BOOK REVIEW: PATENT AND TRADE DISPARITIES IN DEVELOPING COUNTRIES
BY SRIVIDHYA RAGAVAN
Oxford University Press, USA [Hardcover] [2012]

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I. INTRODUCTION

The dialectics of development policy debate today is centre on knowledge protection versus access to knowledge. Although ‘knowledge’ is conceptually a global public good, the harsh realities of markets as a socio-economic and political phenomenon demand certain policy and legal instruments in order to safeguard the constant process of knowledge creation and diffusion. Property is one such instrument. This property paradigm in ideational ‘things’ (i.e. the intellectual property system) has been extended universally through the global trade-based regime called the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS Agreement), and is being pursued through a binding remedial system within the World Trade Organization’s Dispute Settlement Understanding (DSU). Since the dawn of industrialisation, property skeptics have offered myriad reasons of its ‘unjust’ consequences on the poor and the subaltern. The patent system has grown out of constant distrust but has never failed to admire the best of its critics. Such a policy debate is not uncommon among the supporters and critics of

† Assistant Professor of Law, National LUD.
3 See J. W. Harris, PROPERTY AND JUSTICE (Oxford Univ. Press 2002).
4 See COMM. ON THE JUDICIARY, 85TH CONG., AN ECON. REV. OF THE PATENT SYSTEM 80 (Comm. Print 1958) (Fritz Machlup) (famous remark of Fritz Machlup) (“If we did not have a patent system, it would be irresponsible, on the basis of our present knowledge of its economic consequences, to recommend instituting one. But since we have had a patent system for a long time, it would be irresponsible, on the basis of our present knowledge, to recommend abolishing it”).
globalisation. Professor Srividhya Ragavan's academic contribution entitled 'Patent and Trade Disparities in Developing Countries', adds to the existing common pool of knowledge in this area. As the title of her book suggests, Professor Ragavan is quite critical of the current policy paradigm of the patent system as perpetrated through the WTO and its effect on development policy.

II. OVERVIEW OF THE BOOK

Patent and Trade Disparities in Developing Countries is an exhaustive piece of work. Laced in broad page margins, it leaves plenty of room for notes and has a readable font size. However, its use as a resource book could be limited since it does not provide annexes of select provisions of the TRIPS Agreement (which run through different chapters in the book) and provisions from the Indian and Brazilian patent statutes referred therein. It would not be an exaggeration to state that this book has been successful to a large extent in combining the benefits of a textbook commentary on trade related aspects of patent law along with the socio-economic and political realities in the developed and the developing worlds.

The book offers a broad methodology in understanding the benefits and vices of the current patent system as embraced by developing countries. There is a certain advantage of this broad narrative as it offers the reader the benefit of access to the author. However, this is not a pure legal commentary and Ragavan lays no claim to it. The book largely draws from the implications of patents on developing countries and builds around its linkages with trade, biodiversity and sustainable development. Except for the fact that the book provides an excellent descriptive analysis of the implications of the patent system (based on WTO trade based system) in developing countries, there is no single theme that runs through the book. The book does not offer any concluding chapter since it is a collection of essays on concurrent themes. While the author does not make any thematic classification, readers would notice that these themes broadly include: (a) historical development of intellectual property in the light of its implications for developing countries; (b) Indian patent law for pharmaceuticals in the background of the TRIPS Agreement; (c) Biodiversity, Plant Variety Protection and Sustainable Development; and (d) Agricultural subsidies and the WTO. The thematic analysis carried out below is only to ensure a better reception of the book by the readers of this review.

Although Ragavan notes in the preface, "[t]his book is an outline of
the flaws and flourish of the New Trading Order,\textsuperscript{13} one can certainly draw certain broad conclusions based on the book's chapterisation and analysis. These include: (a) historically, developed countries have industrially progressed through a flexible patent system; (b) prior to the absence of common binding norms of the TRIPS Agreement, developing countries have in the past used flexibilities for achieving industrial progress and access to medicines; (c) post-TRIPS, such flexibilities are curtailed due to unwarranted global harmonisation of patent law through the WTO; (d) there are higher costs in complying with a patent system harmonised through trade agreements, primarily the TRIPS Agreement; (e) TRIPS remains an unresolved puzzle in the absence of global harmonisation of procedural mechanism under the patent law; (f) patent regime is not fully adequate to reap the advantages of biotechnology patents and the supporting mechanisms viz., the patent office practices, the tribunals and courts etc., have to complement; (g) subsidies are undoing the benefits arising out of the WTO system and patent and plant variety regimes have led to unequal bargains; (h) trade and biodiversity are in enduring conflict and such conflict must be resolved to achieve sustainable development.

