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*Review of Intellectual Property and Human
Development: Current Trends and Future
Scenarios* by Tzen Wong and Graham
Dutfield (eds.)

Sorin G. Zaharia*

INTRODUCTION

Intellectual property (IP), a “bundle of rights” to creative inventions of the mind, has long been justified in terms of utilitarian economics as a system that incentivizes creators and leads to maximum societal net benefit. *Intellectual Property and Human Development* confronts this oft-repeated economic argument head on, by encouraging the reader to take a broader perspective and to look beyond raw product output to other indicia of social well-being, including distributional inequalities of such output, and the unequal playing field between developed and developing countries.¹ Ultimately, *Intellectual Property and Human Development* urges readers to ascertain how IP rights in the current framework further fundamental human rights in our globalized, twenty-first century world.

The book weaves a common theme of the interplay between IP rights (IPRs) and human development throughout its nine topical chapters, which deal with the relationship between IPRs and various facets of human development. Together, the chapters cover a wide range of significant and engaging topics: from access to life-saving medicines to farmers’ ability to replant seeds; from indigenous people’s rights to their traditional medicines and cultural expressions to the impact of copyright in education in developing countries; from increased access to information to the interplay between IP and contemporary art.

The book emerged as a result of a comprehensive research study under the aegis of the Public Interest Intellectual Property Advisors (PIIPA), funded by the Ford Foundation. The more than a dozen authors hail from a number of countries and continents and have a broad range of expertise. One of the editors of the book and the managing editor of the study, Tzen Wong, is a researcher

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1. INTELLECTUAL PROPERTY AND HUMAN DEVELOPMENT (Tzen Wong & Graham Dutfield eds., 2011).

with PIIPA and has a background in law, economics, and sociology. The other authors also have diverse backgrounds ranging from public policy research to law professors, economists, social scientists, public-interest lawyers, IP consultants, and museologists.

The main theme of the book is that there is more to intellectual property than its utilitarian dimension: intellectual property rights have to be put into the context of human development, and one cannot take for granted that the IP law framework as now structured (and as it has been driven policy-wise mostly by rich nations) is optimally supporting human welfare. The book looks at the social dimension of intellectual property laws and regulations, especially as seen through the conflicting lens of the relationship between developing and developed countries and their sometimes-disjointed priorities. For developed countries, IP rights are seen as an engine of economic growth, whose existence and enforcement leads to incentives to create more output. The book argues that this policy is not always in line with the interests of developing nations. According to the authors, the main problem with the utilitarian approach on which modern intellectual property rights are based is that it is not interested in the distribution of the products within the society, just the total output or cumulative effect.²

The nine chapters of the book comprehensively analyze the interplay between IPRs and critical issues for human development and welfare. The analysis is thorough, based on many past research articles, policy papers, and other scholarly output. It is performed through the lens of several international agreements of varying complexity, inclusiveness, and compulsoriness, especially agreements related to United Nations bodies and protocols related to the World Trade Organization (WTO). For each topic, the analysis ferrets out several pertinent points in how IP rights affect the lives of people around the world through globalization and its impact. Each chapter of the book also looks beyond past research in an attempt to explore new ideas and stimulate further thought.

A novel, refreshing, and important feature of the book is the inclusion of future scenarios in many of the topical chapters. These scenarios investigate possible outcomes under a wide variety of inputs (underlying assumptions), and are a very useful tool for research, better understanding, and policy action. Unlike forecasts or prognoses, such scenarios exhibit a bewildering diversity based on which assumptions are prioritized, and are likely to be a useful tool in the arsenal of the stakeholders and others involved in policy reform.

Intellectual Property and Human Development takes the reader on an epic journey through the multi-dimensional interaction between IP rights and a myriad of social policy interests. Significant emphasis is placed not only on the impact that the spread of new technologies has had on this interaction and its potential for empowering people and helping local communities, but also on its

2. Tzen Wong, *Intellectual Property Through the Lens of Human Development*, in INTELLECTUAL PROPERTY AND HUMAN DEVELOPMENT, *supra* note 1, at 1, 24.

drawbacks in how it can negatively affect, for example, the proprietary interest of indigenous people in their traditional knowledge and cultural expressions. Each chapter is devoted to a comprehensive analysis of such a relationship. While the chapters are written by different experts in the field, the book has a strong thematic cohesiveness.

