Int’l J. Tech. Enhanced Learning* 643, 649; Currier, *Open Science Project* (2011), p.4. Interestingly, some of the oil companies have started sharing data to help them solve complex problems David Hunn, “Oil Companies Joining Open Source World by Sharing Data”, available at <http://fuelfix.com/blog/2016/08/25/oil-companies-joining-open-source-world-by-sharing-data/> [Accessed November 7, 2016].

⁵⁵ Kaja Scheliga and Sascha Friesike, “Putting Open Science into Practice: A Social Dilemma?” (2014) 19 *First Monday*, available at <http://firstmonday.org/ojs/index.php/fm/article/view/5381> [Accessed November 7, 2016].

⁵⁶ As Jayant Murthy pointed out during his interview, many scientists may find it difficult to adopt new programmes and technologies. Such difficulty can act as an impediment to open science.

⁵⁷ David J. Solomon and Bo-Christer Björk, “A Study of Open Access Journals Using Article Processing Charges” (2012) 63 *J. Am. Soc’y for Info. Sci. & Tech.* 1485, 1488.

⁵⁸ This issue was also highlighted by many scholars, including Jayant Murthy and Arvind Kasthuri during their interviews. See also Scheliga and Friesike, “Putting Open Science into Practice” (2014) 19 *First Monday*.

⁵⁹ Scheliga and Friesike, “Putting Open Science into Practice” (2014) 19 *First Monday*; Interview with Jayant Murthy.

⁶⁰ Arul George Scaria, Arianna Broggiato and Tom Dedeurwaerdere, *Report on the IP Model Agreements for Pre-competitive Access to Microbial Genomic Research Databases*, p.22, available at https://www.microb3.eu/sites/default/files/deliverables/MB3_D8_4_PU.pdf [Accessed November 7, 2016].

⁶¹ Ann Grand, Clare Wilkinson, Karen Bultitude and Alan Winfield, “Mapping the Hinterland: Data Issues in Open Science” (2016) 25 *Pub. Understanding Sci.* 88, 90.

management before uploading data was considered by many respondents as an important factor dissuading them from sharing data.⁶² Underlying all these issues could be the prevalent feeling of insecurity, competitiveness, ownership and ego.⁶³

Current incentive structures in science and academics are also problematic. As mentioned earlier, research remains extremely publication-driven.⁶⁴ Particularly, publications in high-impact journals play an important role in the career progress of researchers.⁶⁵ Adopting principles of open science in research is not yet considered as an important evaluative criteria for the assessment of researchers and research outputs.⁶⁶

Finally, open science may also lead to information overload and information misuse. With more openness, more data and more publications will be available for public consumption. How this additional information would be processed by the public is still an issue to be addressed. In this context, some scholars also underline the possible misuse of information. This includes the potential misuse for terrorism-related activities or self-treatment solely based on limited information.⁶⁷ However, a counter-argument would be that the issue of information overload and misuse has been raised with every technological development with regard to dissemination of information, including the printing press.⁶⁸

On an overall analysis of the benefits and challenges, one can conclude that the potential benefits outweigh the challenges. More importantly, as Shammad Basheer pointed out, the pertinent question to be asked is whether society would be better off without open science.⁶⁹ In the absence of open science, we would only become more closed, selfish, hierarchical and unequal as a society.⁷⁰ If we want to push the notions of democracy, equality and egalitarianism, then openness should be the core value.⁷¹

Practising open science in the Global South

While open science is considered to be beneficial in general, it is important to recognise that there are specific challenges with regard to its implementation in the Global South. For example, practising open science requires infrastructure, provision and maintenance of which is expensive.⁷² Countries in the Global South may not have adequate funding set aside for research.⁷³ Similarly, some countries may even have challenges regarding access to computer or the internet.⁷⁴ For open science to sustain, it is important to contextualise its implementation based on the local needs and problems.⁷⁵

⁶² Scaria, Broggiato and Dedeurwaerdere, *Report on the IP Model Agreements for Pre-competitive Access to Microbial Genomic Research Databases*, p.22.

⁶³ Interviews with Arvind Kasthuri, G.P.S. Raghava and Zakir Thomas; Interview with C.N.R. Rao, National Research Professor, Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore in Bangalore, July 22, 2016.

⁶⁴ For example, in the Indian context, appointments and promotions in publicly funded colleges and universities are guided by the Academic Performance Index (API), developed by the University Grants Commission (UGC). API places heavy reliance on the number of publications. University Grants Commission (Minimum Qualifications for Appointment of Teachers and other Academic Staff in Universities and Colleges and Measures for the Maintenance of Standards in Higher Education) (4th Amendment), Regulations 2016, available at http://www.ugc.ac.in/pdf/news/3375714_API-4th-Amendment-Regulations-2016.pdf [Accessed November 7, 2016].

⁶⁵ Eugenie Samuel Reich, "Science Publishing: The Golden Club" (2013) 502 *Nature* 291, 291.

⁶⁶ Scheliga and Friesike, "Putting Open Science into Practice" (2014) 19 *First Monday*.

⁶⁷ Brian J. Gorman, "Balancing National Security and Open Science: A Proposal for Due Process Vetting" (2004) 7 *Yale J.L. & Tech.* 491. See also Patty Kostkova, Helen Brewer, Simon de Lusignan, Edward Fottrell, Ben Goldacre, Graham Hart, Phil Koczan, Peter Knight, Corinne Marsolier, Rachel A. McKendry, Emma Ross, Angela Sasse, Ralph Sullivan, Sarah Chaytor, Olivia Stevenson, Raquel Velho and John Tooke, "Who Owns the Data? Open Data for Healthcare" (2016) 4 *Digital Health* 1, 3.

⁶⁸ Ann Blair, "Information Overload's 2,300-Year-Old History", available at <https://hbr.org/2011/03/information-overloads-2300-yea> [Accessed November 7, 2016].

⁶⁹ Interview with Shammad Basheer.

⁷⁰ Interview with Shammad Basheer.

⁷¹ Interview with Shammad Basheer.

⁷² Scheliga and Friesike, "Putting Open Science into Practice" (2014) 19 *First Monday*.

⁷³ Jennifer I. Papin-Ramcharan and Richard Dawe, "Open Access Publishing: A Developing Country View" (2006) 11 *First Monday*, available at <http://firstmonday.org/ojs/index.php/fm/article/view/1332> [Accessed November 7, 2016].

⁷⁴ Kevin Zelnio, "Bandwidth and Open Access in Developing Countries", available at <http://blogs.scientificamerican.com/evo-eco-lab/bandwidth-and-open-access-in-developing-countries/> [Accessed November 7, 2016].

⁷⁵ Becky Hillyer, "Uncovering the Challenges of Open Science in Development", available at <http://ocsdnet.org/uncovering-the-challenges-of-open-science-in-development/> [Accessed November 7, 2016].

It has been argued that the present global structures favour northern researchers.⁷⁶ Very often, practices and experiences of the Global North are imposed on the Global South, which may not be relevant, and may even be harmful in some situations.⁷⁷ The existing power structures may even prioritise certain forms of knowledge and research over others, where northern knowledge is seen as “most legitimate”.⁷⁸ Subbiah Arunachalam referred to this as the “Harvard Hyderabad Syndrome”, wherein science performed in the south is seen as meagre or not worthy of notice.⁷⁹

Another argument is that the countries in the Global South may not be able to derive the benefits of openness to the same extent as those in the Global North.⁸⁰ As Jaykumar Menon highlighted, people in power and people with resources may have more capabilities to excel using openness.⁸¹ However, he also noted that this just implies the need to develop capacities necessary to ensure a successful open science environment. If that is ensured, an open model is beneficial to countries with lesser affordability.⁸² Similarly, other scholars have argued that it is important for countries like India to start competing in the global market, and artificial boundaries cannot be used to justify a closed scientific inquiry.⁸³

Despite the clear need for openness, India has yet to see a sustainable open science movement. As Anil Gupta pointed out, it is an interesting paradox that, despite the greater need for openness in the Global South, it is the Global North that is often more open.⁸⁴ According to him, India remains a downloading, rather than an uploading, nation when it comes to information sharing.

There have been very few open science movements and projects in India that have adopted open science principles. The Open Knowledge Foundation Network (now Open Knowledge International) had initiated an open science project titled “VITAYARD”, an open platform for researchers to share their research outputs.⁸⁵ The Open Source Drug Discovery Project, an initiative of the Council of Scientific and Industrial Research (CSIR), was also cited by some scholars as an open science project.⁸⁶ Ganit Labs in Bangalore, a research lab working in the area of genomic science, also asserts that they are adopting open science principles.⁸⁷ It is important to note that, during our interviews, we had specifically asked our interviewees to provide an example of an open science project in India, as per their characterisation of the term. Interestingly, many of the interviewees were unable to provide even one example.

Among all the open movements, open access has gained the maximum momentum in India. The movement was pioneered by some of the top institutions like the Indian Institute of Science, MS Swaminathan Research Foundation and the Indian Statistical Institute.⁸⁸ These movements led to the setting

⁷⁶ Hillyer, “Uncovering the Challenges of Open Science in Development”.

⁷⁷ For a detailed discussion on this issue, see Hillyer, “Uncovering the Challenges of Open Science in Development”.

⁷⁸ Hillyer, “Uncovering the Challenges of Open Science in Development”. In the Indian context, scholars like Sarukkai have pointed out that the general belief that science from the West is more important has contributed to the invisibility of Indian science. Sarukkai, “Defining Science” in *What Is Science?* (2012), p.49.

⁷⁹ Interview with Subbiah Arunachalam, Distinguished Fellow, Centre for Internet and Society in Bangalore, July 22, 2016.

⁸⁰ For example, in the context of environmental research data, it was highlighted that developing countries may remain mere data providers, with countries having more resources enjoying the actual benefits of shared data. Eduardo Eiji Maeda and Juan Arevalo Torres, “Open Environmental Data in Developing Countries: Who Benefits?” (2012) 41 *Ambio* 410.

⁸¹ Telephonic Interview with Jaykumar Menon, ISID Professor of Practice, McGill University, August 13, 2016.

⁸² Interview with Jaykumar Menon.

⁸³ Interviews with Jayant Murthy and Swaraj Paul Barooah.

⁸⁴ Interview with Anil Gupta.

⁸⁵ However, the blog has not been updated since 2014. “Vitayard: Science Vitality Platform”, available at <https://vitayard.wordpress.com/> [Accessed November 7, 2016].

⁸⁶ Interview with Jaykumar Menon; Interview with Anindya Chatterjee, Regional Director, Asia, International Development Research Centre in New Delhi, August 2, 2016; Interview with Phet Sayo, Senior Programme Officer, International Development Research Centre in New Delhi, August 25, 2016.

⁸⁷ For more information, see Ganit Labs, “Open Science”, available at <http://www.ganitlabs.in/open-science> [Accessed November 7, 2016].

⁸⁸ Subbiah Arunachalam and Madhan Muthu, *Open Access to Scholarly Literature in India—A Status Report (with Emphasis on Scientific Literature)* (New Delhi: Centre for Internet and Society, 2015), p.25, available at <http://editors.cis-india.org/openness/publications/open-access-scholarly-literature.pdf> [Accessed November 7, 2016].

up of institutional repositories such as Librarian's Digital Library in the Indian Statistical Institute, Bangalore.⁸⁹ Currently, more than 300 open access journals from India are listed in the DOAJ.⁹⁰

There have also been some policy initiatives from the government. The Indian Council of Agricultural Research (ICAR) released their open access policy in 2013.⁹¹ This policy mandates all ICAR institutes to set up open access repositories and all researchers to deposit their final research works at these repositories. The policy was followed by the release of a joint open access policy by the Department of Biotechnology (DBT) and the Department of Science and Technology (DST) in 2014.⁹² This policy provides that all papers resulting from DBT or DST funding must be submitted either to the institutional repository or the central repository, in case the former is not set up.⁹³ Recently, the State of Tamil Nadu also mandated that publications from all government departments and Tamil University be released under the Creative Commons licence.⁹⁴ The last decade has also seen several events aimed at increasing awareness about open access.⁹⁵ However, as Subbiah Arunachalam pointed out, while institutions are taking steps, the level of compliance remains very poor.⁹⁶

Open data, on the other hand, has received lesser attention and the relevant movements have been primarily limited to government data. In 2012, the Government of India launched the Open Government Data platform along with the *National Data Sharing and Accessibility Policy 2012*.⁹⁷ This policy highlights important principles of data sharing such as openness, sustainability, transparency and privacy.⁹⁸ It aims to facilitate access

“to all sharable non-sensitive data available either in digital or analog forms but generated using public funds by various Ministries/Departments/Subordinate offices/Organizations/Agencies of Government of India”.⁹⁹

However, India is yet to see a strong movement with regard to openness in research data. Even most of the leading institutions do not have any data repository. Most of the discussions surrounding open data have also excluded scientific and research data. Recently, one of the states in India, Telangana, released their *Open Data Policy*.¹⁰⁰ However, even this policy failed to explicitly include within its ambit research related data.¹⁰¹

⁸⁹ Sarika Sawant, “Past and Present Scenario of Open Access Movement in India” (2013) 39 J. Acad. Libr. 108, 108.