Students of different disciplines will benefit from the book since it allows them to get familiarised with the policy dimension of the patent system operated through the global trade-based framework. In that sense, the book is quite interdisciplinary in its approach. Access campaigners, health activists and environmentalists will clearly see the book's objectives and might applaud the book's polemical style. Legal practitioners will shy away due to the absence of concrete legal analysis that upholds the black-letter law in its strictest sense. As I shall note below, there are certain gaps in the legal analysis that are summarily reflected upon by Ragavan. It would do us greater good in ensuring 'justice oriented' legal interpretation, which this book attempts to invoke, if lawyers were to wholeheartedly accept this book. However, this book will no doubt succeed as a favorite for any reader with little or no legal background.

III. THEMATIC ANALYSIS OF THE BOOK

a. Universal Evolution of Patents: Of Haves, Have-nots and the TRIPS Agreement

Intellectual property law in general and patent law in particular cannot be examined in isolation from the industrial context of developed

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5. SRIDHAYA RAGAVAN, PATENT AND TRADE DISPARITIES IN DEVELOPING COUNTRIES (Oxford Univ. Press, 2012) at X [hereinafter RAGAVAN].
and developing economies. As Ragavan vividly points out, historically, throughout different phases of industrial growth, patent law has been used as a tool to leverage the 'progress of science.\(^6\) Developed countries are now denying developing countries the tools that they resorted to in linking industrial progress through a flexible patent regime. However, this argument has been put to limited use, mostly for academic discourses, and has largely failed in achieving any concrete identifiable legal or policy options to scuttle the maximalist patent agenda.\(^7\) Chapters 1, 2 and 3 of the book mainly chronicle the historical evolution of patents in developed countries, developing countries, and through the TRIPS Agreement respectively.

In concluding Chapter 1, Ragavan aptly makes certain observations in the form of 'lessons from early development of the patent regime.'\(^8\) Citing several historical examples, Ragavan goes on to make the following conclusions: (a) patent policies were based on the choice mechanism introduced to achieve national objectives; (b) national welfare considerations were paramount; (c) patent policies were designed to improve local industrialisation; (d) patent policies were directed to local economic realities; (e) 'time' is the contributing factor towards a mature patent regime; (f) there was a possibility of a complete or partial rollback of patent protection during economic depression; (g) there existed government intervention to promote access to patent protected knowledge or to promote 'public rights.' As readers may note, these conclusions overlap with each other. It is therefore difficult to suggest that Ragavan could have come to any different conclusions after analysing the history of the patent system. However, such an overlap could have been avoided by better organisation of ideas.

If the conclusions drawn above are based on factual accounts, then how could developing countries resist the temptation of being swayed by the idea of a full-blown patent regime during the last couple of centuries?\(^9\) Chapter 2 of the book, where Ragavan provides a historical account of Indian and Brazilian patent systems, helps clear exactly this mystery.\(^9\) India and Brazil achieved self-sufficiency in drug production by withdrawing the product patent protection for food, pharmaceuticals

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\(^6\) Ragavan, supra note 5, at 12-23.

\(^7\) See generally Susan Sell, The Global IP Upward Ratchet, Anti-Counterfeiting and Piracy Enforcement Efforts: The State of Play, in Program On Info. Just. And Intell. Prop. Res. Paper No. 15 (2010) (arguing that right since the beginning of TRIPS Agreement, there have been various attempts in ratcheting up IP standards through various bilateral, plurilateral and multilateral-positivist and maximalist notions embedded in international treaties, which do not allow reliance on history unless it is an outcome of an interpretative question.).

\(^8\) Ragavan, supra note 5, at 23-29.