I. SUMMARY

The first chapter is a bird's-eye view of intellectual property through the perspective of its effect on human development and human welfare, especially in developing and least-developed countries (LDCs). This chapter provides the "glue" that ties the subsequent topical chapters together. After a brief primer on intellectual property and the ever-expanding different types of IP (patents, copyright, trademarks, trade secrets, utility models, geographical indications),³ the author starts exploring the major assumption in modern intellectual property, the utilitarian rationale for its existence. Utilitarianism posits that by giving the creator property rights and thus allowing him or her to "fence off" his or her intellectual property for a limited period of time, the assured exclusivity and potential financial benefits are strong incentives for innovation, and societal benefit and public welfare will be maximized in the long run.⁴ In utilitarian theory, what matters is the overall or aggregate effect summed over all members of society.

One problem with this assumption is that utilitarianism does not take into account potentially unequal distribution of benefits, both within a nation and also among different nations at different levels of development.⁵ A secondary critique points out that the extent of incentivization is sometimes less than clear, and there is a debate as to how much recognizing strong intellectual property rights ensures maximum benefits⁶ Furthermore, the author points out that economic macro indicators (e.g. gross domestic product, GDP) do not necessarily translate into quality of life⁷ or other criteria that people associate with fulfilling, productive lives, such as food security or access to education and health care.

The author introduces the "capability approach," a philosophical concept that contrasts with utilitarianism and looks at the "multidimensional aspects of well-being."⁸ While used in other arenas, the capabilities approach is relatively new to the IP realm. Application of the capabilities approach can help

3. *Id.* at 6–8.

4. *Id.* at 18.

5. *Id.* at 25–26.

6. *See id.* at 23.

7. *Id.* at 27–28.

8. *Id.* at 27.

policymakers determine the proper boundaries for IPRs⁹ and can also inform a rights-based approach to human development.¹⁰ The chapter concludes with restating the need for a multidisciplinary approach to study the impact of IP on human development.

Chapter two addresses the interaction between intellectual property and health issues worldwide, particularly focusing on patent rights in the pharmaceutical industry and how they affect access to medicines and the fight against resurgent and neglected diseases in developing countries. This is one of the most sensitive and urgent issues in IP policy because of the internationally recognized fundamental right to health.¹¹ The authors frame the discussion against the background of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS),¹² an international agreement under the WTO that was negotiated in 1994 and mandates minimum standards in intellectual property protection for all signatories.¹³

As the TRIPS Agreement seems to have “straightjacketed” several developing nations into unrealistic deadlines for adhering to recognition of full IP rights in medical patents, it was amended in the health sphere by the later Doha Declaration¹⁴ (adopted in 2001), which extended many of the deadlines.¹⁵ Yet it is unclear that even with the extension, which gives LDCs until 2016 to be ready to recognize full IPRs, countries will be in a position to comply with the agreement. A related problem is that many nations in fact go beyond what TRIPS requires by agreeing to stricter terms in bilateral agreements with developed nations, terms that many times are not in the LDCs’ best interests. Developing nations also face a challenge from certain resurgent and/or neglected diseases that, because they are not present in the rich world, do not pose an important incentive for pharmaceutical companies to invest in research to address them.

Chapter two addresses several solutions to the problem of access to medications and medical technology, including compulsory licensing by governments (allowed under TRIPS), public-private partnerships, and efforts within the World Health Organization (WHO) for addressing this issue. The authors advise using all the relief mechanisms provided for in the TRIPS agreement—including licensing, generic manufacturing in cases of national

9. *Id.* at 32.

10. *See id.* at 34–35.

11. *See* Claudia Chamas, Ben Prickril & Joshua D. Sarnoff, *Intellectual Property and Medicine: Towards Global Health Equity*, in INTELLECTUAL PROPERTY AND HUMAN DEVELOPMENT, *supra* note 1, at 60, 61–62.

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

13. Chamas et al., *supra* note 11, at 62.

14. World Trade Organization (WTO), Ministerial Declaration of 14 November 2001, WT/MIN(01)/DEC/W/1, available at http://www.wto.org/English/thewto_e/minist_e/min01_e/mindecl_e.htm.

