

## PATENTS ON A SHOESTRING MAKING PATENT PROTECTION WORK FOR DEVELOPING COUNTRIES

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“The main challenge for developing countries is to transform [TRIPS] from a rent transfer mechanism into an effective instrument for technological development.”

-- Carlos Primo Braga<sup>2</sup>

Depending of your point of view, the 1994 TRIPS Agreement<sup>3</sup> was either a dramatic leap forward in international intellectual property law or an unprecedented act of legal imperialism.<sup>4</sup> By putting in place mandatory minimum standards covering all the major IP rights (as well as some minor ones), combined with the promise of mandatory dispute resolution backed by enforceable trade sanctions, TRIPS has come close to achieving the long-sought goal of universal worldwide IP protection.<sup>5</sup>

Patents remain by far the most controversial of the intellectual property (IP) rights harmonized under TRIPS. Not only do patents confer significantly stronger rights of exclusivity than other IP regimes,<sup>6</sup> the subject matter of patents—technology—most directly impinges on economic prosperity.<sup>7</sup> In the case of pharmaceuticals, access to patented technology can literally become an issue of life or death. Indeed, the recent showdown in the WTO over compulsory licensing of AIDS medication served as a wake-up call for many who had previously dismissed patents as a technical domain of interest

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<sup>2</sup> Quoted in Robert Sherwood, *The TRIPS Agreement: Implications for Developing Countries*, 37 IDEA 491, 493 (1997).

<sup>3</sup> Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization [WTO], Annex 1C, Legal Instruments—Results of the Uruguay Round, 33 I.L.M. 1125, 1197 (1994) [hereinafter TRIPS Agreement or TRIPS].

<sup>4</sup> Compare EDMOND MCGONUM, INTERNATIONAL TRADE REGULATION §§ 21.211, 21.21-1 (1995) (“The conclusion of the . . . TRIPS Agreement was perhaps the most remarkable achievement of the Uruguay Round.”), with Francis Mangeni, *Implementing the TRIPS Agreement in Africa*, in TRADING IN KNOWLEDGE: DEVELOPMENT PERSPECTIVES ON TRIPS, TRADE AND SUSTAINABILITY 219, 230 (Christophe Bellman et al. eds., 2003) [Hereinafter TRADING IN KNOWLEDGE] (describing TRIPs as “in essence written by developed country industry lobbies” to profit at the expense of the developing world). These assessments of TRIPS are hardly mutually exclusive, nor do they exhaust the range of views on TRIPS’ significance. See, e.g. KEITH E. MASKUS, INTELLECTUAL PROPERTY RIGHTS IN THE GLOBAL ECONOMY 2 (2000) (emphasizing TRIPS’ unique status within the WTO regime of international trade law).

<sup>5</sup> See Rochelle Cooper Dreyfuss & Andreas F. Lowenfeld, *Two Achievements of the Uruguay Round: Putting TRIPS and Dispute Settlement Together*, 37 VA. J. INT’L L. 275 (1997). Adherence to TRIPS is compulsory for all WTO members.

<sup>6</sup> For example, unlike copyrights and trade secrets, patents give exclusive rights to inventors even as against those who independently discover the patented invention. Unlike trademarks, patents govern *any* use of the invention, rather than uses within specific contexts.

<sup>7</sup> Access to technology is intimately linked to the wealth of nations. See *infra* notes xx and accompanying text. By contrast, no one is going to starve because they cannot watch the latest Hollywood blockbuster (copyright) or purchase a fake Gucci handbag (trademark).

only to specialists.<sup>8</sup> Patent protection suddenly became the ugly face of globalization,<sup>9</sup> a hazard to public health<sup>10</sup> and travesty of social justice.<sup>11</sup>

Discontent over TRIPS' patent provisions goes beyond pharmaceuticals. Patent systems are, by nature, the most administratively demanding form of IP protection, requiring extensive record-keeping and sophisticated technical analysis.<sup>12</sup> Yet, given that the top ten industrialized countries account for 94% of patents granted worldwide, the benefits of patent protection appear skewed.<sup>13</sup> Even TRIPS' defenders concede that its patent mandate represents an onerous and costly obligation whose immediate benefits will redound primarily to rich multinational companies.<sup>14</sup> Furthermore, because technology is a cumulative enterprise,<sup>15</sup> TRIPS opponents worry that enforcing patent monopolies will deny developing countries access to vital technology, relegating them to a future of economic dependency.<sup>16</sup>

The debate over whether or not patent protection makes sense in developing countries began long before TRIPS and continues today.<sup>17</sup> However, what has changed is that TRIPS is now a reality.<sup>18</sup> Except for the least developed countries (LDCs) who

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<sup>8</sup> The AIDS pharmaceutical crisis galvanized global attention and threatened to disrupt the Doha Round of WTO trade negotiations. See Frederick M. Abbott, *The WTO Medicines Decision: World Pharmaceutical Trade and the Protection of Public Health*, 88 AM. J. INT'L L. 317 (2005) (describing WTO controversy); Laurence R. Helfer, *Regime Shifting: The TRIPs Agreement and the New Dynamics of International Intellectual Property Lawmaking*, 29 YALE J. INT'L L. 1, 27, 42-43 (2004) (describing lack of attention to intellectual property issues displayed by global human rights, agriculture, environmental, public health, and development agencies and NGOs prior to TRIPS and linking World Health Organization's entry into the global patent debate specifically to the AIDS pharmaceutical debacle).

<sup>9</sup> See, e.g. Maskus, *supra* note 3, at 14 (describing IP protection as at the forefront of controversies over globalization and "a focus of contention about the future of the WTO").

<sup>10</sup> Such concerns go beyond the pharmaceutical context. See, e.g. Michael Crichton, *Patenting Life*, THE NEW YORK TIMES, February 13, 2007 (decrying gene patents as threat to public health).

<sup>11</sup> See, e.g. K. Balasubramaniam, *Access to Medicines and Public Policy Safeguards Under TRIPS*, in TRADING IN KNOWLEDGE; Francis Mangeni, *supra* note 3, at 219, 230 (describing TRIPS' potential to "[i]mpoverish[ ] and leav[e] destitute entire populations in developing countries").

<sup>12</sup> Robert Sherwood, *INTELLECTUAL PROPERTY AND ECONOMIC DEVELOPMENT* (1990); see also Keith Maskus, *Intellectual Property Rights and Economic Development*, 32 CASE W. RES. J. INT'L L. 471, 494 (2000) (providing estimates of TRIPS-compliance costs in selected developing countries averaging an extra \$1 million annually).

<sup>13</sup> See Carlos M. Correa, *Internationalization of the Patent System and New Technologies*, 20 WIS. INT'L L.J. 523, 523 (2006).

<sup>14</sup> Keith E. Maskus, *Intellectual Property Rights and Economic Development*, 32 CASE W. RES. J. INT'L L. 471, 489-494 (2000); Daniel J. Gervais, *Intellectual Property, Trade & Development: The State of Play*, 74 FORDHAM L. REV. 505, 530-31 (2005). But see Edmund W. Kitch, 13 UCLA Pac. Basin L.J. 166, 177 (1994) (arguing that patent fees can defray administrative costs and suggesting royalty rates will be discounted to reflect the reduced ability of developing countries to pay).

<sup>15</sup> See Carlos M. Correa, *supra* note 12, at 525-28.

<sup>16</sup> A. Samuel Oddi, *The International Patent System and Third World Development: Reality or Myth?*, 1987 DUKE L.J. 831, 863 (1987). (describing "desperate" situation of "almost irreversible" technological inferiority); Rochelle Cooper Dreyfuss, *TRIPS-Round II: Should Users Strike Back*, 71 U. CHI. L. REV. 21, 28-30 (2004) (describing TRIPS as "unconscionable bargain").

<sup>17</sup> See, e.g. Edith Penrose, *THE ECONOMICS OF THE INTERNATIONAL PATENT SYSTEM*, Chapt XI (1951) (arguing that developing countries should be exempt from international patent laws) in ABBOTT, GURRY, COTTIER casebook, 263.

<sup>18</sup> The very existence of TRIPS may have altered some of the baseline conditions of this debate. For example, patent advocates often cite studies that show a correlation between stronger patent protection and

can defer full compliance until 2013,<sup>19</sup> all WTO members are obligated to provide a fairly broad baseline level of patent protection. For more than 90% of the world's population,<sup>20</sup> the question is therefore no longer *whether* to have a patent system, but *what kind* of patent system.

Patent systems come in many forms. While TRIPS dictates minimum standards to which all WTO members must adhere, it reserves considerable discretion to member states to implement these standards. By exercising this flexibility judiciously, developing countries can avoid or at least minimize some of the burden that patent protection might otherwise entail. For example, operating a patent system on the rigorous, pre-grant examination model commonly practiced in developed countries requires funding and technical expertise beyond the reach of most developing nations.<sup>21</sup> The US patent office employs more than 5000 employees, many with advanced scientific or legal training at the cost of roughly a billion dollars per year.<sup>22</sup> By comparison, the annual GDP of Malawi amounts to only two billion dollars.<sup>23</sup> Yet, nothing in TRIPS mandates an *ex-ante* examination model.

Deciding whether to conduct pre-grant examinations is only one of many choices for a developing nation to consider in order to make patent protection work for them. Much scholarly analysis has been devoted to surveying the options for developing nations to enact national patent laws appropriate to their needs.<sup>24</sup> The bulk of this work has focused on issues of substantive patent law, and my intent here is not to duplicate such efforts.<sup>25</sup> Because TRIPS' patent mandate imposes a fairly high floor of substantive protection, developing countries have limited discretion to modulate these standards in any case, and thus such doctrinal fine tuning may matter only at the margins. By contrast, TRIPS has comparatively less to say about procedural matters, leaving developing countries free to

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foreign direct investment (FDI). However, in a post-TRIPS world where *all* WTO members are obligated to provide a fairly high level of patent protection, the incremental benefit to any one country from doing so may be neutralized. On the other hand, the costs of patent protection might also be reduced; to the extent that TRIPS' implementation has eliminated alternative suppliers of "pirate" products, the incremental costs of importing patented goods may disappear.

<sup>19</sup> Decision of the Council for TRIPS, Extension of the Transition Period under Article 66.1 for Least-Developed Country Members (29 Nov. 2005). Patent protection for pharmaceuticals can be further deferred until 2016. Declaration on the TRIPS Agreement and Public Health, WT/MIN(01)/DEC/2 (Nov. 20, 2001) (the "Doha Declaration"), ¶7.

<sup>20</sup> See Hisamitsu Arai, *Intellectual Property Policies for the Twenty First Century: The Japanese Experience in Wealth Creation* (WIPO research paper, Dec. 1999), at 12 (noting that countries bound by TRIPS' mandate collectively account for 90% of the world's population).

<sup>21</sup> Indeed, commentators have increasingly worried that maintaining this rigorous model appears beyond the ability of the US itself. By all accounts, threshold standards have fallen as the US Patent & Trademark Office (PTO) has been overwhelmed by an exponentially rising flood of applications. Robert Merges, *As Many as Six Impossible Patents Before Breakfast: Property Rights for Business Concepts and Patent System Reform*, 14 Berkeley Tech. L.J. 577, 590 (1999).

<sup>22</sup> Exact figures are hard to come by because the US Patent & Trademark Office (PTO) is responsible for granting both patents and trademarks. However, the lion's share of resources are consumed by the patent side of operations, and the figures provided are estimates for the latter only.

<sup>23</sup> CIA Yearbook, 2006.

<sup>24</sup> See Paul J. Heald, *Mowing the Playing Field: Addressing Information Distortion and Asymmetry in the TRIPS Game*, 88 MINN. L. REV. 249 (2003).

<sup>25</sup> See Correa; NGOs; etc.

experiment.<sup>26</sup> While perhaps less glamorous than substantive issues, such procedural matters can have important systemic implications. To give one example, a consequence of choosing not to undertake pre-grant examinations may be relinquishing the ability to control the substantive standards under which patents issue.<sup>27</sup> The procedural choice can therefore determine patentability standards by default.

Patent systems comprise multiple moving parts, each of which can serve as policy levers to achieve particular goals. This Article examines two such variables: pre-grant examinations of patentability and assessment of patent fees. It then considers the interaction between these variables and alternative models for regulating innovation outside the patent system. Analysis of each of these policy dimensions will not attempt to be exhaustive. Rather than cataloguing a comprehensive menu of policy options, my emphasis will instead be on the relationships between them: to explore how choices made in one aspect of patent policy affect decisions in others. The Article also includes a descriptive component: It examines what countries are *actually* doing, rather than just discussing theory in the abstract. Lastly, the Article seeks to highlight the link between means and ends: A patent system can serve many purposes, and it matters how you prioritize among them. Our goal then is to understand how these different moving parts function together to advance particular objectives, within the constraints established by international IP & trade law.

## I. Identifying Goals, Choosing Priorities

The most significant international constraint, and one on which this paper will focus, is the TRIPS Agreement, read within the larger context of the WTO trade law in which TRIPS is embedded. Article 7 of TRIPS posits the treaty's objectives as follows:

The protection and enforcement of intellectual property rights should contribute to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations.

Such carefully balanced language, combined with references in TRIPS' preamble to the "developmental . . . objectives" of IP protection,<sup>28</sup> holds out the promise that TRIPS can be read to serve the interests of developing countries and not just those of the developed.<sup>29</sup> The proclamation of the "Doha Development Round" and WIPO's own Development Agenda have reinforced expectations that IP protection can be reconciled

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<sup>26</sup> This paper will focus primarily on procedural and institutional issues related to the acquisition of patent rights. Focusing on the *acquisition* of patent rights rather than *enforcement* facilitates horizontal comparisons across national systems because the issues concerned are largely specific to patents. By contrast, patent enforcement depends on judicial and administrative apparatus that serve broader institutional functions and thus implicate considerations extrinsic to the patent system.

<sup>27</sup> Markus Nolf, TRIPS, PCT AND GLOBAL PATENT PROCUREMENT 172 (2001).

<sup>28</sup> TRIPS Preamble, 5<sup>th</sup> recital; *see also* 6<sup>th</sup> recital (recognizing the "special needs of the least-developed country Members").

<sup>29</sup> *See also* WTO preamble, 2d recit. (recognizing the "need for positive efforts" to benefit developing countries).

with development interests.<sup>30</sup> Developing countries should not hesitate to take this promise at face value as they navigate the flexibilities that TRIPS provides.

