

TOWARDS A PRO-DEVELOPMENT AND BALANCED INTELLECTUAL PROPERTY REGIME

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Thank you very much for this opportunity to address you on a topic which is of increasing importance to the developing world. Intellectual property rights. The TRIPS agreement of the Uruguay Round pushed intellectual property rights onto the development agenda. Countries were required to adopt intellectual property regimes. At the same time, in the decade since the signing of the Uruguay round agreement at Marrakech, dissatisfaction both in the scientific community and in the developing world has grown. The poorest people of the world have been denied access to life saving drugs, corporations from the advanced industrial countries have attempted to patent native medicines and plants, and the scientific community has complained that it has impeded the progress of science. Most of these concerns were anticipated (even within the American Administration that was pushing for TRIPS), but those expressing them were ridden over roughshod by the trade negotiators, reflecting the interests of the pharmaceutical and media industries.

Intellectual property rights *are* important, both for developed and less developed countries, and the world, including the developing countries, would have much to gain from a well designed intellectual property regime. This month, on October 4, in Geneva, the General Assembly of WIPO decided to advance an IPR agenda that was, for the first time, explicitly developmentally *oriented*. The adoption of the Brazilian and Argentinean proposal for a development agenda was a major step forward for several reasons. First, it recognized that intellectual property is not an end in itself. ^[2] Secondly, it reiterated WIPO's mission to promote creative intellectual activity and the transfer of technology to developing countries. To many, it had seemed that in the past WIPO had simply assumed that the stronger the intellectual property the better the better for both developed and less developed countries. The new development agenda calls for ascertaining how different intellectual property regimes impact developing countries. For them, stronger may not be better. But it emphasizes too that there are commonality of interests. As economists have long recognized, even for developed countries *as a whole*, stronger may not be better (though *some* special interests may well benefit). But this characterization is over simplistic: it is not just a question of strong or weak intellectual property rights; but rather the design of the whole intellectual property regime, with its myriad of provisions, that matters.

In this lecture, I want to outline what such a regime might entail, but first, we must describe why intellectual property rights are of such importance to developing countries, the role of intellectual property rights, why intellectual property rights differ from other property rights, and what is meant by a

balanced intellectual property rights regime.

At the onset, we must be aware of a risk: [3] the reality may not live up to the rhetoric. At Doha, the advanced industrial countries, recognizing the imbalances in previous rounds of trade negotiations, committed themselves to a *development round* of trade negotiations, to rectify those past imbalances and to ensure that any new agreement emerging from the negotiations would, in fact, promote the development of the least developed countries. To a large extent, the advanced industrial countries have reneged on that promise. As a recent study I conducted through the Initiative for Policy Dialogue on behalf of the Commonwealth demonstrated, [3] with the agenda as it has evolved, the Development Round does not deserve that epithet. It is a far cry from an agenda that reflects the interests of the poorest countries and would most promote their development.

KNOWLEDGE AND DEVELOPMENT: AN ECONOMIC FRAMEWORK

A half century ago, most economists thought that what distinguished less developed countries from more developed countries was the lack of resources. Hence, development focused on providing more resources, for instance, through institutions like the World Bank. Today, we recognize that even more important than the gap in resources is a gap in knowledge. [4] Those countries which have been most successful in development, most notably those in East Asia, have actively pursued strategies aimed at closing the technology and knowledge gap. (Similarly, many have argued that America's [5] stealing or otherwise obtaining knowledge of key technologies played an important role in America's success in the late nineteenth century. [5] Reverse engineering and compulsory licensing were among the tools employed. Many worry that these tools will be less accessible under the current intellectual property regimes.)

What is entailed, of course, is not just imitation. It involves adaptation, and in many cases, developing technologies that are more appropriate to the factor prices and environmental conditions prevailing in the country. These processes are costly. A question to which I turn shortly is the role of intellectual property both in enhancing, through incentives, and in hindering, them.

Knowledge is important, of course, not just because it increases productivity. Access to knowledge about health, and life saving drugs, has had an enormous effect in extending life spans. Though the AIDS epidemic, which has reversed recent gains in many sub-Saharan African countries, has brought these issues to the fore, there is in fact a far wider set of diseases and health needs for which access to medicines at affordable prices are relevant.

Knowledge as a public good: incentives and inefficiencies

Knowledge, however, does not come costlessly. Resources have to be expended to produce and disseminate knowledge. Intellectual property provides *one* of the mechanisms for providing incentives and resources for the creation of knowledge.

More than two hundred years ago, it was recognized that some form of intellectual property protection was required to provide innovators, writers, and other creative artists with incentives; the right to grant patents and copyrights was contained in the Constitution of the United States, and the first patent law was passed in 1790, not long after the new government was established. [fb1].

But intellectual property rights are different from other forms of property rights. For while they provide an incentive to innovate, they result in an economic distortion—they create a (temporary) monopoly power. Monopolies interfere with the efficiency of the economy. They lead to lower levels of production and higher prices than would prevail with competition. Ordinarily, property rights are argued for as a *means* of achieving economic efficiency^[6]. Intellectual property rights, by contrast, result in a *static inefficiency*, justified by the *dynamic incentives*.