15. Chamas et al., *supra* note 11, at 63–64.

emergencies, price control, and negotiation—as well as resisting pressures to enforce IP rights beyond the minimum required by the agreement. The chapter concludes with several future scenarios, ranging from extreme control of patent rights held by corporations (“Market Rules”) to a significant relaxing of IPRs and (perhaps very unlikely) total abolition of patents in the pharmaceutical industry by 2025.¹⁶

Chapter three analyzes intellectual property rights in agriculture, with an emphasis on food security in the context of plant patents and plant variety protection. It also explores the challenges experienced by farmers and other licensees of biological products (seeds) under licenses that prevent their re-use of the biological material from the crops grown. The discussion has as background food security and the right to food as a fundamental human right, first enshrined in the 1948 Universal Declaration of Human Rights.¹⁷ Since then, food security and eradication of hunger in the world have been constantly recognized as prime priorities by various international bodies.¹⁸

The authors describe in detail the intellectual property rights in the agricultural context, primarily patents and plant variety protection (PVP), as well as the interplay between patent holders, mostly large agribusiness, and individual farmers. While significant technological advances in plant genetic manipulation have led to strong increases in intensive agricultural productivity, all IPRs, and especially patents, applied to genetic resources are having restrictive effects in many places. First, the control of genetic resources by IPRs held by large agribusiness is subjecting farmers to increased cost pressures.¹⁹ Second, while in the short term the productivity increases are spectacular, in the long term assertion of IPRs in genetic resources by only a few players limits biodiversity and local variation in crops—both of which are important for sustainable agriculture.²⁰

The authors urge stakeholders, especially in developing nations, to take advantage of the flexibilities in the TRIPS Agreement to maximize their benefits and at the same time to resist pressures from developed countries to tighten those standards.²¹ The chapter then describes the detrimental trend of enclosure of the commons in the area of property rights over genetic material (seeds) and some international reactions to it, including the 1992 Convention on Biological Diversity (CBD).²² It ends with a discussion of options available to developing countries for using genetic resources, such as focused national policies on

16. *Id.* at 88.

17. Hans Morten Haugen, Manuel Ruiz Muller & Savita Mullanpudi Narasimhan, *Food Security and Intellectual Property Rights: Finding the Linkages*, in *INTELLECTUAL PROPERTY AND HUMAN DEVELOPMENT*, *supra* note 1, at 103, 108; Universal Declaration of Human Rights, G.A. Res. 217A (III), U.N. Doc. A/810 (10 Dec. 1948).

18. Haugen et al., *supra* note 17, at 108–112.

19. *See id.* at 113–15.

20. *See id.* at 113.

21. *Id.* at 128–29.

22. *Id.* at 124; Convention on Biological Diversity, 5 June 1992, 1760 U.N.T.S. 79.

targeted research efforts and attempts to combine modern and traditional agricultural knowledge and habits.

The next two chapters address the related concepts of traditional knowledge (TK) and traditional cultural expressions. Chapter four analyzes TK, such as natural plant compounds known for centuries by indigenous people and their exploitation by the pharmaceutical industry. The chapter begins with a description of main concepts in TK as well as the availability and challenges in securing IP protection in this realm. The authors point out that this area is one in which traditional IPRs might be ill-suited to offer the protection required to deter threats to TK, including misappropriation, and facilitate the integration of TK with other cultural issues of indigenous people. The chapter advocates a fairer apportionment of profits through access and benefit sharing, and describes a suite of possible legal instruments to protect TK, with several case examples involving traditional medicinal knowledge. The highly particular features of local communities and customs makes it likely that there is no one-size-fits-all device to address this issue universally—rather, the tools to be employed will be unique (*sui generis*) to a particular aspect of TK and a particular region. The authors envision that scenario planning will be helpful in bringing out the challenges and potential solutions in this area full of uncertainties.²³

Focusing on the expression of tradition rather than knowledge, chapter five describes intellectual property rights in the context of traditional cultural expressions (TCEs). TCEs comprise a wide variety of expressions: verbal (including stories, poetry, and legends), musical, performative (dancing and plays), and tangible (arts and handicrafts).²⁴ The authors of the chapter then analyze the commodification of TCEs through intellectual property rights, and present its drawbacks as well as its advantages.²⁵ A drawback is the possible misappropriation and dilution of such expressions through commodification and circulation. On the other hand, one cannot neglect the real possibility of intellectual property rights improving the livelihood of indigenous peoples, for example through marketing of their arts and crafts. The chapter then describes several options and limitations of IPR protection of TCEs, including through copyright, design rights, and labels denoting geographical origin. A limitation of existing frameworks is that new forms of expressions are protectable, while old ones might not be.²⁶ Significant focus is placed on how the advent of the Internet, greatly facilitating the dissemination of TCEs, has exacerbated these problems.²⁷ Finally, the chapter looks at *sui generis* ways of protecting TCEs, with several case examples from different world regions. Such *sui generis*

23. Charles McManis and Yolanda Terán, *Trends and Scenarios in the Legal Protection of Traditional Knowledge*, in INTELLECTUAL PROPERTY AND HUMAN DEVELOPMENT, *supra* note 1, at 139, 166.