⁹⁰ “Directory of Open Access Journals”, available at <https://doaj.org/search> [Accessed November 7, 2016].

⁹¹ ICAR, “ICAR Adopts Open Access Policy”, available at <http://icar.org.in/en/node/6609> [Accessed November 7, 2016].

⁹² Department of Biotechnology and Department of Science & Technology, Ministry of Science & Technology, Government of India, *DBT and DST Open Access Policy: Policy on Open Access to DBT and DST Funded Research* (2014), available at <http://www.dbtindia.nic.in/wp-content/uploads/APPROVED-OPEN-ACCESS-POLICY-DBTDST12.12.2014.pdf> [Accessed November 15, 2016].

⁹³ Department of Biotechnology and Department of Science & Technology, Ministry of Science & Technology, Government of India, *DBT and DST Open Access Policy: Policy on Open Access to DBT and DST Funded Research* (2014), pp.1–2.

⁹⁴ A copy of the order in Tamil is available at https://upload.wikimedia.org/wikipedia/commons/b/b9/GoTN_Tamil_Development_Departments_order_on_creative_commons_cc_by_sa.pdf [Accessed November 7, 2016]. A rough English translation of the order is available at https://docs.google.com/a/nludelhi.ac.in/document/d/1F9--s5Eh7auCbH_zUfmXR9ZlrVjtDvo2UIDzjfxSVM/edit?usp=drive_web [Accessed November 7, 2016].

⁹⁵ “Consilience: A Conference on Open Access and IP”, available at <http://www.consilience-nls.com> [Accessed November 7, 2016]; The Energy and Resources Institute, “Looking Backward and Moving Forward: Open Access Movements at a Crossroads”, available at <http://www.teriin.org/eventdocs/files/Open-Access%20flyer-agenda.pdf> [Accessed November 7, 2016]; Ramesh C. Gaur, Parveen Babbar and Santosh C. Hulagabali, *Opening up by Closing the Circle: Strengthening Open Access in India*; The Energy and Resources Institute, “Seminar on Open Access in Research Area: A Strategic Approach”, available at <http://www.teriin.org/eventdocs/agenda/open-access-agenda.pdf> [Accessed November 7, 2016].

⁹⁶ Interview with Subbiah Arunachalam.

⁹⁷ Department of Science & Technology, Ministry of Science & Technology, Government of India, *National Data Sharing and Accessibility Policy* (2012), available at <http://www.dbtindia.nic.in/wp-content/uploads/APPROVED-OPEN-ACCESS-POLICY-DBTDST12.12.2014.pdf> [Accessed November 15, 2016].

⁹⁸ Department of Science & Technology, Ministry of Science & Technology, Government of India, *National Data Sharing and Accessibility Policy* (2012), cl.1.2.

⁹⁹ Department of Science & Technology, Ministry of Science & Technology, Government of India, *National Data Sharing and Accessibility Policy* (2012), cl.1.3.

¹⁰⁰ Government of Telangana, *Telangana Open Data Policy 2016*, available at <http://www.it.telangana.gov.in/telangana-open-data-policy-2016/> [Accessed November 7, 2016].

¹⁰¹ For our submitted comments highlighting the importance of including research data under the *Telangana Open Data Policy 2016*, see <https://drive.google.com/file/u/1d/0B3AFErneilW0eWFhUXVnbWRndnE0U1ppeHdPNXpsSGF5UzBz/view?usp=drivesdk> [Accessed November 7, 2016].

To summarise, India is one of the countries facing challenges in implementation of open science. It is yet to see a sustainable and strong open science initiative, which meets all the characteristics of our definition of open science.¹⁰² This also highlights the need for identifying localised solutions for fuelling an open science movement in India.

IPR policy or legal changes to support open science

The previous sections highlight the need for a stronger and sustainable open science movement in India. It is important to analyse, in this context, the IP-related legal and policy measures that may help in fostering the open science movements in India. While there are many institutional and systemic changes required to achieve the goal of fostering innovation and development through open science, we have identified three areas where changes in the way we approach IP may help in achieving open science goals: first, changes in the view taken by India with regard to the role of IPRs in promoting innovations; secondly, changes in the current copyright law to promote activities like text and data mining; and thirdly, the need for developing mandatory guidelines from the side of funding agencies to limit exercise of IP over certain research outputs.

How countries view the role of IPRs in the broader innovation ecosystem may influence the country's approach towards open science. Recently, India released a *National Intellectual Property Rights Policy* (National IP Policy), outlining the strategies the country will adopt in the area of IPRs for stimulating innovations and creativity.¹⁰³ Unfortunately, the policy appears to have been misguided by the myth that stronger protection and enforcement of IPRs and individual rights are the only paths to more innovation.¹⁰⁴ The policy ignores many of the recent data and literature that challenge the traditional notions of the role of IP in stimulating innovations and creativity.¹⁰⁵ In many places, the policy even considers the creation of IPRs as an end in itself, rather than as just a component of the broader innovation ecosystem.¹⁰⁶ An unfortunate result of this approach is the total neglect of the role of open science in promoting innovations.

It is interesting to note that the *National IP Policy* uses the term “open” only in three places in the 26-page document. In one of those three places, the policy mentions that steps will be taken to

“[e]ncourage R&D including open source-based research such as Open Source Drug Discovery (OSDD) by the Council of Scientific and Industrial Research ... for new inventions for prevention, diagnosis and treatment of diseases, especially those that are life threatening and those that have high incidence in India”.¹⁰⁷

However, the policy does not provide any further information on how and when open source-based research will be promoted. One may contrast this with the approach taken by the policy with regard to

¹⁰² However, some of the other researchers who have tried to map the open science movements in India have reached a different conclusion by looking only at certain aspects of open science. For example, the Innovation Policy Platform has mapped the government's various open science initiatives. The Innovation Policy Platform, “India: Open Science Country Note”, available at <https://www.innovationpolicyplatform.org/printpdf/19856> [Accessed November 7, 2016].

¹⁰³ Department of Industrial Policy and Promotion, Ministry of Commerce and Industry, Government of India, *National Intellectual Property Rights Policy* (2016), available at http://dipp.nic.in/English/Schemes/Intellectual_Property_Rights/National_IPR_Policy_08.08.2016.pdf [Accessed November 15, 2016].

¹⁰⁴ Shamnad Basheer, “An IP Policy with No Innovation”, *The Hindu*, May 17, 2016; K.M. Gopakumar, “Why New IPR Policy Is Inadequate” (2016) 51 *Econ. & Pol. Wkly.* 16, 16–18; Anubha Sinha, “Modi's New Intellectual Property Rights Policy Will Only Benefit Players with Deep Pockets”, *The Wire*, May 21, 2016.

¹⁰⁵ Mark A. Lemley, “Faith-Based Intellectual Property” (2015) 62 *UCLA L. Rev.* 1328; Mark A. Lemley, “IP in a World without Scarcity” (2015) 90 *N.Y.U. L. Rev.* 460; “A Question of Utility”, *The Economist*, August 8, 2015; “Time to Fix Patents”, *The Economist*, August 8, 2015.

¹⁰⁶ For example, this is even evident in the Vision Statement of the Policy, which starts with the following: “An India where creativity and innovation are stimulated by Intellectual Property for the benefit of all; an India where intellectual property promotes advancement in science and technology, arts and culture, traditional knowledge and biodiversity resources” Department of Industrial Policy and Promotion, Ministry of Commerce and Industry, Government of India, *National Intellectual Property Rights Policy* (2016), p.1. See also Basheer, “An IP Policy with No Innovation”, *The Hindu*, May 17, 2016.

¹⁰⁷ Department of Industrial Policy and Promotion, Ministry of Commerce and Industry, Government of India, *National Intellectual Property Rights Policy* (2016), cl.2.10.

generating and enforcing diverse IPRs, wherein it has gone into extensive details of implementation strategies.¹⁰⁸ It is also interesting to note that the only field of research that the policy envisages open source-based approaches is medical research, whereas open approaches can have diverse beneficial effects in many other areas, too.

In another part of the document, the policy mentions that steps will be taken to

“[p]romote ‘infusion of funds to public R&D units’ as a part of Corporate Social Responsibility to foster a culture of open innovation”.¹⁰⁹

While the policy does not mention anywhere what it means by a *culture* of open innovation, it is even more problematic to see it as just an activity that is part of corporate social responsibility of public R&D units. As many scholars have pointed out, open innovation is one of the most important strategies adopted today by firms for fostering innovations in many areas.¹¹⁰ However, the approach taken by the policy to promote it as just a part of corporate social responsibility activities of public R&D units illustrates the clear lack of understanding of the nature and importance of open innovation.

The *National IP Policy* uses “open” for the third time when it highlights the need to “[p]romote use of Free and Open Source Software along with adoption of open standards”.¹¹¹ Unfortunately, the policy here also does not provide any concrete guidelines as to the measures that will be taken for promoting use of free and open source software.

In this context, we need to clarify that open science is not against IPRs per se. As highlighted by many scholars, both open science and IPRs can co-exist,¹¹² but IPRs beyond its reasonable limits can certainly be detrimental to open science.¹¹³ Restrictions based on copyright law can prevent dissemination of educational and research materials. For example, some of the leading publishers had initiated copyright infringement litigation against the University of Delhi to prevent dissemination of course-related materials.¹¹⁴ While IPRs may be one of the numerous components in the broader innovation ecosystem, they should not be allowed to restrict openness in research.

It is also pertinent to note that many of the major open movements like Creative Commons rely on the existing IPR framework to promote open approaches. Creative Commons uses the copyright law framework to promote access to creative works.¹¹⁵ Similarly, the technology commons approach, advocated by Anil Gupta and the Honeybee Network, is trying to promote more horizontal sharing of information within the boundaries of the current IP system.¹¹⁶ Thus, by projecting stronger protection and enforcement of IPRs as the only solution for more innovations, the Indian policy makers are ignoring the importance of openness in the development of a stronger innovation ecosystem in India.

A balanced copyright regime that supports openness is extremely important. India has a copyright statute with fairly broad set of exceptions.¹¹⁷ It follows the hybrid approach that combines a relatively broad fair dealing exception with a set of enumerated exceptions. However, India does not have a specific exception for text and data mining (TDM). The term “text and data mining” generally refers to “use of

¹⁰⁸ See, for example, the detailed clauses under objectives 1, 2, 4, 5 and 6 of the *National IP Policy*.

¹⁰⁹ Department of Industrial Policy and Promotion, Ministry of Commerce and Industry, Government of India, *National Intellectual Property Rights Policy* (2016), cl.2.17.

¹¹⁰ Henry Chesbrough, Wim Vanhaverbeke and Joel West, *Open Innovation: Researching a New Paradigm* (Oxford: Oxford University Press, 2008).

¹¹¹ Department of Industrial Policy and Promotion, Ministry of Commerce and Industry, Government of India, *National Intellectual Property Rights Policy* (2016), cl.5.12.

¹¹² Interview with Subbiah Arunachalam.

¹¹³ Interviews with Shammad Basheer and Jayant Murthy.

¹¹⁴ However, the Delhi High Court has ruled in favour of the University. *The Chancellor, Masters & Scholars of the University of Oxford v Rameshwari Photocopy Services* [2016] CS(OS) 2439/2012.

¹¹⁵ The answer to the question “Is Creative Commons against copyright?” is available at <https://creativecommons.org/faq/#is-creative-commons-against-copyright> [Accessed November 7, 2016].

¹¹⁶ “Questions and Answers: Prof. Anil Kumar Gupta”, *Wall Street Journal*, September 24, 2009.

¹¹⁷ Copyright Act 1957 s.52.

automated analytical techniques to analyse text and data for patterns, trends and other useful information”.¹¹⁸ TDM allows researchers to analyse large amounts of data digitally, which would otherwise require enormous manual efforts.¹¹⁹ However, TDM is impossible without at least the temporary reproduction of the work that is analysed. In the absence of a specific exception, researchers face copyright infringement-related liabilities whenever they engage in TDM of a copyrighted work. This in turn would negatively affect the enormous research possibilities of TDM. The United Kingdom is one of the countries having a specific data mining exception.¹²⁰ The UK copyright law allows researchers to make copies of any work protected under it for the purpose of TDM, as long as they have lawful access to the work. The exception in this regard applies to TDM for any non-commercial research. The most important implication of such an exception is that publishers will not be able to impose or enforce contract terms that restrict researchers from making copies of articles for the purpose of TDM.¹²¹ Addition of a similar exception to the Indian Copyright Act 1957 can provide the much needed legal clarity and certainty for TDM in India.

Finally, it is important to acknowledge the unique position of funding agencies in fostering the open science movement. Funding agencies can play a major role in curtailing the misuse of IPRs by researchers to prevent openness. They can achieve this by limiting the scope of IPRs over certain research outputs like articles and research data. This includes making mandatory obligations on the researchers to share those research outputs through open access modes.