\(^9\) Id. at 30.
and agrochemicals in 1972 and 1969 respectively. India’s drug policy and focus on self-sufficiency did play a significant role in improving the access situation. Furthermore, Brazil’s constitutional commitment to provide access to medicines and other local welfare obligations imposed on patent holders ensured cheaper access to medicines. Ragavan’s elaborate account of Ayyangar report and its impact on India’s patent law and policy is highly commendable.\textsuperscript{10} However, if one were to critically examine the policy basis for withdrawal of product patents in pharmaceuticals, and the concurrent endorsement of product patents in other analogous fields of technology (viz., mechanical), it would be difficult to suggest that ‘innovation’ in the mechanical field did indeed contribute to India’s growth story. This precisely highlights the practical need for introducing other industrial policy instruments and that the patent law cannot be a straitjacket solution to foster an ‘innovation’ centric growth model.

Readers may not differ from Ragavan’s account of what TRIPS has done to developing and least-developed nations in terms of their policy space.\textsuperscript{11} Chapter 3 carries out an elaborate descriptive analysis of the TRIPS Agreement’s general provisions, objectives and principles, patent provisions, exceptions to patent rights and compulsory license, enforcement of patents, the Doha Declaration, transitional provisions, and linkages between TRIPS and Dispute Settlement Understanding (WTO-DSU).\textsuperscript{12}

However, in the interest of adding to the critical outlook of Ragavan’s detailed analysis, the following questions could have been attempted in this chapter: (a) is it conceptually difficult to envisage that IP chapters in RTAs/FTAs concluded after the signing of TRIPS are a general exception to the MFN clause in the TRIPS Agreement? If not, should TRIPS be amended?; (b) considering that Article 7 of the TRIPS Agreement is non-actionable (since ‘measures’ cannot be adopted under Article 7), can Article 8 be effectively implemented in the light of its ‘consistency’ requirement?; c) is patent law technology specific in the sense that Article 27.1 could be interpreted to provide a singular definition of any invention in all fields of technologies without discrimination?; (d) does Article 30 permit a ‘use and pay system’ in cases of blocking patents on research tools, notwithstanding the limited availability of license of related patents regime in Article 31(1)?; (e) if compulsory licenses can be issued under patent law (on any grounds not

\textsuperscript{10} \textit{Id.} at 33.


\textsuperscript{12} \textit{Ragavan, supra note 5, at 63.}
specifically limited by TRIPS) and under competition law (viz., for abuse of dominance), then what is the conceptual difference between the two possible measures allowed under the TRIPS Agreement? Is assessment of market power a prerequisite in compulsory licenses granted as a public interest measure under patent law?; (f) do products traded across borders under the Post-Ebay system of patent injunctions violate the mandate on injunctions under Article 44 of TRIPS? (g) does TRIPS provide any remedy on extra-territorial use of enforcement provisions as in the case of EU Border Measures allowing seizure of goods-in-transit involving generic medicines?; (h) apart from its limited interpretative value are there any other actionable claims under Doha? Does the para VI mechanism of the Doha Declaration enable easier access to medicines?; (i) as argued by some, would withdrawing the moratorium on non-violation disputes in case TRIPS help developing countries in challenging TRIPS-plus measures? These set of questions could possibly have helped us in addressing the TRIPS ‘onslaught’.

b. The Unfinished Maximalist Agenda of TRIPS

The TRIPS Agreement marked the first major multilateral success for developed countries in requiring poor developing nations to harmonise. Chapter 4 charts Ragavan’s attempt to bring out some analysis on how developing countries have implemented the TRIPS Agreement. From the pre-TRIPS scenario of Section 301 investigations by the United States, the India-mailbox dispute at the WTO, to the 1st (1999), 2nd (2002) and 3rd (2005) amendments to the Patents Act, 1970, Professor Ragavan has elaborately examined India’s implementation strategy and the consequent legal provisions. Similarly, Brazil’s implementation of the TRIPS Agreement and the ANVISA regulatory process has been examined in detail. Ragavan concludes with an evaluation of development defects in the international patent regime, which is a difficult economic proposition to establish. However, readers, will witness certain gaps in the legal analysis offered by Ragavan in this chapter. For instance, Ragavan offers limited analysis of her critique of

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15 Ragavan, supra note 5, at 103.