24. Tzen Wong and Claudia Fernandini, *Traditional Cultural Expressions: Preservation and Innovation*, in INTELLECTUAL PROPERTY AND HUMAN DEVELOPMENT, *supra* note 1, at 175, 176.

25. *Id.* at 178.

26. *Id.* at 187.

27. *Id.* at 209.

formulas differ from traditional copyright, for example by not requiring fixation in a “tangible medium” or by being perpetual and non-transferrable.²⁸

Chapter six analyzes copyright within the framework of education. As opposed to the “top-down approach” in which rich nations decide intellectual rights policy, it proposes an approach to IP “from below,” in which considerations of distributive justice and human development play a significant part in ensuring access to educational material, especially hard copy textbooks, in the developing world. Article 10(2) of the Berne Convention for the Protection of Literary and Artistic Works²⁹ plays a central role in this concept, as it allows “free uses” of such works for limited purposes, including educational use.³⁰ The author points out the great discrepancy in pricing of educational books, still an appropriate and useful technology, compared to income in developing versus developed nations. In the “from below” approach, national exemptions to copyright would exist for certain educational materials, helping to alleviate the lack of access to such basic educational materials. The “from below” approach places emphasis on human development as the main goal in setting IP rights, but at the same time makes an economic argument that there can be no market without a vibrant effort to ensure literacy and education.³¹

Chapter seven analyzes the impact of new technologies in access to knowledge and education, by examining the new opportunities that information and communication technologies (ICTs) have brought to the table and how IPRs, in particular copyright restrictions, interact with these opportunities. The analysis somewhat mirrors the concerns in chapter six about textbooks and copyright. The authors find that ICTs have the potential to provide a real decrease in the knowledge gap between countries by greatly facilitating the access to knowledge and education.³² Yet dissemination of information is hampered by copyright policies that seem to become more and more restrictive, including in the educational arena, and more and more often coupled with the specter of criminal sanctions. Here the authors mention the Anti-Counterfeiting Trade Agreement,³³ a recent major driver in increasing copyright enforcement.³⁴ Another concurrent trend the authors point out is the increased reliance on the part of rights owners on Digital Rights Management systems.

28. *Id.* at 202.

29. Berne Convention for the Protection of Literary and Artistic Works, 9 Sept. 1886, as revised at Paris 24 July 1971, and amended 28 Sept. 1979, 1161 U.N.T.S. 30.

30. Margaret Chon, *Copyright and Capability for Education: An Approach ‘From Below’*, in *INTELLECTUAL PROPERTY AND HUMAN DEVELOPMENT*, *supra* note 1, at 218, 219.

31. *Id.* at 237.

32. Dalindyabo Shabalala, *Knowledge and Education: Pro-Access Implications of New Technologies*, in *INTELLECTUAL PROPERTY AND HUMAN DEVELOPMENT*, *supra* note 1, at 250, 251–52.

33. Anti-counterfeiting Trade Agreement, Oct. 1, 2011, *available at* http://www.mofa.go.jp/policy/economy/i_property/pdfs/acta1105_en.pdf (accessed Apr. 20, 2014).

34. Shabalala, *supra* note 32 at 264.

The authors look at how new technologies have changed access to information products and their impact on the behavior of individuals and entities along the chain, from creators to producers, distributors, and finally to end users. They emphasize that true access to knowledge is not just having the information, but transforming the information into knowledge. In this context, besides geopolitical inequalities, there are also inequalities based on gender, social class, and ethnic group.³⁵ The author advocates for increased access to knowledge, unimpeded by stifling copyright regulations, including through the open source model, digitization of works, and open e-journals. The author also recommends minimum exemptions from copyright at the international level.³⁶ It places these exhortations on a human rights foundation based on international agreements: the right to access educational materials, the right to impart and receive knowledge (related to the freedom of expression), and finally the right to enjoy the benefits of scientific progress.³⁷

Chapter eight analyzes modern challenges to copyright laws with respect to art and cultural expressions. It begins by trying to determine how much of an incentive copyright law provides for fostering creativity in the artistic realm. The conclusion is mixed. The authors find that the incentive effect is very much dependent on the type of art, the world region, and several other factors. In some areas, such as contemporary and performing arts, one finds that creativity continues to flourish without significant copyright protection, suggesting other incentive mechanisms at work.³⁸ Another pertinent observation is that in modern society there is a blurred line between producer and consumer of cultural creations, as technology allows easy modification and “remixing” of such creations.³⁹