The fundamental problem is that knowledge is a public good—at least in the sense that there is no cost to an additional individual enjoying that knowledge.^[7] As Thomas Jefferson, America's third president, put it, knowledge is like a candle; as it lights another candle, its original light is not diminished.^[8] Economists refer to this property as *exclusivity*. If I eat a candy bar, you cannot eat it. Only one of us can consume it. But if I know something, you can know it too. To deny you that knowledge, or the right to use that knowledge, gives rise to an inefficiency. But intellectual property is based on such exclusion.

In fact, knowledge is a *global public good*, that is, it of potential benefit to anyone in the world. There is a global social cost in depriving anyone in the world the right to use available knowledge.^[9]

Balancing static inefficiencies and dynamic gains

But that raises three questions. The first is, how to balance the static inefficiencies and the dynamic gains. An unbalanced intellectual property regime—say with an excessively long patent life—leads to overall inefficiency. The increases in incentives to innovate from the increased present discounted value of profits from the extension of monopoly power, say from 20 to 80 years, are almost surely of less importance than the present discounted value of inefficiencies to which they give rise.

In the discussions leading up to the TRIPS agreement, this careful balancing was totally missing. The argument was essentially, the stronger the intellectual property rights, the better. But this is wrong.

Assessing these global social costs is not easy. How, for instance, do we value the lives of the thousands of people who die because they could no longer afford AIDS drugs at the high/monopoly prices which the drug companies might charge? Standards of living in the developing world may be lowered, because they have less easy access to knowledge that would improve productivity and standards of living. But by how much?

Advocates of strong intellectual property sometimes go so far as to suggest that without some intellectual property protection, those inside the developing countries will have little incentive to import new technologies and adapt them to the circumstances of their country. In short, stronger intellectual property rights *helps* less developed countries, because while it may reduce their access to others' intellectual property, it increases incentives for those within their economy to innovate, or to adapt existing technology. But this overestimates the role of intellectual property rights and underestimates other bases for undertaking research—from trade secrets to first mover advantages that can yield sustained profits for the first firm to enter a market.^[10] These alternatives are particularly relevant for those in developing countries. Much of the most important information is not protectable by intellectual property rights—will there be a demand for this product in the country? Is the climate in the country well suited for growing this particular crop? Is there a way of transporting the goods

cheaply from the developing country to markets in developed countries? What is it that we can produce that will be demanded abroad?

(Even within developed countries, assessing the magnitude of the social costs from patent protection is not easy. A patent granted on a four wheel motorized vehicle was used to try to coordinate a cartel among automobile producers; the cartel failed only because Ford challenged the patent and won.)

As difficult as it may be to assess the costs of the inefficiencies arising from patent protection, it is perhaps even more difficult to assess the extent to which (strengthened) intellectual property rights might lead to higher innovation. [11] For instance, at American drug prices, there will be presumably relatively few sales and low profits from selling drugs to sub-Saharan Africa at American prices. [12]

One of the further difficulties in reaching a judgment about the appropriate balance is that the usual calculus, in which there is normally a close congruence between private and social returns and in which compensation is related to *marginal contributions*, does not hold for innovation and intellectual property. The social return to my doing research is not the invention or innovation that I might produce; rather, it is only the fact that the invention or innovation was produced earlier than it otherwise would have been produced. The problem is that that is hard to ascertain. The patent system is a winner-take-all system: if there are a large number involved in a patent race, the winner gets the entire return; the losers typically get nothing. But if the winner had not done his research, the invention would have been discovered by one of the other researchers, only slightly later. It is not in general the case that the average compensation under the patent system corresponds to what compensation would have been, had we been able to base compensation on marginal contribution. Particularly if the patent is broad, or if monopoly power in one area can be leveraged into monopoly power in another, the private return may substantially exceed the social return. (At the same time, the fact that innovations give rise to spill-overs and externalities, which are not captured even by strong intellectual property rights, suggests that in many circumstances, the private returns are less than social returns.)

Similarly, there is a concern that there may be relatively low social returns to patents of traditional knowledge. The medicinal benefits may have long been recognized, even if the critical ingredient giving rise to the benefits was not fully identified.

Many patents (and the research which lies behind them) are focused not so much in producing a product that is *better*, that is valued more by consumers, or which costs less, but rather in enhancing market power, e.g. by extending market dominance. Patents can, and often are, used as a barrier to entry.

At the same time, patents give rise to what may be viewed as socially unproductive research, as others try to innovate around a patent. In short, the patent system not only does not reward inventors on the basis of their marginal contributions, but sets up a distorted set of incentives for innovations, where inventive activity is directed first at creating market power, and then, by others, at overcoming the artificially created market power.

American and other anti-trust authorities have recognized that intellectual property rights may need to be curtailed to prevent excessive monopolization, [13] and for reasons of public health or other public policy concerns. [14] In other cases, such as orphan drugs, patent protection has been extended because of the perceived need for greater incentives for research.

Excessive protection can lower dynamic efficiency

The second question is: is it not possible that excessively strong intellectual property rights can actually lower the pace of innovation? There are several reasons for this. First, the monopoly power to which intellectual property rights give rise may actually lead to less innovation. Monopolies may have insufficient incentives to innovate. [15] Accordingly, the pace of innovation may be less than would be the case with lessened monopoly power. Critics of Microsoft, for instance, have argued that its policies may well have suppressed innovation. In this case, the economy loses twice, both from dynamic and static inefficiency.