16 Id. at 105-28.

17 Id. at 128-39.

18 Id. at 140-44.

the WTO Appellate Body's decision in India-Patent Protection for Pharmaceutical and Agricultural Chemical Products,\(^{20}\) except to summarily assert that the DSB has failed to comply with the 'spirit' of the Vienna convention by not considering Article 7 of the TRIPS Agreement.\(^{21}\) Similarly, in examining the product patent regime, while issues concerning novelty and inventive step have been discussed, Ragavan has not touched on the most controversial 2005 amendment i.e. Section 3(d) of the Patents Act, 1970 and the judicial opinions in that context. In examining the principle of exhaustion under Section 107 A(b) of this Act, one could have offered a more nuanced analysis by examining the notion of exhaustion in comparative jurisdictions, and whether the Indian position is tenable in that respect.\(^{22}\) Furthermore, in examining the experimental use exception under Section 47(3), an analysis of the scope of this provision to include the controversial downstream research "on" or "with" the invention could also have been examined.\(^{23}\) While provisions on compulsory license have been examined, many important questions, for example, the necessity of a three year cooling period for a general compulsory license have not been answered.

The objective of Chapter 5 is to impress upon the reader that imposing substantive patent law without adequate procedural guidance can result in stifling rather than promoting innovation.\(^{24}\) Regarding mechanisms introduced to create 'juridical equality of protection - TRIPS,' Ragavan believes that these can 'paradoxically result in more inequality of protection' since TRIPS and the PCT do not harmonise patent procedures.\(^{25}\) What does Ragavan rely on to prove this? Ragavan employs the sophistication of claim construction an important doctrinal instrument in patent law which has been used in comparative jurisdictions to construe the boundaries of a patent. This opens up an interesting debate on the necessity of adequate procedural systems for developing countries to reap the benefits arising out of the patent system since incremental inventions can be patented by narrowing claims.


\(^{21}\) Ragavan, supra note 5, at 112.

\(^{22}\) European Court of Justice, Merck v. Stepbar, 13 IIC 70 (1982) (The ECJ assumed exhaustion in a situation where products were marketed by the patentee or with his consent in countries of the European Union where no patent was or could have been obtained. In this sense, the principle of exhaustion has been diluted to an extent where existence of a valid patent is not a pre-condition for exhaustion to kick-off.)

\(^{23}\) See Shamnad Basheer & Prashant Reddy, The 'Experimental Use' Exception Through a Developmental Lens, 50 IDEA, no. 4, 2010, at 931 (raising the question of downstream research "on" or "with" the invention in the Indian context.).

\(^{24}\) Ragavan, supra note 5, at 166.

\(^{25}\) Id. at 147.
Alternatively, narrower claims can promote consumer welfare by supporting a healthy public domain, thereby ensuring price competition.

Relying on the Indian situation prior to TRIPS when product patents in the area of pharmaceuticals were unavailable, the claim of Ragavan is that certain inventions that were labelled as ‘copies’ of foreign patents would have been eligible for patents by juxtaposing the use of appropriate and sophisticated patent techniques that prevailed in the United States. Analyzing the US federal circuit decision in Atlantic Thermoplastics Co. v. Faytex Corporation, and the European Patent Office practice of reading claims narrowly for product-by-process claims, Ragavan comes to a conclusion as to how claims encourage incremental innovation. However, this view rests on a fundamental assumption that claim construction is a healthy way to promote incremental innovation, and that incremental innovation is in some way beneficial to developing countries. Interestingly, Ragavan finally suggests that poorer countries may “choose to avoid at the outset” minor innovations that may be protected due to application of patent doctrines and that “each country can raise or lower the bar based on national objectives and priorities”.

In contrast, Ragavan could have examined why claim construction may not be an optimal solution to address the issue of incentivizing incremental inventions. Recent studies have shown that patent claims have fuzzy boundaries. The argument is that claim construction is fraught with conceptual difficulties of consistency. Since claims are interpreted differently at different levels during the patent prosecution process until they are conclusively decided by the courts of law, the boundaries of the patent are almost unclear. This causes considerable impact on the public notice function of the patent system. It is also quite intriguing to note why Ragavan relies on an instrument like patent claim construction when patent breadth can be answered by the patentability

26 Id. at 146, see also id. at 164 (citing Hoechst & B Corp. v. Unichem Labs, 1969 AIR 56 (Bom.) 255.).

However, note that Indian pharmaceutical firms have always had the freedom to patent such inventions abroad where product patents were available prior to TRIPS, and in turn reintroduce such incrementally modified products in lucrative foreign markets.