In order to decide what kind of patent system to opt for, however, a developing country first needs to decide what it hopes to get out having one. In doing so, it helps to distinguish between different, albeit overlapping objectives of patent protection. Much of the debate thus far has focused on the role patents play in economic development. Development economists have long recognized the crucial role that technology plays in facilitating economic advancement. Investing in technology can dramatically improve a country's industrial efficiency, allowing it to migrate from the production of primary goods to value-added industries. The key question is whether patents help or hinder developing countries in their quest to acquire the technology they need.

In general, there are three ways for developing countries to acquire technology. A country can (1) absorb established technologies by tapping the global public domain; (2) generate its own technological innovations; or (3) encourage the transfer of proprietary technologies by foreign firms.<sup>31</sup> The effect that patents have on each of these acquisition strategies is hotly contested.

On its face, patent protection would seem to hamper an absorption strategy by removing technologies from the public domain, raising their cost and restricting availability. However, patent proponents downplay such adverse effects, casting doubt on the ability of developing countries to absorb useful technologies "off the shelf" even in the absence of legal monopolies.<sup>32</sup> Patent proponents also emphasize the positive role that patents can play in helping developing countries to acquire technology, both by inducing exogenous technology transfers and stimulating indigenous innovation. They dismiss the costs associated with patent protection as temporary hurdles outweighed by long-term gains.<sup>33</sup>

Patents critics score the cost-benefit analysis much less favorably. They view patents as a serious obstacle to absorption strategies and of dubious relevance to indigenous innovation<sup>34</sup> or technology transfer.<sup>35</sup> Instead, they see TRIPS primarily as

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<sup>30</sup> See generally Anselm Kamperman Sanders, Intellectual Property, Free Trade Agreements, and Economic Development [companion article in this symposium issue]. Indeed, the greenlighting of compulsory licensing achieved in the Doha Declaration can be seen as a first step in a larger campaign to rebalance international IP law in a more development-friendly light. See Sean Pager, *TRIPS: A Link Too Far? A Proposal for Procedural Constraints on the Use of Cross-Issue Linkages to Advance Regulatory Harmonization in the WTO*, 10 MARQ. INTELL. PROP. L. REV. 215, 250-51 (2006).

<sup>31</sup> Maskus describes three potential channels for transfers of exogenous technology: foreign direct investment (FDI), licensing and direct imports. Maskus, *supra* note xx, at 481.

<sup>32</sup> See Kitsch, *supra* note xx, at 171-72 (arguing that "technology is not a collection of recipes" that can easily be absorbed from published patent specifications or technological literature); see also *id.* at 176-177 (arguing that foreign technologies need to be adapted to suit the needs of developing countries, requiring patent incentives to encourage such adaptive innovation).

<sup>33</sup> See also Kitsch, *supra* note xx, at 177 (arguing that patent fees can defray administrative costs and that royalty rates will be held down by depressed demand).

<sup>34</sup> Skeptics argue that few developing countries are capable of large-scale, patentable innovation in their own right. Meanwhile, enforcing foreign patents may hinder the adaptation of existing technologies and restrict basic research. Petherbridge, *supra* note xx, at 1162-64.

<sup>35</sup> Skeptics contend that technology transfer hinges on trade secret protection more than patents. Heald, *supra* note xx, at 258-59; but see Kitsch, *supra* note xx, at 174-75. Moreover, they suggest that by thinning

serving a “royalty-collection” function, transferring monopoly rents from developing countries to IP producers in rich countries.<sup>36</sup> Such rents are not trivial – one commentator estimated that Brazil would pay an extra \$1.2 billion per year on foreign-held patents in TRIPS’ aftermath.<sup>37</sup>

Because such commentary often assumes that patents uniformly help or hinder technological development, the policy prescriptions that follow generally reduce to a simple binary of positions that are predictably either “pro” or “con” patent: Those who see patents as stimulating innovation advocate immediate and robust patent protection.<sup>38</sup> Those who see patents as rent-seeking tools advocate damage control strategies that seek to limit the costs of patents by adopting the minimum degree of protection necessary to remain TRIPS-compliant.

As between these two philosophical extremes, it is probably fair to say that most developing countries themselves incline to a position of patent skepticism. Such skepticism was reinforced by the manner in which TRIPS was negotiated. Rich countries essentially presented a comprehensive proposal for IP protection as a *fait accompli* to which developing countries eventually acquiesced in return for trade concessions unrelated to intellectual property.<sup>39</sup> For developing countries, the operating assumption going into TRIPS was therefore that IP rights represented a net loss made palatable only as part of an overall package deal that compensated them in other ways.<sup>40</sup>

In fact, the true picture is probably more complex. Patents may assist some aspects of technological advancement while impeding others. The mix of costs and benefits will likely vary according to the individual circumstances of each country. Moreover, even assuming that patents do, in fact, represent a net loss to developing countries, a policy of minimal compliance might not be the only rational response. Even developing countries who see patents as a losing prospect overall should nonetheless remain attuned to the possible benefits that a patent system might bring. Pursuing such proverbial silver linings need not translate into a monolithic set of “pro patent” policies. To some extent,

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out the patent thicket of blocking rights, developing countries might actually attract investment in technologies such as biotech under a low-protection regime. *Id.* at 285; Petherbridge, *supra* note xx, at 1164;

<sup>36</sup> See Jagdish Bhagwati, *After Seattle: Free Trade and the WTO*, 77 INT’L AFFAIRS 15, 26 (2001) (describing TRIPS as “turn[ing] the WTO into a royalty-collection agency”); Maskus, *supra* note xx, at 493 (estimating US gains in static rent transfers from TRIPS as amounting to “a net inflow of some \$5.8 billion per year,” while developing countries would experience a net outflow—which for Brazil alone would total around \$1.2 billion per year).

<sup>37</sup> Maskus, *supra* note xx, at 493.

<sup>38</sup> Some commentators have called for developing countries to voluntarily implement patent protection even before TRIPS’ grace period has expired. Others go further and advocate adopting standards of IP protection that go beyond the minimum requirements of TRIPS. See Robert Sherwood, *The TRIPS Agreement: Implications for Developing Countries*, 37 IDEA 491, 494 (1997).

<sup>39</sup> See Peter Drahos, *Negotiating Intellectual Property Rights: Between Coercion and Dialogue*, in GLOBAL INTELLECTUAL PROPERTY RIGHTS: KNOWLEDGE, ACCESS AND DEVELOPMENT 167-69 (Peter Drahos & Ruth Mayne eds., 2d ed. 2002).

<sup>40</sup> See Peter Yu, *TRIPS and Its Discontents*, 10 MARQ. INTELL. PROP. L. REV. 369, 371-72 (2006).

developing countries can pick and choose, tailoring patent policies according to their specific priorities.<sup>41</sup>

Technological benefits that developing countries may contemplate in structuring their patent system include: (1) providing incentives and support for indigenous innovation; (2) disseminating knowledge of foreign technologies to the public; (3) encouraging the transfer of proprietary technology by foreign companies; and (4) creating incentives to develop or adapt technologies to meet specific national needs. Ancillary benefits may include: (5) generating revenues from patent fees; and (6) developing a reservoir of technical and scientific expertise. Patent systems should also be designed with a view to minimizing costs, such as: (7) conserving institutional resources devoted to administration; (8) preventing anticompetitive abuse of patent rights; and (9) limiting the flow of rents to foreign patent-holders; and (10) preserving the public domain.<sup>42</sup>

These goals are not mutually exclusive and may overlap in terms of the policy prescriptions they point to. However, different priorities will lead to different emphases. For example, high patent fees can serve both to deter patenting (#9 and #10 above) and also to generate revenue (#5): A country prioritizing the former will push fees upward as high as possible, while a country favoring the latter would instead choose a fee level at a point along the demand curve at which maximum revenue is obtained. Similarly, while stronger patent rights *might* be predicted to promote technological advancement both through external technology transfers *and* from indigenous innovation, the specific conditions under which these mechanisms function vary.<sup>43</sup> Accordingly, a developing country might structure its IP regime differently depending on which sort of innovation it wishes to emphasize.<sup>44</sup>

The choices made may depend on the country's current level of economic and technological development. In general, one can trace a natural progression from low to high levels of IP protection as countries develop.<sup>45</sup> Below a certain level of development, intellectual property rights are arguably irrelevant.<sup>46</sup> Severely underdeveloped countries are typically engaged in subsistence agriculture, with little

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<sup>41</sup> J.H. Reichman and David Lange, *Bargaining around the TRIPS Agreement: The Case for Ongoing Public-Private Initiatives to Facilitate Worldwide Intellectual Property Transactions*, 9 DUKE J. COMP. & INT'L L. 11, 23 (1998).

<sup>42</sup> A further consideration for some countries may be ongoing initiatives to harmonize global patent standards. This international dimension could cut two ways: Some developing countries may wish to align themselves with emerging international norms to ease future transitions. Others may want to hold out with contrarian positions that can be deployed as bargaining chips in future negotiations.

<sup>43</sup> See *infra* notes xx and accompanying text.

<sup>44</sup> See *infra* notes xx and accompanying text (re: utility models as alternative protection scheme).

<sup>45</sup> Recent empirical work by Keith Maskus suggests that the relationship between IPR & development is not entirely linear, but rather follows an inverted U-shaped shape, whereby "the apparent strength of patent rights first falls as incomes rise" but then reverses direction to strengthen steadily "as development proceeds . . . accelerat[ing] at a high income levels." Maskus, *supra* note xx, at 477 (describing regression analysis of patent protection in 72 countries between 1985 and 1990, which suggested \$2000 per capita GDP as the level at which patent protection becomes weakest, with rapid acceleration in IPR at incomes levels above \$7750). This apparent anomaly is probably explained by preexisting IP laws that many developing countries inherited from former colonial powers that are subsequently jettisoned.

<sup>46</sup> Lee Petherbridge, *Comment: Intelligent TRIPS Implementation: A Strategy for Countries on the Cusp of Development*, 25 U. PA. J. INT'L ECON. L. 1133, 1146 (2004); Gervais, *supra* note xx, at 519.

ability to innovate. They may also lack functioning legal and administrative mechanisms to enforce IP rights.<sup>47</sup> Foreign patent-holders are less likely to worry about such countries engaging technological “piracy” and may see no prospect of surplus resources from which to extract monopoly rents.<sup>48</sup> Such countries may formally participate in international IP regimes. Yet, patent laws have very little effect in practice.

As a country develops, its domestic industries need access to technology to progress. Initially, weak patent laws (or weak enforcement) appear desirable because such industries lack the ability to generate patentable innovations and typically favor a strategy of absorption instead. Moreover, siphoning of royalties by external rights-holders may threaten macroeconomic stability. Eventually, as a country moves upward along the development ladder, its attitude to intellectual property rights evolve. As domestic industries themselves begin to innovate, they acquire their own stake in enforcing IP rights. Levels of IP protection then begin to rise again.<sup>49</sup>

These historical trends suggest that the optimal patent policy for a developing country will vary according its level of development. Some commentators, however, reject such received historical wisdom. They insist that developing countries can immediately benefit from strengthening patent protection. Some argue that developing countries contain a hidden reservoir of untapped inventive potential and that the failure of patent laws to unleash such indigenous innovation has to do with cultural barriers that governments can overcome through outreach and education.<sup>50</sup> Others contend that by attracting foreign investment developing countries can acquire cutting-edge technologies that will enable them to leapfrog across the development divide and immediately embrace the state-of-the-art.<sup>51</sup> The failure of developing countries to embrace strong IP laws voluntarily, it is suggested, has to do with dysfunctional public choice dynamics rather than rational self-interest, which lead them down a dead-end path of protectionism and “piracy” at expense of long-term technological competitiveness.<sup>52</sup>

IP skeptics counter that TRIPS already imposes a relatively high floor of mandatory IP protection. The question therefore is whether developing countries have anything to gain from going *beyond* TRIPS’ minimum requirements.<sup>53</sup> We should not assume that rich country levels of IP protection represent the “optimal” or “rational” choice.

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<sup>47</sup> Maskus, *supra* note xx, at 478.

<sup>48</sup> Sherwood, *supra* note xx [37 IDEA 491], at 493.

<sup>49</sup> Maskus, *supra* note xx, at 477-78. Korea offers a prototypical example of a country that migrated from IP “pirate” to “protectionist” as it developed.

<sup>50</sup> Sherwood, *supra* note xx (describing unfamiliarity with IP laws and lack of entrepreneurial tradition as primary obstacles to indigenous innovation rather than lack of technological capability); *see also* Bruce Lehman, *Intellectual Property Rights as a Trade, Health, and Economic Development Issue*, 17 ST. JOHN’S J. LEG. COMM’Y 417, 424 (2003) (noting that “the talent exists, but . . . that talent is not being exploited back home”).

<sup>51</sup> Reichman, *supra* note xx [Fair Followers], at 80.

<sup>52</sup> Domestic industries have a natural bias toward free riding—why pay for something you can get for free? They can also be expected to oppose FDI as a source of foreign competition. However, appeasing such economic interests may not benefit the country as a whole.

<sup>53</sup> Fine-tuning of IP standards, in any case, may matter far less in practice than how such laws are enforced. *See* W. Lesser, *The Effects of TRIPS-Mandated Intellectual Property Rights On Economic Activities in Developing Countries*, IPR Commission Study Paper.

Perversions of public choice are hardly unknown even in mature democracies,<sup>54</sup> and many argue that patent standards in developed countries now exceed optimal levels even for advanced post-industrial economies, let alone for developing ones.<sup>55</sup>

In any case, a country's patent policies are likely to be influenced by more than just its economic and technological development. Individual circumstances are also likely to dictate where it sees its advantage lying. For example, some countries have a clear advantage in attracting technology-intensive foreign direct investment (FDI) due to such non-IP variables as market size, openness to trade, education, infrastructure, political stability, rule of law, etc. Some have more obvious prospects of nurturing domestic innovation within established industries or advanced research institutions, or by tapping entrepreneurial traditions. Financial and market structures can affect each of these appraisals, as can political constraints, either internal (e.g. rooted in ideology or cultural tradition) or external (e.g. a dependency on foreign aid or other vulnerability to diplomatic pressure).

Such complex variables counsel against a "one size fits all" solution to patent system design.<sup>56</sup> Each country should undertake a holistic appraisal of its circumstances in order to integrate its IP policy with its overall development agenda and prioritize objectives accordingly. To some extent, such decisions involve a leap of faith. TRIPS has ushered in a new era that calls for experimentation. The benefits and costs of patent protection remain uncertain and contested. On the big questions, reasonable minds can disagree.

