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THE IMPACT OF THE NEW WORLD ORDER ON ECONOMIC DEVELOPMENT: THE ROLE OF THE INTELLECTUAL PROPERTY RIGHTS SYSTEM

JOSEPH STRAUS

ABSTRACT

This article provides a close look at the development of intellectual property protection contrasted with the development of globalization. Specifically, the agreements forming the legal framework of the World Trade Organization are discussed and their impact on the economic development of developing countries examined. A closer look is given to China and India, where only recently intellectual property protection standards complying with mandatory rules of the TRIPS Agreement have been introduced, and where the most remarkable economic, scientific, and technological development can be observed. This article emphasizes the necessity of all members of the World Trade Organization to comply with their obligations under all WTO Agreements, i.e. GATT 1994, TRIPS, TRIMS and GATS, in order to prevent frictions of international trade.

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THE IMPACT OF THE NEW WORLD ORDER ON ECONOMIC DEVELOPMENT: THE ROLE OF INTELLECTUAL PROPERTY RIGHTS SYSTEM

JOSEPH STRAUS*

INTRODUCTION

Those who have spent decades studying the field of intellectual property protection will not be particularly surprised by the criticism of the international system of intellectual property rights protection and of the broad view of these rights, which has been increasingly vehement. Even though a widely surprising breakthrough in support of higher, internationally binding standards of intellectual property protection could have been achieved with the acceptance of the International Agreement on Trade Related Aspects of Intellectual Property Rights ("TRIPs") in 1994, TRIPs was at the center of multifaceted criticism, for both developing and developed countries.[1] Indeed, the criticism of the developing nations soon found support, in part, from internationally recognized economists and lawyers. It did not go unrecognized, even by the critics, that TRIPs, together with the General Agreement on Tariffs and Trade ("GATT 1994"), the Agreement on Trade-Related Investment Measures ("TRIMs"), the General Agreement on Trade in Services ("GATS"), together and with all their appendices, represents only one of the pillars of support of the international legal system of the World Trade Organization ("WTO"). It also did not go unrecognized that developing countries would only accept TRIPs in this context in order to secure access to the markets of industrialized countries. However, it was asserted that ninety percent of all patents are granted in industrialized states, that TRIPs negotiations are brought to an end without a broad cost benefit analysis of, for example, welfare-related aspects of intellectual property rights for less developed countries, and that developing countries and other net importers of protected knowledge accept TRIPs only on political and not economic

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[1] *See generally* THE SECRETARIAT OF THE WORLD INTELLECTUAL PROPERTY ORGANIZATION, PROPOSAL BY ARGENTINA AND BRAZIL FOR THE ESTABLISHMENT OF A DEVELOPMENT AGENDA FOR WIPO, WO/GA/31/11, August 27, 2004, *available at* http://www.wipo.org/documents/en/document/govbody/wo_gb_ga/pdf/wo_ga_31_11.pdf [hereinafter SECRETARIAT].

grounds.[2] It was further claimed that TRIPs was the result of a strong and coordinated political lobby of U.S. and European industry, an "aggressive unilateralism" on the behalf of the United States and the European Communities, and lacked a necessary legitimacy because it was not based on the concept of human rights.[3] Even Secretary-General of the United Nations, Kofi Annan, admonished that the progression of free trade and the legal system cannot be taken for granted: "we must resolve to underpin the free global market with genuinely global values and secure it with effective institutions. We must show the same firm leadership in defence of human rights, labour standards, and the environment as we already do in defence of intellectual property."[4]

I. THE NEW WAVE OF TRIPS CRITICISM

It would doubtlessly go too far to attempt even a brief reference to all recent publications that have critically dealt with the current international concept of intellectual property rights. However, in the articles of Maskus and Reichman,[5] Musungu and Dutfield,[6] or those of Boyle,[7] for instance, it is clear that each of them in some way questions the current system and calls for a moratorium on international development of intellectual property rights. These articles suggest that developing nations be given the possibility either to thoroughly evaluate their realm of interests on the basis of the newly gained knowledge,[8] or to impede a possible cessation of WIPO activities in TRIPs-plus standards,[9] or finally, as seen in Boyle,[10]

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[2] Ernst–Ulrich Petersmann, *From Negative to Positive Integration in the WTO: The TRIPs Agreement and the WTO Constitution*, *in* INTELLECTUAL PROPERTY: TRADE, COMPETITION, AND SUSTAINABLE DEVELOPMENT 21, 23 (Thomas Cottier & Petros C. Mavroidis eds., The University of Michigan Press 2000).

[3] *Id.* at 23, 42.

> Trade liberalization in the WTO should not only be based on utilitarian objectives of 'welfare maximization' but also on human rights concepts, such as individual freedom, . . . non-discrimination . . . , and rule of law subject to judicial review by national courts and international adjudication . . . . The time has come for recognizing that human rights law offers WTO rules moral, constitutional and democratic legitimacy that may be more important for the parliamentary ratification of future WTO Agreements than the traditional economic and utilitarian justifications.

Id. at 44.

[4] Kofi Annan, *Laying the Foundations of a Fair and Free World Trade System*, *in* THE ROLE OF THE WORLD TRADE ORGANIZATION IN GLOBAL GOVERNANCE 26, 27 (Gary P. Sampson ed., 2001).

[5] *See generally* Keith E. Maskus & Jerome H. Reichman, *The Globalization of Private Knowledge Goods and the Privatization of Global Public Goods*, 7 J. INT'L ECON. L. 279 (2004).

[6] *See generally* SISULE F. MUSUNGU & GRAHAM DUTFIEL, MULTILATERAL AGREEMENTS AND A TRIPS-PLUS WORLD: THE WORLD INTELLECTUAL PROPERTY ORGANIZATION ("WIPO"), *available at* http://www.geneva.quno.info/pdf/WIPO(A4)final0304.pdf.

[7] *See generally* James Boyle, *A Manifest on WIPO and the Future of Intellectual Property*, 2004 DUKE L. & TECH. REV. 0009 (2004), *available at* http://www.law.duke.edu/journals/dltr/articles/PDF/2004DLTR0009.pdf [hereinafter *Manifest on WIPO*]. *See generally* James Boyle, *The Second Enclosure Movement and the Construction of the Public Domain*, 66 LAW & CONTEMP. PROBS. 33 (2003).

[8] Maskus, *supra* note 5, at 319.