The worries are even greater: research is the most important input into the product of knowledge, so that by increasing the price of knowledge, the pace of knowledge production may be reduced. Even in the United States, there is considerable concern that, for instance, patenting the human genome may impede follow-on research. [16]

The problems are more even severe because patents often contain a considerable amount of enclosing the commons. That is, while in principle, patents are supposed to be only granted for *new knowledge*, defining new knowledge is not always easy. Often the patent covers knowledge that is already known. In some recent cases of biopiracy virtually all the knowledge covered was previously known. It may, of course, not be known to the patent examiner, and it may not have been published. Indeed, it may not be easy to publish knowledge which is so widely known that it is common knowledge. It may, however, be expensive to challenge a patent application. As it turned out, it was possible to mount successful challenges to the attempt to patent basmati rice or the use of turmeric in healing. [17] In these cases, there is little social benefit—dynamic or static—to the patent, and considerable social cost.

Moreover, no matter how well designed the patent law, intellectual property inevitably involves ambiguity—not only over whether there is a legitimate patent (e.g. has the novelty standard been met) but over the scope of the patent. While, by a large, it is relatively easy to define ownership rights over physical property, this is not so for intellectual property. Did Ransom's original patent for a four wheel self propelled vehicle include *all* such vehicles, or only the one he sketched out? A potential producer may be uncertain over who he needs to pay to have the right to produce. He may pay party A, only to find out that party B also has a claim. Patent conflict can, and in the past, has impeded innovation. The conflicting airplane patents held by the Wright Brothers and by Curtis impeded the development of the airplane, until in World War I, the government forced the pooling of patents.

The concerns raised here—the potential dynamic losses from excessively strong intellectual property rights—are, to a large extent, amplified in developing countries, for their ability to import new technologies from abroad and adapt them may well be impeded. Just as the original innovator has an incentive to try to get a patent with as broad a scope as possible, those in the developing world have, to a large extent, an incentive to have as narrow a scope as possible. Even when they recognize a patent, they may have provisions for compulsory licensing, which such licensing promotes social objectives, like health, competition, or development. Such a patent system might, for instance, provide incentives for those in developing countries to engage in the expenditures required for adaptation; no patent protection would undermine their incentives, and excessively broad patent protection would transfer so much of the rents to those in the advanced industrial countries that innovation too would be circumscribed. [18]

(Some have suggested that without strong intellectual property rights, countries will be unable to attract

investment. [19] In some cases, firms, such as in the automobile industry, assert that they will not produce locally certain key components in order to maintain their control over intellectual property. How significant this is, however, is difficult to ascertain.)

Alternative ways of financing and producing knowledge

So far, our discussion has focused on the potential disadvantages of the IPR system that it gives rise to inefficiencies, and excessively strong property rights may actually impede innovation and growth. This brings us naturally to the third critical question: are there alternative ways of producing and financing knowledge, which are better, in some way, than the system of *incentives* through patents and copyrights, with its attendant distortions?

There are other ways of appropriating returns from innovation (trade secrets, first mover advantage) besides patents and copyrights, and in many areas these are highly effective.

The advocates of stronger intellectual property rights give the impression that intellectual property rights are *essential* if any innovation is to occur. In fact, many of the most important advances in knowledge are not protected by intellectual property rights, and were not motivated by monetary gains. The basic mathematic advances which provided the underpinnings of the computer are but one of a large number of examples. Much of the innovation of the drug companies is based on basic research, sponsored by the US or other governments. The internet that spawned a myriad of innovations from the mid 90s on was based on research that was supported, and largely conducted, by the US and European governments.

More recently, the open source movement in software has been an important source of innovation. [20]

The fact that so much of the successful innovation in the united states has occurred in research parks adjacent to universities suggests that these firms are benefiting from knowledge produced in the universities and university research is, by and large, funded by foundations, government, and endowment.

We can think of IPR as a method of funding research a highly distortionary method. Price exceeds marginal cost by a considerable amount, for a limited period of time, and then price equals marginal cost. In the last seventy five years, there has been considerable research into the optimal way of raising (tax) revenues. [21] There is no research which suggests that the implicit taxation of IPR has any optimality properties. Its principal virtue is that it is a benefit tax, that is, only those who benefit from the innovation pay for it. But in most arenas, we do not employ benefit taxes, largely because the additional distortions associated with such taxes are generally not viewed as worth the slight gain in equity. In the area of life saving drugs, such an argument is even more compelling, since typically those who have to use the drug are already suffering from the bad luck of having the life-threatening disease. While within the United States, the distortions associated with monopoly-pricing as a basis of research-funding may be limited, because so much of the funding for health care is from third parties, and there may accordingly be little price elasticity, internationally this is not true. High prices do have the effect of denying access to life saving drugs to large numbers of individuals.

A more equitable system of financing would be progressive would entail those more able to pay

paying more, and indeed a larger share of their income. By contrast, the in-effect benefit tax is *regressive* the poor pay a higher fraction of their income, at least on a *per unit* consumed basis. Indeed, one can argue that *not charging* prices above marginal cost for say life saving drugs may be a highly effective way of providing foreign assistance to the poorest countries of the world. Under current arrangements, American taxpayers fund foreign assistance which *indirectly* goes to American drug companies, as the health care budgets of the developing countries pay a research tax in the form of a price in excess of marginal cost. A system of direct payment combined with marginal cost pricing would make what is going on more transparent, and lead to better resource allocations.