State-supported funding agencies, in particular, should ensure that the research funded by them is accessible to the public.¹²² Unfortunately, in India, dissemination is still not seen as a priority.¹²³ However, in countries like the United States, some of the funding agencies mandate open access. For example, the National Science Foundation (NSF) and the National Institutes of Health (NIH), two of the most prominent funding agencies, have specific policies in this regard. The NSF guidelines mandate that the version of record or the final accepted version of the manuscript must be deposited in a repository no later than a year after the initial publication.¹²⁴ Similarly, NIH mandates that the final peer-reviewed manuscripts should be submitted to the digital archive, PubMed Central.¹²⁵ Even private funding agencies such as the Wellcome Trust in the United Kingdom have made it mandatory for projects to release research outputs through open access modes.¹²⁶

Unfortunately, in India, even when the funding agencies mandate open access, they do not put any enforcement mechanisms in place.¹²⁷ With no clear guidelines or monitoring mechanisms, the compliance may remain poor. In this regard, it is also interesting to note that during the initial years, when the NIH policy was voluntary, the compliance rate was at a mere four per cent.¹²⁸ In a country like India, which spends enormous sums of public money on research, it is extremely important to ensure compliance with the policies. With no monitoring mechanisms in place, their objectives may remain unfulfilled.¹²⁹

Before we conclude, we must also add that some scholars are of the view that legal and policy measures alone will not make the necessary changes. For example, according to Murali Mohan, who heads the Big

¹¹⁸ “Exceptions to Copyright—Detailed Guidance”, available at <https://www.gov.uk/guidance/exceptions-to-copyright#text-and-data-mining-for-non-commercial-research> [Accessed November 7, 2016].

¹¹⁹ Declan Butler, “Europe Proposes Copyright Reform to Help Scientists Mine Research Papers”, *Nature*, September 15, 2016.

¹²⁰ Copyright, Designs and Patents Act 1988 s.29A.

¹²¹ Copyright, Designs and Patents Act 1988 s.29(5).

¹²² Peter Suber, “The Taxpayer Argument for Open Access”, available at https://dash.harvard.edu/bitstream/handle/1/4725013/suber_taxpayer.htm?sequence=1 [Accessed November 7, 2016].

¹²³ Interview with Anil Gupta.

¹²⁴ National Science Foundation, *NSF’s Public Access Plan: Today’s Data, Tomorrow’s Discoveries* (2015), cl.3.1, available at <http://www.nsf.gov/pubs/2015/nsf15052/nsf15052.pdf> [Accessed November 15, 2016].

¹²⁵ National Institutes of Health, “Public Access Policy Details 2008”, available at <http://publicaccess.nih.gov/policy.htm> [Accessed November 7, 2016].

¹²⁶ Wellcome, “Open Access Policy”, available at <https://wellcome.ac.uk/funding/managing-grant/open-access-policy> [Accessed November 7, 2016].

¹²⁷ See for example, Department of Biotechnology and Department of Science & Technology, Ministry of Science & Technology, Government of India, *DBT and DST Open Access Policy: Policy on Open Access to DBT and DST Funded Research*.

¹²⁸ Peter Suber, “An Open Access Mandate for the National Institutes of Health” (2008) 2 *Open Med.* e39, 14.

¹²⁹ See “Budget 2015: Boost for Science & Technology as Government Allocates Rs 7,288 Crore for Research” *Economic Times*, February 28, 2015.

Data Initiative of the Government of India, laws will not make a difference unless accompanied by changes in ethical values.¹³⁰ Laws are not the primary tool preventing people from sharing.¹³¹ More studies need to be conducted for identifying the factors that dissuade people from practicing open science, and for identifying the incentives that may promote open science.¹³²

Conclusion

Open science is a global movement aimed at restoring the core tenets of science. Its implications are far-reaching and go beyond the scientific research ecosystem. It can play an important role in democratising science. While we need to acknowledge the existence of certain challenges in its implementation, as the article highlights, the benefits outweigh the challenges involved. Open science can be particularly helpful to countries in the Global South seeking to achieve optimal use of scarce resources and to address the inequalities in the global knowledge sharing. However, this requires changes in the way many countries perceive the role of IPRs in the broader context of research and innovation. The policy suggestions made in this article in the context of India are examples of how countries may modify certain aspects of their IPR system to embrace open science. However, for any movement to be successful, the focus should primarily be on the key stakeholders. In the context of open science movements, more individual level studies need to be done to map the factors that dissuade researchers from participating in the open science movement. Identification of those factors will help in formulating better incentives for practicing open science. Through such a holistic approach, we will be able to regain the true values of science and may even make the prefix “open” redundant.

¹³⁰ Interview with Murali Mohan, Head and Scientist, Big Data Initiatives Division, Department of Science and Technology in New Delhi, August 2, 2016.

¹³¹ Interviews with Jayant Murthy and Zakir Thomas.

¹³² As part of a project on open science, the Centre for Innovation, Intellectual Property and Competition is conducting a survey amongst researchers, focussing on this aspect. The project is available at <http://ciipc.org/open-science-for-an-innovative-india> [Accessed November 7, 2016].

The Need for a Pluralist Approach to the Link between Intellectual Property and Development: A Pacific Island Case Study

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In late 2015 I completed a four-year research project examining the relationship between intellectual property and development in Pacific Island countries.¹ In this article I discuss some of the main findings and their broader relevance for questions of intellectual property and development. The main finding, which then informed the entire project, was that intellectual property regulation is by no means a new concept in Pacific Island countries. Indeed, this region has always been a knowledge economy, where intangible valuables (such as knowledge (sacred and profane), innovations, designs, stories, names and creative expressions) are intertwined with power and value. As a result, there are regulatory frameworks around intangible valuables that impact directly on the practices of knowledge sharing, transmission, creativity and innovation. This context is central for understanding and theorising the introduction and entrenchment of the global intellectual property system, by which I mean the collection of treaties brought together by the Agreement on Trade-Related Aspects of Intellectual Property Rights 1994 (TRIPS) and subsequently expanded through a range of multilateral and bilateral treaties. The transplanting of the global system into this region—in many cases very recently—has led to a rapid hybridising both of practice and understanding of intellectual property regulation. A further important contextual factor is the ongoing processes of development in the region and their contingency with neoliberalism and capitalism.

The overall conclusion of the project is that adopting a pluralistic approach to questions of intellectual property regulation makes visible a variety of different regulatory models. Customary or other types of local regulation of intangible valuables otherwise tend to be hidden by a focus on the global framework. This perspective also reveals the respective strengths and weaknesses of the resources and power structures associated with the different regulatory models. An additional value in acknowledging the variety of regulatory structures that exist is that it opens up completely different perspectives—for example, the relational approach to regulation apparent in much of the Pacific Islands highlights the need to consider relationships between people and between knowledge, people and place. Such an approach could offer important insights for intellectual property policy in the developed country context as it puts questions of distribution of access and benefits at the heart of questions of regulation. A further crucial finding is that the story or narrative surrounding intellectual property regulation in developing countries is, in many ways, as important as any actual legislative or policy regime, in terms of impacting upon how people respond to regulatory systems.

¹ I was joined in this project by Professor Sue Farran from the University of Northumbria.

Where is the Pacific Islands region and who lives there?

The Pacific Islands region, also known as Oceania, has been famously referred to as a “sea of islands”² and consists of 25,000 islands scattered across more than 3 million square miles of the world’s largest ocean.³ Pacific Island countries are among the least developed in the world, according to the UN Human Development Index.⁴ Indeed Pacific Island countries are sometimes regarded as so small and insignificant on the world stage that they are regularly left off “global” indexes and reports altogether. For example, no Pacific Island country was listed in the 2016 Global Innovation Index, which ranks “global” innovation outputs.⁵ Ignored in terms of innovation, these countries tend to be judged on Global North indicators of gross domestic product, aid dependency and balance of imports and exports. Overwhelmingly, economic growth has to come from the exploitation of natural resources—such as tuna, logging, mining and natural resource extraction—and to a lesser extent from agriculture and aquaculture. With poor infrastructure, little or no industrialisation, and limited manufacturing capacity, all these countries depend on regular injections of foreign aid, some almost entirely. The total population of the region is about 10,989,200, but there is considerable variation within the population composition between the three major groupings in the region.⁶ The majority of the population are indigenous Pacific Islanders, but there are other ethnic minority groups of European and Asian descent scattered around the region who often exert a significant economic influence. All the countries in the region except Tonga were previous colonies but gained their independence at various times during roughly the past five decades.

The majority of the population is not in waged employment, public and private spending on research and development is almost non-existent, and a large percentage of people live in rural areas where their daily needs are primarily met by fishing, foraging and cultivating staple food crops. As such, the traditional ordering of society remains important but is not static and is being affected by increased engagement with the cash economy, the claims made by state government about matters such as adjudication of criminal activities, and increased internal migration and urban drift. Nevertheless, for many people, it is local structures and organisation—both in urban and rural contexts—that determine the stability of their daily lives.

The scope and methodology of the study

The research project involved both desk-based literature reviews and extensive fieldwork. I conducted over 170 semi-structured interviews with a broad range of stakeholders (artists, intellectual property officers, government pharmaceutical purchasers, education officers, farmers’ groups, customary leaders etc.) in Vanuatu, Samoa, Fiji, Cook Islands and Kiribati between 2011 and 2014. The underlying premise of the study was to explore as widely as possible the different ways in which intellectual property regulation impacted upon people’s lives. A typical legal analysis that focused on legislation and case law would have yielded very few results, and would also have been, to a great extent, misleading. This is because there

² Epeli Hao’ofa, “Our Sea of Islands” (1994) 6 *The Contemporary Pacific* 147.

³ This study is only concerned with the independent Pacific island countries of Vanuatu, Tuvalu, Fiji, Solomon Islands, Samoa, Tonga, Cook Islands, Nauru, Niue, Marshall Islands, the Federated States of Micronesia, Papua New Guinea, Kiribati and Palau.

⁴ For the 2013 ranking for Pacific Island countries, see the UN Human Development Index and its components, available at <http://hdr.undp.org/en/composite/HDI> [Accessed October 27, 2016]. See also UN Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States, “About the Small Island Developing States”, available at <http://unohrlls.org/about-sids/> [Accessed October 27, 2016]; UN Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States, “Landlocked Developing Countries and the Small Island Developing States”, available at <http://unohrlls.org/about-ldcs/> [Accessed October 27, 2016].

⁵ Soumitra Dutta, Bruno Lanvin and Sacha Wunsch-Vincent (eds), *The Global Innovation Index 2016: Winning with Global Innovation* (Ithaca: Cornell University, 2016); Pacific Islands Trade & Invest, “Islands’ GDP Figures Present Interesting Picture”, available at <http://www.pacifictradeinvest.com/wp/?p=3726> [Accessed October 27, 2016].

⁶ Eighty-seven per cent are Melanesian (Fiji, Papua New Guinea, Solomon Islands and Vanuatu), 6.6 per cent are Polynesian (Cook Islands, Niue, Samoa, Tonga, Tuvalu), and 5.5 per cent of the total population are Micronesian (Federated States of Micronesia, Kiribati, Marshall Islands, Nauru, Palau). Papua New Guinea contains about 70 per cent of the total population and by far the largest land mass.

have been very few cases decided by the courts, very few enforcement actions, relatively few patent and trade mark registrations; much of the legislation exists in a very nominal way.⁷ The conclusions suggested by following a typical legal research methodology would be that intellectual property regulation exists only at a superficial level in the region. However, by engaging in empirical research and drawing upon anthropological material, a far more complex picture emerges. Intellectual property regulation—customary, introduced, and also an *increasingly hybridised* version of the two—has tremendous impact upon almost every area of life in the region, including agriculture, health, cultural heritage, education, transport, business, tourism and communication.

The main findings

The global intellectual property system is moving in

The research project was initiated by an awareness that the global intellectual property system was actively encroaching upon the Pacific Islands, perhaps as its final geographical region to conquer. I argue that this has occurred in two ways: through free trade agreements (FTAs) and through what I term the ideological mechanism of IP=development.

In terms of FTAs, a major impetus for the introduction of new regimes has been membership of the World Trade Organisation (WTO), with Tonga, Samoa and Vanuatu acceding in 2007, 2012 and 2012 respectively. Many other countries in the region have been long-term members of the WTO through their participation in the General Agreement on Tariffs and Trade. As part of their accession negotiations, all new members from the region agreed to implement both TRIPS and TRIPS-plus standards. The region is also currently negotiating a regional economic partnership agreement with the European Union, which may contain an intellectual property chapter. In the past decade in the region, 18 new intellectual property laws have been passed, seven national intellectual property policies developed and at least four national intellectual property offices established. Whilst FTAs have certainly been a major cause of much of the legislative developments in this area in the past decade,⁸ this pressure alone does not explain the success of the expansion of intellectual property laws, policies and implementation programmes throughout the developing world and in the Pacific Islands region in particular. For example, in 2014 the Cook Islands passed the Copyright Act 2013 and prepared a draft intellectual property policy with the assistance of the World Intellectual Property Organization (WIPO), despite having no obligations to do so as it is not a member of the WTO. Further, countries such as Solomon Islands and Vanuatu, which are the least developed countries and hence have until 2021 to apply the bulk of TRIPS obligations, have been actively developing their intellectual property frameworks.⁹

Another explanation for the spread of the global intellectual property framework into this region is that there is a very powerful ideational mechanism at work, spreading the message that intellectual property is, in the words of a former head of WIPO, a “power tool for economic growth”.¹⁰ Tellingly, this phrase is also used on Samoa’s intellectual property website¹¹ and is also used in awareness raising presentations by the Papua New Guinea (PNG) Intellectual Property Office. In 2014 the Director General of the WTO rephrased this as

⁷ Part of the project involved building a library of this material: see Pacific Islands Legal Information Institute, “Pacific Intellectual Property Virtual Library”, available at <http://www.paclii.org/libraries/pacific-ip/> [Accessed October 27, 2016].