27 Atlantic Thermoplastics Co. v. Faytex Corp., 970 F. 2d 834 (Fed. Cir. 1992) (holding that the use of a different process to make the same product by the defendant does not infringe a product protected using product-by-process claims).

28 Id. at 157.

29 See Hall, supra note 19 (arguing that the current economic literature on patent policy does not suggest what type of inventions patent law should try to promote).

30 RAGAVAN, supra note 5, at 159.


32 Id. at 57.
test of inventive step.\textsuperscript{33}

Furthermore, since the definition of invention\textsuperscript{34} is left undefined by the TRIPS Agreement, it definitely leaves considerable scope for WTO members to effectively tailor their patent regimes.\textsuperscript{35} That TRIPS does not harmonise sophisticated patent procedures which may thus be detrimental to developing countries may be a far-fetched argument. There is no doubt that with the functioning of IPAB (a specialised patent tribunal) and many cases going to appellate courts, certain fundamental claim construction doctrines recognised in comparative jurisdictions may well find a place in the Indian patent jurisprudence. Probably, the broader implications of Ragavan’s conclusion in this chapter may well remind the Indian courts that they should avoid repeating mistakes committed elsewhere in matters of claim construction.\textsuperscript{36}

How do nations balance patents with cheaper access to products? In Chapter 6, Ragavan brings out the usefulness of two important instruments, i.e. compulsory licenses and price controls in ensuring wider access to medicines.\textsuperscript{37} Ragavan tries to draw a comparison by citing instances from developed countries in order to protect their consumer from prohibitive prices for patented drugs. The United States attempts at ensuring early generic entry through the framework of Hatch Waxman Act, 1984, Medicaid, Medicare, Social Security Act (SSA). The unsuccessful attempt made by the District of Columbia in passing the Excessive Pricing Act, 2005 is discussed elaborately.\textsuperscript{38} The threat of compulsory license issued in the light of the anthrax crises in the United States is also discussed to highlight that developed countries would employ the same legal instruments to promote access which they otherwise deny for developing countries.\textsuperscript{39}

One could have imagined from the title of the chapter (TRIPS Patent Regime: The Poverty Penalty), that Ragavan would engage in an elaborate legal and policy analysis of whether or not TRIPS curtails flexibilities that countries have historically had in issuing compulsory license or in


\textsuperscript{34} See generally Justin Pilla, The Requirement For An Invention In Patent Law (Oxford Univ. Press 2010) (discussing the implications of the definition of invention by TRIPS).

\textsuperscript{35} In explaining these attempts, Ragavan discusses the US Supreme Court Judgment in Pharm. Research & Mfrs. of America v. Walsh, 538 U.S. 644 (2003) and Biotechnology Indus. Org. v. Dist. of Columbia, 496 F.3 1362 (Fed Cir. 2007).


\textsuperscript{37} Ragavan, supra note 5, at 168.

\textsuperscript{38} Id. at 182.

\textsuperscript{39} Id. at 184-87.
imposing price control mechanism.\textsuperscript{40} For example, TRIPS consistency of an exclusive export license under Section 84 and its consistency with Article 31(f) requiring that any use without authorisation shall be authorised predominantly for the supply of the domestic market of the Member authorising such use,\textsuperscript{41} similarly, TRIPS consistency of both Indian and Brazilian local working requirements as in local manufacturing could have been examined.\textsuperscript{42} Furthermore, the chapter could have examined TRIPS consistency of price control measures in light of the possibility of lifting the moratorium on non-violation complaints. Price control, as some would argue, would with great difficulty muster the consistency requirement in Article 8:1 of TRIPS.\textsuperscript{43}

This chapter, however, provides a refreshing analysis on two other alternatives viz., differential pricing and government procurement (through price negotiations and local manufacturing requirement). Although the threat of parallel imports is highlighted as a great impediment in differential pricing, the chapter does not suggest why differential pricing could be a major threat for countries following national exhaustion. But the proposals discussed by Ragavan in negotiating reasonable restrictions and placing burden on developing countries to prohibit exports of differentially priced medicines is worth further examination.\textsuperscript{44} In discussing Brazil’s attempt to grant compulsory license on the ground of lack of ‘working’ in the sense of local manufacturing of patented drugs, which Ragavan regards as ‘flexibilities in TRIPS,’ one could have also discussed the possibility of TRIPS violation of this particular measure.\textsuperscript{45}

c. IP in Biotechnology and Sustainable Biodiversity: The Enduring Debate

Factual narrative being important in the evolution and growth of patent law, Chapter 7 on biotechnology\textsuperscript{46} brings out the vivid success stories of patent-biotech industry linkages by focusing on the role of