Rather than resolve such fundamental debates, this paper takes it for granted that different countries will arrive at different normative positions vis-à-vis patent protection. For purposes of this paper, we can identify four distinct "strategic profiles" with which developing countries might identify. The first two fall within the ranks of patent skeptics. The second two see a possible upside to patents, albeit to varying degrees:

### **1. The Passive Minimalist**

In many developing countries, the level of patenting activity is so low that it makes patent policy virtually irrelevant in the short term.<sup>57</sup> Countries in this camp include those with low levels of development, small populations, and/or isolated economies.<sup>58</sup> For

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<sup>54</sup> See, e.g. Eldred v. Ashcroft, 537 U.S. 186, 262-63 (2003) (Breyer, J., dis.) (decrying capture of copyright system by rightsholders); Robert Denicola, *Some Thoughts on the Dynamics of Federal Trademark Legislation and the Trademark Dilution Act of 1995*, 59 L. & Contemp. Prob. 75, 80-83 (1996) (same for trademark law).

<sup>55</sup> Correa, *supra* note xx; Rochelle Cooper Dreyfuss, *Are Business Method Patents Bad for Business*, 16 SANTA CLARA COMPUTER & HIGH TECH L.J. 263, 274 (2000) (critiquing the trend in IP law toward excessive protection without any underlying rationale); MASKUS, *supra* note 23, at 65-66 (U.S. intellectual property "regime has become overly protectionist by almost any utilitarian standard . . . it seems unwise to advocate the exportation of such protection to developing nations"). Any discussion of "optimal standards" or "levels" necessarily collapses a complex array of doctrinal elements into a single, misleading variable. In practice, developing country must navigate a long menu of doctrinal options to design a patent regime tailored to its national interests. See generally Robert Sherwood, 37 IDEA 261 (1997) (developing a numerical rating system to measure the strength of IP rights in developing countries).

<sup>56</sup> See Reichman & Lange, *supra* note xx, at 50.

<sup>57</sup> Petherbridge, *supra* note xx, at 1146.

<sup>58</sup> See Biswajit Dhar & C. Niranjan Rao, *International Patent System: An Empirical Analysis* (IPR Commission Study Paper, October 14, 2002), at 17, 21.

these countries, it may make sense to take the path of least resistance: to implement a patent registration system that complies with TRIPS, pocket the fees received, but otherwise not expend much effort in fine-tuning substantive or procedural standards.

## 2. The Substantive Minimalist

Developing countries who feel they have more to lose from patent protection will choose a more active course of resistance. We can call them “Substantive Minimalists” because their goal is to test the floor of TRIPS’ minimum requirements and fully exploit the flexibilities that TRIPS allows.<sup>59</sup> This could entail crafting restrictive standards of patentability,<sup>60</sup> defining substantive rights narrowly,<sup>61</sup> recognizing expansive defenses to infringement,<sup>62</sup> all as part of a damage control strategy to minimize the costs of patent protection. Such countries may also deploy procedural obstacles to patenting, such as third-party opposition proceedings or costly translation requirements.<sup>63</sup> Indeed, the more idiosyncratic the rules such countries adopt, the higher the associated costs of patenting, thereby encouraging foreign inventors to forgo the incremental benefits of acquiring patent rights in that territory and instead to concentrate on “softer” targets elsewhere. To be sure, TRIPS has provisions designed to limit overt obstructionist tactics.<sup>64</sup> The analysis here assumes that Substantive Minimalists will operate within these limits, exploiting only such policy tools as can be defended in good faith.<sup>65</sup>

## 3. The Nativist

A third category will be developing countries that see patent protection as having genuine potential to stimulate indigenous innovation but worry about the burden of monopoly rents extracted by foreign patent-holders. These countries will seek to craft patent policies that favor domestic inventors while still maintaining barriers against foreign applicants. Such discriminatory policies can be problematic under TRIPS’ national treatment provision. The challenge therefore will be to employ legitimate (i.e. presumptively defensible) policy tools to achieve the desired effects. For example, discounting patent fees for small businesses will tend to favor local inventors over

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<sup>59</sup> Countries subscribing to either Substantive or Passive Minimalism will be referred to collectively as patent skeptics, denoting their shared position of skepticism toward patents.

<sup>60</sup> Narrow patentability standards could include establishing a high originality bar, absolute standards of novelty; restrictive definitions of patentable subject matter (e.g. invoke the exclusions permitted under TRIPS Article 27 for living matter, therapeutic methods and “morality”—and not allowing software, business models, algorithms, natural isolates, etc. to qualify as “inventions”). *See, e.g.* Petherbridge, *supra* note xx, at 1165-67.

<sup>61</sup> E.g. literal claim interpretation only (no doctrine of equivalents). *Id.* at 1168.

<sup>62</sup> Defenses can consist of both shields (prior user rights, experimental use) and swords (antitrust, inequitable conduct, abuse of rights, etc).

<sup>63</sup> Other examples of procedural hurdles might include limits on the number of claims allowable; requirements of specialized drafting format; placing the burden of proof on the applicant to establish patentability, according no presumption of validity once patents have issued; high maintenance fees; expansive disclosure requirement; enforcing patent working requirements; compulsory licenses, etc.

<sup>64</sup> *See, e.g.* TRIPS, Arts. 41, 62.

<sup>65</sup> Of course, where one draws the line is the subject of legitimate debate. *Compare* Heald, *supra* note xx, at 275 (advocating aggressive use of minimalist legislation), *with* Gervais, *supra* note xx, at 525 (dismissing search for loopholes as “legal ‘gimmickry’”).

foreign multinationals. Yet, it can be justified on normative grounds independent of its discriminatory effects.<sup>66</sup>

#### **4. The Globalist**

The final category of developing countries will be those ready to embrace the global patent system. They may do so to lure foreign investors, making it easy for the latter to acquire patent rights and signaling a commitment to fully enforce patents once granted. For newly industrializing countries who have reached relatively advanced stages of development, a “globalist” profile may be prompted by the need of their own indigenous inventors to secure patent rights abroad. Globalists will gravitate toward patent policies that mirror established international norms.

These profiles represent ideal types whose boundaries will overlap in practice. Countries may combine elements of more than one strategy, or transition from one profile to another over time.<sup>67</sup> Nonetheless, the distinctions between these categories serve to highlight important differences in policy orientation. The analysis that follows traces the implications of these distinct strategies across the three policy dimensions identified above: patent examinations, patent fees, and alternative protection models.

## **II. Patent System Design 101 – Options & Implications**

### **A. Examination Options**

Perhaps the most important procedural decision a country needs to make is to decide the extent to which it will conduct examinations prior to issuing a patent to determine whether applications conform to substantive patentability standards (novelty, nonobviousness, enablement, etc.). Patent examinations serve as a filter to screen out undeserving claims before they mature into a patent grant. However, they can be enormously demanding in time and resources.

#### **1. Registration Model**

##### **i. Pure Registration**

For Passive Resisters, a low volume of patent applications may not justify the expense of conducting in-depth examinations. One way they can avoid these costs is to forego substantive examinations entirely and adopt a registration system whereby patents are reviewed solely for compliance with procedural formalities.<sup>68</sup> Determinations of validity only occur later if an infringement claim is brought.<sup>69</sup> Since most patents are never enforced, this dramatically reduces the overall costs of such review.<sup>70</sup> However, failure to conduct pre-grant examinations can open the door to abusive patenting

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<sup>66</sup> See *infra* notes xx and accompanying text.

<sup>67</sup> Cf. Reichman & Lange, *supra* note xx, at 53 (advocating a policy of “tailor-made adjustments of the intellectual property fences in developing countries” that adjusts standards on a case-by-case basis).

<sup>68</sup> Dhar & Rao, *supra* note xx, at 10. South Africa offers an example of a country that relies on a pure registration model. Lehman, *supra* note xx, at 425.

<sup>69</sup> Challenges to patent validity are commonly raised as defenses to infringement. However, if the burden is on defendants to raise the challenge, then in some cases, validity review may still not occur even then.

<sup>70</sup> Cf. Mark Lemley, *Rational Ignorance at the USPTO*, Northwestern L. Rev.

practices, encouraging spurious claims that could be used *in terrorem* against competitors and the public at large.<sup>71</sup> Investors might also be unwilling to back business ventures resting on untested patents. For these reasons, many developed countries—including the US—that experimented with registration systems ended up reverting to an examination model.<sup>72</sup>

## ii. Re-registration -- Examination by Proxy

Since most patents filed in developing countries are also the subject of patent applications elsewhere, a better approach is to piggyback on the review conducted by foreign patent offices. The simplest way to do this is to rely on the issuance of a foreign patent directly as an assurance of validity. Unsurprisingly, this approach has appealed to small countries with limited administrative resources. For example, to register a patent in Hong Kong, applicants must demonstrate their receipt of an equivalent patent (with identical claims) issued either by China, the United Kingdom, or the European Patent Office (EPO).<sup>73</sup> Many other countries appear to operate a *de facto* re-registration model, giving heavy weight to foreign patents, albeit informally.<sup>74</sup> Such “examination by proxy” combines the efficiency of a registration system with assurance of substantive review by a professional patent staff elsewhere.<sup>75</sup>

A re-registration model has its drawbacks, however. Even more than a pure registration system, it limits the ability for developing countries to control substantive patentability standards or even procedural rules for claim drafting.<sup>76</sup> It can also severely disadvantage local inventors who may have difficulty accessing (and paying for) patent

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<sup>71</sup> Such overreaching patent claims can translate into market leverage even if they would be invalidated once the patentee tried to enforce them. Patent litigation is so expensive that competitors might shy away from challenging the patent. The mere threat of an infringement claim might be enough to convince potential infringers to negotiate a license. South Africa attempts to cure this defect by allowing for pre-grant opposition proceedings to filter out undeserving applications. However, this assumes there will be local entities motivated to challenge pending registrations, which often may not be the case. *See infra* notes xx and accompanying text.

<sup>72</sup> John F. Duffy, *Harmony and Diversity in Global Patent Law*, 17 Berkeley Tech. L.J. 685, 714-15 (2002). *But see* F. Scott Kieff, *The Case for Registering Patents and the Law and Economics of Present Patent-Obtaining Rules*, Stanford Law and Economics Olin Working Paper No. 276 (2004).

<sup>73</sup> Arthur Wineburg, ed., *INTELLECTUAL PROPERTY PROTECTION IN ASIA*, 2d ed. § 4.02 (2004). Patents issued by the EPO are accepted only where the United Kingdom has been designated a covered territory. *Id.* Several South Pacific island nations also operate reregistration systems: The Solomon Islands, Tuvalu, Tonga, Vanuatu, and Kiribati only accept patents issued by the United Kingdom. Micronesia requires a US patent. Nauru accepts patents from Australia, the UK, or America. Samoa seems the most ecumenical. It recognizes patent granted by *any* overseas country. *See* INTERNATIONAL ENCYCLOPEDIA OF LAWS: INTELLECTUAL PROPERTY (2006).

<sup>74</sup> Nolf, *supra* note xx, at 143. Even relatively large, developed countries such as Canada may be included among this group. *Id.*

<sup>75</sup> Re-registration schemes are also known as “validation systems.” Setsuko Asami, *A View toward the Global Patent: Mutual Exploitation of Examination Results*, CASRIP Newsletter (Spring, Summer 2002).

<sup>76</sup> *Id.* at 172. Under a pure registration model, a country can still develop its own customized patentability standards that are applied, albeit belatedly, during infringement actions. By contrast, countries following a patent re-registration model will face pressure to align their standards with the foreign proxies that they recognize. While it is possible to tolerate minor discrepancies under a rule that re-registration serves only as *prima facie* evidence of validity, going beyond that would introduce an unwelcome element of uncertainty.

procurement overseas, thereby inhibiting local innovation.<sup>77</sup> Perhaps for these reasons, many countries have moved away from a re-registration model.<sup>78</sup>

Furthermore, selective re-registration schemes may also present a legal problem. Most countries recognize foreign patents only from certain countries, often based on former colonial ties. Yet, privileging patents granted by certain countries over others could violate the most favored nation (MFN) principle of TRIPS.<sup>79</sup> The MFN principle forbids WTO members from favoring nationals of one member state over another.<sup>80</sup> On its face, discriminating between patent offices would not violate MFN because anyone can apply to the designated offices to obtain a patent, regardless of their nationality.<sup>81</sup> However, one can argue that nationals of the favored offices, in practice, would enjoy a *de facto* advantage in that they would find it easier to navigate the patent procurement process in their home country.<sup>82</sup> Indeed, in many cases, they would have obtained a patent at home already and thus not incur any extra expense or inconvenience. Consider, for example, a New Zealand company and British company that each seek to export their patented products to Vanuatu. The British company could so immediately, obtaining a Vanuatu patent based on their preexisting British patent. By contrast, the New Zealand firm would have to apply specially for a patent in the United Kingdom, despite already having a New Zealand patent and having no intention of exporting their product to Britain.

While MFN is long-established principle of international trade law, its application in the context of intellectual property is a recent innovation that remains relatively undertheorized.<sup>83</sup> Intellectual property rights present a substantially different context

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<sup>77</sup> *Id.* at 147; Dhar & Rao, *supra* note xx, at 20. Unless the re-registration scheme includes a translation requirement, the original patent application may be filed in a foreign language, inhibiting dissemination of technical information domestically. See Asami, *supra* note xx.

<sup>78</sup> Nolff, *supra* note xx, at 146 (citing evidence of trend in African jurisdictions).

<sup>79</sup> Another potential obstacle might be Paris Convention, Article 4bis which states that “[p]atents applied for in the various countries of the Union . . . shall be independent of patents obtained for the same invention in other countries.” This provision most likely governs only the substantive grant of rights, not the procedural foundation on which such rights were based. However, it might come into play if a re-registration scheme tied invalidation to the fate of the original reference patent. Nolff, *supra* note xx, at 149 n.437.

<sup>80</sup> See TRIPS, Article 4.

<sup>81</sup> Moreover, the principle of national treatment (in theory) ensures that foreign nationals are not disadvantaged as against locals in making such applications. National treatment, like MFN, is a rule of non-discrimination, but it only applies to preferential treatment of nationals over foreigners, whereas MFN applies to discrimination *between* foreigners. See TRIPS, Article 3.

<sup>82</sup> Of course, a degree of home court advantage is inherent in a system of national patent rights. One would not normally think of such insider advantages as violating national treatment just because locals can work the system better than foreigners. The difference here is that there is no inherent reason why British subjects should be better able to procure patents in Vanuatu than New Zealanders.