The issues of production and finance can be largely separated. The IPR system is one in which there is private funding and private finance *except* that much of the innovation is based on basic research which is publicly funded and often publicly produced or at least not produced by for-profit entities. In the case of both health and defense, even the seemingly private funding under an IPR regime is really public funding, since all of defense expenditures is from the public purse, and since most of the funding for health care expenditures in most countries outside the United States is from the government.) In the United States, the national institutes of health represent publicly finance and publicly produced research.

Thus, the patent system is a distortionary and, with the huge transfers that might result from the poor countries to the rich, a potentially inequitable system of funding research. The huge transfers clearly can have an adverse effect on development. A balanced, development oriented, intellectual property regime would recognize this, and at least in some areas such as in life saving drugs almost certainly look for alternatives.

LEGAL AND POLICY FRAMEWORKS

In the first part of this lecture, I outlined some of the economic principles that underlay a balanced and development oriented intellectual property regime. Such principles get translated into action through legal and policy frameworks. Unfortunately, many of the current legal and policy frameworks do not reflect the kind of balance that we have advocated, and may actually hinder development. Part of the problem arises from a failure to understand the economics, part arises from a failure to understand property rights, and some of it arises because the agenda of those pushing for stronger intellectual property rights is not so much concerned with efficiency and equity, but with rent seeking.

Property rights

A common misperception is that once a patent is granted, it gives the grantee the right to do anything with it (during its life time), an uncircumscribed ability to exercise monopoly rights. Property rights do not in general, and should not, give the owners of property uncircumscribed rights, and this is especially true for intellectual property rights. Remember, intellectual property rights are not an end in themselves; they are a means to promote societal well being and this is most likely accomplished with carefully defined intellectual property rights.

Examples where public interest concerns circumscribe ordinary property rights abound; the general principle is that I cannot do things with my property that might adversely affect others. This provides a justification for zoning and for relevant parts of the endangered species act. In these cases, there is a balancing of public interest and private rights.

We have already noted several instances in which patent rights have been circumscribed, e.g. when the government has given itself the right to issue compulsory licenses. [22] The two most important are when there is a threat of excessive monopolization or a threat to public health. A development oriented intellectual property regime might well recognize the right to grant a compulsory license when doing so promoted a development agenda, e.g. enabled the country to reduce the technology gap that separated it from the more advanced industrial countries.

U.S. law provides an even more embracing exception. Under 28 USC 1498, the government is authorized to use any patent or copyright. The right can be extended to any contractor or subcontractor or employee working for the government. While there is extensive debate about the legal justification for this, the view taken by the United States Court of Federal Claims in the 1990s is telling. It recognized that the granting of a patent was a limited grant. Just as it was limited in time, so too it was limited in use. Government use represents a power reserved to the government when the government initially grants the patent. the government cannot take what it already possesses, the government [has] the absolute power to take a compulsory, non-exclusive license to a patented invention at will. [23] While other courts have challenged this interpretation, what these court decisions make clear is that *reasonable people, even in advanced industrial countries, balancing the interests, looking at the costs and benefits of stronger intellectual property rights, have come to the conclusion that these rights should be heavily circumscribed.*

The question, accordingly, is not *whether* intellectual property rights need to be circumscribed, to advance broader social objectives, but how much, and in what manner. For instance, intellectual property rights, by definition, create a monopoly power; but what is to be meant by an abuse of monopoly power? There is a broad consensus that Microsoft, in leveraging its market power over operating systems into other arenas, overstepped the boundaries. But while both American and European anti-trust authorities have concurred on this, they have proposed different remedies, perhaps partly based on differences in judgments about the balancing of the static and dynamic effects. Again, what is clear is that there is no unanimity even among the advanced industrial countries on the appropriate balancing; developing countries should be given the discretion to arrive at their own judgments.

Similarly, many countries view discriminatory pricing not justified by cost differences as an anti-competitive practice that is *per se* illegal. In the area of monopoly power resulting from patents, the answer is not so clear; indeed, we argued earlier than, at least in the area of those related to life-saving medicines, price discrimination at least in form of making drugs available at lower prices in poor countries was not only defensible, but desirable. But should Europe be able to free ride on research in America, simply because European governments have created a health care system which allows them to bargain more effectively with the drug companies/ or should they only be allowed to benefit from the markedly lower costs of distribution?

Balancing in the granting of patents

In intellectual property rights, the very process of patenting entails some restrictions the patent applicant has to disclose information. This is the *quid pro quo* for the patent; society gains from the knowledge which is disclosed, and this provides partial compensation for the grant of monopoly power. The patent system thus is not just a system for providing compensation.

Intellectual property is filled with ambiguities, which inevitably require balancing judgments.