[9] MUSUNGU, *supra* note 6 at 24.

to call the entire concept of the system into question. These authors neither entertain the existing circumstances of developing nations and industrialized nations before TRIPs,[11] nor, even more surprisingly, do they base their theoretical deliberations on any empirical insights that they could have accumulated in this matter since the implementation of TRIPs.[12] Indeed, no single attempt has been made in this direction. Even the moderately worded paper of the British Commission on Intellectual Property Rights ("CIPR")[13] contained explicit allusions that "developing countries accepted TRIPs not because at the time the adoption of intellectual property protection was high on their list of priorities, but partly because they thought the overall package offered, including the reduction of trade protectionism in developed countries, would be beneficial."[14] There were complaints that these expectations had not been rewarded, but the complaints lacked a reciprocal offering of empirical data. The statistics retrieved from the databanks of the World Bank, which refer to the alleged benefit of patent licenses, according to which the active trade balance of the United States rose from fourteen billion U.S. dollars to over twenty-two billion U.S. dollars between 1991 and 2001,[15] prove nothing about the macroeconomic results of the WTO "Package Deal" on developing nations.

The comment made by Nobel Prize winner Joseph Stiglitz, that the structure of intellectual property rights has become so extreme that it is harmful to society and especially harmful to developing countries, points in the same direction.[16] Institutional mechanisms should be established "so that we can go back and recognize the need for developing countries, for instance, to have some technology transfer."[17] Similar, but even more explicit, is the Geneva Declaration on the Future of the World Intellectual Property Organization of October 2004, signed by Stiglitz, among others, which accuses WIPO of "embrac[ing] a culture of creating and expanding monopoly privileges, often without regard to consequence."[18] A moratorium should be made on the negotiations of new treaties and the harmonization of standards that further strengthen and augment monopolies and restrict access to knowledge. The Declaration states that WIPO has, for generations, predominantly reacted "to the narrow concerns of powerful publishers,

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[10] *Manifest on WIPO*, *supra* note 7.

[11] *See generally* Joseph Straus, *Implications of the TRIPS Agreement in the Field of Patent Law*, *in* FROM GATT TO TRIPS — THE AGREEMENT ON TRADE-RELATED ASPECTS OF INTELLECTUAL PROPERTY RIGHTS 160 (Friedrich-Karl Beier & Gerhard Schricker eds., 1996).

[12] *See, e.g.*, Petersmann, *supra* note 2, at 32–35.

[13] *See generally* COMMISSION ON INTELLECTUAL PROPERTY RIGHTS, INTEGRATING INTELLECTUAL PROPERTY RIGHTS AND DEVELOPMENT POLICY (2002).

[14] *Id.* at 8.

[15] *Id.* at 21. The greatest loser in this regard was Korea with fifteen billion U.S. dollars. *Id.*

[16] Joseph E. Stiglitz, *Globalism Discontents*, 13 THE AMERICAN PROSPECT 1 (2002), *available at* http://www.prospect.org/print/V13/1/stiglitz-j.html.

[17] *See also* Interview by Mamudi with Joseph Stiglitz, How to fix the IP Imbalance, *in* 143 MANAGING INTELLECTUAL PROP. 28 (2004) ("We need to develop the institutional mechanisms so that we can go back and recognize the need for developing countries, for instance, to have some technology transfer.").

[18] GENEVA DECLARATION ON THE FUTURE OF THE WORLD INTELLECTUAL PROPERTY ORGANIZATION (2005), *available at* http://www.cptech.org/ip/wipo/futureofwipodeclaration.pdf.

pharmaceutical manufacturers, plant breeders and other commercial interests."[19] Now it should address the fundamental needs of consumer protection and human rights: "Long-neglected concerns of the poor, the sick, the visually impaired and others must be given priority."[20]

The Argentine and Brazilian recommendation for a "Development Agenda" for WIPO[21] demands, among other things, that WIPO's role should not be solely limited to the promotion of intellectual property protection.[22] Treaties in this area should explicitly take into account the interest of the consumer and of the general public. It is important that the exceptions and the boundaries of the national law of member states remain protected.[23] Special attention should be paid to the idea of establishing an international regime, which would provide developing countries with access to publicly funded research results in industrialized nations. Such a regime could follow the form of the Treaty on Access to Knowledge and Technology.[24] The recommendation further demands that the currently negotiated agreements in WIPO, such as the Substantive Patent Law Treaty ("SPLT"),[25] should include provisions on technology transfer, competition inhibiting practices, specific clauses on the principles and goals of the agreements as they are laid down in Articles 7 and 8 of TRIPs, and ensure the flexibility of public interest. However, these provisions should only be included with the concurrent clarification that the WIPO agreements "do not expressly deal with 'trade-related issues.'"[26] In other words, Argentina and Brazil do not want the agreements to contain reference to trade related aspects of intellectual property.

II. WHAT HAS THE NEW WTO LEGAL SYSTEM REALLY ACHIEVED?

The given goals of the WTO legal system, within which the developing countries accepted TRIPs as an integral component, depict the liberalization of international trade and the equal distribution of its benefits throughout the developed and developing nations.[27] This primarily demands that the markets of developed and developing countries be equally open to one another. Although it must be observed that the OECD-states are still far from fully complying with the requirements of the WTO, especially in the area of agriculture, the most recent balance between developing and industrialized nations looks positive.[28] The national economies of

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[19] *Id.*

[20] *Id.*

[21] SECRETARIAT, *supra* note 1.

[22] *Id.* at 2.

[23] *Id.* at 1.

[24] *See* CONSUMER PROJECT ON TECHNOLOGY, TREATY ON ACCESS TO KNOWLEDGE (2005), *available at* http://www.cptech.org/a2k/consolidatedtext-may9.pdf.

[25] See the report from PRINZ ZU WALDECK UND PYRMONT, WIPO, STANDING COMMITTEE ON THE LAW OF PATENTS, TENTH SESSION (2004).

[26] *Id.*

[27] Supachai Panitchpakdi, *Balancing Competing Interests: The Future Role of the WTO, in* THE ROLE OF THE WORLD TRADE ORGANIZATION IN GLOBAL GOVERNANCE 29 (Gary P. Sampson ed., 2001).