\textsuperscript{40} Id. at 168.
\textsuperscript{41} Some commentators have argued that it may violate the TRIPS Agreement. See generally Janice Mueller, \textit{The Tiger Awakens: The Turbulent Transformation of India’s Patent System and the Rise of Indian Pharmaceutical Innovation}, 68 (3) Univ. Pittsburgh L. Rev., no. 3, 2007 at 200.
\textsuperscript{44} Id. at 191.
\textsuperscript{46} RAGAVAN, supra note 5, at 200.
courts, patent offices, and certain set of legislative amendments. In highlighting the differences between the EU and US biotech successes, Ragavan rightly remarks how “supporting mechanisms”, i.e. the courts and administrative mechanisms helped the developed countries to build up a legally predictable IP environment.\textsuperscript{47} Starting with the decisions of Chakrabarty,\textsuperscript{48} including harmonization of EU law through the EC Biotech Directive,\textsuperscript{49} EU judicial decisions that put to rest the moral and ethical concerns, or the intuitive interpretative sense of Canadian Supreme Court to deny a patent for Harvard Oncomouse,\textsuperscript{50} according to Raghavan, are lessons for developing countries to balance competing interests.

Irrespective of Ragavan’s attempt to narrate the history of biotech patenting in India,\textsuperscript{51} without a thorough analysis of the scope of biological subject matter exclusion,\textsuperscript{52} discovery exclusion,\textsuperscript{53} public order and morality exclusion,\textsuperscript{54} and exclusion based on traditional knowledge\textsuperscript{55} under section 3 of the Indian Patents Act, 1970, this chapter falls short of taking the biotech debate to its logical conclusion. The chapter should have elaborated on issues concerning the exclusion of genes and the effect of blocking patents in the biotechnology research, notwithstanding the judicial decisions concerning research exemption discussed therein.\textsuperscript{56} Furthermore, the virtues of heightened written disclosure requirement\textsuperscript{57} can only be one of the tools in clarifying the boundaries of a patent which does not conclusively determine whether certain type of biotech subject-matter indeed pass the invention threshold as a prerequisite.

In what appears as an attempt to structurally organise the chapter’s biotech focus, the discussion of Indian cases on small molecule patenting and the Brazilian situation on access to medicines, as the reader may

\textsuperscript{47} Id. at 208.
\textsuperscript{50} Harvard College v. Canada (Commissioner of Patents), (2002) 4 SCR 45.
\textsuperscript{53} Id.§ 3(c).
\textsuperscript{54} Id.§ 3(b), a critical analysis of interpretation of Section 3(b) in the IPAB decision in Novartis v. Union of India may well be applied to all forms of pharmaceutical and biotech patenting that poses challenges to affordable access to medicines.
\textsuperscript{55} Id.§ 3(p).
\textsuperscript{56} RAGAVAN, supra note 5, at 215-16. See also Michel Carrier, Innovation For The 21ST Century: Harnessing The Power Of IP AND Antitrust LAW (Oxford University Press, 2009).
\textsuperscript{57} RAGAVAN, supra note 5, at 213.
conspicuously note, reflects the entire debate on biotechnology. Indian judicial opinions in \textit{Novartis v. Union of India} (on the scope of section 3(d) vis-à-vis the invention sought to be patented by Novartis),\footnote{Novartis v. Union of India, (2007) 4 MLJ 1153.} \textit{Roche v. Cipla}\footnote{Roche v. Cipla, 2008 (37) PTC 71 (Del.).} (on evaluating the four factor test for injunctions), and the \textit{Bayer v. Union of India}\footnote{Bayer Corp. and others v. Union of India, WP(C) No. 7833/2008 (2008).} (on drug patent-linkage) could have been avoided since they do not raise any fundamental issue concerning biotechnology patentability or patent eligibility. Similarly, an abrupt discussion on Brazil’s constitutional mandate on universal access/right to health vis-à-vis patents is of little relevance, if any, to biotech patenting issues. Infact, more elaborate and critical analysis of the IPO's decision in Pegasys (a drug involving recombinant DNA technology) and Brazil’s legislative exclusion of living subject matter involving genes whether isolated or otherwise, could have enriched the chapter. Notwithstanding this, Ragavan’s book is a commendable effort to provide a stimulating analysis on “filters in patent law”\footnote{RAGAVAN, \textit{supra} note 5, at 241-46.} evolved through the judicial decision in \textit{KSR v. Teleflex}.\footnote{KSR Intl Co. v. Teleflex Inc., 550 U.S. 398 (2007).}