<sup>83</sup> MFN was introduced to international IP law by TRIPS in 1995. Earlier international IP treaties such as the Berne and Paris Conventions contained only national treatment provisions, but not MFN. See Reichman & Lange, *supra* note xx. One important issue left open is whether TRIPS-MFN is subject to the exception provided by GATT Article XXIV that sanctions trade discrimination where “necessary to the formation” free trade agreements (FTAs) and customs unions. For example, patents conferred by the European Patent Office are recognized through extension agreements with several Balkan nations that are not themselves members of the European Patent Organization but which do have free trade agreements with the European Community. It is unclear whether, in principle, the existence of the latter could offer a

than traditional trade issues, calling into question GATT precedent addressing the latter.<sup>84</sup> Nonetheless, recent WTO authority suggests that such indirect discrimination could result in an actionable MFN claim under TRIPS.<sup>85</sup> In a 2006 decision on the European Community's (EC) regulations on geographical indication (GIs), a WTO panel found that the EC had improperly applied a reciprocity requirement whereby the EC would only protect foreign GIs from countries that offered comparable protection to European GIs.<sup>86</sup> The panel dismissed the EC's objection that the discrimination was based on the location of the GI, not the nationality of the rights-holder, holding that the reciprocity rule clearly inured to the benefit of EC nationals in practice.<sup>87</sup> While the panel reached its analysis under TRIPS' national treatment provision, the same logic would have applied to the MFN claim in that case.<sup>88</sup> Substitute "location of patent office" for "location of GI" and arguably you have the case at hand. One could attempt to distinguish the two cases by arguing that many foreigners do, in practice, routinely apply for British and/or US patents, and thus the *de facto* disadvantage caused by privileging patents from these offices would be less extreme. However, if the grounds for choosing which patent offices get favored are entirely arbitrary then even a slight disadvantage would likely still be actionable.<sup>89</sup>

The safest solution would be to defuse the issue entirely and accept all foreign patents as presumptively valid, as does Samoa.<sup>90</sup> Yet, this would exacerbate the potential for legal uncertainty due to incompatible standards.<sup>91</sup> Patents rejected in one foreign

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defense to an MFN claim under TRIPS. *See generally* UNCTAD-ICTSD: RESOURCE BOOK ON TRIPS AND DEVELOPMENT: AN AUTHORITATIVE AND PRACTICAL GUIDE TO THE TRIPS AGREEMENT 79-82 (2005) [Hereinafter *UNCTAD RESOURCE BOOK*] (discussing possible free trade exception to TRIPS MFN).

<sup>84</sup> *See* Reichman & Lange, *supra* note xx, at 63 ("the MFN clause that applies to knowledge goods under [TRIPS] . . . is not the same MFN clause that . . . applie[s] to trade in tangible goods under the GATT").

<sup>85</sup> The fact that several countries currently award patents on this potentially discriminatory basis offers little assurance that the practice would be upheld. Given the limited number and relatively small size of the countries currently operating selective patent re-registration systems, it has probably not been worth anyone's while to object. That would not be true if the practice spread more widely, especially in light of recent precedent. *See infra* notes xx and accompanying text.

<sup>86</sup> Panel Report, European Communities--Protection of Trademarks and Geographic Indication for Agricultural Products and Foodstuffs, WT/DS174/R (Mar. 15, 2005) [hereinafter "EC-GI case"], ¶7.441. Geographical Indications are a variant of trademarks that protect goods whose "quality, reputation or other characteristic . . . is essentially attributable to [their] geographical origin." *See* TRIPS Article 22.

<sup>87</sup> As the panel pointed out, even though it *was* possible for foreigners to own, e.g., French vineyards that benefit from EC protection and also for Europeans to own foreign GI assets which did not benefit, in practice, the reverse would overwhelmingly be true in both cases. EC-GI case, ¶7.272.

<sup>88</sup> The panel declined to address the MFN claim on judicial economy grounds. *Id.* at 7.716. However, one could easily hypothesize two non-EC nationals, one based in a country which does meet the EC's reciprocity requirement and another in a country which does not. The same discrimination analysis would then apply.

<sup>89</sup> *Cf.* Appellate Body Report, United States--Import Prohibition of Certain Shrimp and Shrimp Products, WT/DS58/AB/R, adopted 6 November 1998, DSR 1998:VII, ¶165-66, 176 ("Shrimp Turtle") (arbitrarily imposing inflexible standard without inquiring into actual conditions prevailing in regulated countries constitutes unlawful discrimination under GATT Article XX).

<sup>90</sup> *See supra* note xx.

<sup>91</sup> *See supra* note xx.

office may have been approved in another.<sup>92</sup> To defuse such conflicts by adopting an all-embracing patentability standard would do more harm than good.

Many countries will also be uncomfortable delegating patentability decisions to less established patent offices whose judgment might prove unreliable. To circumvent the latter concern, countries could accord recognition selectively to patent offices chosen based on objective indicia of institutional competency. For example, accepting only patents granted by patent offices which are accredited as International Search Authorities (ISA) and/or International Preliminary Exam Authorities (IPEA) under the Patent Cooperation Treaty might dispel any inference of discriminatory favoritism. Under WTO precedent, *de facto* discrimination is not actionable where a non-discriminatory objective that serves a legitimate need can be demonstrated.<sup>93</sup> Yet, the problem of incompatible standards would remain.

A country might resolve this latter concern by only recognizing patents issued by countries that enforce compatible standards of patentability. In principle such a rationale could legitimize re-registration schemes based on colonial ties, to the extent that common legal standards are a legacy of colonial rule.<sup>94</sup> However, to avoid an MFN challenge, such countries would probably need to provide a mechanism to review and certify the compatibility of other WTO member state standards on a non-discriminatory basis.<sup>95</sup>

## 2. In-House Review

Unlike Passive Resisters, Substantive Minimalists are unlikely to be willing to cede control over patentability standards to the extent that a registration model requires. Conducting patentability reviews in-house allows such countries to tailor standards to their needs. By enforcing narrow standards of patentability, they can limit economic losses to foreign patent-holders. The capacity for in-house review also makes it easier to conduct opposition proceedings, allowing third parties to challenge patents without incurring the costs and risks of litigation. Such proceedings can serve as a further safeguard against invalid patents and perhaps provide an additional deterrent to prospective applicants.<sup>96</sup>

In-house examinations may also appeal to Nativists because it allows them to build expertise and technical capabilities that can foster indigenous innovation. By assembling a technical staff able to navigate complex patent procedures, a patent office can assist

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<sup>92</sup> Nollf, *supra* note xx, at 146.

<sup>93</sup> See Report of WTO Dispute Settlement Panel, Canada-Patent Protection of Pharmaceutical Products, P4.6 n. 27, WT/DS114/R (March 17, 2000) [hereinafter Canada Pharmaceuticals], ¶7.57-58 ("Article 27 does not prohibit bona fide exemptions to deal with problems that may exist only in certain product areas."). Canada Pharmaceuticals was an Article 27 case but the panel explicitly drew on GATT precedent from MFN and national treatment cases in undertaking its discrimination analysis.

<sup>94</sup> See Dhar & Rao, *supra* note xx, at 11.

<sup>95</sup> Cf. Shrimp Turtle, WT/DS58/AB/R, ¶165-66, 176 (certifying environmental standard met by certain countries while failing to consider comparable regulation by others constituted unjustifiable and arbitrary discrimination).

(certifying environmental standard met by certain countries while failing to consider comparable regulation by others constituted unjustifiable and arbitrary discrimination).

<sup>96</sup> See *infra* notes xx and accompanying text.

local entrepreneurs in patenting their inventions both at home and internationally.<sup>97</sup> A patent office can also function proactively by conducting outreach and education campaigns to educate prospective inventors about the benefits of the patent system,<sup>98</sup> or by contributing to technology incubation programs. More generally, patent offices can serve as conduits for technology transfers to local industries.<sup>99</sup> For example, Peru and Guinea have instituted ambitious programs to mine global patent disclosures to identify useful technologies and disseminate them to local firms.<sup>100</sup>

Accumulating a staff of highly trained patent examiners can yield other collateral benefits. Developing countries often suffer from a “brain drain” whereby highly qualified graduates end up emigrating due to a lack of opportunities at home.<sup>101</sup> A patent office can help to counteract this trend. As one example, Albert Einstein began his career as a technical assistant in the Swiss Patent Office. Unable to find an academic post, he made some of his most important scientific contributions (including publishing his theory of special relativity) while still a civil servant.<sup>102</sup> The professional expertise assembled in a patent office can also assist with policy decisions, e.g. advising government ministries on technical issues. Alternatively, a patent office can rely on outside consultants from government or academia to advise on patent issues, helping to cross-subsidize their retention.<sup>103</sup> Either way, some of this “human capital” will eventually cross over to the private sector, benefiting existing enterprises or starting new ones.

Despite these benefits, developing countries often lack the institutional capacity to conduct patent examinations in-house.<sup>104</sup> Patent applications span a daunting array of

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<sup>97</sup> Some attention will need to be paid to ensure that special assistance to local inventors does not run afoul of national treatment rules prohibiting discrimination against foreigners. However, as a practical matter, many of the measures described here are unlikely to appeal to foreign applicants, who are typically sophisticated multinational companies. Moreover, TRIPS only requires national treatment with respect to “matters affecting the availability, acquisition, scope, maintenance and enforcement of intellectual property rights.” Developing countries can argue that offering strategic consulting to local inventors regarding patent acquisitions as part of a broader “technology incubation” program falls outside this requirement since foreigners can still apply for and enforce their patents on an equal footing.

<sup>98</sup> See Sherwood, *supra* note xx (describing vital “teaching role” played by patent offices in developing countries).

<sup>99</sup> As discussed below, the WPIS service offered by WIPO can assist in this regard as well. See *infra* notes xx and accompanying text. However, local patents offices can serve both as intermediaries and publicists for WPIS’ services.

<sup>100</sup> Conversation with Doris Long, March 23, 2007.

<sup>101</sup> Lehman, *supra* note xx, at 424.

<sup>102</sup> See [http://en.wikipedia.org/wiki/Albert\\_Einstein](http://en.wikipedia.org/wiki/Albert_Einstein).

<sup>103</sup> For example, in Chile, universities are frequently tapped to advice on patents. In Brazil, the Ministry of Health assists in the examination of pharmaceutical patents. Indeed, the very institution of patent examinations was inaugurated by France, relying on its Academy of Science. IPR Commission, *supra* note xx; Sherwood, *supra* note xx; Hon. Bruce A. Lehman, *Addressing the Crises of the Global Patent System*, International Intellectual Property Institute, October, 2004; Duffy, *supra* note xx, at 714.

<sup>104</sup> As Bruce Lehman, former Commissioner of the USPTO, observes:

the number of patent offices capable of effectively searching and examining in all fields of technology is very small. There are only 10 patent offices in the world that qualify as international searching authorities and international preliminary examining authorities under articles 16 and 32 of the Patent Cooperation Treaty. And, most of these office lack comprehensive capability to examine in all technologies.

technical fields and often comprise hundreds of pages of technical specifications. Assessing their validity requires the ability to comb through and evaluate a voluminous and complex scientific literature and render judgments on cutting edge issues of technology.<sup>105</sup> Such reviews can be costly and administratively demanding, requiring access to scientific materials, and sophisticated technical capabilities, all of which will frequently be in short supply.<sup>106</sup> Attempting in-house examinations without adequate resources can lead to flawed or erratic patentability reviews that can cause more problems than they solve. Many developing countries may conclude that they are better off directing their scarce resources to other tasks.

### **3. Outsourcing Examination**

For this reason, most developing countries will choose to outsource some or all of the substantive examination process. To do so means foregoing some ability to control standards of patentability. Therefore, a patent office might choose to do this only with regard to technologies for which it lacks in-house expertise. An office might also outsource only part of the examination process, for example, delegating determinations of novelty and non-obviousness which require time-consuming searches for prior art, while maintaining control over subject matter and utility which may be easier to evaluate internally. In this way, developing countries could reduce the burden and expense of examining patents in-house, while gradually building the capacity to do so in long term.

#### **i. Regional Organization**

One way for developing countries to offload some of the burden of conducting patent examinations is to join together in regional organizations. The WTO's strongly advocated this solution in its Doha Declaration.<sup>107</sup>

Such organizations vary in the extent to which they apply a unitary patent law across all member states.<sup>108</sup> They also differ in the extent to which centralized examinations have displaced national review.<sup>109</sup> OAPI vests exclusive jurisdiction of patentability

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Hon. Bruce A. Lehman, *Addressing the Crises of the Global Patent System*, International Intellectual Property Institute, October, 2004.

<sup>105</sup> IPR Commission, Chapt 7.

<sup>106</sup> *Id.*

<sup>107</sup> Decision of the General Council on Implementation of Paragraph 6 of the Doha Declaration (30 August 2003) (the "Doha Decision"), ¶6(ii) (calling for "the development of systems providing for the grant of regional patents [to] be promoted" and committing "developed country Members . . . to provide technical cooperation" to this end.").

<sup>108</sup> OAPI has fully harmonized the substantive patent law applicable within its member states. By contrast, the European Patent Convention (EPO) and ARIPO's Lusaka Agreement only governs pre-grant proceedings. Gerald Mossinghoff & Vivian Ku, *World Patent System Circa 20XX, A.D.*, 38 IDEA 529, 542-45 (1998). OAPI stands for the Organisation Africaine de la Propriété Intellectuelle, a grouping of twelve former French colonies in West Africa. ARIPO, the African Regional Intellectual Property Organization, is OAPI's equivalent for English-speaking African nations. The European Patent Office (EPO) is the agency established under the aegis of the European Patent Organization, a grouping of 32 countries which include all 27 member states of the European Union plus five others and which administers the European Patent Convention (EPC).

<sup>109</sup> See Mossinghoff & Ku, *supra* note xx, at 54146. In each of these organizations, post-grant interpretation and enforcement of the patents has remained subject to national law. In theory, however, centralized enforcement mechanisms could be also established as well, enabling cost sharing in this respect as well. Indeed, the European Union had taken tentative steps in this direction via its Brussels Convention

determinations in its central administering body, whereas the EPO and Eurasian Patent Convention<sup>110</sup> operate as an alternative to national patenting procedures.<sup>111</sup>

A regional model is flexible enough to be adapted to many different contexts and institutional frameworks and thus could appeal under any of the strategic profiles identified above. Passive minimalists will appreciate the potential to share administrative costs with neighboring states. Affording indigenous inventors access to a broader market base will appeal to Nativists, while Globalists may see regional patent rights as serving to lure foreign companies. This latter prospect can be welcome if it brings investment, but perhaps harmful if it merely encourages foreign rights-holders to file for patents and extract monopoly rents from afar. There are numerous institutional<sup>112</sup> and possibly legal<sup>113</sup> challenges inherent in operating a supranational institution that need to be reckoned with. The main problem with regional organizations, however, is that even by combining efforts, developing countries may lack the ability to effectively conduct patent examinations for truly state-of-the-art technologies.<sup>114</sup> Therefore, such organizations may need recourse to external assistance in at least some cases.