Judgments are inevitably required, for instance, on the scope of the patent, and on what is patentable. Inherent in the granting of a patent make it inevitable that there be a process of balancing. ❖ An overly broad patent risks monopolization, with likelihood that the pace of innovation be reduced, or, if it is increased, that the dynamic gains are more than offset by the short run welfare losses, either in equity or efficiency

❖ It is clear, however, that judgments about what is patentable have changed over time. ❖ The United States is now issuing business process patents. ❖ Even if such patents are in the interests of the ❖❖ United States, it is not clear that they are in the interests of those in the developing world. ❖

Rule of law versus per se

Sometimes legal frameworks can provide some, or even considerable, guidance. ❖ A key question in defining an intellectual property regime concerns presumptions. ❖ In standard anti-trust policy, there are some areas where per se rules apply ❖ price fixing is per se illegal. ❖ In other areas, the courts are asked to engage in a rule of reason, to balance competitive losses against any efficiency gains which might result from a vertical restraint. ❖ Courts have set strong presumptions against predatory pricing, arguing (I think incorrectly) that the conditions under which firms would willingly sell a product below marginal cost must be rare. ❖

While it may eventually be possible to devise simple rules for judging when, for instance, a compulsory licenses should be granted, intellectual property rights, especially in developing countries, are at an early stage of development. ❖ Simplicity ❖ and the limited capacity of developing countries to engage in expensive litigating ❖ argues that there should be strong presumptions in favor of limiting intellectual property rights when there is an apparent health, competition, developmental objective. ❖ That is, the burden of proof should be placed on the original holder of the patent that there is not a legitimate health, competition or developmental objective. ❖

De jure and de facto fairness

Legal systems often look fair on paper. ❖ Everyone has a right to their day in court. ❖ But in practice, it is expensive to obtain justice, and those who are poor often cannot accordingly get it. ❖ That is why increasingly, democratic societies have provided legal aid to those who cannot pay. ❖ While there are still enormous imbalances, the system is fairer than it otherwise would be.

Similar issues abound in intellectual property rights. ❖ We have already alluded to these. ❖ It may be difficult for a developing country to challenge a patent on traditional knowledge. ❖ A development oriented global intellectual property regime must provide legal assistance to developing countries, both so that their citizens can obtain patents in the advanced industrial countries, and so that they can challenge patent applications and legal actions attempting to hamper their access to intellectual property. ❖

We should recognize that this will go only a little way in achieving a level playing field. ❖ The advanced industrial countries have a number of ways in which they can apply pressure to developing countries. ❖ They can threaten to cut off foreign aid; the international economic institutions too can try to force more stringent intellectual property regimes as a condition for getting assistance. ❖ In some cases, simple pressure may work, without the threat of explicit sanctions. ❖ Developing countries are told ❖ and sometimes believe ❖ that without strong intellectual property regimes, foreign investment will not come. ❖❖❖

TRIPS and intellectual property rights

There is a broad consensus among academic economists—including some who are strongly in favor of multilateral agreements liberalizing trade between developed and less developed countries [24]—that intellectual property should never have been included in trade negotiations. The WTO is supposed to promote trade; many of the provisions associated with enforcing IPR entail restrictions on trade. (For instance, there are restrictions on compulsory licensing, when majority of the sales are outside the country. Note that this kind of provision not only restricts trade, but puts small countries at a disadvantage, since they will not be able to take advantage of economies of scale.)

Unlike traditional trade liberalizations, where tariff reductions benefit *both* parties, the exporter and the importer, intellectual property rights represent a transfer; the holder of the intellectual property right is better off, and the user is worse off. To be sure, advocates of intellectual property rights try to claim that *in the long run* everyone is better off, but such a claim has never been substantiated.

Most importantly, the parties involved in negotiations at the WTO are trade ministers, who are not well suited to engage in the careful balancing that is required if we are to have well balanced intellectual property rights. As I already noted, this was evident during the Uruguay round, when the concerns of developing countries, the scientific community, and health advocates were given short shrift, in favor of the interests of America's pharmaceutical and media industries.

Nowhere were the problems with TRIPS more evident than in the treatment of life saving drugs. The original text contained ambiguities—the developing countries thought that they had the right to force compulsory licensing for life saving drugs that otherwise would not be affordable. The United States thought otherwise. Eventually, a world outcry forced the drug companies to step back, and in Doha, there was an agreement that this was to be one of the issues to be addressed. But just a month before the meeting in Cancun, the United States still was reluctant to go very far. The key question was whether a small country, like Botswana, facing an AIDS epidemic, could purchase generic drugs from South Africa. It was too small to produce itself. Would it have to pay the high American prices? Or could it import lower priced drugs produced under compulsory licenses from South Africa? While the United States eventually gave in to the global consensus, the dispute made clear: there can be disagreements about the appropriate framework for intellectual property rights. Clearly, in this case, the position taken by the United States was not developmentally oriented. But the eventual agreement still fell far short of a minimal developmentally oriented agreement. For the United States continued to insist that access be given *only in the case of an epidemic*. It is, and should be, a concern to developing countries that their citizens are dying needlessly because they cannot get access to lifesaving drugs at affordable prices, whether there is an epidemic or not. It is certainly a legitimate position for developing countries to insist on compulsory licensing for life saving medicines when monopoly pricing on the part of the patent holder leaves prices at levels substantially above the costs of production. That the developing countries could not get American acquiescence on this fundamental principle even in a round of trade negotiations that was called the development round suggests that such matters need to be taken out of the WTO, and put into other venues.