Chapters 11 and 12 highlight concerns of the enduring conflicts between conserving/ sustainable use of biodiversity and promoting trade in what Ragavan precisely remarks as “compulsive one-dimensional developmental perspectives promoted by the trade and intellectual property (IP) agenda”.\footnote{RAGAVAN, \textit{supra} note 5, at 331.} The discussions are replete with concerns raised by TRIPS and UPOV (The International Union for the Protection of New Varieties of Plants) in its interaction with the Convention on Biological Diversity (CBD) including attempts in protecting traditional knowledge. To Ragavan’s credit, an elaborate legal analysis of CBD, the recently negotiated Nagoya Protocol, asymmetrical access agreements, and breach of access agreements is carried out in greater detail.\footnote{Id. at 332-59.} 

Furthermore, Ragavan’s suggestion to bridge the capacities gap between bio-prospectors and holders of genetic resources and associated traditional knowledge is highly thoughtful.\footnote{Id. at 342-56.} The framing of an intellectual debate based on the western philosophy of property and the resulting lack of positive rights based protection for traditional knowledge is rightly noted. However, missing in the analysis are measures within patent law that can abate misappropriation and also how such measures can withstand the test of TRIPS Agreement, for e.g., Ragavan’s
suggestion on invalidating patents on grounds of lack of prior informed consent can possibly violate Article 27.1 by virtue of introducing an additional fourth criteria to patentability. In the subsequent chapter, except some preliminary discussion on the scope of biotech exclusions under Articles 27.2 and 27.3(b), the surprising absence of any discussion on the “legal” conflict between TRIPS and CBD leaves the reader unsatisfied. The author could have countered points discussed by other experts in this chapter.

Similarly, Ragavan’s concern regarding different notions of ownership in CBD and UPOV is understandable. However, it is difficult to comprehend, lacking any concrete empirical measure, how UPOV’s low standard for protection can undermine a nation’s genetic diversity and thus be contrary to the objectives of CBD. Moreover, Chapter 9 on Plant Variety Protection amply clarifies the Indian Plant Variety Protection Act due to its balanced provisions and stands as a model for other developing and least-developed countries. In this regard, Ragavan’s exposition of the Indian Act is original and the resort to possible interpretation of TRIPS Articles 7 and 8 in the light of Vienna Convention is noteworthy. However, readers must be reminded of a WTO panel interpretation of Article 7 and 8.1 in which it clarified that these articles cannot be read in a way “to bring about what would be equivalent to a renegotiation of the basic balance of the Agreement.”


In Chapter 8 and 10, Ragavan has attempted to link how developing countries tend to lose when they comply with plant variety protection without eliminating subsidies afforded by developed countries. Again, lacking any concrete empirical measure since they are subject to different

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66 Article 27.1 of the TRIPS Agreement states that “patents shall be available for any inventions, whether products or processes, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application”.

67 See supra note 43, at 316-35.

68 It may be noted that TRIPS does not suggest UPOV as the standard for sui generis regime. In fact, under Article 27.3(b) countries have the freedom to legislate what they consider as an “effective” regime for protection of plant varieties, which can involve a higher threshold of novelty and distinctiveness.