The authors also point out that in the art distribution chain from creator to consumer, intermediaries such as publishers are often the ones who profit the most due to contractual relinquishing of the creators’ copyright to corporations.⁴⁰ This also casts doubt on the value of copyright as an economic incentive for the creators.⁴¹ The chapter presents a case study for the interplay between contemporary art and intellectual property rights, specifically copyright, in Appendix E. The authors conclude with several scenarios for the future, from “business as usual” (not much change) to a society where copying is so prevalent that “original” and “copy” have lost their distinctive meaning. The main thrust of the chapter is exhortatory, inviting everyone to judge copyright protection based on how well it fosters creativity, cultural diversity,

35. *See id.* at 251.

36. *See id.* at 271–72.

37. *Id.* at 251.

38. Tzen Wong, Molly Torsen and Claudia Fernandini, *Cultural Diversity and the Arts: Contemporary Challenges for Copyright Law*, in INTELLECTUAL PROPERTY AND HUMAN DEVELOPMENT, *supra* note 1, at 279, 319–20.

39. *Id.* at 310–11.

40. *Id.* at 289–90.

41. *Id.*

broader participation in and consumption of culture, and overall better human experience and human development.

Finally, chapter nine concludes the book with a broad discussion of scenario planning in the context of intellectual property and issues involving human welfare. Scenario planning is again portrayed as an innovative and very important tool for planning processes. Rather than a prediction or forecast, which would be forestalled by the many variables and unknowns in this arena, scenario planning looks into multiple possible “alternative futures.”⁴² Such outcomes can be wildly different and arise due to different assumptions in the input. As such, it points out certain features that could result if a certain present policy or direction is followed or rejected. The authors describe in significant detail the scenario planning “Intellectual Property in the Year 2025” undertaken by the European Patent Office,⁴³ arguably the most ambitious and comprehensive such planning to date. The project led to four widely disparate scenarios based on the controlling factor underlying each of them: Market Rules (driven by business market forces, in a world of stricter IP rights), Whose Game (driven by geopolitical changes), Trees of Knowledge (where civil society leads to erosion of IP rights) and Blue Skies (fast technology drivers that do not depend too much on patents).⁴⁴ Efforts by other entities are mentioned as well.⁴⁵ Then, the focus of the chapter shifts to the way scenario planning unfolds regarding two domains: the future of the public domain, and the implications of the advent of new technologies. Finally, scenario planning is advertised to policy makers and stakeholders as a new approach that could lead to sometimes surprising, but always-useful outcomes for helping those in charge of policy reform.

II. DISCUSSION

Intellectual Property and Human Development impresses through its comprehensiveness in looking at virtually all public-interest aspects of intellectual property rights. Each topical chapter is a full-fledged research paper, complete with exhaustive bibliography for readers interested in delving further into the particular area addressed. The book’s great strength is that it thus provides both the big picture but also the micro details, bolstered by the tools to delve into thorny and intricate issues such as how to address the scarce availability of medicine for neglected diseases of the least developed countries, or how to protect traditional knowledge of indigenous people while at the same time recognizing its potential for empowering them and bettering their lives.

42. Michael A. Gollin, Gwen Hinze and Tzen Wong, *Scenario Planning on the Future of Intellectual Property: Literature Review and Implications for Human Development*, in *INTELLECTUAL PROPERTY AND HUMAN DEVELOPMENT*, *supra* note 1, at 329, 343.

43. *Id.* at 330.

44. *Id.* at 332–34.

45. *Id.* at 336.

Many of the topics addressed in specific chapters relate to other chapters as well, and the introductory and concluding chapters do a good job at further cementing everything together. Probably the biggest challenge in putting together a book of this scope through topical chapters authored by different scholars is achieving cohesiveness. Where many other efforts fail, leading to disjointed collections of papers reminiscent of conference proceedings, this book succeeds, no doubt a credit to the editors' painstaking effort.

The book is both informative and thought provoking in bringing to the fore, especially through the analysis of future scenarios, pertinent issues of public policy in areas that are bewilderingly heterogeneous and complex. As such, *Intellectual Property and Human Development* will surely appeal to a wide swath of individuals, including students, researchers, decision makers, and other stakeholders, as well as more generally creators and users of intellectual property.