⁸ Miranda Forsyth and Sue Farran, *Weaving Intellectual Property Policy in Small Island Developing States* (Cambridge: Intersentia, 2015), pp.30–31.

⁹ Agreement on Trade-Related Aspects of Intellectual Property Rights 1994 art.66.1.

¹⁰ Jeremy de Beer, Chris Armstrong, Chidi Oguamanam and Tobias Schonwetter (eds), *Innovation & Intellectual Property: Collaborative Dynamics in Africa* (Cape Town: Juta Academic, 2014), p.7 (arguing that “[t]he still dominant paradigm of IP protection, globally and in Africa, promotes IP as a ‘power tool’ to facilitate economic growth”).

¹¹ Ministry of Commerce, Industry and Labour, Government of Samoa, “What Is Intellectual Property and Intellectual Property Rights?”, available at <http://www.mcil.gov.ws/index.php/en/2-uncategorised/104-intellectual-property-rcip> [Accessed October 27, 2016].

“a growing collective recognition of the need for balanced and effective intellectual property systems as a key ingredient for growth and well-being in an age where knowledge is central to trade and economic policymaking”.¹²

The promotion of intellectual property rights as a driver of development on an ideological level is based on a variety of claims made about the benefits (or promised positives) of intellectual property regimes for developing countries. These claims are essentially that intellectual property rules are an incentive for creativity and innovation, they promote economic growth, and they encourage foreign direct investment. My research casts doubt upon the causal connection between these promised positives and the introduction of intellectual property systems in the region, at least in the short- to medium-term, particularly given the very small numbers of research institutions and manufacturing industries and the low technological base. In addition, anthropological research into notions of creativity and innovation in Melanesia and elsewhere in the Pacific strongly suggests that the stimuli for both varies according to cultural context.¹³ For instance, Giuffre’s ethnography of artists in the Cook Islands leads her to argue:

“[C]reativity is very much a social phenomenon and that creativity is in many ways produced by particular types of social structures. ... Creative individuals are embedded within specific network contexts so that creativity itself, rather than being an individual personality characteristic is, instead, a collective phenomenon.”¹⁴

PNG anthropologist Moutu argues that rather than owning what you create—as occurs in the West—in PNG people create what they own, which gives rise to a very different causality trajectory.¹⁵ Conceptions of creativity and innovation do, however, develop and change over time just like other social phenomena, and the trope of the individual artist and creator is increasingly common in the region.

The promotion of the benefits of intellectual property in the region is made by a range of what Braithwaite and Drahos refer to as “model missionaries”,¹⁶ such as technical advisors from WIPO.¹⁷ Another common vector for advocating for intellectual property protection are artists and musician groups, such as the various performing rights associations. Problematically, the plight of artists and musicians has been used as a means of promoting *all* intellectual property protection. For example, on World Intellectual Property Day 2015 in the Solomon Islands, there was a large event focused on the local artist and music community. Speeches repeatedly referenced promised benefits of intellectual property frameworks for artists and musicians, and the consequent need for the Solomon Islands to strengthen its engagements with the international regime. Such promises included collection of royalties for artists through collecting societies, the protection of cultural values and heritage from external exploitation, and generally the message that “Intellectual Property Rights will affect them in a lot of positive ways”.¹⁸ A number of intellectual property-related commitments currently under consideration or in development by the Solomon Islands Government were also announced at this event.¹⁹ These included the Solomon Islands finalising its draft

¹² World Trade Organization, “Azevêdo Highlights ‘Dramatic Increase’ in Knowledge Component of Trade”, available at https://www.wto.org/english/news_e/spra_e/spra38_e.htm [Accessed October 27, 2016].

¹³ Katherine Giuffre, *Collective Creativity: Art and Society in the South Pacific* (Farnham: Ashgate, 2009); Simon Harrison, *Stealing People’s Names: History and Politics in a Sepik River Cosmology* (Cambridge: Cambridge University Press, 2006); Eric Hirsch and Marilyn Strathern, *Transactions and Creations: Property Debates and the Stimulus of Melanesia* (New York: Berghahn Books, 2004); James Leach, “Modes of Creativity and the Register of Ownership” in Rishab Aiyer Ghosh (ed.), *CODE: Collaborative Ownership and Digital Economy* (Cambridge: MIT Press, 2005), pp.29–44; Lamont Lindstrom, “Big Men as Ancestors” (1990) 29 *Ethnology* 313, 316.

¹⁴ Giuffre, *Collective Creativity* (2009), p.1.

¹⁵ Andrew Moutu, “The Dialectic of Creativity and Ownership in Intellectual Property Discourse” (2009) 16 *Int’l J. Cultural Prop.* 309.

¹⁶ John Braithwaite and Peter Drahos, *Global Business Regulation* (Cambridge: Cambridge University Press, 2000), p.586.

¹⁷ The pro-intellectual property focus of WIPO technical advisors has been extensively detailed by a number of academics: see Carolyn Deere, *The Implementation Game: The TRIPS Agreement and the Global Politics of Intellectual Property Reform in Developing Countries* (Oxford: Oxford University Press, 2009). However, it must also be acknowledged that the type of technical assistance currently being provided in the region is highly nuanced and sophisticated, with a good understanding of context.

¹⁸ “World Intellectual Property Day Celebrated”, *Solomon Star*, April 27, 2015, p.12.

¹⁹ Radio New Zealand, “Solomons to Modernise Intellectual Property Rights Law”, available at <http://www.radionz.co.nz/international/pacific-news/271623/solomons-to-modernise-intellectual-property-rights-law> [Accessed October 27, 2016].

national intellectual property strategy, becoming a WIPO member, signing the Berne Convention for the Protection of Literary and Artistic Works 1886, finalising the draft Bill on the Protection of Traditional Knowledge and Cultural Expressions and signing the Paris Convention for the Protection of Industrial Property 1883. Such a conflating of different categories of intellectual property rights indicates the real difficulties with following a type of carefully calibrated approach to intellectual property as has been suggested by a range of scholars.²⁰ The calibration model depends upon a level of technical capacity that simply does not exist at a local level in much of the region (for example, intellectual property is only occasionally taught at the law schools in the region), meaning there is a high dependency upon outside expertise. Historically this has led to national intellectual property frameworks that do not take full account of flexibilities that are available.

A final way that intellectual property policies and legislative frameworks are being promoted in the region is through reference to the need to protect traditional knowledge. My research has found many examples of statements demonstrating that an important motivating factor for Pacific Islands governments in implementing global intellectual property frameworks is the understanding that this will enable the protection of traditional knowledge, and this is also a widely held perception amongst the population at large.²¹ This is illustrated in a 2016 brochure about intellectual property in the Solomon Islands produced by the Pacific Islands Forum Secretariat. It provides information about works protected under the Copyright Act 1987, and yet the two pictures on it are of a carver producing a traditional crocodile carving and a man in traditional dress playing on bamboo flutes (neither are likely to satisfy the originality requirement under copyright laws). Understanding this conceptual linking of joining the intellectual property rights framework and the protection of traditional knowledge is important because it needs to be actively countered. It is misleading and justifies the expansion of the global system on a highly problematic basis (i.e. governments and the population as a whole believe these frameworks will allow them to stop misappropriation of traditional knowledge when in fact they do not cover traditional knowledge). However, it also points to an important truth: the impossibility of regulating “modern” knowledge separately from “traditional” knowledge in contexts where local knowledge and epistemic practices are often rooted in previous knowledge, but are also highly modern as they continuously evolve and develop.²² I have explored these issues in detail in case studies involving sustainable sea transport, “traditional” painted bark cloth and medicine in the region.²³

The Pacific Islands are already a knowledge society

Knowledge is highly prized in Pacific Island societies, and its use is regulated through a variety of informal or customary mechanisms. Knowledge is not widely viewed as free in these societies, either in the sense of “free speech” or “free beer”.²⁴ Access and use is controlled in a variety of ways including *tabus*, secrecy, ritual transmission and exchange, and attribution (naming) systems. An example of the importance of attribution is demonstrated by the comments of an ethnobiologist working in the northern islands of Vanuatu:

“In fact if a man, or more rarely a woman, gives his name to a new taro that he or she has discovered in a fallow pond, his descendants will conserve it as part of their heritage. In Vanuatu, there are not

²⁰ Daniel J. Gervais, “TRIPS 3.0: Policy Calibration and Innovation Displacement” in Neil Weinstock Netanel (ed.), *The Development Agenda: Global Intellectual Property and Developing Countries* (Oxford: Oxford University Press, 2009); Michael Blakeney and Getachew Mengistie, “Intellectual Property and Economic Development in Sub-Saharan Africa” (2011) 14 J. World Intell. Prop. 238.

²¹ E.g. Miranda Forsyth and Blayne Haggart, “The False Friends Problem for Foreign Norm Transplantation in Developing Countries” (2014) 6 Hague J. on the Rule L. 202.

²² Latour makes a similar argument about the impossibility of making divisions between the social and the natural worlds: see Bruno Latour, *We Have Never Been Modern* (Cambridge: Harvard University Press, 1993).

²³ Forsyth and Farran, *Weaving Intellectual Property Policy in Small Island Developing States* (2015).

²⁴ To use the distinctions made famous by the Free Software Foundation: see “What is Free Software? The Free Software Definition”, available at <https://www.gnu.org/philosophy/free-sw.en.html> [Accessed October 27, 2016].

so much property rights but usufruct rights. An individual owns what he plants and not the soil that nourishes the crops. The new taro holds the seal of its discoverer. The farmer will plant it, multiply it and distribute it with attention as his ‘invention’, as the range of its dispersion will be the measure of his renown while alive and after his death.²⁵

Another example from PNG was recently recounted by Dr Kwa, the head of the PNG Constitutional and Law Reform Commission. He stated that in his society there are different songs that are sung at different times of the day and different times of the night. These songs are owned by different clans, and so if someone is organising a feast and they want to have singing the whole time then they must negotiate with the different clans and “rent” the song from them by giving them money, pigs and some food. He warned that if you do not do this then the owners of the song will come and interrupt your feast.²⁶ He also said that when people do “rent” the songs then they still have to respect the customary rules around them; they cannot sing the song at just any time.

Much has been written about the inapplicability of the term ownership in regard to indigenous relationships to knowledge and other intangible valuables²⁷ (and relatedly and highly relevantly, land).²⁸ Many of these difficulties were recently beautifully summed up in the words of PNG anthropologist Moutu who stated:

“Ownership conceals its origins, it is written in a language of the present tense ... in anticipation of the future ... and it enrols the past.... You can never know where to locate the source because the source of ownership is always scattered in relations, spirits”²⁹

Other terms have been proposed, such as custodianship and stewardship, to emphasise the reciprocal nature of obligations and their continuing and communal nature. These insights are also true in the Pacific Islands context, but I think that perhaps the key principle on which to conceptualise this relationship is that of respect. The principle of respect in the Pacific Islands encompasses a whole range of mutual obligations, but, in essence, involves acknowledging that intangible valuables are embedded in a web of complex relationships (some with those living, some with those dead and some with spirits) that require acknowledging and honouring in particular ways. Just as a small illustration, I met a man who had been collecting some custom stories on an island in Vanuatu. One day an old man had recounted a long story to him and then left. He was awakened in the middle of the night by the old man banging on his door demanding he turn his tape recorder back on, and the man then recounted the genealogy of who had told him the story and who had told that story and so forth. It was a need to show respect to the creators of the story and the past tellers of the story that drove his actions.

In many places in the region today, existing customary regulatory systems are becoming entangled and sometimes fused with introduced state-based intellectual property systems. For example, the Vanuatu Intellectual Property Office was asked for assistance in late 2015 to help with an ongoing dispute over the *nagol*, a traditional event involving land diving (the actual precursor to bungy jumping). This office has also developed a memorandum of understanding with the National Council of Chiefs to assist in the

²⁵ Sophie Caillon and Virginie Lanouguère-Bruneau, “Taro Diversity in a Village of Vanua Lava Island (Vanuatu): Where, What, Who, How and Why?” in Luigi Guarino, Mary Taylor and Tom Osborn (eds), *3rd Taro Symposium 21–23 May 2003, Nadi Fiji Islands: Proceedings of an International Scientific Meeting Organised by the Secretariat of the Pacific Community and the International Genetic Plant Resources Institute* (Suva: Secretariat of the Pacific Community, 2004).

²⁶ Remarks of Dr Eric Kwa at the National Forum on Intellectual Property and Research and Development, Port Moresby, PNG, September 1–2, 2016.

²⁷ E.g. Lyndel V. Prott and Patrick J. O’Keefe, “‘Cultural Heritage’ or ‘Cultural Property’?” (1992) 1 *Int’l J. Cultural Prop.* 307.

²⁸ For instance, Colin Filer has written very extensively and helpfully about the “ideology of landownership” in PNG that has arisen in response to concepts of law and custom generated by the ongoing processes of large-scale mining and petroleum projects. Colin Filer, “Custom, Law and Ideology in Papua New Guinea” (2006) 7 *Asia Pac. J. Anthropology* 65.