69 Chapter 9 has a useful exposition on the contours of the Plant Variety Protection Act, 2000. Ragavan draws a fine comparison between UPOV (1991) and the Indian law and suggests why the Indian law is very progressive by including provisions on farmer’s rights, broad research exceptions, benefit sharing, compensation norms, compulsory licensing provisions, defense of innocent infringement and other public interest provisions. See Ragavan, Supra note 5, at 295-307.

economic variables, such a linkage may remain as a hypothetical textbook example.\textsuperscript{71} Ragavan’s concern regarding an imbalanced trading regime due to the apparent failure of the WTO to contain inefficient subsidies in developed nations is appreciable.\textsuperscript{72} However, Ragavan does not suggest why certain subsidies (barring Article 13 of the Agreement on Agriculture) cannot be offset by countervailing duties imposed by developing nations or why such subsidies cannot be challenged in the WTO as in the case of US-upland cotton dispute brought by Brazil which is elaborately discussed in the chapter itself. An entire chapter devoted to the issue of subsidies in a book that largely pertains to imbalances created by the international intellectual property regime seems out of place. The only apparent reason which the readers would note, is an attempt to prove that TRIPS was a bad bargain coupled with unsuccessful attempts by developing countries to eliminate subsidies provided by developed countries which somehow undermines the legitimacy of the WTO.\textsuperscript{73} Moreover, it is difficult to see why the issue of subsidies is prioritised over other forms of non-tariff barriers in agricultural trade viz. violations of TBT and SPS measures.\textsuperscript{74} Interestingly, WTO’s flagship Annual Report of 2012 states that “[N] TMs, and TBT/SPS measures in particular, vary across sectors but are especially prevalent in agriculture”.\textsuperscript{75} In fact, intellectual property measures like agro-chemical data exclusivity responsible for raising input costs are equally contentious. These measures are being legislated by countries either unilaterally or as a mandate governing ‘TRIPS-plus’

\textsuperscript{71} Ragavan provides a hypothetical example where pricing below cost in the international market can affect farmers of developing world. However, this logic can still apply in a situation where no plant variety legislation exists. Conversely, even if subsidies are eliminated, the monopoly rents imposed on farmers, or the lack of access to innovative varieties may still require farmers in developing countries to compete on unfair terms in international markets. See Ragavan, supra note 5, at 314.

\textsuperscript{72} In this regard, Ragavan examines the failure of Agreement on Agriculture and the Agreement on Subsidies and Countervailing Measures, including the recent Brazil- US Upland Cotton Dispute at the WTO. Id. at 250-69.

\textsuperscript{73} Id. at 269.

\textsuperscript{74} Econ. Research and Statistics Div., World Trade Org., \textit{World Trade Report 2012} 8 (2012), available at: \url{http://www.wto.org/english/res_e/booksp_e/anrep_e/world_trade_report12_e.pdf} (“[e]vidence from WTO disputes also shows a greater number of citations of the SPS and TBT agreements in cases involving agricultural products. Both agreements were cited in 28 per cent of disputes involving agricultural products (as defined in the Agreement on Agriculture) between 2007 and 2011. Meanwhile, no disputes involving non-agricultural products cited the SPS Agreement and only 2.9 per cent cited the TBT Agreement.”).

\textsuperscript{75} Id.
FTAs.\textsuperscript{76} Ragavan could possibly have addressed such pressing issues on trade-related intellectual property and its interaction with agriculture.

IV. Concluding thoughts

To conclude, the following five sets of specific suggestions may be explored as possible avenues for further deliberation in any future editions of the book; a) it could be made more readable by certain external and internal structural reorganization of materials, themes, and ideas in order to avoid overlap of discussions and analysis; b) the work could be enriched by offering some nuanced legal and policy analysis on specific issues of topical interest the lack of which as readers should note is a natural outcome of the ‘big-picture’ methodology adopted in this book; c) the book is high on information and intuitive in its content but it may be further enriched by offering concrete policy prescriptions or recommendations through a critique of existing judicial decisions, changes in administrative practice or through certain set of legal amendments; d) an introductory and concluding chapter may be introduced to highlight the possible scope and objectives of the book and to understand how the book has achieved those objectives; e) in the light of the increasing number of RTAs/FTAs and bilateral investment agreements, TRIPS-101 is undoubtedly the foundation. However, some analysis on TRIPS-Plus agreements and their impact on patent policies in developing countries may be useful.

As Thomas Carlyle, a leading Scottish figure of the Victorian era once remarked: “The merit of originality is not novelty; it is sincerity.”\textsuperscript{77} Ragavan’s book is a sincere attempt in ‘covering’ many vast areas of patent and trade disparities in developing countries, and in ‘uncovering’ the contextual policy paradigm. It will be interesting to see how this useful contribution might act as a foundation for other works including Ragavan’s own future work.

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