These and other problems encountered in the so-called development round provide a further argument for moving discussions of intellectual property outside that venue. At Cancun, it became clear that the developed countries had reneged on the promises that they had made at Doha in November 2001, and that the developing countries only recourse at the time was to walk away from the negotiations. As we have already noted, a comparison between the development round agenda, and what would constitute a true

development round, makes it clear that what is currently going on does not deserve the epithet of a development round.

With the failure of Cancun, the United States has tried to sign a large number of bilateral and regional trade agreements. ❖ So far, these have embraced a relatively small fraction of global trade. ❖ Still, it is very disturbing that so many of them require developing countries to agree to an intellectual property regime which is even more unbalanced than TRIPS, that restricts further, for instance, access to generic drugs. ❖

TOWARDS AN INTELLECTUAL PROPERTY REGIME THAT PROMOTES DEVELOPMENT

We have tried to explain in this paper what might be meant by an intellectual property rights regime that promotes development, and why it is so important that such a regime should be established. ❖ We have called for ❖balance❖ in intellectual property rights, a balance that may differ among different countries. ❖

It should be clear that a one-size-fits all regime is inappropriate. ❖ While there may be some advantages from harmonization of standards, there are also marked disadvantages. ❖ In the commonwealth-IPD report on the Development Round, we called for a ❖conservative principle❖❖ that common standards only be adopted where there were overwhelming gains, especially to the developing countries. ❖ Inevitably, in the bargaining over standards, the developing countries would be put at a disadvantage, and this was especially so when the number of items on the agenda increased. ❖ The developed countries have put forth the strongest argument for why the issue of intellectual property rights should not be subject to standardization, in claiming that stronger intellectual property rights are in the interests of the developing countries themselves. ❖ If that be the case, then they should be presented with the evidence, and presumably, if the evidence is as overwhelming as the United States claims, countries will voluntarily undertake these standards. ❖ But of course, the United States recognizes that the agenda that they have pushed may well represent a huge transfer of rents from the developing country to the United States, and may well adversely affect the development and well being of the people in the poorest countries of the world.

One should thus be wary about a single standard. ❖ But intellectual property, where there is always a balancing between static and dynamic gains, between private and social returns, is an arena where almost surely the standards that are appropriate for advanced industrial countries are different from those appropriate to developing countries. ❖ It would not be in the interests to adopt the standards that would reflect, say, the outcome of the balancing in the US

On the contrary, I would argue that a more balanced intellectual property regime, one which reflects the balance of concerns within developing countries, is in the interests of the world. ❖ It would facilitate the closing of the gap between the haves and the have nots. ❖ A balanced regime is required if the kinds of aspirations that were articulated in the Millennium Development Goals are to be achieved. ❖

As we have suggested, we are unlikely to achieve a more balanced intellectual property regime in the framework of the WTO. ❖ At the very least, WIPO, whose mandate includes the promotion of the transfer of technology to developing countries and establishing an appropriate intellectual property regime, should be one forum in which these issues are discussed.

Every issue that is up for discussion ❖ from what is patentable, to the scope of the patent, to the novelty standard and what evidence should be adduced, to what are the limitations of intellectual property rights,

when should governments have the right to grant compulsory licenses and on what terms needs to be addressed from the perspective of development. I have not been able to provide the answers within the short compass of this talk; I do hope, however, that I have raised some of the relevant issues.

A development oriented IPR agenda would pay attention to

- ◆ The importance in ensuring effective competition. There is even greater risk of limitations in competition in smaller developing countries, so that even greater weight should be given to the risks that patents pose in decreasing competition.
- ◆ The importance of ensuring access to life-saving medicines. With strong budgetary limitations at both the household and government levels, higher prices translate directly into a loss of life.
- ◆ The importance of ensuring the transfer of technology. Unless the gap in technology and knowledge between developed and less developed countries can be closed, there will be no successful development. What is required is not only access to products and technology, but the ability to learn how to produce with more advanced technologies, which may not be feasible without compulsory licensing.
- ◆ The importance of ensuring protection of traditional knowledge, recognizing the special problems in establishing patents in this area and the dangers here, even more than in other areas, of fencing in the commons

It requires resources to design and implement an intellectual property regime. As in other areas of the law, access to the benefits which might be provided requires resources; given the disparity in access to resources, even a seemingly fair intellectual property regime may lead to unfair outcomes. Hence, if the international community is really committed to a development oriented IPR agenda, it will have to recognize

- ◆ The importance of the need for impartial technical assistance,
- ◆ The need for financial assistance in creating an appropriate IPR regime within each country and in establishing any international standards
- ◆ And legal assistance (financial and technical) to challenge patent applications and to obtain patents in more advanced industrial countries. Without such assistance, there cannot be fairness and there is a risk that whatever the legal framework, the interests of the developing countries will be given short shrift.

CONCLUDING REMARKS

Focusing on the developmental consequences of intellectual property provides a new lens through which to appraise every aspect of the intellectual property regime. The fact that intellectual property requires balancing a variety of concerns implies that there the intellectual property regime which is appropriate for one country may differ from that of another. What is required is a better understanding of the trade-offs.