## ii. Patent Cooperation Treaty

Another way to outsource patent examinations is for developing countries to join the Patent Cooperation Treaty (PCT). The PCT is designed to streamline international patent applications, allowing inventors to apply for global patent rights through a single streamlined process. As part of the initial “international phase” of the PCT process, an international search report and preliminary examination opinion are prepared by expert

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until the European Court of Justice ruled against it. See [Case C-4/03, \*Gesellschaft für Antriebstechnik v Lamellen und Kupplungsbau Beteiligungs KG\*, \(European Ct. of Justice 13 July 2006\)](#); [Case C-539/03, \*Roche Nederland BV v Primus\*, \(European Ct. of Justice 13 July 2006\)](#); Mossinghoff & Ku, *supra* note xx, at 539-540.

<sup>110</sup> The Eurasian Patent Convention (EAPC) groups together now-independent states that were formerly republics of the Soviet Union. *Id.* at 545.

<sup>111</sup> *Id.* at 542-545. ARIPO follows a hybrid model whereby centralized examinations govern the issuance of patents unless members opt out on a case-by-case basis, by notifying their intent to deny recognition to specific patents within their territory. *Id.* at 545. Yet, another model can be seen in the cooperation among Andean countries with respect to the International Convention for the Protection of New Varieties of Plants (UPOV) whereby different countries specialize in examinations of different varieties. Sherwood, [37 IDEA], *supra* note xx, at 521.

<sup>112</sup> These include difficulties in agreeing on governance and funding mechanisms, legal standards, institutional locations, official language(s), etc. A threshold level of comfort and trust between the prospective partners is essential to maintain political cooperation despite sources of friction that may arise over the long-term. Political stability can also be a concern. For example, Zimbabwe, the headquarters of ARIPO is currently beset by political and macroeconomic turmoil.

<sup>113</sup> In theory, MFN objections similar to the patent re-registration example discussed below could also arise with respect to procedural advantages offered to regional members over outsiders. For example, the EPC gives preferential treatment to applications filed in languages of its members states vs. foreign languages. Mossinghoff & Ku, *supra* note xx, at 542. While this linguistic preference may be grandfathered under TRIPS Article 4(d), comparable provisions adopted today might not be. See UNCTAD RESOURCE BOOK, 20-21; Hanns Ullrich, *TRIPS: Adequate Protection, Inadequate Trade, Adequate Competition Policy*, 4 Pac. Rim. L. & Pol’y J. 153, 184 n.133 (1995). Given the strong public policy endorsement that regional patent organizations received in the Doha Decision, plus the precedents established by the EPO and other such bodies, such objections are unlikely to be upheld, barring unusual circumstances.

<sup>114</sup> Sherwood [37 IDEA], *supra* note xx, at 528.

staff at some of the world's leading patent offices, based on an in-depth search for and analysis of prior art. These patentability assessments are not binding, but may be relied on by national patent offices during the subsequent "national phase" in which applicants prosecute their claims on a country-by-country basis.

The advantage of relying on PCT preliminary examination reports to determine whether to award a national patent (as opposed to relying on foreign patent proxies under a re-registration scheme) is that developing countries are assured access to the underlying analysis on which the patentability was determined as well as the relevant body of prior art that was considered.<sup>115</sup> This allows them to maintain some control over substantive standards and (at least in theory) depart from the international recommendations in appropriate cases. A drawback of PCT examinations is that there is no provision for reexamination following an amendment of claims or subsequent discovery of prior art. Since the PCT *requires* that applicants be given the opportunity to amend, the former omission, in particular, makes reliance on PCT examinations an incomplete solution.<sup>116</sup>

The PCT offers perhaps the greatest appeal to developing countries embracing a Globalist strategy. Participation in the PCT arguably promotes technology transfer by enabling foreign investors more efficient access to the national patent system. It also makes it easier for indigenous inventors to procure global protection for their innovations, and, for the same reason, may encourage foreign companies to invest in research and development through local subsidiaries. As an added bonus, the PCT discounts its fees for non-corporate applicants from qualifying developing countries.<sup>117</sup>

Most home-grown technologies produced by developed countries, however, are not patented overseas.<sup>118</sup> 95.5% of all PCT applications come from nationals of OECD member countries.<sup>119</sup> Undoubtedly, there is untapped potential that should not be discounted.<sup>120</sup> At present, however, most innovators in developing countries lack the means to patent overseas; by itself, the PCT will do nothing to change that.<sup>121</sup>

Instead, the immediate benefits of PCT participation are likely to redound to foreigner inventors. Joining the PCT greatly reduces the transactional costs for foreigners to obtain patent rights in developing countries. "The PCT was designed to be as applicant-friendly

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<sup>115</sup> While national patents office typically make available the pre-grant "file wrapper" of correspondence between the examiner and applicant that may shed insight on key issues of patentability, this record does not record internal deliberations within the patent office.

<sup>116</sup> Nolf, , *supra* note xx, at 156 (quoting PCT Article 28/41).

<sup>117</sup> Natural (i.e. non-corporate) applicants from countries with annual GDP per capita below \$3000 receive a 75% discount. Unfortunately, the discount only applies to fees during the "international phase" of the PCT process. Applicants must pay full price during the subsequent "national" phase in which they must perfect their patent claims in countries of their choice. Nolf, *supra* note xx, at 147.

<sup>118</sup> WIPO statistics on the top twenty countries ranked by worldwide non-resident patent filings in 2006 include only two developing countries—China and India—ranked at #17 and #20, respectively.

<sup>119</sup> Lehman, *supra* note xx, at 425. Lehman adds that "if you include China and Israel into the mix it goes up to over 99%." *Id.*

<sup>120</sup> Sherwood , *supra* note xx; Lehman, *supra* note xx, at 426 (describing patentable technologies produced by Jamaican university).

<sup>121</sup> Lehman, *supra* note xx, at 426 (advocating a global funding mechanism to enable developing countries meaningful access to the patent systems in developed countries). The ability to patent overseas is only one hurdle that inventors in developing countries must overcome to launch their technologies on the global marketplace. They also need access to venture capital, marketing & distribution channels, etc.

as possible.”<sup>122</sup> It removes much of the guesswork involved in securing global patent rights, by harmonizing procedures and eliminating or minimizing procedural obstacles that often deter foreign applicants such as translation requirements, use of specialized forms, mandatory disclosures, etc., while providing a one-stop-shop for securing global priority.<sup>123</sup> As a result, the share of international patents processed through the PCT has grown steadily in recent decades.

Joining the PCT is therefore likely to mean significantly more foreign patent applications. While increased foreign patent activity can generate additional revenue from patent fees, it comes at a cost. For countries seeking to minimize the economic drain of patent royalties to overseas rights-holders, PCT participation can pose a significant disadvantage. Moreover, the PCT enables inventors to hedge their bets by allowing a 30 month delay after their initial filing before entering national phase,<sup>124</sup> giving applicants time to assess the value and marketability of their inventions before investing in widespread patent procurement. This inventor-friendly rule means that the patents that do go forward are likely to be of higher value than if the applicants had to make such decisions up front, compounding the potential economic losses to foreign patentees.

Finally, while the PCT’s preliminary opinions can significantly reduce examination costs, relying on PCT process as the exclusive basis for patentability decisions may disadvantage indigenous inventors who are only looking for patent protection in their home market, by forcing them to assume added costs of a PCT application. For many developing countries, the costs of the PCT may thus exceed the benefits.<sup>125</sup>

### iii. WIPO’s Patent Information Services (WPIS)

As an alternative to PCT examination reports, WIPO offers a separate patent consulting service exclusively for developing countries. Developing countries can obtain search reports and patentability opinions prepared free of charge by participating developed country patent offices. The opinions only address novelty and non-obviousness, leaving developing countries to assess subject-matter, utility, and enablement requirements on their own.<sup>126</sup> However, several European patent offices provide additional consulting services to developing countries by special arrangement. The advantage of going this route is that it avoids the added exposure to foreign patenting that participating in the PCT entails.<sup>127</sup> And for developing countries that do participate

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<sup>122</sup> Markus Nollf, TRIPS, PCT AND GLOBAL PATENT PROCUREMENT 85 (2001).

<sup>123</sup> Markus Nollf, *The Expanded International Search Procedure: What Will Be the Next Step in View of TRIPS?*, 86 J. PAT. & TRADEMARK OFF. SOC’Y 717, (2004).

<sup>124</sup> *Id.* at 720.

<sup>125</sup> It’s worth noting that developing countries might be able to gain access to PCT preliminary examination reports even without formally participating in the treaty simply by requiring inventors to disclose such reports, where available, when applying for a national patent. TRIPS, Article 29 explicitly permit member states to “require an applicant for a patent to provide information concerning the applicant’s corresponding foreign applications and grants.” Whether such free riding will win them any friends is another matter.

<sup>126</sup> Of special interest to Nativists, WPIS will also prepare reports on the overall “state-of-the-art” in a particular technical field upon request. Such reports can assist research & development efforts independent of patentability issues by allowing individuals or institutions in developing countries to keep abreast of global advances in technology.

<sup>127</sup> IPR Commission, *supra* note xx.

in the PCT, WPIS reports can be used to process patent applications from local inventors who do not want to be burdened with going through the PCT.

### **3. Hybrid Solutions**

Developing countries should consider mixing and matching several of the approaches described above. Countries can be selective as to extent they perform in-house examinations, e.g., relying on external determinations of novelty and nonobviousness, while enforcing specific subject matter restrictions internally. For example, India has a specific rule limiting patents on derivatives of known substances designed to prevent “evergreening” of pharmaceutical patents.<sup>128</sup> Enforcing such restrictions can narrow the categories of eligible patents without requiring full-blown examinations. Some subject-matter restrictions—e.g. bars on software patents—are notoriously hard to define and subject to evasion through creative claims drafting. To guard against such “gaming” of subject matter rules, developing countries should consider comparing ambiguous applications against patents granted on the same underlying technologies elsewhere. To do this, they can take advantage of additional (free) services provided by WPIS to trace the lineage of “patent families” across multiple jurisdictions and provide copies of the relevant documents. A country might also accord presumptive deference to external determinations of validity while reserving the right to exercise independent review.<sup>129</sup> This might enable narrowing of standards in specific contexts that can be identified relatively easily.

### **4. Deferred Examination**

Many developing countries require patent applicants to petition for substantive patentability review as a separate step that occurs after they have filed the initial application. Applicants may be allowed to wait as much as seven years before having their claims examined. They may also be granted provisional patent rights in the interim. Deferred examinations benefit inventors by allowing them to test the waters for their invention in the marketplace before having to incur the full expenses of prosecuting their claims to conclusion. As many initially filed applications do not proceed to the examination stage, the delays also benefit patent offices who are relieved of the burden and expense of conducting the examinations. Deferred examinations thus offer some of the cost-savings of registration systems, without entirely foregoing the quality control assurance of substantive examinations.

As an inventor-friendly procedure, deferred examinations will appeal to Globalists and, to a lesser extent, Nativists. However, for patent skeptics, the cost savings they provide may prove illusory. The savings from filed, but never examined applications

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<sup>128</sup> Under this statutory exclusion, “a new form of a known substance” is not patentable subject-matter unless it results in significantly enhanced efficacy as compared to the original. Janice Mueller, 71-72 (quoting Section 3(d) of the Indian Patents Act, 1970 (2005)). New uses of known substances must also result “in a new product or employ[ ] at least one new reactant.” *Id.* Many developing countries similarly bar patents on isolates of “biological materials found in nature.” Correa, *supra* note xx, at n.109 (citing example of Brazil). *Cf.* Parke-Davis & Co. v. H.K. Mulford Co., 189 F. 95, 103 (C.C.N.Y. 1911) (opposite rule in US).

<sup>129</sup> Several countries operate “modified substantive examination” procedures whereby the results from prior patent examinations in other countries are taken into consideration as part of the review process. *See* Asami, *supra* note xx (citing Australia, Croatia, Singapore, and Malaysia as examples).

have to be balanced against applications that might never be filed at all under the pressure of an earlier deadline. Moreover, as was the case with the PCT's 30-month delay, allowing inventors to wait will also result in more valuable patents being obtained, meaning greater royalty drains to foreigners. Especially for developing countries who opt out of the PCT, it may make sense to force the hands of prospective applicants. By obliging inventors to prosecute their claims separately, ahead of the global curve, such countries may impel the former to forgo their rights, keeping the underlying technology in the public domain.

## 5. Additional Validity Checks

In addition to the examination options discussed above, many developing countries rely on third party oppositions to prompt further reexamination of patentability either pre- or post-grant.<sup>130</sup> Such proceedings can provide a quality control safeguard, and, for patent skeptics, can act as a further deterrent to prospective applicants.<sup>131</sup> Publication of patent applications is the standard means to notify potential opposers, a practice that web technologies can greatly facilitate.<sup>132</sup> Instituting a practice of publishing preliminary opinions and search reports would provide a useful complement that would enable third-parties to make better informed assessments of probable validity, whether or not oppositions are actually filed. Moreover, developing countries might solicit public input even without oppositions by emulating the “open source” patent wiki recently proposed by the USPTO.<sup>133</sup>

A bigger problem, however, is that many developing countries lack local competitors and/or public interest watchdogs who have an interest in challenging improperly issued patents. In many cases, patents will be obtained by foreign rights-holders solely to deter other foreign competitors from entering the market. As such, the patent may never actually be enforced, further limiting the opportunity to litigate its validity. This raises the danger that patents that may have been invalidated in the inventor's home country can live on indefinitely overseas—thanks to Paris Convention's principle of independent rights.<sup>134</sup> Nor is there any international mechanism for alerting developing countries to the fate of corresponding patents comparable to the Madrid Union's “central attack”

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<sup>130</sup> The trend in developed countries has been move away from pre-grant oppositions in favor of post-grant review due to a combination of pressure to harmonize procedures and a desire to eliminate prosecutorial delays. Nancy J. Linck, Kevin T. Kramer and David J. Ball, *A New Patent Examination System for the New Millenium*, 35 Hous. L. Rev. 305, (1998). These reasons may necessarily not translate to developing countries, at least where patent skeptics are concerned. For them, delays and procedural idiosyncrasies serve as useful deterrents.