[28] Richard H. Steinberg & Timothy E. Josling, *Where the Peace Ends: The Vulnerability of EC and US Agricultural Subsidies to WTO Legal Challenge*, 6 J. INT'L ECON. L. 369, 371–372, 414

these developing states are growing more quickly than those of the industrialized nations. Their growth rates are the highest in the last thirty years and three-fifths of these countries have an average rate of growth that is at least six percent greater than that of the industrialized states.[29] This holds true especially for the four largest national economies in the group: China, India, Brazil and Russia. The International Monetary Fund predicts the highest growth rates in the last thirty years over the next few years for even the Sub-Sahara Africa region,[30] although the traditionally poor regions of Africa and the Middle East have, until now, been considered losers of globalization.[31] The development of Europe is particularly disappointing by international comparison, which lost ground not only to Asia, but also to the United States, in spite of the high-set goals of the Lisbon summit in March of 2000.[32]

India was one of the most vehement opponents of TRIPs,[33] and did not join the Paris Convention until December 7, 1998,[34] despite entering the WTO and TRIPs on January 1, 1995. Additionally, China was one of the states in which there was no reason to protect intellectual property because of the lack of effective competition in the domestic marketplace until the 1980s.[35] However, it is important to examine

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(2003); *see also Straus,* Patentschutz durch TRIPs- Abkommen – Ausnahmeregelungen und -praktiken und ihre Bedeutung, insbesondere hinsichtlich pharmazeutischer Produkte, Bitburger Gespräche, Jahrbuch 2003, Munich 2003, p. 117 *et seq.* (124).

[29] *See Grow Up: Developing Countries are growing at Their Fastest Pace for Decades,* ECONOMIST, Oct. 16, 2004, at 16.

[30] *Id.*

[31] De Jonquieres, *Dealing in Doha,* FINANCIAL TIMES, Nov. 6, 2001, at 16.

> The developing countries generally have had an increasingly larger share of the industrialized world's imports, which rose from 15% in 1990 to almost 25% in 2000. Over half of Japan's manufactured imports come from developing countries, while the share for the United States of America was 45%. In the year 2000 alone, developing countries' exports rose by 15% – three times their GDP growth – the best rate of growth in five decades. Likewise, the exports from the 49 least developed countries rose by 28% in the same year – amounting to around US $34 billion. The developing countries' share of world trade has risen from one-fifth in the 1970s to one-third, and as per current trends it is likely to grow to well over half of world trade in the next 25 years. Incidentally, world exports of manufactured goods have expanded by 8% annually on an average between 1948 and 2000. For the year 2000, the value of world exports of manufactured goods from these countries was more than 50 times larger than that in 1948, and while the ratio of exports in respect of goods and services to the GDP was 8% in 1948, it had increased to 29.5% in the year 2000 taken at constant 1987 prices.

SHAHID ALIKHAN & RAGHUNATH MASHELKAR, INTELLECTUAL PROPERTY AND COMPETITIVE STRATEGIES IN THE 21ST CENTURY 34 (International Law Publications 2004).

[32] HIGH LEVEL GROUP, FACING THE CHALLENGE: THE LISBON STRATEGY FOR GROWTH AND EMPLOYMENT 10 (2004), *available at* http://ec.europa.eu/growthandjobs/pdf/kok_report_en.pdf.

[33] Straus, *supra* note 11, at 168.

[34] *Decisions of the Enlarged Board of Appeal,* 27 ONLINE J. EPO 483, 485–86 (2004), *available at* http://www.european-patent-office.org/epo/pubs/oj004/10_04/10_4834.pdf.

[35] *See also* Zhicun Gao & Clem Tisdell, *China's Reformed Science and Technology System: An Overview and Assessment,* 22 PROMETHEUS 311, 321 (2004); William A. Fischer & Maximilian von Zedtwitz, *Chinese R&D: Naissance, Renaissance or Mirage?,* 34 R&D MGMT. 349, 354 (2004), *available at* http://www.blackwell-synergy.com/doi/abs/10.1111/j.1467-9310.2004.00346.x. Admittedly, China began preparations for a system of intellectual property protection already at the end of the 1970s, as it prepared to enter the Paris Convention. Guo, *TRIPs and Intellectual Property Protection in the People's Replublic of China,* GRUR INT. 1996, 292. Advanced development of the system only took place during preparation for and adoption of TRIPs. *Id.*

more closely the reasons for China and India's development in the light of the WTO legal system, notwithstanding the peculiarities of these developing or threshold countries.

Attention is on the development of China, not only because China is the object of much current common interest as a rising economic power, but more so because of the wealth of relevant data on its development. The Chinese State Intellectual Property Office ("SIPO") recorded 308,487 new patent applications in 2003 (this number covers all three types of patents: invention patents, design patents, and utility patents).[36] This represents a 22.1 percent increase in invention patents compared to 2002.[37] Without being able to examine the origin of these applications here,[38] some of the following figures may speak for themselves: the number of people employed in the field of research and development ("R&D") rose from 781,000 in 1986 to 1,035,000 in 2002.[39] In this regard, China has surpassed Russia, Japan, and, by some accounts, even the United States.[40] With expenditures of sixty billion U.S. dollars for R&D, China was already in third place worldwide in 2001, behind only the United States (with 282 billion U.S. dollars) and Japan (with 104 billion U.S. dollars), but ahead of Germany (with 54 billion U.S. dollars).[41] As measured by the gross domestic product ("GDP"), expenditures for R&D rose from point 6 percent in 1996 to 1.3 percent in 2002, having more than doubled in only six years.[42] This is also demonstrated by the shift of R&D workers from state research institutions to industry, shown by an increase from 154,000 in 1990 to 351,000 in 1999.[43] Industry in 2001 covered sixty percent of all R&D expenditures. This significantly aided industry capabilities in optimizing the use of imported technologies, and in asserting China in international competition.[44] Since the late 1990s, European and U.S.

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[36] *See* Peter Ganea, *Die Neuregelung des chinesischen Patentrechts*, GRUR INT., 686 (2002), *available at* http://www.jurion.de/login/login.jsp?goToUrl=../fachpresse/27003.html&docid=2-27003; see *also* Ai, *et. al.*, in: China Intellectual Property Law Guide, THE HAGUE 2005, at 15, 001 *et seq.* (providing detail on the new Chinese patent system).