There is, too, a need to give greater voice to the concerns of the developing world. This is a matter of both efficiency and equity. Unless this is done, there is the prospect of an ever increasing gulf between the developed and less developed world.

[1] I am indebted to Jamie Love for discussions and comments; to Francesco Brindisi for research assistantship and to the Ford, MacArthur, and Mott Foundations for financial support.

[2] Statement by Brazil on September 30, 2004 before WIPO General Assembly at the introduction of the proposal for a development agenda.

[3] Charlton, Andrew and Joseph E. Stiglitz (2004) ♦ The Development Round of Trade Negotiations In the Aftermath of Cancun, ♦ Report prepared for the Commonwealth Secretariat, IPD Working Paper Series 07/01/2004.

[4] This was the theme of the World Bank ♦'s Annual Development Report for 1998 the second to be published while I served as chief economist of the World Bank (see World Bank (1999) *Knowledge for Development*, World Development Report 1998/99, Oxford University Press for the World Bank, Washington D.C.). ♦ That volume also called attention to the need for a more balanced intellectual property regime. ♦ This paper can be thought of as an elaboration of the analysis and argument presented there. ♦

[5] See Chang, Ha-Joon (2002) *Kicking Away the Ladder* ♦ *Development Strategy in Historical Perspective*, Anthem Press, London.

[6] See e.g. Coase, Ronald H. (1960) ♦ The Problem of Social Cost, ♦ *Journal of Law and Economics*, 3, October, pp.1-44.

[7] The view of knowledge as a public good is discussed in Stiglitz, Joseph E. (1999) ♦ Knowledge as a Global Public Good, ♦ in *Global Public Goods: International Cooperation in the 21st Century*, Inge Kaul, Isabelle Grunberg, Marc A. Stern (eds.), United Nations Development Programme, New York: Oxford University Press, pp. 308-325.; for a textbook discussion of the concept of public goods, see, e.g. Stiglitz, Joseph E. (2000) *Economics of the Public Sector*, Second Edition, W.W.Norton, New York.

[8] Jefferson described the public good characteristics of knowledge in the following way:

... no one possesses the less because everyone possesses the whole of it. He who receives an idea from me receives [it] without lessening [me], as he who lights his [candle] at mine receives light without darkening me.

Quoted in Meier, Hugo A. (1981) ♦ Thomas Jefferson and a Democratic Technology, ♦ in C.W. Pursell (ed.) *Technology in America: A History of Individuals and Ideas*, second edition, 1990, MIT Press, Cambridge, Mass., Chapter 3.

[9] The concept of global public goods, and knowledge as a global public good, is developed in Stiglitz, Joseph E. (1999) op.cit..

[10] And as we shall comment shortly, it does not address the pivotal issue ♦ the appropriate design of IPR. ♦ One can have an IPR regime which protects adaptation, but transfers less rents to those in the advanced industrial countries.

[11] The extent to which increased expenditures on research resulting from stronger intellectual property protection is associated with a faster pace of innovation may also be limited because of efforts to innovate around patents, and innovation directed at extending the scope of the patent, to prevent others from innovating around the original patent. ♦ Thus, patent systems give rise to distortions in the pattern of innovation.

[12] Of course, the drug companies could engage in ♦ optimal ♦ price discrimination, charging a lower price ♦ but still substantially in excess of marginal costs. ♦ But the drug companies have consistently claimed that they could not control reimports, even though most drug sales are through highly regulated intermediaries. ♦

[13] Illustrated by the 1956 AT&T consent decree, which forced Bell labs to license all of its patents and the 2000 CSU v. Xerox Federal Circuit Court of Appeals decision. ♦ (The decision was issued on 02/17/2000. According to the Federal Circuit Court of Appeals, a patent or copyright owner may refuse to sell or license the protected intellectual property only as long as the refusal does not cause a collateral, anticompetitive effect beyond the scope of the patent or copyright grant.) ♦ See, for instance, Correa, Carlos M. (2000) ♦ ♦ The Strengthening of IPRs in Developing Countries and Complementary Legislation, ♦ report prepared for the Department of International Development (DFID) , University of Buenos Aires, October, who lists a large number of cases in which courts have granted compulsory licenses. ♦

Frederic M Scherer, in his expert report ♦ In the matter of GlaxoSmithKline South Africa et al, ♦ August 28, 2003, notes that ♦ By the end of the 1950s, compulsory licenses had been issued in roughly 100 antitrust cases covering an estimated 40 to 50 thousand patents, including AT&T ♦'s basic transistor concept patents, IBM ♦'s computer and tabulating card machine patents, General Electric ♦'s fluorescent and incandescent lamp patent, Dupont ♦'s nylon patents, and Eastman Kodak ♦'s color film processing patents. ♦ ♦ Additional cases since then have led to the licensing of Xerox ♦'s plain paper copying machine patents ♦ .. [and a host of other patents]. ♦ Some of the U.S. antitrust decrees such as those covering General Electric ♦'s incandescent lamp patents and many of the patents in AT& T ♦'s portfolio, required licensing at zero royalty rates. ♦ ♦ Cited in Love, James (2004) ♦ Compensation Guidelines for non-Voluntary use of a ♦ Patent on Medical Technologies, ♦, mimeo, September 7.

[14] In the anthrax scare of 2001, a compulsory license was issued by the US government, for Ciprio.