<sup>131</sup> Opposition proceedings will appeal more readily to Substantive Minimalists than Passive Resisters because they require significant administrative investment. Countries relying on a patent re-registration model, for example, are unlikely to have the technical capacity to conduct reexaminations (although they could potentially outsource the work).

<sup>132</sup> Many patent statutes only require publication in local newspaper. Posting on the web makes the information more widely accessible as well as searchable.

<sup>133</sup> Alan Sipress, *Open Call from the Patent Office*, WASH. POST (March 5, 2007). If they prove viable, such systems could invite global commentary from NGOs, public interest watchdogs, and members of the scientific community. Soliciting input from a broader audience could prove particularly useful for developing countries who may not be able to rely on local competitors to lead oppositions.

<sup>134</sup> See Paris Convention, Article 4bis, quoted *supra* note xx.

procedure for trademarks.<sup>135</sup> As noted, WPIS does offer developing countries a free service to track “patent families” of related applications filed in multiple jurisdictions. Equipped with such information, a developing country could undertake to monitor such “families” for subsequent invalidations. However, to do so would be administratively cumbersome. A simpler solution might require patent-holders to affirmatively disclose any adverse validity determinations with respect to comparable patents as part of their patent maintenance requirements.<sup>136</sup> Such disclosures could then trigger post-grant reexamination.

## B. Fees

### 1. Timing/Distribution

Developing countries should also give careful thought to the structure of patent fees they assess. First, a decision must be reached as to the distribution of fees between the acquisition and maintenance phases of a patent grant.<sup>137</sup> In general, back-loaded fees are considered more inventor-friendly, allowing applicants time to evaluate the market potential of a new technology before they have to invest significant sums in acquiring/maintaining patent rights. This approach may appeal especially to Nativists because developing countries often lack ready access to venture capital to bring products to market. By contrast, front-loaded fees can act as a deterrent to patenting, appealing to skeptics. However, keeping a residual level of maintenance fees assessed throughout the patent’s life is probably worthwhile, even for skeptics, because such fees act as *de facto*, self-executing working requirement that weeds out non-productive patents.<sup>138</sup> In fact, an empirical survey by the present author reveals that a significant number of developing countries have opted for heavily back-loaded fees that increase incrementally over the life of the patent,<sup>139</sup> apparently opting for a pro-inventor structure, even at the risk of forfeiting potential revenues from patents not renewed for the full term.<sup>140</sup>

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<sup>135</sup> Cf. Madrid Agreement Concerning International Registration of Marks of April 14, 1891 (as subsequently revised), Article 6(3)-(4) (requiring notification of trademark invalidity in country of origin leading to cancellation internationally).

<sup>136</sup> Article 29 of TRIPS explicitly permits member states to “require an applicant for a patent to provide information concerning the applicant’s corresponding foreign applications and grants.” Firms that hold multiple patents covering different aspects of the same underlying technology might object to such reporting requirements as overly burdensome. A precise definition of “corresponding” grants would need to be supplied. At minimum, however, where the local patent has been issued on the basis of a specific foreign patent grant, the reporting duty would encompass any adverse decisions with respect to the original foreign patent.

<sup>137</sup> Further variations are possible as to the distribution of fees within these categories. For example, some countries charge separate fees for the initial filing vs. examination phase; some charge per claim, or per page, etc. Some countries assess maintenance fees annually; others (e.g. the US) require payments only at designated intervals. Some have fixed maintenance fees throughout the patent. Others charge fees at incrementally increasing levels. However, such fine tuning lies beyond the scope of this Article. For discussion of an optimal allocation of maintenance fees see Sherwood, *supra* notes xx.

<sup>138</sup> See *id.*

<sup>139</sup> The survey of national practice examined the fee structures of 15 developing country whose patent offices post fee information online. The results are set out below in table form. **[AUTHOR’S NOTE: Word or Excel Table to be Inserted].**

<sup>140</sup> See Linck, Kramer, et. al., *supra* note xx, at 315 (noting that only one third of patents issued in the US are maintained through the third maintenance fees at eleven-and-a-half years). One caveat may be that patents obtained in developing countries likely represent a self-selected subset of the most valuable

## 2. Amount

Apart from the distribution of fees, a decision also needs to be reached as to how much to charge.<sup>141</sup> As noted, setting fees at a high level will deter some prospective applicants and while generating additional revenue from the rest.<sup>142</sup> A country that focused on maximizing revenues would base fees levels on supply and demand, which can be calculated according to standard principles of microeconomics. However, Substantive Minimalists emphasizing deterrence as part of their overall damage control strategy will want to push fees as high as possible.<sup>143</sup> But what might “as high as possible” mean?

Neither TRIPS nor the PCT specify an explicit upper bound on patent fees. TRIPS Article 62(1) only requires that “procedures and formalities” related to the acquisition or maintenance of intellectual property rights be “reasonable.”<sup>144</sup> Article 62(4) further stipulates that such procedures “shall be governed by the general principles set out in paragraph 2 and 3 of Article 41.”<sup>145</sup> These principles include the requirement that procedures be “fair and equitable” and not “unnecessarily . . . costly.”<sup>146</sup> While none of these terms are defined or elaborated upon, they could impose additional restraints beyond the threshold requirement of “reasonableness.” In particular, the reference to “unnecessary” costs might be read as akin to the “not more trade-restrictive than necessary” test applied in other WTO contexts such as health & safety regulations.<sup>147</sup> The latter standard would be significantly more restrictive than one of mere “reasonableness.”

Notably, however, Article 62(4) does not impose these same requirements on “formalities.” Given the hypertextualist approach to treaty interpretation that pervades WTO interpretation, this distinction between formalities and procedures might be significant. WTO panels strive to give each and every term used in a treaty text a distinct meaning. The repetition of “procedures” in both paragraphs of Article 62, juxtaposed with the omission of “formalities” in the second instance could be taken to mean that only the former are subject to the additional restriction. Since patent fees fall more naturally within the plain meaning of the “formalities” than “procedures,”<sup>148</sup> the omission

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technologies to justify global protection. If so, these patents—and pharmaceutical patents in particular—are more likely to be maintained for their full term.

<sup>141</sup> For simplicity, I will henceforth consider fees in terms of the total lifetime costs associated with the patent, i.e. embodying both filing and maintenance fees.

<sup>142</sup> GAO study and other article showing that price is an important factor governing foreign patenting decisions.

<sup>143</sup> Using fees as a deterrent would also be consistent with a Passive Resister strategy since collecting patent fees does not require much administrative effort and provides a cost-free method of resistance.

<sup>144</sup> TRIPS, Article 62(1). Moreover, maximizing fee revenues might prove an illusory gain when the full costs of patent protection are considered.

<sup>145</sup> TRIPS, Article 62(4).

<sup>146</sup> TRIPS, Article 41(2).

<sup>147</sup> See, e.g. Agreement on the Application of Sanitary and Phytosanitary Measures, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1A, Legal Instruments—Results of the Uruguay Round, 33 I.L.M. 1144 (1994), Article 5(6).

<sup>148</sup> Black's Law Dictionary (8th ed. 2004) defines **formality** as follows:

of formalities from Article 62(4) suggests that patent fees are subject only to “reasonableness.”

Regardless of which textual formula is deemed controlling, it remains to be seen how they would be evaluated in practice. “Reasonableness,” “unnecessary costliness,” and “fairness and equity” all denote fairly abstract concepts with overlapping meanings. Because such terms are left undefined by TRIPS, member states would appear to have considerable discretion to reach their own interpretations. In the absence of further guidance, a WTO panel would likely accord considerable deference to their sovereign choices.<sup>149</sup> However, if forced to decide the outer bounds of reasonableness within which such member state discretion must be exercised, the panel would likely consider a broadly similar set of criteria under any of these phrases. Patent fees can be analogized to the rent on a lease—i.e a purchase of a temporary property right.<sup>150</sup> To determine if the rent is “fair” or “reasonable” one might: (1) look at comparable rentals; (2) consider the value received (e.g. square footage, fixtures, conveniences); (3) calculate the landlord’s costs (e.g. purchase price and maintenance); (4) assess the tenant’s ability to pay; or (5) incorporate broader public policy perspectives (e.g. social justice concerns, rent control, urban planning).

A WTO panel could pursue analogous approaches in scrutinizing patent fees.<sup>151</sup> First, to examine “comparables,” a panel is likely to look to existing state practice.<sup>152</sup> So long as a developing country keeps its fees roughly in line with other member states, they are likely to be upheld as “reasonable.” The lifetime cost of acquiring and maintaining a patent varies considerably. For patents issued in the US, Germany, and Japan they range

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1. A small point of practice that, though seemingly unimportant, must usu. be observed to achieve a particular legal result . . . 3. *Copyright. (usu. pl.)* A procedural requirement formerly required before receiving U.S. copyright protection. • Formalities included (1) a copyright notice appearing on the work, (2) actual publication, (3) registration with the Copyright Office, and (4) deposit of the work with the Library of Congress.

Patent fees are directly analogous to the copyright formalities described in the second definition quoted above in that they are formal prerequisite act to obtain the grant of an IP right.

By contrast, law.com ascribes to **procedure** a more general meaning of : “the methods and mechanics of the legal process. These include filing complaints, answers and demurrers; serving documents on the opposition; setting hearings, depositions, motions, petitions, interrogatories; preparing orders; giving notice to the other parties; conduct of trials; and all the rules and laws governing that process.” Furthermore, TRIPS Article 62(4) itself contextualizes the meaning of “procedures” by referring in particular to “administrative revocation and *inter partes* procedures such as opposition, revocation and cancellation,” which fit with this more generic understanding of procedure as elements of legal process rather specific prerequisite acts to obtain a property right.

<sup>149</sup> See generally TRIPS, Article 1 (“Members shall be free to determine the appropriate method of implementing the provisions of this Agreement within their own legal system and practice.”).

<sup>150</sup> One might further analogize acquisition fees to up-front “move-in costs” and maintenance fees to the monthly rental payments.

<sup>151</sup> To justify a given fee structure, a developing country would therefore want to be able to triangulate between each of separate rationales, in order to construct a multiple pronged defense tailored to their particular situation.

<sup>152</sup> Following the Vienna Convention on the Law of Treaties, WTO panels look both at (a) state practice prior to TRIPS as establishing a baseline norm that may have informed the understanding of the drafters, and (b) subsequent state practice in implementing TRIPS’ requirements, to the extent it reveals an international consensus as to the scope of specific obligations. See *Canada Pharmaceuticals*; Vienna Convention on the Law of Treaties, 1155 U.N.T.S. 331 (May 23, 1969), Art. 31(3)(b); Art. 32.

from roughly \$15,000 to \$30,000.<sup>153</sup> Such fee comparisons would likely provide the strongest determinant of “reasonableness.” By this standard, most developing countries charge much less than they theoretically could: A survey by the present author of 15 developing countries found lifetime patent fees ranging from \$\_\_\_ to \$\_\_\_, with an average of \$\_\_\_. Patent skeptics among them should consider substantially raising their fees.

Prospective patentees might object, however, that patent rights in developing countries are worth less than rights in developed markets, thus demanding a lower ceiling on fees. The preamble to TRIPS “recogniz[es] that intellectual property rights are private rights.”<sup>154</sup> Arguably, reasonableness of fees could therefore be evaluated from the applicant’s perspective in terms of value received.<sup>155</sup> The economic value of a patent right can be quantified in market terms,<sup>156</sup> and, in practice, patent holders do weigh such cost-benefit analyses when making foreign patenting decisions.<sup>157</sup> A small, poor country that charged disproportionately high fees would arguably upset this implicit fee-to-value balancing principle.<sup>158</sup> Indeed, taken to an extreme, adopting fee levels that forced patent applicants to purchase their monopoly rights at their full market value would nullify the benefit of having a patent and destroy the underlying incentive to innovate.<sup>159</sup> Of course, the value of such rights will vary according to the individual patent which could, in theory, dictate different upper bounds in different cases. In practice, however, an individualized approach to fee levels would prove unmanageable.<sup>160</sup> Despite WTO precedent considering limitations on patent rights on a case-by-case basis in an Article 30

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<sup>153</sup> See US General Accounting Office's June 2003 study "International Trade: Experts' Advice for Small Businesses Seeking Foreign Patents" (GAO-03-910), pp. 41-52.

<sup>154</sup> TRIPS preamble, 4<sup>th</sup> recitation. The significance of this language is likely to be contested. Accounts of TRIPS’ legislative history suggests that the reference to “private rights” was inserted only to emphasize that governments would not be directly responsible for prosecuting infringements. See UNCTAD RESOURCE BOOK, at 11 & n.21. If so, it is unlikely to be read as bolstering IP rights.

<sup>155</sup> Cf. Dreyfuss/Lowenfeld article arguing for “reliance” interests to be judged from private rights-holder perspective when interpreting TRIPS in a different context (non-violation nullification and impairment).

<sup>156</sup> Economists could calculate the value of such monopoly rights directly. They can also look to licensing agreements for a market-determined price. There are other strategic benefits to patenting beyond the market value of the rights—e.g. helping to secure financing or deter competitors. However, market value should serve as a useful first approximation.

<sup>157</sup> Consider market size vs. fees – only proceed if net profit.

<sup>158</sup> In this context, a panel might also look to TRIPS Article 7, which calls for the protection of IP rights to “contribute to. . . a balance of rights and obligations.” Since Article 7 sets out the objectives of TRIPS, its focus on balancing rights and obligations would likely inform the textual references to “fair and equitable” and “reasonable” procedures in Articles 41 and 62. See Vienna Convention, Art. 31(1) (treaty language should be construed according to the treaty’s goals).

<sup>159</sup> Such nullification would go against Article 7, which posits “the promotion of technological innovation” as one of the goals of IP protection.

<sup>160</sup> A patent office cannot reasonably predict the value of prospective patent applications. Indeed, many patents turn out to be entirely worthless (aside perhaps from ego gratification for the inventor), which would mean, as to these patents, *any* fees whatsoever would have to be deemed disproportionate. Nor can a patent office discriminate by technology without violating TRIPS Article 27. Unsurprisingly, established state practice is to have uniform fee levels, with the only variation being based on applicant entity size. See *infra* note xxx.

context,<sup>161</sup> a panel assessing fee-to-value proportionality would almost certainly apply this test to *average* patent values viewed in aggregate.