²⁹ Remarks of Dr. Andrew Moutu at the PNG National Forum on Intellectual Property and Research and Development, Port Moresby, PNG, September 1–2, 2016.

process of registering trademarks that contain elements of indigenous culture. At a local level there are changes as well. A leader of an artist organisation stated in relation to the local production of artwork:

“Before people would look and appreciate patterns and designs. But now copyright comes in and then wakes up the idea and so now people are cross—they ask ‘who got the rights to do this?’ It has changed from appreciation [of the artwork] to disappointment and anger”.³⁰

A long time PNG anthropologist, James Leach also observes that “intellectual property law then has power to reorganise people’s relations with one another”.³¹ Further, he notes that

“[d]ifferent registers of value locate knowledge in relation to something else and this can create hierarchies, appropriation, replacement or elision of pre-existing values. While knowledge may create value, new value does not always supersede previous value, sometimes an entity carries more than one value, more than one set of relationships”.³²

The broader point is that intellectual property rights are always locally interpreted in ways that are informed by cultural context and historical experience. In the Pacific Islands region, this means that the global intellectual property system is understood through a cultural lens in which the use of valuable intangibles is highly regulated. It must also be understood in the context of a long history of past and present resource misappropriation by outsiders (logging, mining—sometimes to the extent of causing the destruction of entire islands³³—fishing and most shamefully “blackbirding”, which involved the capture or removal of Pacific Islanders to work on plantations in Australia). A senior public servant in PNG recently stated in the context of developing a national intellectual property policy for research and development:

“We cannot continue to allow ourselves to be exploited ... the days for that are over ... we are not cargo carriers.”³⁴

This leads to considerable fear about misappropriation of local knowledge by outsiders. This is no doubt a very different context to other countries where there is a less firmly entrenched equation of control over intangibles with value and power.³⁵

As a result of these contexts, intellectual property narratives are used in ways that create hurdles to access to needed knowledge. My research found this was occurring in a range of areas, particularly access to educational materials and access to plant genetic resources where the narrative of global intellectual property laws have been interpreted within the cultural and historical context in ways that lead indigenous gatekeepers, such as librarians and agricultural innovators, to restrict access in problematic ways. For example, librarians at a university in the region discourage staff from copying teaching materials and making them available on the password-protected online teaching site. Instead they encourage them to use open access material, or educational material covered by creative commons licences, or to provide electronic links to material. Practically, this denies students access to material, as bandwidth and reliability of the internet across the region is often not sufficient to support this mode of delivery, and much of the specific resources about the region are not available in open access mode.³⁶

³⁰ Author’s translation.

³¹ James Leach and Richard Davis, “Recognising and Translating Knowledge: Navigating the Political, Epistemological, Legal and Ontological” (2012) 22 *Anthropological F.* 209, 215.

³² Leach and Davis, “Recognising and Translating Knowledge” (2012) 22 *Anthropological F.* 209, 221.

³³ Katerina Teaiwa, *Consuming Ocean Island: Stories of People and Phosphate* (Bloomington: Indiana University Press, 2014).

³⁴ Remarks of an Official from the Department of Planning, National Forum on Intellectual Property and Research and Development, Port Moresby, PNG, September 1–2, 2016.

³⁵ Such as arguably China, although it must be noted that the relationship between culture and intellectual property rights in China is a subject of robust debate: see Peter K. Yu, “The Confucian Challenge to Intellectual Property Reforms” (2012) 4 *WIPO J.* 1, 3–5.

³⁶ Forsyth and Farran, *Weaving Intellectual Property Policy in Small Island Developing States* (2015), Ch.3.

In a region where access to the courts is well beyond most of the population,³⁷ and there is very little civil society activism and awareness raising in relation to intellectual property, narratives of control by such gatekeepers are far more influential than what is written in the statutes.

The relationship between intellectual property and development depends a lot on what is meant by development and what is meant by intellectual property

Intellectual property rights or regulation exist in many forms, the global intellectual property rights framework being just one (although by far the most powerful and geographically extensive). A similar point can be made in relation to the concept of development. Many different models exist, but the dominant and most firmly entrenched is the neoliberal one of economic growth, enabled by the development of new markets, the liberalisation of trade and capital flows, and intensification of production in agriculture and industry. Despite the continued dominance of the neoliberal development model, there is broad agreement that the expectations of this model have largely not been met, and indeed the economic order underpinning this model has frequently *increased* poor development outcomes.³⁸ A sizeable literature details the ways in which this development project has resulted in substantial human, social, environmental and economic costs for the Global South.³⁹ Escobar, for example, argues that, “the discourse and strategy of development [has] produced its opposite: massive underemployment and impoverishment, untold exploitation and oppression”.⁴⁰

The relationship between the current dominant models of intellectual property rights and development also needs to be recognised. Drahos argues that

“hegemony within the world system has come to depend profoundly upon the commodification and control of abstract objects by means of intellectual property rights”.⁴¹

Within the global intellectual property rights framework, these rights are treated essentially as commodities, the fundamental value of which lies in the production of revenue.⁴² The same institutions that maintain and reproduce market-based capitalism, such as the WTO, also underwrite the current intellectual property paradigm, strongly supported by powerful developed countries such as the United States and Western European states.

However, the Pacific Islands region demonstrates that not only are other models of intellectual property regulation available, but so too are other models of development. For example, since as early as 1992, Vanuatu has been promoting a development model based on a traditional economy, also called the *kastom* economy, as *kastom* is the local pidgin word meaning “knowledge and practice of the place”, in contrast to that from outside.⁴³ This has involved a wide range of initiatives, such as the development of a customary bank using customary currency (for example, pigs); the declaration of the Year of the Traditional Economy; advocating the use of traditional wealth items and agricultural produce in the place of cash; and encouragement of the performance of customary exchange ceremonies.⁴⁴

³⁷ For example, in Vanuatu a recent report found the magistrates court fee of VT 8,000 is four times the weekly per capita adult expenditure, while the supreme court fee of VT 20,000 is more than 10 times the weekly per capita adult expenditure. See UN Women, *Women and Children's Access to the Formal Justice System in Vanuatu* (2016), p.24.

³⁸ For critiques of aid, see for example Paul Collier, *The Bottom Billion: Why the Poorest Countries Are Failing and What Can Be Done about It* (Oxford: Oxford University Press, 2007).

³⁹ See Jan Knippers Black, *Development in Theory and Practice: Paradigms and Paradoxes*, 2nd edn (Boulder: Westview Press, 1999).

⁴⁰ Arturo Escobar, *Encountering Development: The Making and Unmaking of the Third World* (Princeton: Princeton University Press, 1995), p.4.

⁴¹ Peter Drahos, *The Global Governance of Knowledge: Patent Offices and Their Clients* (Cambridge: Cambridge University Press, 2010), p.3.

⁴² Some aspects of the system adopt a non-economic perspective—primarily in the area of moral rights, which are more concerned with maintaining the integrity of works, such as the right of attribution of authorship, the right not to have authorship of their work falsely attributed and the right of integrity of authorship.

⁴³ Lissant Bolton, “Describing Knowledge and Practice in Vanuatu” in Edvard Hviding and Knut Mikjel Rio (eds), *Made in Oceania: Social Movements, Cultural Heritage and the State in the Pacific* (Wantage: Sean Kingston Publishing, 2011), p.301.

⁴⁴ Ralph Regenvanu, “The Traditional Economy as Source of Resilience in Vanuatu” in Tim Anderson and Gary Lee (eds), *In Defence of Melanesian Customary Land* (Erskineville: Aidwatch, 2010); John P. Taylor and Benedicta Rousseau, “Kastom Ekonomi and the Subject of Self-Reliance:

In 2013, the regional Pacific Islands Development Forum has also called for a new approach to development, one that is envisaged as based on green growth and that champions sustainable development by adopting innovative and “outside of the box approaches”, revisiting traditional practices and improving existing mechanisms. A commentator on the forum observes that a number of things stood out, including an emphasis on infusing the forum with “a distinctive Pacific voice”, repeated calls for a “new development paradigm” based around a “distinctive Pacific model of green growth in blue economies” and the need to be “agents of our own change”.⁴⁵

These visions of development are not focused on rejecting Western technology and ideas; rather they seek to develop an alternative vision of modernity, one that mediates the benefits of globalisation with an appreciation of their current social and environmental resources. In this way, they generally support Coombe’s observations about indigenous rights movements:

“Cultural survival in the early twenty-first century is not dependent upon isolation from modernity but upon the selective use of modern technologies and market mechanisms for the continuation and revitalisation of cultural identity as a distinctive way of being in the world—to promote forms of development in which the reproduction of living traditions serves ‘as a means and measure of innovation.’”⁴⁶

The initiatives taking place in the Pacific Islands reflect the refusal of many countries in the Global South to passively accept the prescriptions of their development partners, but rather to develop their own development pathways, seeking to blend local values and indigenous practices and ways of knowing with elements of global versions of modernity. They can also be seen as part of a recent growing global trend to revalue and prioritise social and cultural values (which in turn follows decades of interrogation of the neoliberal model, such as by Amartya Sen⁴⁷ and Joseph Stiglitz).⁴⁸ For example, both Bolivia and Ecuador have recently amended their constitutions to include the principles of *buen vivir*, which is said to encompass indigenous conceptions of life and subordinates economic objectives to ecological criteria, human dignity and social justice.⁴⁹

This opening up of awareness about different models of development and different models of intellectual property regulation is important because it allows far more flexibility and creativity in thinking about how the two may go together. It encourages creativity and the freedom to mix and match aims and policy tools. Raising awareness about the validity of other approaches to development and to the regulation of intangible valuables, particularly those that are centred on respect for relationships, may also in a small way unsettle the current relationship between the global intellectual property system and the neoliberal development model. This relationship is currently leading to an inexorable accumulation of resources in an increasingly diminishing number of hands.⁵⁰ A similar point is made by Shao who argues that a true reading of Chinese history reveals “non-monopolistic practices of intellectual property” which are “constructive to a more

Differentiating Development in Vanuatu” in Soumya Venkatesan and Thomas Yarrow (eds), *Differentiating Development: Beyond an Anthropology of Critique* (Oxford: Berghahn, 2012).

⁴⁵ Sandra Tarte, “A New Regional Pacific Voice? An Observer’s Perspective on the Pacific Islands Development Forum (PIDF), Inaugural Summit, Denarau, Fiji, 5–7 August 2013” (2013) *Pacific Islands Brief* No. 4, 4.

⁴⁶ Rosemary Coombe, “Protecting Traditional Environmental Knowledge and New Social Movements in the Americas: Intellectual Property, Human Rights, or Claims to an Alternative Form of Sustainable Development?” (2005) 17 Fla. J. Int’l L. 115, 133.

⁴⁷ Amartya Sen, *Development as Freedom*, 2nd edn (Oxford: Oxford University Press, 2001).

⁴⁸ Joseph E. Stiglitz, *Making Globalization Work* (New York: W.W. Norton & Co., 2006).

⁴⁹ Arturo Escobar, “Latin America at a Crossroads” (2010) 24 Cultural Stud. 1.

⁵⁰ Thomas Picketty, *Capital in the Twenty-First Century* (Cambridge: The Belknap Press of Harvard University Press, 2013). For example, in relation to intellectual property rights in 2014, 75 per cent of patents held worldwide were held by just four countries: China, the United States, Japan, and South Korea. In 2002, it was estimated that over half (53 per cent) of the value of all royalty and licence fees paid worldwide were received in just one territory—the United States. Worldmapper, “Royalty Fees”, available at <http://www.worldmapper.org/display.php?selected=168> [Accessed October 27, 2016]. In terms of geographical indications of origin, under the Lisbon system, France has over 500 active registrations and Italy some 100. The six African countries that are part of this system only have two registrations between them, despite having been members of the Lisbon Agreement since the 1970s. Catherine Saez, “France, Italy, Heavyweights of Lisbon Appellations of Origin System; Africa Struggling”, *Intellectual Property Watch*, May 16, 2015.

development-oriented approach that seeks balanced strengths among different players in global and local knowledge economy”.⁵¹

One example of how this may occur is a greater focus on the value of the informal economy and grassroots innovation and the role that intellectual property regulation plays within that.⁵² Emerging research shows that grassroots innovation occurs in the context of particular social and cultural understandings about the use and transmission of knowledge, and is often subject to non-state systems of intellectual property regulation, such as informal contracts, codes of access and customary norms. For example, wind turbine development can originally be traced to a culture of collaborative craft production and a tradition of co-operative organisation in Denmark. Ely, Smith, Stirling and Scoones observe that “social networks built up shared knowledge, experience and ideas about turbine construction and use”.⁵³ Such ideas are being actively explored by Jeremy de Beer and his colleagues in the African context.⁵⁴

Some concluding thoughts

In conclusion, the research findings from this project suggest a need to re-think many of the frames through which the link between intellectual property and development is currently considered and operationalised. One potential way forward is to adopt a pluralistic and culture-centred approach to questions of intellectual property regulation.

Adopting a cultural centred and pluralistic approach to intellectual property regulation in developing countries necessitates various shifts in thinking that are summarised in the table below.