[37] *Compare* SIPO, WHITE PAPER ON THE INTELLECTUAL PROPERTY RIGHTS PROTECTION IN CHINA IN 2003 (2004), *available at* http://www.sipo.gov.cn/sipo_English/ndbg/bps/200406/t20040603_33986.htm [hereinafter SIPO], *with* DAVID MICHAEL & KEVIN RIVETTE, FACING THE CHINA CHALLENGE: USING AN INTELLECTUAL PROPERTY STRATEGY TO CAPTURE GLOBAL ADVANTAGE 7–8 (The Boston Consulting Group 2004) (showing an increase of 100% from 1999 in Exhibit 1).

[38] SIPO, *supra* note 37.

[39] SIPO, *supra* note 37 (stating after China joined the Patent Cooperation Treaty ("PCT"), the foreign applications for patents of invention outnumbered domestic applications, but in 2003 the tide turned again in favor of domestic applications (57,000 domestic vs. 49,000 foreign applications)).

[40] *See* Gao & Tisdell, *supra* note 35; Maximilian von Zedtwitz, *Managing Foreign R&D Laboratories in China*, 34 R&D MGMT. 439, 439 (2004), *available at* http://www.blackwell-synergy.com/doi/abs/10.1111/j.1467-9310.2004.00351.x. In 2002, Chinese Foreign Direct Investment ("FDI") amounted to fifty–three billion U.S. dollars, which surpassed the U.S. Oliver Gassmann & Zheng Han, *Motivations and Barriers of Foreign R&D Activities in China*, 34 R&D MGMT. 423, 423 (2004), *available at* http://www.blackwell-synergy.com/doi/abs/10.1111/j.1467-9310.2004.00350.x. This clearly shows the support China received from international investors for entering the WTO in November 2001. *Id.*

[41] Gassmann & Han, *supra* note 40.

[42] *See* von Zedtwitz, *supra* note 40, at 358 (according to OECD statistics in 2003, the expenditures amounted to sixty–nine billion U.S. dollars); *see also* Fischer & von Zedtwitz, *supra* note 35.

[43] *See* Gao & Tisdell, *supra* note 35, at 318.

[44] *Id.*

companies such as Siemens, Philips, Nokia, General Electric, and Motorola, as well as, Japanese, Korean, and Taiwanese companies had been moving their production facilities to China. According to some accounts, foreign companies opened 60,000 factories in China between 2000 and 2003, allowing Chinese exports to rise to over 400 billion U.S. dollars in 2003.[45] Von Zedtwitz identified approximately 200 R&D laboratories that had been established, or were in the process of being established in China at the beginning of 2004, which corresponds to approximately one fourth of the foreign investment in the United States during 1998.[46] What impressed von Zedtwitz the most was that these investments were transacted during a period of global economic instability.[47] His investigation also shows that foreign companies do not move R&D facilities to China in order to solely research according to local needs.[48] Rather, companies move with the express task of developing products and technology for the global market.[49] Nokia, for example, moved divisions crucial to the development of its third-generation software from Finland to Hangzhou.[50] One reason for the move is supposed to be cost effectiveness; Chinese engineers' salaries are about a quarter of their U.S. or European counterparts.[51] Moreover, their high level of technical competence affected Nokia's decision.[52]

China's commanding, complex, and almost scary development is doubtlessly dependent on a range of factors that cannot be explored in depth in this article. Without a doubt, foreign companies would not have become involved in China, at least not to this extent, had the goods produced in China not had open access to global markets, which they did because of the new WTO legal system. Similarly, it is beyond question that China's entrance into WTO, and further development of its intellectual property rights protection played a decisive role, despite all of the still prevalent deficits to TRIPs standards.[53] Gao and Tisdell note in this context:

> Following market reforms and commercialisation, the Chinese Government started to establish a patent system. This has become the cornerstone of science and technology development in China, and has enabled China to participate in the World's Intellectual Property market. In 1983, China

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[45] *See also Men and Machines: Technology and Economics Have Already Revolutionized Manufacturing. White-Collar Work Will be Next*, ECONOMIST, Jan. 13, 2004, at 5–6.

[46] *See* von Zedtwitz, *supra* note 40, at 440. According to the data collected by von Zedtwitz, foreign firms should have established some 400 R&D Centers in China by 2002. *Id.*

[47] *Id.*

[48] *Id.*

[49] *Id.* at 441.

[50] *Id.*

[51] *Id.* at 442.

[52] *Id.* Von Zedtwitz researched fifteen European, seventeen U.S., and twelve Japanese companies, as well as five from other countries, including Nokia, Ericsson, Hoffmann-La Roche, Tetrapak, Volkswagen, Bayer and Siemens. *Id.* Gassmann & Han, *supra* note 40, at 427 (providing a detailed and exhaustive analysis of the motives of transnational companies establishing R&D activities in China).

[53] *See* Can Huang et al., *Organization, Programme and Structure: An Analysis of the Chinese Innovation Policy Framework*, 34 R&D MGMT. 367, 382 (2004), *available at* http://www.blackwell-synergy.com/doi/abs/10.1111/j.1467-9310.2004.00347.x. *See generally* ANDREW C. MERTHA, THE POLITICS OF PIRACY: INTELLECTUAL PROPERTY IN CONTEMPORARY CHINA (2005).

> enacted its patent law. This was the first step in establishing a legal basis for ownership of intellectual property.[54]

Despite the many great and fundamental differences that exist between China and India, the two great economies share several notable commonalities in the context at issue. Although not widely known, it was not until the early 1990s that India liberalized its economy,[55] started a privatization process,[56] and gradually adapted its patent legislation to a large extent consistent with TRIPs standards.[57] India now possesses a wide and well-structured scientific, technological, and industrial basis.[58] Production costs in India are also quite low.[59] Foreign direct investment in India is not quite comparable to China, but in 2001-2002 it rose to 3.91 billion U.S. dollars, indicating an increase of sixty-five percent compared to the previous year, and earning India a seventh place standing in Foreign Direct Investment ("FDI") worldwide.[60] The value of textile and clothing exports amounted to eleven billion U.S. dollars in 2003, and should climb to fifty billion U.S. dollars by 2010, according to the predictions of the Indian government.[61] These factors, paired with the especially high qualification of Indian scientists and engineers in the field of information technology,[62] attracted U.S. companies such as Texas Instruments and Motorola to Bangalore as early as the 1980s. But significant relocation of U.S. and European companies in previously unthought-of amounts first occurred in the late 1990s — i.e., already under the aegis of the WTO regime — as Hewlett-Packard, American Express, Citibank, General Electric, and other companies entered India. The Indian information technology industry reached a turnover of approximately sixteen billion U.S. dollars in 2003, three-quarters of which resulted from exports.[63] The yearly turnover is supposed to rise to about fifty billion U.S. dollars by 2008.[64] The turnover seen by the company Infosys, one of the largest contractors of IT services, increased eight-fold in five years, and crossed the one billion U.S. dollar

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[54] Gao & Tisdell, *supra* note 35, at 324.