In any event, developing countries should not concede the applicant's "fee value" perspective as the arbiter of fee reasonableness. Instead, they could justify higher fees as necessary to recover the underlying expenses of their patent system (i.e. the "landlord cost" perspective). The textual injunction against "*unnecessary costliness*" in Article 62(4)/Article 41, in particular, strongly suggests such a basis for appraising fees. "Necessary" costs would certainly include staff time and administrative costs to process a patent application.<sup>162</sup> Additional pro rata allocations might be made to cover the fixed costs of operating a patent office.<sup>163</sup> More creatively, commentators have suggested that a country could tack on additional amounts to pay for enforcement of patent rights, including judicial time spent on patent disputes and border control mechanisms to impound infringing imports.<sup>164</sup> Perhaps even the initial start-up costs in establishing a patent system and training staff could be recovered as a component of fees amortized over a chosen time period.<sup>165</sup> Assuming a panel were willing to indulge such expansive accounting, applicants could be forced to fully internalize a "fair and equitable" share of the administrative costs associated with their patent grant.<sup>166</sup>

At some point, however, a panel is likely to draw the line at attempts to force patent holders to pay for overly ambitious or extravagant investments in governance.<sup>167</sup> Conversely, a cost recovery model might not stand as the ceiling on fees charged by lower-cost patent operations either. Traditionally, many countries have operated patent and trademark offices as profit centers, with revenues greatly exceeding costs.<sup>168</sup> Such well-established state practice suggests that—to the extent "*unnecessary costliness*" does

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<sup>161</sup> Cf. Canada Pharmaceuticals case, ¶7.37 (stating that "[e]ach exception must be evaluated with regard to its impact on each affected patent, independently"). Article 30 allows derogations from TRIPS' patent mandate to the extent they fall within its "limited exception" requirements.

<sup>162</sup> Note that countries that perform patent examinations "in house" will be in the stronger position to justify high fees under such a cost recovery approach.

<sup>163</sup> Patent fees can contribute to building technical and administrative capacity, which in turn serve to justify higher fees.

<sup>164</sup> Heald, *supra* note xx, at 284. Maintenance fees could be conceptualized as corresponding to enforcement costs, with acquisition fees linked to examination costs. However, one doubts whether a WTO panel would insist on such linkages, without a textual basis to do in TRIPS.

<sup>165</sup> Cf. Maskus, *supra* note xx, at (detailing start-up costs).

<sup>166</sup> Cf. Jerome H. Reichman & David Lange, *Bargaining Around the TRIPS Agreement*, suggesting such a fee-for-service approach be implemented on a case-by-case basis.

<sup>167</sup> TRIPS Article 67 would likely figure in this debate. Article 67 commits developed country members to provide technical and financial assistance to help developing countries establish and enforce systems for IP right protection. This could cut two ways. One could read this as evincing a general policy commitment to easing the burdens borne by developing countries, which would support an analogous position on fees. Or one could view Article 67 as embodying a commitment exclusively by *governments* to provide the needed assistance, thus obviating the need for private firms to contribute and perhaps preventing such an obligation from being unilaterally imposed. See Article 67 (referring to cooperation "on *mutually agreed* terms and conditions") (emphasis added).

<sup>168</sup> IPR Commission, Chapt. 7. US government, for example, diverts about 10% of PTO fees annually to the general treasury. Note, however, an expansive "full internalization" approach including enforcement costs (assuming a panel were willing to countenance it) would yield significantly higher expenses calculations than are reflected in such profitability accounting. If so, a cost recovery rationale might still present the strongest basis to justify high fees.

apply to fees—it was not intended to be judged solely on the basis of input costs. Indeed, when WTO treaty drafters have intended to impose such a concrete limitation, they have elsewhere been explicit in saying so.<sup>169</sup> Patent fees arguably serve a broader function than merely defraying expenses. They represent an important policy lever regulating the dispensation of monopoly rights and ensuring that such rights are put to productive economic use.<sup>170</sup> The “necessity” of a given fee level might also be viewed on this broader, normative dimension.<sup>171</sup>

Developing countries could advance arguments based on social justice rationales as an implicit counter to “fee balancing” from the rights-holder perspective. Although TRIPS’ preamble recognizes that IP rights are “private,” it also “recogniz[es] the underlying public policy objectives of national systems for the protection of intellectual property, including developmental and technological objectives.”<sup>172</sup> Such a broader policy perspectives are echoed in Article 7 which posits the objectives of TRIPS as including “the *transfer and dissemination of technology*, to the *mutual advantage* of producers and users of technological knowledge and *in a manner conducive to social and economic welfare*.”<sup>173</sup> One could argue that high fees serves these objectives. Fees serve as a deterrent to patenting, thereby facilitating the transfer and dissemination of unpatented technologies.<sup>174</sup> Patent fees can also be used to build technical capacity and improve governance, contributing to the “mutual advantage” of producers and users contemplated by Article 7. Forcing patent holders to partly compensate for the dead weight losses their monopoly rights create arguably ensures a “balance of rights and obligations.” Moreover, minimizing the drain of royalties from poor countries to rich ones could be consistent with a global reckoning of “social and economic welfare.”<sup>175</sup> Therefore, developing countries can plausibly make the case that to be “fair and equitable,” fees should be evaluated against this broader social justice backdrop and in tandem with other TRIPS/WTO provisions evincing special concern for developing nations.<sup>176</sup> As poor, underdeveloped, net importers of intellectual property, developing

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<sup>169</sup> See GATT Article VIII(1)(a) (“All fees and charges . . . shall be limited in amount to the approximate cost of services rendered and shall not represent . . . a taxation . . . for fiscal purposes.”). GATT was the multilaterally trade agreement that preceded the WTO and was incorporated by the latter. Because TRIPS was adopted as an annex to the same WTO Agreement that incorporate GATT, a WTO panels is likely to read the two texts *in pari materia*.

<sup>170</sup> See Sherwood, (on maintenance fees serving as the functional equivalent of a “working requirement.”).

<sup>171</sup> Cf. *Canada Pharmaceuticals* (construing patent language in TRIPS as embodying a dual-standard, both an empirical and normative).

<sup>172</sup> TRIPS preamble, 5<sup>th</sup> recitation. Cf. Vienna Convention, Art. 31(2) (stipulating that relevant context for treaty interpretation includes preamble as well as text).

<sup>173</sup> TRIPS, Art. 7 (emphasis added). As noted, under the Vienna Convention on treaty interpretation, TRIPS’ “objectives” set out in Article 7 would inform a reading of Articles 41 and 62. See *supra* note xx.

<sup>174</sup> One could counter that high fees will inhibit transfer of proprietary technologies. However, foreign companies investing directly in local production are much less likely to be deterred by an increase in patent fees (which would represent a small fraction of their total investment) as compared to absentee rights-holders looking to maximize the marginal gains of their global rent extraction, balanced against the incremental costs of worldwide patent procurement.

<sup>175</sup> See Barton, in 7 J. Int’l Econ. L. 341, 345 (describing “inequitable allocation of cost of research” born by developing world).

<sup>176</sup> Reichman, *supra* note xx, at 40-41; Maggie Chon, *Intellectual Property And The Development Divide*, 27 Cardozo L. Rev. 2821, 2905-06 (2006). TRIPS contains a number of provisions that acknowledge the “special needs” of developing and least developed countries. See TRIPS preamble, 5<sup>th</sup>-6<sup>th</sup> recit., Article 7,

countries could conceivably justify imposing higher fees than rich countries in order to shift some of the economic burdens of global IP protection from “producers” to “users” per Article 7’s balancing of rights and obligations.

That said, there are reasons independent of TRIPS’ legal constraints for a country to exercise restraint in the fees it charges. First, some might worry that setting fees too high may deter foreign investors, although one may doubt whether patent fees play much of a role in investment decisions.<sup>177</sup> Second, relying on patent fees too heavily as a revenue source may lead to an unhealthy dependency and risks the institutional capture of patent offices by their multinational clients.<sup>178</sup> A further concern—of special interest to Nativists—is a risk that high patent fees will discourage indigenous inventors.<sup>179</sup>

### 3. Tiered Rates

The obvious solution to this latter concern—charging lower prices for locals than foreigners—would run afoul of national treatment rules in both TRIPS and the Paris Convention that prevent countries from discriminating by nationality.<sup>180</sup> But could a country justify discriminating in favor of applicants from developing countries generally based on their reduced ability to pay? One might read into the “fair and equitable” and “balancing of rights and obligations” language discussed above a concern over the applicants’ ability to pay, introducing a kind of implicit means testing into assessments of fee “reasonableness”? As noted, the Patent Cooperation Treaty gives substantial discounts to applicants from developing countries. However, such tiered pricing is not mirrored in member state practice at the national level. Moreover, preferential treatment of developing countries would likely violate TRIPS’ MFN provision.<sup>181</sup> However

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Article 8, and Articles 66-67. Moreover, TRIPS arguably should be read against the larger backdrop of GATT/WTO treaty law which reinforces these pro-development values. *See, e.g.* WTO preamble, 2d recit. (recognizing the “need for positive efforts” to benefit developing countries). Whether a TRIPS panel would be willing to imply a generalized “special and differential treatment” principle out of these combined provisions is open to debate. *See* Reichman, at 41-42 (arguing that “vestiges of [GATT’s] ‘two-tiered’ regime have been incorporated into the TRIPS Agreement, in a kind of ‘invisible ink’ that will become more legible over time”).

<sup>177</sup> *See supra* note xx.

<sup>178</sup> *See* Reichman, *supra* note xx, at 29 [Fair Followers] (calling for states to “resist the temptation to treat intellectual property services as a ‘cash cow,’ which leads to the rubber-stamping of foreign applications”); PETER DRAHOS & JOHN BRAITHWAITE, INFORMATION FEUDALISM: WHO OWNS THE KNOWLEDGE ECONOMY? 204-05 (2002) (relating anecdotal evidence of multinational companies exerting undue influence over newly-fledged patent offices). Sherwood also cautions that countries that treat patent offices as revenue sources for the general treasury often fail to reinvest adequately in patent administration. Sherwood, *supra* note xx [37 IDEA], at 523.

<sup>179</sup> Sherwood, *supra* note xx.

<sup>180</sup> *See* TRIPS, Article 3; Paris Convention, Article 2.

<sup>181</sup> TRIPS Article 4. One might argue that “affirmative action” in favor of poor countries should not constitute discrimination. *See* Maggie Chon, *supra* note xx, at 2885 (arguing for a “substantive equality” principle in TRIPS that would display special concern for the needs of developing countries). However, unlike GATT which explicitly recognizes the need for preferential treatment of developing countries (see GATT Article XXXVI) and has specifically waived MFN rules for this purpose, TRIPS has no comparable “special and differential treatment” principle. *See* Reichman & Lange, *supra* note xx, at 40-41. WTO Panels thus far have proven unwilling to allow social policy rationales to override antidiscrimination norms. *See Canada Pharmaceuticals*, ¶7.92 (rejecting reliance on Art. 7 & 8 to evade TRIPS’ bar on patent subject-matter discrimination in Article 27).

desirable such tiered pricing might appear normatively, a WTO panel is thus unlikely to sanction it overtly under TRIPS.

To get around this obstacle, some countries establish a tiered system of fees tied to entity status/size whereby individuals and/or small business applicants get a discount, while large multinational companies pay full price.<sup>182</sup> Indeed, such tiered pricing has long been practiced in the US, where it is justified as ensuring equal access for small inventors to protect their innovations.<sup>183</sup> For developing countries, however, the advantage of tiered pricing is that small entities will be primarily local and big ones overwhelmingly foreign, resulting in *de facto* price discrimination that can tax and deter foreign applicants through high prices without disadvantaging local ones.

Given this disparity, it is perhaps surprising that more developing countries have not adopted tiered pricing. Of the 15 developing country patent offices surveyed, less than half presently offer some form of tiered fee pricing. Of these, most restrict the discounted rates to natural persons—meaning corporations based in developing countries would be ineligible.<sup>184</sup> One limitation is that indirect discrimination is still vulnerable to national treatment/MFN objections. Some degree of discounts for small businesses can probably be defended, per the US example, as a legitimate practice that accords with TRIPS’ broader purpose of encouraging innovation.<sup>185</sup> However, the more extreme the disparity, the more likely that a WTO panel would condemn the disparity as a mere pretext for nationality discrimination.<sup>186</sup> This places developing countries who want to use fees as a deterrent in a difficult position. To charge foreign multinationals fees close to the upper bound of “reasonableness,” they may end up pricing out local inventors even after granting them the largest discount they could plausibly justify.<sup>187</sup>

#### 4. Subsidizing Locals

One way to avoid this dilemma is to rely on a subsidy scheme to offset some of the costs born by locals. WTO/GATT rules on national treatment contain an exemption for subsidies to producers.<sup>188</sup> However, TRIPS contains its own separate national treatment rule. Whether this exception has been implicitly incorporated into the latter is

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<sup>182</sup> Sherwood, *supra* note xx; IPR Commission, chapt 7.

<sup>183</sup> See GAO study, *supra* note xx, at 41.

<sup>184</sup> The Philippines was the only country surveyed to structure its lower tier explicitly as a “small entity” discount. The other countries offer reduced fees either to “natural persons” or else, even more restrictively, to the “original inventor.” Such restrictive criteria arguably hampers the ability of local entrepreneurs to commercialize indigenous innovations by raising capital through incorporation.

<sup>185</sup> As noted, *de facto* discrimination is not actionable where a legitimate objective purpose can be shown. See *supra* notes xx and accompanying text.

<sup>186</sup> Cf. Chile—Taxes on Alcoholic Beverages, WT/DS871/AB/R and WT/DS110/AB/R (adopted 12 January 2000), ¶52-53 (extreme disparity in tax treatment structured so as to accord *de facto* preference to domestic alcohol constituted unlawful discrimination); *Canada Pharmaceuticals*, ¶7.104-05 (*de facto* discrimination actionable where rationale for differentiating between patents amounts to sham).

<sup>187</sup> The relatively low fees charged even by developing countries with tiered rates suggests that countries are erring on the side of inclusiveness. Combined with back-loaded fee structures, the result is relatively inventor-friendly fee structure consistent with a Nativist or Globalist profile. One wonders, however, to what extent such policy choices may have been influenced by outside advice; e.g. “technical assistance” from rich countries leading developing nations to adopt policies that cut against their national interest.