Existing paradigm	New or emerging paradigm
Economic centred approach, social, cultural and political issues marginalised	Relational approach that views intellectual property regulation as being intrinsically associated with sociality, culture and politics
State-centric approach; focus on legislation and formal institutions	<ul style="list-style-type: none"> • Recognition of different levels and types of agency involved in the regulation of intangible resources • Recognition of the actual and potential role of local forms of knowledge governance • Focus on links between state, local and international
Deficit lens (absence of systems, innovation and creativity, leading to a need for legal regimes and technical assistance transfer from the North to the South)	Recognition of existing knowledge systems, and local stimulus for innovation and creativity and the social systems within which this is nurtured ⁵⁵
Positivist conception of intellectual property regulation	Pluralist approach, recognising that there are many different forms of intellectual property regulation of which the global system is just one example
Assumptions about the primacy of economic values	<ul style="list-style-type: none"> • Appreciation of the social and cultural roles played by knowledge that also advance community wellbeing • Building regulatory frameworks that promote and endorse local value systems
Marginalise local experiences and insights, deferral to foreign experts	Local people and communities, and their experiences and knowledge meaningfully involved in policy development
Reliance on standardised and template solutions, reproducing Western institutions	• Focus on questions of functionality of regulatory tools rather than their form,

⁵¹ Ken Shao, “Chinese Culture and Intellectual Property: Let’s Realise We Have Been Misguided” (2012) 4 WIPO J. 103, 110.

⁵² Jeremy de Beer, Fu Kun and Sacha Wunsch-Vincent, “The Informal Economy, Innovation and Intellectual Property—Concepts, Metrics and Policy Considerations” (2013) WIPO Economics & Statistics Series, Economic Research Working Paper No.10.

⁵³ Adrian Ely, Adrian Smith, Andy Stirling and Ian Scoones, “Innovation Politics Post Rio-20+: Hybrid Pathways to Sustainability?” (2013) 31 *Environment and Planning C: Government and Policy* 1063, 1072.

⁵⁴ de Beer, Fu and Wunsch-Vincent, “The Informal Economy, Innovation and Intellectual Property” (2013) WIPO Economics & Statistics Series, Economic Research Working Paper No.10.

⁵⁵ For a detailed ethnographic account of stimulus of creativity in Cook Islands, see Giuffrè, *Collective Creativity* (2009).

	<ul style="list-style-type: none"> • Explanation of the potential of existing mechanisms or new non-standard global intellectual property mechanisms to meet emerging needs
Focus on innovation solely as a driver of economic growth	Develop policies around the directions of innovation, the equitable distribution of its costs, benefits and risks, and an appreciation of the diversity of innovation. ⁵⁶
Little concern with “trickle down” effects of restrictive intellectual property laws	<ul style="list-style-type: none"> • Recognise crucial importance of perceptions about laws as culturally transformative. • Recognise the importance of countering these, for example through the dissemination of access-enabling interpretations of intellectual property laws
Binary framing of “modern” and “traditional”	Awareness of continual interplay between past and present skills and knowledge

A pluralist approach (to development, law, economy and so on) is based on the premise that no one approach is *necessarily* any more appropriate or liberating than any other. As Burke and Shear observe in the context of the diverse economies perspective, it

“does not simply posit a new, liberatory structure in place of an old, exploitative capitalist structure, but rather offers us the opportunity to identify, analyse and deliberate about the distinct socio-ecological consequences of different types of economic relations”.⁵⁷

Pluralism thus starts from the unveiling of pretences to universalism, by exposing alternative voices, worldviews, processes and systems that are often obscured from view, and recognising their potential value to policy formulation and debates. This point is important because it overcomes one of the main criticisms levelled at many post-structuralists, namely that they romanticise the indigenous and the local and do not take into account hard geo-political realities. A pluralist approach simply says that instead of only focusing on one particular vision of the topic under consideration, we explore and assess alternative visions as well. For example, in some circumstances it may well be that a global intellectual property model is the one most likely to maximise the benefits for the particular group under consideration, but this should not be automatically assumed.

A culture-centred approach is one that recognises the importance of the dynamic cultural context on the ways in which laws are implemented and internalised by populations, and also the ways in which social structures and institutions themselves create regulations. It argues that “legal norms emerge from the interaction of a great many actors on the basis of their shared understandings”.⁵⁸ This viewpoint shares some insights with critical legal pluralism, which also stresses that legal subjects are “law inventing” as well as “law abiding”.⁵⁹ My exploration of the cultural context of intellectual property regulation contributes to a body of literature that emphasises the interrelationship between culture and intellectual property, and draws attention to its complexity and its multi-faceted and continuously evolving nature.⁶⁰

⁵⁶ This “3D agenda” is suggested by Ely, Smith, Stirling, Scoones, “Innovation Politics Post Rio-20+” (2013) 31 *Environment and Planning C: Government and Policy* 1063.

⁵⁷ Brian J. Burke and Boone Shear, “Introduction: Engaged Scholarship for Non-Capitalist Political Ecologies” (2014) 21 *J. Pol. Ecology* 127, 132.

⁵⁸ Wibren van der Burg, *The Dynamics of Law and Morality: A Pluralist Account of Legal Interactionism* (Farnham: Ashgate, 2014), p.14.

⁵⁹ Martha-Marie Kleinhans and Roderick MacDonald, “What Is Critical Legal Pluralism?” 12 *Can. J.L. & Soc’y* 25.

⁶⁰ See for example the special issue in Vol.4 of *The WIPO Journal*, which examines the relationship between culture and intellectual property in China, Islamic countries, India, Europe, the Jewish tradition and a range of other contexts.

The Reform of Educational Exceptions in the UAE Copyright Law to Suit Development Goals

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☞ Copyright; Economic development; Educational policy; Permitted acts; United Arab Emirates

Introduction

Education is at the heart of development.¹ A well-informed, educated and highly skilled citizenry is fundamental to capacity building and economic progress.² It is also an important tool for achieving development goals and redressing inequality.

Access to knowledge is critical to developing countries that seek to educate their masses.³ It is considered a key to ensuring quality education, which is a top development priority.⁴

The digital revolution presents great opportunities for developing countries to access and disseminate knowledge.⁵ Information communication technologies (ICT) enable a wider dissemination of learning materials as well as allowing for collaborative research and production.⁶ It has opened up new sources of knowledge through the internet, such as online libraries, databases, e-learning, multimedia and educational software programmes.⁷ Educational materials are immensely available, but access can be denied by the high cost of the copyrighted materials as well as legal requirements.

Copyright rewards the expressive human creativity and provides individuals with incentives to engage in cultural productions through the granting of time-limited monopolies. It protects a wide range of tools that are vital to education and technical literacy, such as books, journals, poetry, novels, movies, songs and computer software. The subject of copyright law is an important area of law not only for lawyers, but anyone interested in creative works—whether teachers, students, researchers, artists, musicians, designers or ordinary consumers.⁸

Developing countries have a critical role to play in designing an appropriate copyright regime to facilitate education, but the question which system they need and on what basis.

This article studies the copyright law in the United Arab Emirates (UAE), particularly the educational exceptions in the digital age. It examines to what extent they can foster education and development goals.

¹ See the Universal Declaration of Human Rights 1948 art.26.

² Margaret Chon, “Intellectual Property and the Development Divide” (2006) 27 *Cardozo L. Rev.* 2813, 2855; Ruth L. Okediji, “The International Copyright System: Limitations, Exceptions and Public Interest Considerations for Developing Countries” (2006) UNCTAD-ICTSD Project on IPRs and Sustainable Development, Issue Paper No.15.

³ Consumers International, Asia Pacific Office, *Copyright and Access to Knowledge: Policy Recommendation on Flexibilities in Copyright Laws* (2006), available at [http://www.consumersinternational.org/media/303356/copyright%20and%20access%20to%20knowledge%20-%20full%20report%20\(pdf\).pdf](http://www.consumersinternational.org/media/303356/copyright%20and%20access%20to%20knowledge%20-%20full%20report%20(pdf).pdf).

⁴ Consumers International, Asia Pacific Office, *Copyright and Access to Knowledge* (2006); Susan Isiko Štrba, *International Copyright Law and Access to Education in Developing Countries* (Leiden: Matinus Nijhoff, 2012), p.38.

⁵ Commission on Intellectual Property Rights, *Integrating Intellectual Property Rights and Development Policy* (2002).

⁶ Lawrence Liang, “Exceptions and Limitations in Indian Copyright Law for Education: An Assessment” (2010) 3 (2) *L. & Dev. Rev.* 198, 198.

⁷ Consumers International, Asia Pacific Office, *Copyright and Access to Knowledge* (2006).

⁸ Lawrence Liang, “Guide to Open Content Licenses”, available at http://pzwart.wdka.hro.nl/mdr/research/liang/open_content_guide [Accessed November 4, 2016].

Unfortunately, there are few studies that consider educational exceptions in developing countries and examine their impact on development. This is certainly the case for Arab countries and the Gulf States that have little research in relation to educational exceptions,⁹ and limitations and exceptions more generally.¹⁰

The research is divided into four sections. The first section will provide a general overview of intellectual property and development. The second section considers economic and social development in the UAE. The third section gives an overview of educational exceptions under the UAE Copyright Law and examines the adequacy of these exceptions in the digital age. The final section discusses the future of copyright law in the UAE and developing countries.

Intellectual property and development in general

The relationship between intellectual property rights and development can be described as controversial.¹¹ Whereas some commentators suggest that developing countries need strong intellectual property rights to ensure social and economic development,¹² others argue that intellectual property law stands in the way of development itself.¹³ As a consequence of the increasing debates on both sides, research on intellectual property and development has gained renewed momentum.¹⁴

In 2004, Brazil and Argentina presented a comprehensive proposal on behalf of developing countries to establish the Development Agenda in the World Intellectual Property Organization (WIPO). They put forward a view that intellectual property laws in their current form are not helping those countries in their development, as is constantly being suggested by developed countries. They further argued that there is a need to rethink the international intellectual property system and the work of WIPO.¹⁵ In 2007, WIPO Member States made a historic decision, for the benefit of developing countries, to establish a WIPO Development Agenda to ensure that intellectual property rights are not considered in isolation, but within a broader picture of economic, social and public interests.¹⁶

WIPO approved the Development Agenda in 2007 and established a Committee on Development and Intellectual Property (CDIP) to manage its implementation. This agenda is implemented through 45 approved recommendations¹⁷ that cover not only IP, but also a variety of other issues, including flexibilities, public policy, public domain, technology transfer, information and communication technology, and access

⁹ One of the few studies was prepared in October 2009 by Professor Victor Nabhan on behalf of the World Intellectual Property Organization (WIPO). Professor Nabhan reviewed the copyright laws of 17 Arab countries and studied the various limitations and exceptions that are available to utilise, reproduce, perform and communicate the work for educational purposes. Victor Nabhan, "Study on Limitations and Exceptions for Copyright for Educational Purposes in the Arab Countries", available at http://www.wipo.int/edocs/mdocs/copyright/en/scr_19/scr_19_6.pdf [Accessed November 4, 2016].

¹⁰ Mohamed Bin Barak Al Fawzan, *Copyright Protection in Saudi Arabia—Explanation and Study* (Library of Law and Business, 2009), pp.363–385 (Arabic); Edward Eead, *Copyright and Neighbouring Rights in Lebanese, Arabic and Foreign Law* (Beirut: Sader, 2001), Vol.1, pp.298–313 (Arabic); Nouri Hamad Khater, *Explanation of Intellectual Property Rules: Author's Rights and Neighbouring Rights* (Al-Ain: United Arab Emirates University, 2008) (Arabic); Mohamed Loutfi, *Intellectual Property Right—Basic Principles—A Study of Law No. 82 of 2002*, 2nd edn (Cairo, 2012) (Arabic).

¹¹ Rami Olwan, *Intellectual Property and Development: Theory and Practice* (Berlin: Springer, 2013), pp.8–13.

¹² Michael P. Ryan, "Knowledge-Economy Elites, the International Law of Intellectual Property and Trade, and Economic Development" (2002) 10 *Cardozo Int'l & Comp. L.J.* 271, 284–286.

¹³ Michele Boldrin and David K. Levine, *Against Intellectual Property* (Cambridge: Cambridge University Press, 2008); Weerawit Weeraworawit, "Why Do Developing Countries Fail to Use IP as a Tool for Development?", paper presented at the Fifth Annual Asian Intellectual Property Law and Policy Day, New York, March 26, 2008.

¹⁴ Mario Cimoli, Giovanni Dosi, Keith E. Maskus, Ruth L. Okediji and Jerome H. Reichman (eds), *Intellectual Property Rights: Legal and Economic Challenges for Development* (Oxford: Oxford University Press, 2014); Ricardo Melendez-Ortiz and Pedro Roffe (eds), *Intellectual Property and Sustainable Development: Development Agendas in a Changing World* (Cheltenham: Edward Elgar, 2010); Hirouki Odagiri, Akira Goto, Atsushi Sunami and Richard R. Nelson (eds), *Intellectual Property Rights, Development and Catch-up: An International Comparative Study* (Oxford: Oxford University Press, 2010); Wong Tzen and Graham Dutfield (eds), *Intellectual Property and Human Development: Current Trends and Future Scenarios* (Cambridge: Cambridge University Press, 2011); Denis Borges Barbosa, Margaret Chon and Andre Moncayo von Hase, "Slouching towards Development in International Intellectual Property" [2007] *Mich. St. L. Rev.* 71.