The scenario analysis, a clear strength of the book, is a novel and refreshing concept that promises significant utility. Scenarios are not forecasts, and the book makes this clear. In fact, the complexity of the problem would probably preempt any attempt at realistic prediction. The issue is one of truly international dimensions, and the interplay between the different factors coupled with the huge number of variables makes attempts at accurate prediction futile. Scenarios are potential outcomes that could result in various future incarnations of "virtual realities" in which certain considerations and assumptions have prevailed. In fact, perhaps the most useful for policy analysis are the "extreme" scenarios. In spite of the fact that they are probably not realizable *per se*, they provide much more assistance in understanding the effect of different factors than scenarios of the type "business as usual." By concentrating on and magnifying certain impacts of an assumption to a future outcome, a scenario stresses the effect of a particular policy, trend, or activity spurred for example by an international agreement, and provides stakeholders and policy makers with a tool to adjust course by "tweaking" the system with certain levers at their disposal, including national policies, use of international agreement exemptions, and innovative public-private partnerships to foster the pertinent societal interests.

If this excellent book lacks something, it has to do perhaps with its apparent bias in highlighting only the problems with intellectual property rights as they exist now. The book points out the negative aspects of the market-emphasis approach with strong IPRs observed by the developed world. It also points out the gap between North and South, along with the fact that the interests of the developed and the developing nations might not coincide. Some readers might find that the book does not cover the other side of the coin—the utilitarian incentive of IP rights—to an extent sufficient to frame the argument as strongly as possible. This is seen in a dual way. First, perhaps the book is indeed too quick to discount the weight placed in western nations on the incentive impact of IP as well as on economic utilitarianism. Western nations are presented as being interested to a disproportionate degree only in economic growth and cumulative income at the expense of true human development. The book clearly

focuses on IPRs as they are framed today as a tool of the rich world to ensure dominance of their interests, and emphasizes at times how rich countries press the developing nations into agreeing to terms that are not necessarily to their advantage and go beyond minimum requirements in IP rights enforcement through the use of bilateral agreements. Perhaps the gap between North and South has stayed the same in recent years, but the book does not tackle evidence that the developing world is quickly moving forward. China, India, and Brazil, among other countries, have made tremendous gains in recent decades in all areas of development, and it can be argued that this has happened not necessarily because they resisted globalization of the markets and its impact, but to a great extent because they embraced it. Thus, while the dimension of how IPRs deleteriously affect human development is certainly one that merits public attention, and although this book does a marvelous job in showcasing it, the other side gets perhaps too little notice.

While it is clear that macroeconomic progress does not necessarily translate into proportional gains for individual members, both at national and international levels, it is incontrovertible, for example, that many of the new medicines that have saved many lives everywhere in the world (and thus led to gains for everybody) have been researched in the laboratories of the developed world. While restricted access to novel medicines because of pricing is obviously an issue that needs to be tackled, the cost of researching these medicines is in the billions of dollars. Because they function mostly on economic factors, and because it takes many failed tries to develop a successful drug, it is unclear that the companies that have put forward medicines that provide life-saving retroviral therapy stopping HIV/AIDS in its tracks around the world would have invested the enormous resources into the research of those drugs in the absence of substantial economic benefits guaranteed by IPRs.

Along the same lines, a related criticism would be that the book does not address the impact of IPRs in developed countries to the same extent. More focus could have been placed on tackling several questions that the book only touches upon tangentially. For example, some of the very pertinent questions as we go into the future will be how to make sure that our intellectual property system is set up to deal with rapid advances in biotechnology as well as information and communication technology. Should companies be able to patent screening methods for cancer? Should we place more emphasis on curing current patients at the (potential) expense of not having a better cure possibly developed in the future? How do we assure that the best national policies are being followed in a market economy where economic incentive is king, and where big players and international corporations can and do exert enormous clout on decision makers, as seen for example in recent changes in U.S. law that have made IPRs stricter through extension of copyrights?

The book, however, does an excellent job of bringing forward many of the broader concerns in the application of intellectual property frameworks within different locales, despite the minor points above. It puts forward the message that there is no unique solution to the problem because of the wide heterogeneity

of the contexts in which these concepts are being applied. At 397 pages, the book probably tackles as much as it realistically can within its assigned scope.

In summary, *Intellectual Property and Human Development: Current Trends and Future Scenarios* is a thorough account of the international interaction between intellectual property legal infrastructure and a myriad of broader concerns related to human welfare, going well beyond traditional economic indicators, gross domestic product, and industrial output. It is a book that should be on the shelf of everyone interested in intellectual property or international law, especially those interested in the confluence of legal and social policy, politics, and international relations.