[55] *See* Ashok K. Gupta et al., *Managing the Process of Market Orientation by Publicly Funded Laboratories: The Case of CSIR, India*, 30 R&D MGMT. 289, 289 (2000), *available at* http://www.blackwell-synergy.com/doi/abs/10.1111/1467-9310.00182.

[56] See the brochure "Indien 2003-2004 – Verlässicher Wirtschaftspartner – Attraktives FDI Gebiet," p. 11 *et seq.* published by the *Ministry of External Affairs* of the Indian Government [hereinafter Indien].

[57] Prabuddha Ganguli, *Intellectual Property Rights in Transition*, 20 WORLD PAT. INFO. 171, 175 (1998); H. Rajeshwari & D.C. Gabriel, *An Indian Summer: Contract Research Heats Up*, 166 PAT. WORLD 19, 19 (2004). Last amendments to the Indian Patent Act were passed by the Parliament on Mar. 22, 2005. *Id.*

[58] Ganguli, *supra* note 57, at 177.

[59] *See* Edward Luce, *India's Investment Climate Brightens*, FINANCIAL TIMES (London), Nov. 24, 2004, at 5 (noting production costs are about twenty-five percent less than China; however, the productivity of a worker in India is about fifty percent less than of one in China).

[60] *See* Indien, *supra* note 56, at 5–6.

[61] *See Id.*

[62] *The Place to Be*, ECONOMIST, Nov. 11, 2004, at 8, 10. Every year approximately 300,000 information technology engineers graduate from Indian universities, of those about 30,000–40,000 are highly qualified and in demand from foreign companies such as IBM and Accenture. *Id.*

[63] *Id.*

[64] *Id.*

boundary in the 2003 financial year.[65] Infosys maintains an annual training course capacity of 4,000 students.[66] The so-called Indian Business Process Outsourcing Industry ("BPO") makes workers in industrialized nations tremble in fear of losing their jobs. The growth in productivity in the Indian IT service industry is the highest worldwide.[67] Almost everything can be made quicker, cheaper and better in India, claims Nandan Nilekani, the managing director of Infosys.[68] His company managed to create almost 5,000 new jobs in the year 2004.[69] But the Indian IT industry is by no means the only industry that attracts foreign capital and reasons to create R&D centers. By achieving TRIPs protection standards in the field of pharmaceutical patent protection,[70] the wave of outsourcing should also include pharmaceutical R&D, especially where clinical trials are involved. This should lead to a 200 to 300 million U.S. dollar drop in development costs per drug. Also, German companies such as Mucos Pharma or Schering AG have become active in this domain. The Indian Central Drug Research Institute ("CDRI"), a governmental organization, is actively involved in contract negotiations and contract design for research projects of foreign companies. The already well-developed Indian pharmaceutical industry, with companies such as Dr. Reddy's, Ranbaxy, Orchid, and Cipla, is increasing investment in its own R&D,[71] while other companies are looking for different methods of collaboration, such as joint venture, combined distribution, and, most recently, research contracts.[72] As far as India is concerned, there is no doubt that such development could not have come about without the WTO regime.[73]

III. WHAT ACCOUNTS FOR TRIPS-PLUS AND TRIPS-MINUS?

When the issue of TRIPs-plus comes up, there are many different perceptions ensconced in the term that can be only briefly discussed here and only in the context of patent protection. As has already been alluded to, the endeavors to encourage greater harmonization of substantive patent law in the form of SPLT, made in the context of WIPO, were assessed by critics as an attempt to usher in TRIPs-plus standards, and, thus, to deprive developing countries the room to maneuver that

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[65] *Id.*

[66] *Id.*

[67] *Id.*

[68] *Id.*

[69] *Faster, Cheaper, Better*, ECONOMIST, Nov. 13, 2004, at 12. The Indian IT industry is projected to create 2.5 million jobs by 2008. Imam, *How Does Patent Protection Help Developing Countries?*, 37 INT'L REV. INTELL. PROP. & COMPETITION. L. 245, 256 (2006). IBM, Microsoft, Metamove, Oracle, and Sathyam computers have built corporate schools for training in India. *Id.*

[70] *See* Sreenivasarao Vepachedu & Martha M. Rumore, *Patent Protection and the Pharmaceutical Industry in the Indian Union*, INTELL. PROP. TODAY, Oct. 2004, at 44; Sajeev Chandran et al., *Implications of New Patent Regime on Indian Pharmaceutical Industry: Challenges and Opportunities*, 10 J. INTELL. PROP. RTS. 269, 269 (2005).

[71] *See* Khozem Merchant, *Scientists in India Develop New Cure for TB*, FINANCIAL TIMES, Sept. 7, 2004, at 9. Indian scientists have recently developed the first new medicine for the treatment of tuberculosis and have submitted patent applications for it not only in India but also in the U.S. *Id. See also* Chandran et al., *supra* note 70, at 278.

[72] *See* Rajeshwari & Gabriel, *supra* note 57; *see also* Indien, *supra* note 56, at 83.

[73] *See* Peter Marsh, *A New Manufacturing Mantra*, FINANCIAL TIMES, May 16, 2006, at 8 (stating the current state of Indian service-based manufacturing).