¹⁵ "Proposal by Argentina and Brazil for the Establishment of a Development Agenda for WIPO", August 27, 2004, WIPO Doc. WO/GA/31/11.

¹⁶ WIPO, "Member States Adopt a Development Agenda for WIPO", available at http://www.wipo.int/pressroom/en/articles/2007/article_0071.html [Accessed November 4, 2016].

¹⁷ WIPO, "The 45 Adopted Recommendations under the WIPO Development Agenda", available at <http://www.wipo.int/ip-development/en/agenda/recommendations.html> [Accessed November 4, 2016].

to knowledge.¹⁸ The main importance of the Development Agenda is that it shifts the attention of WIPO to matters beyond protection of the interests of private right holders to the social, cultural and educational challenges that are confronting developing countries.¹⁹

Economic and social development in the UAE

The UAE has witnessed incredible social and economic development in the past few decades. The Emirates have developed into a global hub for trade, logistics, financial services and tourism.²⁰ It is home to the world's tallest tower, one of the world's largest airlines, state-of-the-art infrastructure and smart government services. Currently, the UAE ranks seventeenth in the Global Competitiveness Report issued by the World Economic Forum (WEF),²¹ and the INSEAD Global Innovation Index places it at forty-first out of 128 countries for innovation across all sectors.²² The UAE is also ranked twenty-third in the Networked Readiness Index (NRI)²³ and forty-first in the Human Development Index (HDI).²⁴

From an early stage, the UAE leaders realised that, although the country is rich in natural resources, it cannot rely on that alone, but needs to diversify its economy.²⁵ This ambitious outlook is specified in the Federal Government's *UAE Vision of 2021*,²⁶ which was launched on October 19, 2014 for the country to be among the most innovative within seven years. The document focused on seven sectors—namely, renewable energy, transportation, education, health, technology, water and space.²⁷

The *UAE Vision* strives to build a knowledge-based economy where

“knowledgeable and innovative Emiratis will confidently build a competitive and resilient economy that will thrive as a cohesive society bonded to its identity, enjoying the highest standards of living within a nurturing and sustainable environment”²⁸

Towards this end, the UAE Government has invested significantly in transportation, local capacity development and promotion of local innovation²⁹ by adopting various policies and kick-starting several targeted and industry-focused initiatives to develop R&D efforts in the country.³⁰

Education was always one of the UAE's top government priorities and development goals. The continued investment in human capital is considered critically important for the country's future progress. This focus is in line with the direction of the founder of the UAE and past president Sheikh Zayed Bin Sultan Al

¹⁸ WIPO, “Committee on Development and Intellectual Property (CDIP)”, available at <http://www.wipo.int/policy/en/cdip/> [Accessed November 4, 2016].

¹⁹ Danielle Conway, “The Miracle of Marrakesh: Doing Justice for the Blind and Visually Impaired While Changing the Culture of Norm Setting at WIPO” in Irene Calboli and Srividhya Ragavan (eds), *Diversity in Intellectual Property: Identities, Interests, and Intersection* (New York: Cambridge University Press, 2015), p.47.

²⁰ Ahmad Bin Byat and Osman Sultan, “The United Arab Emirates: Fostering a Unique Innovation Ecosystem for a Knowledge-Based Economy” in Soumitra Dutta, Bruno Lanvin and Sacha Wunsch-Vincent (eds), *The Global Innovation Index 2014: The Human Factor in Innovation* (Ithaca: Cornell University and Fontainebleau: INSEAD, 2014).

²¹ Klaus Schwab (ed.), *Global Competitiveness Report 2015–2016* (Geneva: World Economic Forum, 2015).

²² Dutta, Lanvin and Wunsch-Vincent (eds), *The Global Innovation Index 2014* (2014).

²³ Soumitra Dutta, Thierry Geiger and Bruno Lanvin (eds), *The Global Information Technology Report 2015: ICTs for Inclusive Growth* (Geneva: World Economic Forum, 2015).

²⁴ United Nations Development Programme, *Human Development Report 2015: Work for Human Development* (2015).

²⁵ WAM, “UAE Is a Center for Creativity and Innovation”, available at <http://gulfnnews.com/news/uae/government/uae-is-a-centre-for-creativity-and-innovation-1.1117503> [Accessed November 4, 2016].

²⁶ UAE Government, *UAE Vision of 2021* (2010), available at <http://www.vision2021.ae/en> [Accessed November 4, 2016]. The Emirates of Dubai have also adopted its own innovation strategy. WAM, “Dubai Innovation Strategy Approved”, available at <http://gulfnnews.com/news/uae/government/dubai-innovation-strategy-approved-1.1413822> [Accessed November 4, 2016].

²⁷ Arabian Business, “UAE Launches Plan to Be ‘among the Most Innovative Nations in the World’ within 7yrs”, available at <http://www.arabianbusiness.com/U.A.E-launches-plan-be-among-most-innovative-nations-in-world-within-7yrs-568451.html#.VJQtrsAyA> [Accessed November 4, 2016].

²⁸ UAE Government, *UAE Vision of 2021* (2010).

²⁹ Khaleej Times Business, “Innovation Key for UAE Development”, available at <http://www.khaleejtimes.com/business/local/innovation-key-for-uae-development> [Accessed November 4, 2016].

³⁰ Byat and Sultan, “The United Arab Emirates” in Dutta, Lanvin and Wunsch-Vincent (eds), *The Global Innovation Index 2014* (2014).

Nahyan, who said that “the greatest use that can be made of wealth is to invest it in creating generations of educated and trained people”.

Since its establishment in 1972, the UAE has invested greatly in the education to cater for the educational needs of an ever-expanding population. In 2014, the UAE Government allocated 21 per cent of its federal budget, or AED 9.8 billion (US \$266 billion), to education. AED 6 billion (US \$163 billion) of this amount will be spent on improving general education, and AED 3.8 billion (US \$103 billion) on academic excellence programmes in local universities.³¹ Furthermore, the Ministry of Education developed *Education 2020*, a series of ambitious five-year plans designed to bring significant qualitative improvement to the education system, especially in the way teachers teach and students learn. Many other new initiatives are also being launched at all educational levels. As education is at the heart of the UAE’s economic growth and future development plans, it is critically important to understand how the copyright system can contribute to society and the economy.

Educational exceptions under the UAE Copyright Law

The UAE Federal Copyright Law 7/2002 Pertaining to Copyright and Neighbouring Rights as amended (UAE Copyright Law) is similar to the French law that has a short enumerated list of exceptions to author’s rights and that allows users to use copyrighted works for specific purposes.³² Article 22 of the UAE Copyright Law has five exceptions that can be used for educational purposes.³³ These are:

- 1) private or personal use (art.22.1);
- 2) reproduction by libraries, archives and documentation centres (art.22.4);
- 3) quotation and analysis (art.22.5);
- 4) school and family performance (art.22.6); and
- 5) education and cultural needs (art.22.8).³⁴

These exceptions are based on the Berne Convention for the Protection of Literary and Artistic Works 1886 (Berne Convention), which the UAE joined on April 14, 2004 and which came into effect on June 14, 2004.³⁵ Any limitation specified under the law should comply with the so-called three-step test in accordance with the Berne Convention³⁶ and the Agreement on Trade-Related Aspects of Intellectual Property Rights 1994 (TRIPS Agreement).³⁷ We will study below the various educational exceptions that are available under the UAE Copyright Law and assess their adequacy for educational purposes in the digital age.

Private or personal use (Article 22.1)

Overview

It is permitted under art.22.1 of the UAE Copyright Law to make a reproduction of any published work for a non-commercial purpose and non-professional use. This is allowed for the copier’s personal use as

³¹ Embassy of the United Arab Emirates, Washington D.C., “Education in the United Arab Emirates”, available at <http://www.uae-embassy.org/about-uae/education-uae> [Accessed November 4, 2016].

³² Compare Federal Law 7/2002 art.22 (UAE Copyright Law 2002) with French Intellectual Property Code art.L.122-5. The UAE Copyright Law 2002 is available here http://www.wipo.int/wipolex/en/text.jsp?file_id=124612 [Accessed November 4, 2016]. See also Brad Spitz, *Guide to Copyright in France: Business, Internet and Litigation* (Alphen aan den Rijn: Wolters Kluwer, 2015), pp.106–108.

³³ UAE Copyright Law 2002 art.22.

³⁴ The other kind of exception is compulsory licensing for educational and translation purposes that is provided in return for a remuneration that should be paid to the author. UAE Copyright Law 2002 art.21.

³⁵ Berne Convention for the Protection of Literary and Artistic Works 1886 (Paris Act 1971) arts 9 and 10.

³⁶ Berne Convention for the Protection of Literary and Artistic Works 1886 (Paris Act 1971) art.9(2).

³⁷ Agreement on Trade-Related Aspects of Intellectual Property Rights 1994 art.13.

long as there is sufficient acknowledgement of the title of the work and the name of the author.³⁸ The kinds of works that are excluded from the application of this exception include³⁹:

- work of fine art or applied art in private places;
- architectural works; and
- computer programmes and databases, unless the copying falls within art.22.2 of the UAE Copyright Law.⁴⁰

There is no need to obtain authorisation from the author or payment of any remuneration. One UAE lawyer criticises this particular exception for being extremely broad and for having the potential to encourage a culture that believes “copying is OK”.⁴¹ Such an analysis is not entirely in conformity with international treaties such as the Berne Convention which allows for such reproduction if the exception satisfies the three-step test.⁴² This analysis is also inconsistent with the copyright laws of those countries that follow the author’s rights tradition.⁴³

Assessment

Article 22.1 is restrictive in many respects. The provision applies mainly to published works and excludes four kinds of works (fine art or applied art, architecture works, software and databases). The copying is allowed only to make one single copy and should be done by a natural person for personal use only.

The application of this specific exception is unclear in the digital environment because it is easy to make an infinite number of copies and to possibly store the work in multiple places and formats. It is also unclear whether forwarding articles in the text of email messages or linking to the copyrighted content of another work online is allowed under the private use exception? What about downloading music files for individual and non-commercial use? Can it be considered private use?

The UAE Copyright Law does not give individuals an exception for temporary acts of reproduction that are transient or incidental, that constitute an essential and integral part of the technological process and that has no significant economic value (exception for transitory reproduction).

Reproduction by libraries, archives and documentation centres (Article 22.4)

Overview

Article 22.4 of the UAE Copyright Law contains specific exceptions for the reproduction of a single copy of the work through photocopying or otherwise by libraries, archives and documentation centres. Reproduction is allowed subject to the four conditions:

- 1) the activities of these institutions are not for profit-making, either directly or indirectly;

³⁸ See UAE Copyright Law 2002 art.22.2 in relation to the computer software exception.

³⁹ UAE Copyright Law 2002 art.22.1 provides: “Reproducing one single copy of the work to be personally used by the reproducer himself, for non-profit and non-professional purposes; with the exception of the following: i) works of fine or applied arts, unless existing in public, and upon consent from the right holder or the successor thereof; ii) architectural works, unless pursuant to item 7 of the present article; and iii) computer software, and applications thereof and data bases unless pursuant to item 2 of the present article.”

⁴⁰ UAE Copyright Law 2002 art.22.2 provides: “Making one single copy of the computer software or applications thereof, or the data bases, upon the consent of the person lawfully in control thereof. Such person may solely quote therefrom, provided that such quotation is within the licensed purpose or for the purpose of maintenance or substitution, in case of loss, distortion or invalidation of the original copy; with the proviso that the spare or quoted copy should be distorted, even if downloaded or stored in the computer hardware, once the reason of holding the original copy is terminated.”

⁴¹ Peter W. Hansen, *Intellectual Property and Practice in the United Arab Emirates* (Oxford: Oxford University Press, 2009), p.243.

⁴² Berne Convention for the Protection of Literary and Artistic Works 1886 (Paris Act 1971) art.9(2).

⁴³ E.g. French Intellectual Property Code (as amended by the Law of December 2011), art.L.122-5; German Copyright Act on Copyright and Neighbouring Act of 1965 (as amended) s.35(1); Italian Copyright Act of 1941 (as amended) arts 15(2), 68(1) and 71septies. For further explanation, see Lionel Bently (ed.), *International Copyright Law and Practice* (New York: Matthew Bender, 2015); Paul Goldstein and Bernt Hugenholtz, *International Copyright Principles: Law, and Practice*, 3rd edn (Oxford: Oxford University Press, 2013), pp.380–387.

- 2) the copyright should be for the sole purpose of preserving or replacing the original copy that has been lost, destroyed or replaced;
- 3) the work is reproduced for individual users for research or study, and the reproduction of the materials is restricted to “one time” or “interrupted periods of time”; and
- 4) it is not possible to obtain a licence from the copyright holder.⁴⁴

It is unclear what kind of procedure libraries and archives must implement to limit copying to what is legitimately permitted.

Assessment

The law allows copying of one single copy of the work by academic institutions for non-profit-making purposes. This should be done after the academic institution has been asked by the student or the researcher to make the copy for the purpose of research or study. It is clear that several requirements need to be satisfied in order for this exception to be used. These requirements are generally considered to be cumbersome.