<sup>188</sup> See GATT, Article III(8)(b).

debatable.<sup>189</sup> Merely repackaging discriminatory prices as a “subsidy” would therefore be unwise. Instead, a developing country should implement a broader research subsidy program of which funding to secure IP rights locally and—just as importantly—internationally<sup>190</sup> would comprise but one component.<sup>191</sup> Such a subsidy program would be consistent with the broader vision of patent offices as catalysts for technology incubation described above.<sup>192</sup>

To be sure, subsidies are themselves subject to GATT discipline. Yet, unless they are made contingent on exports or the use of domestic content, such generalized assistance is likely not actionable.<sup>193</sup> The WTO subsidies code only governs benefits directed at specific industries. To justify a remedy, an aggrieved member state must demonstrate both that the subsidy is “specific” and that it has caused significant competitive harm to an identifiable industry of the complainant. Even assuming specificity could be established, most firms in developing countries do not actively compete in global markets and are thus unlikely to generate such competitive harms. It also may be difficult to establish a causal link between such generalized research subsidies and competitive advantage gained in the marketplace. Moreover, the subsidies code allows for fairly generous *de minimis* exceptions in the case of developing countries.<sup>194</sup>

## 5. Ancillary Service Charges

Finally, it is worth noting that patent offices in Europe and elsewhere require use of (and charge separate fees for) local translators and patent agents, which can substantially increase the total costs of patenting, acting as a further deterrent to foreign applicants and a source of revenues for the local economy.<sup>195</sup> To secure maximum protection, patents issued under the European Patent Convention must be translated into at least 28 different languages, including such obscure tongues as Estonian and Irish (Gaelic).<sup>196</sup> Developing countries—especially those with more than one official language—should consider

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<sup>189</sup> The TRIPS Agreement was adopted as an annex to the overall WTO *acquis*, and WTO panels traditionally have read such agreements *in pari materia* with the existing body of GATT rules. *See, e.g.* Argentina—Safeguard Measure on Imports of Footwear, WT/DS121/AB/R (adopted January 12, 2000). Such cases did so, however, in construing codes that elaborated upon and incorporated by reference specific GATT provisions. While the TRIPS’ preamble does refer generally to “recognizing the basic principles of GATT 1994,” its national treatment provision (Article 3) itself does not reference its GATT counterpart, Article III. Instead, Article III references the national treatment provisions in preexisting international IP conventions such as the Paris and Berne Conventions, underlying the conceptual distinctions between IP and international trade that might make a panel might be less willing to draw interpretive link across these separate domains.

<sup>190</sup> *See supra* notes xx and accompanying text.

<sup>191</sup> To push the envelope a step further, a developing country might also allocate the costs of such research subsidies as part of the expense to be recaptured through patent fees, relying on an Article 7 “mutual advantage” rationale to justify such revenue redistributions.

<sup>192</sup> *See supra* notes xx and accompanying text.

<sup>193</sup> So-called “red light” subsidies linked to exports or domestic content are per se invalid. *See* WTO Subsidy Code.

<sup>194</sup> *Id.* at xx.

<sup>195</sup> Heald, *supra* note xx, at 284.

<sup>196</sup> Translation requirements apply on a country-specific basis for each member state in which European patent protection is being sought. In most cases, translation of the entire patent specification and claims are required. Samson Helfgott, *Why Must Filing in Europe Be So Costly*, 76 *J. Pat. & Trademark Off. Soc’y* 787, (1994).

adopting similar requirements to further boost the cost of patent applications. Such requirements will likely disadvantage foreign applicants more than locals, appealing to patent skeptics and Nativists. Yet, their well-established precedent in state practice probably immunizes them from national treatment objections.

### C. Alternative Protection Models

The desire to discriminate between foreign patents and indigenous innovation is not limited to fees. Nativists will be similarly conflicted when it comes to setting substantive patentability standards. Setting a high threshold standard of nonobviousness, for example, can limit the number of foreign patents granted. India offers an apparent example of such a “nonobviousness-plus standard.”<sup>197</sup> Yet, doing so is likely to harm local innovators who may even be less capable of the fundamental inventive leaps contemplated under such a standard.<sup>198</sup> Developing countries may therefore be drawn toward a lower standard that would accommodate the sort of incremental improvements that their local industries typically produce.

To avoid such Hobbesian choices, developing countries should consider alternative protection models that can operate independently of the patent system to meet the needs of indigenous inventors.<sup>199</sup> Such models have a long pedigree; whether labeled as “petty patents,” “utility models,” or *sui generis* schemes, they continue to be widely used today even in developed countries.<sup>200</sup> Such regimes typically have relaxed inventiveness requirements, sometimes requiring only that an invention be “novel” (even if obvious). They usually operate on a registration basis, thus dispensing with the need to conduct *ex-ante* examinations. In return, the term of protection is typically shorter and the scope of the rights are less extensive.<sup>201</sup>

The benefits of “second tier” patent protection have been much debated by commentators. Some scholars argue that utility models can play an important role in facilitating development.<sup>202</sup> Others contend that a reduced inventiveness threshold can lead to an unhealthy proliferation of rights that blocks innovation by second-comers.<sup>203</sup> Rather than addressing the substantive merits of this debate, my purpose here is merely to

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<sup>197</sup> See Mueller, *supra* note xx, at 87.

<sup>198</sup> *Id.* at 88.

<sup>199</sup> See Maskus, *supra* note xx, at 479.

<sup>200</sup> See generally Mark D. Janis, *Second Tier Patent Protection*, 40 HARV. INT’L L. J. 151 (1999).

Traditionally, utility model protection was limited to three-dimensional industrial designs (as the word “model” suggests). However, such subject-matter restrictions have increasingly been dropped. At the same time, there is an opposing trend toward even more narrow subject-matter-specific *sui generis* schemes. Even the US, which lacks a general utility model scheme, have enacted several recent forms of *sui generis* protection. See Heald, *supra* note xx, at 270; Oddi, *supra* note xx, at 834-35.

<sup>201</sup> See Janis, *supra* note xx, at 158-176.

<sup>202</sup> See Maskus, *supra* note xx, at 479 (describing how utility models in Brazil “helped domestic producers gain a significant share of the farm-machinery market by encouraging adaption of foreign technologies to local conditions” and in Thailand led to similar “adaptive invention of rice threshers”); *id.* at 479 n.14 (describing how postwar Japanese development relied on adaptive innovation to work around foreign patent claims and leveraged incremental improvements protected by utility models to gain access to imported technologies through cross-licensing).

<sup>203</sup> Janis, *supra* note xx, at 212 (citing Reichmann, *Of Green Tulips and Legal Kudzu*). To address such problems, some commentators have proposed limiting the remedies under such schemes to a liability rule rather than a property rights model (i.e. awarding royalties but not injunctions). *Id.*

observe how consideration of such alternative models can complement the institutional and procedural choices discussed above.

Relying on a “second tier” scheme tailored to indigenous inventors, to some extent, can enable developing countries to have it both ways. Just as tiered system of fees maximizes income from foreigners without disadvantaging locals, similarly, providing second tier protection to local innovations reduces the concern over restricting access to the regular patent system. As such, the second tier serves as a kind of hedge.<sup>204</sup> Developing countries can enact deterrents against foreign patents—jacking up fees, tightening patentability standards—or employ cost saving procedures, e.g. re-registering foreign patents—all without causing adverse impacts on indigenous innovation. For developing countries that already have an emergent technology base, a system of utility models combined with early disclosure of patent applications and a narrow interpretation of claims can itself serve as a hedge against foreign patent power by allowing local firms to “invent around” foreign innovation, locking in claims to incremental improvements.<sup>205</sup> Japan is often cited as an example of successful use of such “flooding” techniques to gain leverage in negotiating cross-licenses.<sup>206</sup>

A further advantage of relying on second tier protection models is that they may not be subject to the restrictions that TRIPS imposes on patents.<sup>207</sup> For example, TRIPS restricts the issuance of compulsory licenses for use of “dependency” patents (whereby a second patent is based on improvements on an existing patent and cannot be exploited without infringing the first patent). TRIPS requires that the second patent “involve an important technical advance of considerable economic significance” for the license to be granted.<sup>208</sup> However, read literally, the restriction applies only to blocking *patents*. A compulsory license to benefit the holder of a utility model would, on its face, seem unencumbered by the restriction. While it is possible a WTO panel could be persuaded to extend TRIPS’ disciplines to subpatentable rights as well, this approach would go against the plain language of the treaty.<sup>209</sup>

Similarly, subject-matter discrimination with respect to patents is forbidden under TRIPS Article 27; yet, this restriction does not apply to *sui generis* schemes. Developing

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<sup>204</sup> Janis, *supra* note xx at 196.

<sup>205</sup> 1999 paper cited in Maskus, *supra* note xx, at 479 n.14.

<sup>206</sup> See Sri K. Sankaran, *Patent Flooding in the United States and Japan*, 40 IDEA 393 (2000).

<sup>207</sup> See *infra* note xx.

<sup>208</sup> TRIPS Article 31(k).

<sup>209</sup> There is some ambiguity in the usage of “patent” in TRIPS Article 27 that could support an expansive meaning. See Nolff, *supra* note xx, at 52 (reference to plant patents in Article 27(30)(b) suggests that “patents” could mean more than “utility patents”). The PCT defines patents to have this broader meaning, and arguably TRIPS should be read to be consistent. On the other hand, the Paris Convention does make a textual distinction between “patents” and “utility models.” Given that TRIPS explicitly incorporates the Paris Convention, arguably its definitions should control. See Vienna Convention, Art 30; UNCTAD RESOURCE BOOK, at 48. International treaties are generally subject to a rule of strict construction: Without explicit indication to the contrary, a country should not be presumed to have encumbered its sovereign rights. To be on the safe side, however, developing countries may want to fashion *sui generis* protection schemes that fall outside any recognized patent model or, at least, are not labeled as such. Cf. S.M. Stewart, INTERNATIONAL COPYRIGHT AND NEIGHBORING RIGHTS, 2d. ed. 39-43 (1989) (suggesting that national treatment obligation under Berne Convention turns on formal designation as “copyright” provision under national law).

countries are free to tailor their second tier schemes around particular industries where local innovators have a comparative advantage. They may also focus on sectors where development of technology will reap the most immediate benefits, e.g. agriculture.<sup>210</sup> Recourse to local expertise in such technologies will also alleviate some of the burdens of administering such schemes.<sup>211</sup> Subject-matter tailoring also reduces the concern that foreign inventors, too, might exploit the second tier, giving rise to a destructive “anti-commons” in which the public domain becomes ensnared in a utility model “thicket.”<sup>212</sup>

An even more direct way of keeping foreigners from entering the second tier would be condition access on reciprocity. Arguably, TRIPS’ national treatment rules apply only to the specific intellectual property rights specified in the treaty, leaving countries free to discriminate with respect to *sui generis* IP regimes.<sup>213</sup> Overtly preferential treatment might violate the Paris Convention’s broader national treatment principle.<sup>214</sup> Yet, both the United States and the European Community have established precedents for enforcing reciprocity requirements with respect to *sui generis* IP regimes, however contrary to the spirit of national treatment such restrictions may be.<sup>215</sup> Developing countries should feel no compunction about doing the same.

### III. Conclusion

Implementing TRIPS’ patent mandate presents developing countries with a complex array of policy decisions to be made. How they ultimately choose from the menu of options before them will depend on the underlying calculus of costs and benefits that such countries perceive in patent protection. However, by making creative use of the flexibilities that TRIPS allows and by thinking strategically across all facets of patent system design (including alternative protection models), developing countries can potentially turn patent protection to their advantage. Rather than bemoaning TRIPS’ mandate as a purely negative burden imposed upon them for the benefit of outsiders, such countries should look to capture the pro-development possibilities that patent systems can offer, while minimizing the harmful side effects.

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<sup>210</sup> See Sherwood [37 IDEA], *supra* note xx, at 491.

<sup>211</sup> See *id.* (describing how *sui generis* plant protection registries are often housed within a ministry of agriculture or the agricultural division of a public university).

<sup>212</sup> See J.H.Reichman, *Of Green Tulips and Legal Kudzu: Repackaging Rights in Subpatentable Innovation*, 53 Vand. L. Rev. 1743, 1776 (2000); Janis, *supra* note xx, at 188. See generally Michael Heller & Rebecca Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, 280 Science 698 (1998).

<sup>213</sup> TRIPS Article 3 requires national treatment with regard to “intellectual property,” a term defined in Article 1 as restricted to the “categories of intellectual property” covered in TRIPS itself.

<sup>214</sup> Article 2 of the Paris Convention sets out a national treatment rule that covers utility models, as well other forms of industrial property “understood in the broadest sense.” However, the Paris Convention lacks any enforcement mechanism except in so far it has been incorporated into TRIPS, and TRIPS’ national treatment provision (Article 2) incorporates Paris Convention Article 2 only “in respect of” the subject-matter contained in TRIPS itself, presenting a difficult interpretive question as to the scope of this obligation. See UNITED STATES – SECTION 211 OMNIBUS APPROPRIATIONS ACT OF 1998 (“Havana Club”), AB-2001-7, WT/DS176/AB/R, Report of the WTO Appellate Body (2 January 2002) (addressing TRIPS’ incorporation of Paris Convention Article 8); UNCTAD RESOURCE BOOK, at 48-54.

<sup>215</sup> See Oddi, *supra* note xx, at 874.

For many developing countries, operating a patent system remain a novelty, and further experimentation is doubtless needed before definitive conclusions can be reached as to the pros and cons of particular strategies. Interestingly, this process of experimentation comes at a time at which rich countries themselves are rethinking many aspects of their established patent systems.<sup>216</sup> While these two trends are not necessarily moving in parallel,<sup>217</sup> they do offer the potential for overlapping insights and innovations from which all sides can learn. Let a hundred flowers bloom . . . .

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<sup>216</sup> See, e.g. Asami, *supra* note xx; Linck, *et. al.*, *supra* note xx; Lemley, *supra* note xx; Patent Office Pushes Changes to Trim Huge Backlog, National Law Journal, at 1,13 (November 13, 2006).

<sup>217</sup> Patent reform proposals in the developed world focus primarily on coping with an ever rising flood on patent applications, as well as adapting the challenges of new technologies and preparing for substantive harmonization of international standards. See Asami, *supra* note xx. Developing countries are likely to have a very different agenda. See generally Kamperman Sanders, *supra* note xx, at xx (discussing “Development Agenda” at WIPO and related WTO initiatives).