TRIPs had provided them. In particular, commentators have argued that a second phase with the aim of establishing the international standard for determining the scope of protection, which would cover also equivalents, would follow the first phase of the harmonization of standards for prior art, novelty, utility, inventive step, enabling disclosure, as well as the patent claims drafting.[74] Dutfield calls this process "immoral and 'the last insult to developing countries,'"[75] and Reichman has asked for a moratorium on the process.[76] Should these efforts for harmonization in the framework of WIPO, the supposed results of which could be subsumed under the term TRIPS-plus, eventually fail, this would harm, rather than benefit, all parties involved, especially the developing nations.[77] A failure would give the United States, which already takes part in the negotiations with rather restrained enthusiasm,[78] yet another reason for the bilateral pursuit of its aims. This pursuit, denoted as TRIPs-plus, will lead to a rather one-sided export of American protection standards to partner nations. However, the results do not coercively have to be so, since the definitions of specific patentability requirements in SPLT relate vastly to purely legal/technical aspects that are primarily disputed between the United States and the rest of the world, and whose solution would not disadvantage developing countries.[79]

As it did even before the adoption of TRIPS, the United States has been following the strategy of imposing high standards for the protection of intellectual property in bilateral free trade agreements ("FTAs"), which surpass the standards of TRIPs. This policy concerns FTA agreements with very diverse partners such as Australia, Bahrain, Chile, Jordan, Morocco, and a string of Central American countries. The core of "plus" lies primarily in the protection of pharmaceutical inventions. For instance, the possibility of granting compulsory licensing in the case of public, non-commercial use is reduced to some cases of national emergency and behavior restricting competition, which constitutes a deviation from the rules of TRIPS Article 31.[80] Furthermore, the FTAs contain clauses on the exclusivity of data, which pharmaceutical companies submit to competent authorities for the purpose of gaining marketing approval for new drugs.[81] This protection clearly goes beyond that of Article 39 paragraph 2 of TRIPs against misuse of data by a third party.[82] The obligation is particularly far reaching since it does not grant marketing approval for drugs that are covered by patent claims during the patent term, as well

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[74] *See* MUSUNGU & DUTFIELD, *supra* note 6, at 12. For details of the consultation on a gradual advancement, *see Prinz zu Waldeck und Pyrmont*, GRUR Int. 2004, 840 *et seq.*

[75] *See* THIRD WORLD NETWORK, WIPO HAS FAILED IN ITS DEVELOPMENT MISSION, *available at* http://www.twnside.org.sg/title2/twr171h.htm (last visited Oct. 1, 2006).

[76] *Id.*

[77] *Cf. Klunker*, Informal Session des Standing Committee on the Law of Patents der WIPO in Genf von 10. bis 12. April 2006, GRUR Int. (2006).

[78] *Cf. Prinz zu Waldeck und Pyrmont*, *supra* note 74, at 843.

[79] *Id.*

[80] *See, e.g.*, U.S.–Austl. Free Trade Agreement, U.S.–Austl., art. 17.9(7), May 18, 2004, *available at* http://www.ustr.gov/Trade_Agreements/Bilateral/Australia_FTA/Final_Text/Section_Index.html [hereinafter FTA].

[81] See for this problem e.g. in European Law, *Gassner*, Unterlagenschutz im Europäischen Arzneimittelrecht, GRUR Int. 2004, 983 *et seq.*

[82] *See* DANIEL GERVAIS, THE TRIPS AGREEMENT: DRAFTING HISTORY AND ANALYSIS 274 (Sweet & Maxwell Limited 2003) (1998).

as during the patent term extension, if any.[83] This is supposed to delay market access to generic drugs as long as possible. Other obligations touching on intellectual property relate, for instance, to the general commitment of contracting partners to reduce differences in their respective national laws. For example, the FTA with Australia obliges Australia to accept the patentability requirement of utility as fulfilled only if the latter is "specific, substantial and credible."[84] Thus, Australia has practically adopted the standards of the Utility Examination Guidelines of the U.S. Patent and Trademark Office ("USPTO"). Critics of the FTAs, such as Drahos,[85] view this as a strategy of the United States, which wants to impose its own protection standards worldwide via the most-favored-nation clause of Article 4 of TRIPs—the contracting parties are bound to apply to all members of the WTO.

There is no room here to delve into the criticism of the U.S. TRIPS-plus strategy. However, it can basically be assumed that contracting parties apply their own cost-benefit analysis prior to signing such agreements. The analysis will without a doubt be based on actual and anticipated bilateral trade with and without the FTA. In this context, the Australian government has calculated that the FTA will boost the Australian economy by six billion dollars in benefits annually.[86] However, other Australian institutions estimate the total costs to be fifty billion dollars, and that there will be a loss of up to 200,000 jobs.[87] When trying to decide on a course of action, the choice was clear to the Australian government, because without an FTA the country would have to fear or perhaps even suffer economic disadvantages. Drahos and his fellow authors criticize their government for the FTA encroachment on Australia's sovereign right to independently price pharmaceuticals by means of the Pharmaceutical Benefits Scheme ("PBS"), the National Health Act, and the Pharmaceuticals Benefit Pricing Authority ("PBPA"). Because future decisions of the PBPA will be reviewed by an independent organization, and because generics will be available on the market only at a later date, the FTA adds to the increasing cost of the healthcare system.[88] In their crusading attacks, especially against the U.S. Pharmaceutical Industry,[89] Drahos and others misjudge something very fundamental; the philosophy of the Australian PBS is "driven by the principle of equity of access" and is based on the consideration that

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[83] *See, e.g.*, FTA, *supra* note 80, art. 17.10.

[84] *See* FTA, *supra* note 80, art. 17.9(13). The free trade agreement with Bahrain seems to contain – in view of the up to now rather poor protection standards in Bahrain – an obligation to provide patent protection for plant patents and to join the International Union for the Protection of New Varieties of Plants (UPOV), and to arrange for patent protection for new uses of known products, including uses for further medical indications. *See* U.S.–Bahr. Free Trade Agreement, U.S.–Bahr., May 27, 2004, *available at* http://www.ustr.gov/Trade_Agreements/Bilateral/Bahrain_FTA/final_texts/ Section_Index.html.

[85] *See generally* Peter Drahos et al., *Pharmaceuticals, Intellectual Property and Free Trade: The Case of the U.S.-Australia Free Trade Agreement*, 22 PROMETHEUS 243 (2004) (discussing the U.S.-Australia free trade agreement).

[86] *Id.* at 244.

[87] *Id.*

[88] *Id.*

[89] *See, e.g.*, Peter Drahos & John Braithwaite, INFORMATION FEUDALISM (The New Press 2003) (2002).