It is difficult to apply art.22.4 to the digital environment, as it does not allow libraries to make works in an electronic format or make interlibrary loans that are considered common practices within libraries worldwide.⁴⁵

The UAE Copyright Law is criticised because it does not take into consideration the important role that libraries play in the digital age. Libraries should be given the widest possible privileges to strengthen their role and capacity to serve as knowledge custodians. These privileges include making digital reproductions for library patrons, reproduction and distribution for the purposes of preservation, security or research use by another library, and converting works into digital accessible formats.⁴⁶ The law should give exceptions to benefit libraries especially in relation to the use of digital content, digitalisation of research materials and harvesting of internet resources.

Finally, in accordance with the requirements of the WIPO Copyright Treaty 1998,⁴⁷ the UAE Copyright Law provides civil and criminal provisions in relation to the circumvention of technological protection measures (TPMs).⁴⁸ Unfortunately the law does not exempt educational institutions from the obligations relating to TPMs. Nor does it expressly link these obligations to copyright infringement.⁴⁹ This means that educational institutions can be liable even if they are unaware of these provisions.

⁴⁴ UAE Copyright Law 2002 art.22.4 provides: “Making one copy of the work through the non-profit archives, libraries or authentication offices, either directly or indirectly, in the following cases:

- A— Reproduction is made for the purpose of maintaining the original copy or of substituting a lost, distorted or invalid copy, if it has been impracticable to obtain a substitute thereof under reasonable conditions.
- B— Reproduction is made in fulfilment of a request made by a natural person, for using same in study or research. Such reproduction shall be made for only once and on irregular intervals; if it has been impracticable to obtain a licence for reproduction pursuant to the provisions of the law herein.”

⁴⁵ Ali Abdulla, “Copyright and Knowledge Advancement: A Case Study on the UAE Copyright Law” (2008) 29 (6–7) Lib. Mgmt. 461.

⁴⁶ Okediji, “The International Copyright System” (2006) UNCTAD-ICTSD Project on IPRs and Sustainable Development, Issue Paper No.15.

⁴⁷ WIPO Copyright Treaty 1998 art.11 requires member states to “provide adequate legal protection and effective legal remedies against the circumvention of effective technological protection measures that are used by authors in connection with the exercise of their rights”. See also WIPO Copyright Treaty 1998 art.12; WIPO Performances and Phonograms Treaty 1993 arts 18, 19.

⁴⁸ UAE Copyright Law 2002 art.38.

⁴⁹ Nabhan, “Study on Limitations and Exceptions for Copyright for Educational Purposes in the Arab Countries”, p.55, available at http://www.wipo.int/edocs/mdocs/copyright/en/scr_19/scr_19_6.pdf [Accessed November 4, 2016]. See also Consumers International, Asia Pacific Office, *Copyright and Access to Knowledge* (2006).

Quotation and analyses (Article 22.5)

Overview

It is permissible to quote short paragraphs of the work under art.22.5 of the UAE Copyright Law for the purpose of criticism, review or discussion. The name of the author and the source should be given, and the use should be done in accordance with the normal custom and practice of research.⁵⁰

Assessment

The quotation and analysis exception originated in the Berne Convention. It is mandatory under the text of the convention. Article 22.5 of the UAE Copyright Law allows the quotation or citation of “short passages” for the purpose of criticism, discussion or information. The Berne Convention gives national lawmakers flexibility to determine the appropriateness of the quotation exception, its size and purpose.⁵¹ It also allows “making” the quotation not only in relation to the reproduction right of the copyright owners, but also other rights such as the right of communication to the public. Article 22.5 is restrictive since it has limited the quotation to “short passages” only and for criticism, discussion or information. The provision applies the quantitative, not the qualitative, test in relation to the copying amount. The qualitative rather than quantitative approach is preferred in order to better serve the UAE’s educational policy goals.⁵²

School performances (Article 22.6)

Overview

Article 22.6 allows a student in an academic institution to perform a work (a performance, a phonogram or a broadcast). This may include reading a book, reciting poetry, performing a play or singing a song aloud. The law requires the performance of the work to be done privately, but there is no need of payment of any remuneration, direct or indirect, to the copyright holder.⁵³

Assessment

This exception relates to the “minor reservation” exception provided under the Berne Convention in relation to performance, broadcasting, recitation, recording and cinematographic rights (de minimis copying). Article 22.6 of the UAE Copyright Law provides a public performance exception to allow students in schools to publicly recite copyrighted works for educational purpose. Unfortunately, the exception in the UAE law is restrictive since it can only be used by students who are located in an academic institution. The law does not extend the application of this exception to teachers and other educators who might also need to perform the work at class or elsewhere.

⁵⁰ UAE Copyright Law 2002 art.22.5 provides: “Citations of short paragraphs, quotations, or analysis, within the scope of the work, for the purpose of criticism, discussion or media; wherein mention shall be made of the source and name of author.”

⁵¹ Berne Convention for the Protection of Literary and Artistic Works 1886 (Paris Act 1971) art.10(1).

⁵² Liang, “Exceptions and Limitations in Indian Copyright Law for Education: An Assessment” (2010) 3 (2) L. & Dev. Rev. 198.

⁵³ UAE Copyright Law 2002 art.22.6 provides: “Performance of a work in meetings with family members or by pupils in an educational institution, so long as such performance has not been made against direct or indirect consideration.”

Education and cultural needs (Article 22.8)

Overview

Article 22.8 is one of the most important exceptions related to education and access to knowledge as it targets reproductions by educational institutions and others (cultural institutions and vocational training). In particular, the provision allows reproduction of short excerpts of written, audio or audio-visual works for cultural, religious, educational or vocational training purposes. Several conditions must be fulfilled:

- copying does not aim at direct or indirect profit;
- licence for copying was unobtainable in accordance with the provisions of the law;
- copying should be done within reasonable limits of its purpose; and
- the title of the work and the name of the author should be always given (attribution requirement).⁵⁴

The law does not specify what is considered as “reasonable copying” and leaves the matter to the judge to determine whether copying is considered infringement of the author’s economic rights.

Assessment

Article 22.8 of the UAE Copyright Law provides such an exception in relation to the right of reproduction. It is unclear from art.22.8 what exactly reproduction means, especially in the digital age. Does it mean making a photocopy of a text for education and cultural use or downloading for such use a copyrighted work from the internet, such as an article, an image, an mp3 file or a video?

The UAE Copyright Law answers these questions in art.1, which defines “reproduction” broadly to mean

“[t]he making of one or more reproductions of a work, phonogram, broadcast or any performance in any manner or form, including permanent or temporal electronic loading or storage, and whatever the method or device used in reproduction”.⁵⁵

The Berne Convention does not prohibit the utilisation of the whole work for the purpose of teaching provided that it is justified and compatible with fair practice.⁵⁶ Unfortunately, art.22.8 limits its application to educational use and allows copying of only a “small part of a work” in written, audio or visual recording form. It requires obtaining a licence from the copyright holder to be operational, and it is also designed not to support new forms of teaching, such as distance education that can occur outside the classroom in a public library, computer lab or student residence, workplace or any other location that is physically removed from the school or the university.

This particular educational exception does not allow students in schools and universities to create their own “mashups” by combining different resources, such as graphics, texts, audio clips and videos, to integrate and create their own works (known in some jurisdictions as the YouTube clause). This exception should be included in the UAE Copyright Law provided that three requirements are satisfied:

⁵⁴ UAE Copyright Law 2002 art.22.8 provides: “Reproducing short abstracts of a work in the form of manuscripts or audio, visual, or audio-visual recordings, for the purposes of cultural or religious education, or vocational training; with the proviso that: i) reproduction shall be within the reasonable limits; ii) reproduction shall not surpass the purpose thereof; iii) mention shall be made of the name of the author and the title of the work, whenever possible; iv) the reproducer shall not seek profit, either directly or indirectly; and v) a licence for reproduction may not be obtained pursuant to the provisions of the law herein.” See also Abdulla, “Copyright and Knowledge Advancement: A Case Study on the UAE Copyright Law” (2008) 29 (6–7) Lib. Mgmt. 461, 469.

⁵⁵ UAE Copyright Law 2002 art.1.

⁵⁶ Berne Convention for the Protection of Literary and Artistic Works 1886 (Paris Act 1971) art.10(2). See also Consumers International, Asia Pacific Office, *Copyright and Access to Knowledge* (2006).

- 1) the work should be used for a non-commercial purpose;
- 2) the source of the work should be included (where reasonable); and
- 3) there should be no negative impact on the exploitation of the copyright holder's economic rights.

Finally, there are currently no exceptions in the UAE Copyright Law for students with sensory disabilities, whether blind, visually impaired or otherwise reading-disabled. This means that any use or adaptation of a work by a visually impaired student constitutes copyright infringement. It is important for the UAE Copyright Law to permit copies of the work to be made in an accessible format (Braille, audio-recording, audio-visual or digital compatible) for these students without the need to obtain the copyright owner's permission. Such exceptions would help those students in education, enabling them to access copyrighted materials and thereby catch up with their peers.

The future of copyright law in the UAE and developing countries

It is important to discuss the kind of copyright system that should be available in the UAE to support its educational needs and development goals. The same kind of discussion should also take place in developing countries that are in the process of updating their copyright laws to suit their individual interests and local conditions.

As we have entered a new era of unprecedented development in digital technologies and knowledge production and dissemination, the UAE and developing countries are challenged to reconsider how their copyright systems might be adjusted to serve their needs in the digital age.

Any future amendment of the copyright law should be robust and flexible to promote innovation and creativity in the education sector. It should be technology-neutral and adaptive to technological changes that humans are witnessing on a daily basis. It should also be realistic and meet the expectations of consumers and the general public who want to use information communication technologies (ICT) for their advantage. Furthermore, it must compensate copyright owners adequately for their efforts in creating new educational works, such as by including appropriate civil and criminal measures whenever copyright infringement occurs.

This should of course be introduced after reviewing the relevant international treaties and should benefit from the flexibilities available under those treaties, especially in relation to interpretation and understanding of the various obligations. In particular, the UAE and developing countries should take full advantage of the flexibilities enshrined in the Berne Convention and implement the convention in favour of their development goals.⁵⁷

The educational exceptions in the UAE and developing countries should be carefully examined and tailored to the unique features of digital technologies and the internet to promote access, exploitation and use of copyrighted works. The following exceptions should be added to the UAE Copyright Law:

- exception to engage in transformative use and format shifting (e.g. changing material from one digital format (CD) to another (mp3));
- exception to facilitate internet browsing and cache copies (temporary acts of reproduction in technological processes);
- exception to make accessible-format copies of works for the benefit of students who are visually impaired;
- exception to allow libraries to preserve, index and loan digital content;
- exception for text and data mining for non-commercial research; and

⁵⁷ Dalindyabo Shabalala, "Knowledge and Education Pro-access Implications of New Technologies" in Wong and Dutfield (eds), *Intellectual Property and Human Development* (2010), p.11.

- exception for digital exploitation of unavailable books (orphan works).

The UAE and developing countries should also examine carefully their copyright laws as a whole and make sure that it suits their development goals. They should consider in particular copyright issues, such as formalities, exclusive rights, reproductions rights, derivative works, TPMs, the public domain, infringements and damages.⁵⁸

The UAE and developing countries might also consider non-legislative proposals. In particular, they should encourage the use of “open” rather than “closed” standards for digital content creation and dissemination, such as Creative Commons and other alternative open content licensing models. They need to adopt sensible policies on the development of internet-based resources that students and researchers can build and access in order to stimulate innovation in the education sector. They also have to promote the development of government and university repositories for education and research, provide incentives for educators to share their learning resources on the internet, and draft appropriate publishing agreements to that effect.⁵⁹

Finally, WIPO, and specifically the CDIP, should provide specific assistance to those developing countries that want to update their copyright laws. They should develop a guide that these countries can use in the future. This guide should provide a review of developed countries that have updated and modernised their copyright laws and educational exceptions to fit the digital environment. Developing countries can use this guide to develop their own copyright laws by choosing among the various options available in the jurisdictions.

Conclusion

The *UAE Vision of 2021* aims to make the UAE among the best countries in the world. It also aspires to transform the country into a knowledge-based economy.

The current copyright regime of the UAE, and particularly the educational exceptions to author’s rights, do not seem to support the future development plans of the country since it is criticised for being inflexible and not robust enough.

Amending the UAE Copyright Law would be an important step for the country to develop a creative and innovative education sector in the digital age. The amendment to the copyright law should be done carefully after reviewing the relevant international treaties and making sure that the law suits its development and educational goals.

Finally, it should be acknowledged that amending the law alone or having a new one will not simply fix the problems associated with education in developing countries. In addition to the legal requirements, it is important to consider other relevant issues, including the cost of educational resources (affordability), the accessibility of those resources and the ability to maintain and update the learning materials.

⁵⁸ Pamela Samuelson, “Preliminary Thoughts on Copyright Reform” [2007] Utah L. Rev. 551.

⁵⁹ Brian Fitzgerald (ed.), *Legal Framework for e-Research* (Sydney: Sydney University Press, 2008), pp.147–158.

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