[15] Earlier theoretical literature suggested that the threat of a new firm entering the market would force the incumbent monopolist to have a high rate of innovation though often a rate of innovation that is less than would prevail in a competitive market. (see Arrow, Kenneth J. (1962) Economic Welfare and the Allocation of Resource for Invention, in R. Nelson (ed.) *The Rate and Direction of Inventive Activity: Economic and Social Factors*, Princeton University Press for the NBER, Princeton, NJ; Dasgupta, Partha and Joseph E. Stiglitz (1980) Industrial Structure and the Nature of Innovative Activity, *Economic Journal*, 90(358), June 1980, pp. 266-293. Reprinted in *The Economics of Technical Change*, Elgar Reference Collection, International Library of Critical Writings in Economics, 31, Edwin Mansfield and Elizabeth Mansfield (eds.), Aldershot, UK: Elgar. pp. 133-160., Dasgupta, Partha and Joseph E. Stiglitz (1980) Uncertainty, Market Structure and the Speed of R&D, *Bell Journal of Economics*, 11(1), Spring, pp. 1-28 and Gilbert, Richard J. and David M.G. Newbery (1982) Preemptive Patenting and the Persistence of Monopoly, *American Economic Review*, 72(3), June, pp.514-26.) But then it was recognized that, given the sunk cost nature of research expenditures, an incumbent could deter competitive entry with only a limited amount of research, and so that innovation with monopoly could be substantially lower than with more competition. See, e.g. ; Dasgupta, Partha and Joseph E. Stiglitz (1981) Entry, Innovation, Exit: Toward a Dynamic Theory of Oligopolistic Industrial Structure, *European Economic Review*, 15(2), February, pp. 137-158; Dasgupta, Partha, Richard J. Gilbert and Joseph E. Stiglitz (1982) Invention and Innovation Under Alternative Market Structures: The Case of Natural Resources, *Review of Economic Studies*, 49(4), 1982, pp. 567-582; Farrell, Joseph, Richard J. Gilbert and Michael L. Katz (2003) Market Structure, Organizational Structure, and R&D Diversity, in R. Arnott, B. Greenwald, R. Kanbur and B. Nalebuff (eds.) *Economics for an Imperfect World Essays in Honor of Joseph E. Stiglitz*, MIT Press, Cambridge Mass., pp.195-220.

[16] See for instance Public Comment on the United States Patent and Trademark Office N.41, 03/22/2000 by Bruce Alberts, president of the National Academy of Science.

[17] The attempt of Ricetec Inc. at patenting basmati rice was rejected by the US Patents and Trademarks Office on 08/21/2001. The attempted patenting of tumeric for healing purposes was rejected on 08/14/1997. See also Perleman, Michael (2002) *Steal this Idea: Intellectual Property and the Corporate Confiscation of Creativity*. Palgrave, New York. The costs of challenging a patent may be too high for some small developing countries. Indeed, even the U.S. courts have recognized these costs. In *United States v. General Electric Co.*, 115 F. Supp. 835, 844 (1953) the court in arguing for compulsory licensing with zero royalties noted that small firms desiring to stay in or gain a foothold in the industry may well be unequipped to engage in litigation on the validity of one patent after another at what could be incalculable expense. In order to avoid it they could be required to should royalties which could prove to be the very factor that would push them out of the competitive circle of the market. Cited in Love, James (2004), op.cit..

[18] If the owner of IPR could engage in perfect price discrimination, he would always charge the highest royalty that would still induce innovation. Such price discrimination is not feasible, and in some contexts may not be legal; and with imperfect price discrimination, the licensing fees that would be optimal will be so high as to discourage some of those in developing countries from adapting the technology to their economy. Moreover, even with perfect discrimination, the high royalties will have an adverse effect on development, simply because of the large transfers and because they will decrease the equity base of firms in the developing countries; limitations on equity markets imply that firms will not be able to raise equity in other ways, and so growth will be stunted.

[19] See, for instance, Correa, Carlos M. (1995) Intellectual Property Rights and Foreign Direct Investment, *International Journal of Technology and Management*, 10(2/3), pp.173-99, who contends that based on current evidence, the link between FDI and IPR is difficult to prove.

[20] And there is some concern that the threat of patent litigation may act as a damper, with many small innovators facing potential large litigation costs.

[21] Reviewed, for instance, in Atkinson, Anthony B. and Joseph E. Stiglitz (1980) *Lectures in Public Economics*, McGraw-Hill Book Company, New York and London. or Stiglitz, Joseph E. (2000) *Economics of the Public Sector*, Second Edition, W.W.Norton, New York.

[22] Moreover, we noted earlier the important quid pro quo that there be disclosure. Patent rights can thus be viewed as an

exchange, where the public grants a temporary monopoly right, circumscribed, in return for the revelation of information.

[23] See *Brunswick*, 36 Fed. Cl. at 207. cited in Love, James (2004) op. cit. p. 13. Since the government already possesses the right, exercising the right is not a taking requiring compensation.

[24] See Bhagwati, Jagdish (2002) Afterword: The Question of Linkage, *The American Journal of International Law*, 96(1), January, pp.126-34.

[fb1]The first patent law is from 1790. The ratification process ended in 1788. The first government was established in 1789.