> [A]ll Australians have a right of access to needed medicines. Need however, has a utilitarian dimension. The PBS is not designed to provide medicines for specific individuals with specific needs. Rather its purpose is to maximize the access of community of individuals with limited resources to essential medicines. To paraphrase Jeremy Bentham, the PBS is all about the greatest health of the greatest number.[90]

The idea that this should be part of the responsibility and the cost of the companies who effectuate the enormous investments, and the economies whose healthcare systems have rendered the highest drug prices is indeed very appealing, and could even be realized if globalization had not reached the level it is at today. However, this idea might now finally belong to the past, especially when it seems advisable in the context of the macroeconomic considerations of the state in question. Surely the Australian government saw this similarly. A country cannot demand access to the U.S. market for agricultural products and seek cutbacks on U.S. agricultural subsidies, while at the same time demanding access to medicines developed within the United States at a lower price than the U.S. population pays. Needless to say, the idea of the "principle of equity of access" is fundamentally correct, but Australia, as the world's fifteenth largest national economy, must provide access for its population with its own financial means, and not at the expense of the U.S. health care system! For countries whose own resources are insufficient, the international community of states must come to their aid.[91] Here, it should be clearly stated that this should not be taken as a comment on the appropriateness of drug prices. Rather, no one should lose sight of, nor compromise the high level of investments that are admittedly plagued by high risks upon which the continuous flow of new medicine is dependent and upon which humans are ultimately dependent.

In summary, it can be observed that the FTAs with TRIPs-plus standards should only be accepted if they are justified in a macroeconomic context on the basis of specific provisions of the concerned agreements, and not just on vague hopes. The term "macroeconomic" can, of course, never be reduced to an isolated examination of the genuine effects of, e.g., patent protection, but applies to the exact circumstances of the economies affected, both with and without the FTA. On the current level of development of globalization, every attempt to disconnect matters of intellectual property protection from matters of international trade must inevitably fail. If it ever actually came to pass, it would have negative and lasting effects on international trade.

Regarding the idea of TRIPs-minus, it should be observed that the development since the Doha WTO Ministerial Conference in November 2001 has brought about a TRIPs-minus for the least developed countries, in the respect that they are not required to start providing patent protection for pharmaceuticals until January 1, 2016.[92] Since the decision of the WTO General Council of August 30, 2003, it has been further clarified that under specific conditions deviating from Article 31(f) of TRIPs, compulsory licenses can be issued for the production of

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[90] Drahos, *supra* note 85, at 244.

[91] *See* Straus, *supra* note 28, at 132.

[92] *See Straus*, Bitburger Gespräche, Jahrbuch 2003, p. 126 *et seq.*

pharmaceuticals in order to satisfy the demands of third-party countries.[93] Furthermore, developing countries were advised to completely exclude from patentability diagnostic, therapeutic, and surgical methods for the treatment of humans and animals; plants and animals, in a narrower interpretation of the term microorganism; computer programs; and business methods.[94] The countries were further advised to avoid patenting new uses of known products, the use of the patent system to protect plant species, and, when possible, genetic material.[95] The countries of the Andean Community, and with them Argentina and Brazil, have specifically barred biological material from patent protection, even if isolated from its natural environment and commercially applicable, and have, thus, adopted standards that can be seen as TRIPs-minus-standards.[96] Disregarding that some of these measures, in part recommended and in part already introduced into law, could possibly provide grounds for a WTO dispute settlement action, they are also not in the well-understood interest of the developing nations, and thus stand in clear contradiction to their own argument. For example, developing countries like Brazil and India claim, and are by all means justified in doing so, that they should be able to adequately participate in the commercial gains achieved through the use of their genetic resources, so-called "benefit sharing." Although, in view of the ability of biological material to reproduce, it cannot be questioned that such material can be effectively protected as genotypes, i.e., over generations and also outside the territory of origin, and thus commercialized profitably for the country of origin only in the form of patents or other intellectual property rights.[97] These countries exclude the material in question from patent protection and raise objections against its patent protection in industrialized countries. As Boyd, Kerr and Perdikis[98] stress, the developing nations at hand concentrate exclusively on the alleged costs of the respective exclusive rights and thus overlook the benefits of innovation, which domestic experts as well as foreign companies and research institutions could bestow upon a nation.[99] Boyd, Kerr and Perdikis accurately note:

> Thus, the real question is not how to prevent multinational biotechnology firms from exploiting developing countries, but rather, how to induce them to want to exploit developing countries. Multinationals lining up to extract monopoly rents from developing countries would be the surest sign that

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[93] *See* Implementation of Paragraph 6 of the DOHA Declaration on the TRIPS Agreement and Public Health, WT/L/540 and Corr. 1 (Sept. 1, 2003), *available at* http://www.wto.org/english/tratop_e/trips_e/implem_para6_e.htm; *see also* PRESS RELEASE, WTO NEWS: 2003 NEWS ITEMS, THE GENERAL COUNCIL CHAIRPERSON'S STATEMENT (Aug. 30, 2003), http://www.wto.org/english/news_e/news03_e/trips_stat_28aug03_e.htm.

[94] COMMISSION ON INTELLECTUAL PROPERTY RIGHTS, INTEGRATING INTELLECTUAL PROPERTY RIGHTS AND DEVELOPMENT POLICY 122 (2002), *available at* http://www.ipcommission.org/graphic/documents/final_report.htm.

[95] *Id.*

[96] *See* Joseph Straus, *Patents on Biomaterial: A New Colonialism or a Means for Technology Transfer and Benefit-Sharing?*, *in* BIOETHICS IN A SMALL WORLD 45, 59 (F. Thiele and R. Ashcroft eds., 2005).

[97] *Id.* at 67.

[98] Shari L. Boyd et al., *Agricultural Biotechnology Innovations Versus Intellectual Property Rights: Are Developing Countries at the Mercy of Multinationals?*, 4 J. WORLD INV. 211, 212 (2003).

[99] *Id.*

> investments in the desired innovations are taking place. Unless developing countries or aid-givers are willing to subsidize biotechnology tailored to developing countries – and there is no evidence to suggest they will – the investment will simply not take place. The key lies in developing countries' willingness to extend and enforce IPR's biotechnology.[100]

It is beyond question that China acts according to this advice, and is therefore able to achieve convincing, even envy-inspiring success.[101]

IV. Closing Remarks and Further Prospects

Eleven years after the WTO Global Economic Order was established, with GATT 1994 and TRIPs as its main pillars, everyone should realize that international trade, with open and opening markets, is tightly linked to the international system of intellectual property protection. Due to the already achieved level of globalization, GATT 1994 and TRIPs have become practically inseparable. If the achieved status, which, as empirical data shows, has brought mostly advantages for the developing countries, and their further development are not to be endangered, every attempt to disjoin intellectual property protection from the development of international trade should cease. In view of the effects of globalization on job markets, particularly felt in industrialized nations on account of job loss from the displacement of production and R&D to threshold and developing countries, the benefits of globalization for the national economies of the industrialized countries are not easily communicable,[102] especially as their interests are not always congruent with the interests of internationally active businesses. Attempts to overturn the laboriously achieved balance, which by all means benefits the developing countries, could produce a boomerang effect in favor of those in industrial nations who already want to betake themselves to protectionism and isolationism no matter how incorrect the latter may be from an objective point of view.[103] It is easy to envision what this would mean for

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[100] *Id.*

[101] Richard McGregor, *China's Success Inspires Envy and Awe*, FINANCIAL TIMES, May 28, 2004, at 12.

[102] For more on this complicated problem see *Streeck*, Globalisierung: Mythos und Wirklichkeit, in Max-Planck-Gesellschaft (ed.), Jahrbuch 2004, Munich 2004, p. 25.

> Anders als im Mythosder Globalisierung unterstellt, kann dabei von einem Bedeutungsverlust staatlicher Politik keine Rede sein. Sektorale Spezialisierung erfordert im Gegenteil eine integrierte, auf den Ausbau vorhandener komparativer Vorteile hin maßgeschneiderte national Wirtschafts-, Struktur-, Sozial- und Bildungspolitik. Sie verlangt ferner angepasst institutionelle Regelwerke, etwa für den Arbeitsmarkt, die eine optimale Nutzung der nationalen Ressourcen zugunsten der jeweiligen Kernsektoren ermöglichen.

Id. at 31. *See also Into the Unknown: Where Will the Jobs of the Future Come From?*, ECONOMIST, Nov. 13, 2004, at 12; *Sink or Swim: Sourcing from Low-cost Countries Works Only in Open and Flexible Markets. Europe's are Neither*, ECONOMIST, Nov. 13, 2004, at 14.

[103] *See A World of Opportunity: Why the Protectionists are Wrong*, ECONOMIST, Nov. 13, 2004, at 12. Lawrence H. Summers stated recently in this context:

> The twin arguments that globalization is inevitable and protectionism is counterproductive for almost everyone have the great virtue of being correct – but they do not provide much consolation for the losers.

countries such as Bangladesh, Cambodia, Macao, or Pakistan, who make sixty to eighty percent of their exports with textiles and clothing, and are already fully exposed to the overpowering competition from China and India as a result of the abolition of quota regulations on December 31, 2004.[104]

The critics of TRIPs are unwilling or unable to accept this. Just as little as critics considerations reflect the actual state of the developing economies in the pre-TRIPs era, they do not bear in mind the actual development under the influence of the WTO system. The expressed criticism rather commemorates the criticism and the suggestions made by the United Nations Conference on Trade and Development ("UNCTAD") in the seventies of the last century,[105] which inhibited the further development of the international system for the protection of intellectual property rights, without having brought the slightest advantage for developing countries, except for dubious political victories.[106] Even if all comparisons were flawed, the numerous submitted recommendations for the alteration and amelioration of the current international system of intellectual property protection in general, in the interest of the developing countries, in particular, reminds us of Karl Popper's remark regarding the Freudian psychoanalysis: "Its logical content surely is great; but its empirical content is zero."[107] Those who believe they can conceive the protection of intellectual property rights internationally isolated from the issues of international trade, misjudge the reality of globalization, its legal foundations, and its functional machinery. In the current state of the development of globalization, the compliance with all WTO requirements, i.e., GATT and TRIPs, is decisive to avoid frictions in international trade, which inevitably would hurt the weaker and the weakest. WIPO would be well advised to take this to heart. Lately, requests WIPO has been beset with misjudge these realities and are overwhelming not just for WIPO, but to the entire system of intellectual property rights protection by demanding it provide solutions to all the world's problems.

Thus, for the time being, the successful functioning of the international protection of intellectual property rights in the context of the global economic order depends on the WTO members' compliance with TRIPs, GATT, TRIMS, and GATS commitments. TRIPs-minus standards based on the Doha model should remain a one-time exception, as they only distort and weaken the system without being able to provide permanent and appropriate solutions to the problems approached.[108] As far

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Lawrence H. Summers, *Globalization Anxiety*, LOS ANGELES TIMES, October 30, 2006, *available at* http://www.latimes.com/news/opinion/la-oe-summers30oct30,0,1998395.story?coll=la-opinion-rightrail.

[104] *See The Looming Revolution: China, the world's workshop, is poised to become its tailor. What will happen to textile industries elsewhere, especially in South Asia?* ECONOMIST, Nov. 13, 2004, at 76.

[105] UNCTAD, THE ROLE OF THE PATENT SYSTEM IN THE TRANSFER OF TECHNOLOGY TO DEVELOPING COUNTRIES, Doc. TD/B/AC/11/19, April 21, 1974.

[106] See on this critically *Straus*, Patent Protection in Developing countries, an Overview, in: Equitable Patent Protection for the Developing World, Cornell Agricultural Economic Staff Paper 89-36, Ithaca, NY.

[107] "Ihr logischer Gehalt ist sicher groß; aber ihr empirischer Gehalt ist Null." *Popper*, Wissenschaftslehre in entwicklungstheoretischer und in logischer Sicht, in: *Popper*, Alles Leben ist Problemlösen – Über Erkenntnis, Geschichte und Politik, Munich and Zurich 2004, p. 15 *et seq.* (41).

[108] *See Straus*, Bitburger Gespräche, Jahrbuch 2003, p. 129 *et seq; see also* Glenn Hubbard, *Attacking Drug Makers is no Cure*, FINANCIAL TIMES, June 16, 2004, at 15.

as the real TRIPs-plus deliberations are concerned, they lack the foundation as a general concept, until a balance in other areas of the WTO economic order can be achieved, i.e., as long as further concessions concerning market access, possible investment, etc., are not in place. However, efforts for harmonization in the area of technical law should be a different matter. Obstruction of, for example, the work of SPLT, is counterproductive and misguided, especially as several generally acknowledged weaknesses in the system could also be remedied in this context.[109]

[109] *See* A PATENT SYSTEM FOR THE 21ST CENTURY 49 (Stephen A. Merrill et al., eds., National Academies Press 2004).