

Intellectual Property Post-Seattle: Challenges for India as User and Creator

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Paper presented at the
Workshop on South Asia and the WTO
New Delhi
December 20-21, 1999

ABSTRACT

While external pressure to change intellectual property (IP) regimes has abated, India faces other challenges not just as a net user/importer but as net creator—actual and potential—of IP. This paper outlines the responses to the four challenges that lie ahead. First, India should consider revising its draft IP legislation so that TRIPs obligations can serve as a mechanism for enforcing its market access rights in the WTO. Second, compulsory licensing and competition policy regimes need to be expeditiously implemented to mitigate some of the most egregious impacts of TRIPs. Third, India needs to identify where its interests lie in relation to the new technologies (plants, biotechnology), and appropriately adapt intellectual property rights legislation as well as complementary institutions that would allow the benefits of these technologies to be harnessed while minimizing attendant risks. And finally, establishing workable domestic systems for protecting intellectual property/resources created in India would serve as a basis for seeking their replication internationally.

The author would like to thank Aaditya Mattoo and Jayashree Watal for helpful discussions. The views expressed in the paper do not necessarily reflect those of the institutions with which the author is associated. Errors and excesses remain my own.

I. Introduction

For India, no aspect of the Uruguay Round has engendered as much concern, acrimonious debate, and vitriol as TRIPs (Trade-Related Aspects of Intellectual Property Rights). With only some exaggeration, it came to symbolize all that was wrong with the World Trade organization (WTO), multilateral engagement, greedy multinationals, and even globalization as a whole. As with most impassioned rhetoric, while there was some misunderstanding and misrepresentation an essential kernel of truth underlay it. On balance, the TRIPs agreement on its own will impose welfare costs on India, at least in the key pharmaceuticals sector.¹

Today, of course, the mood on intellectual property (IP) is vastly different. At Seattle, the presence of the IP lobby was token and concerned more with preventing serious backsliding on TRIPs than with advancing a new IP agenda. So the good news on TRIPs for India is that in the near future, external pressure on IP issues is going to be minimal. This is so for four reasons.

First, there is the strong influence of civil society groups within industrial countries, championing causes that can be argued to be at odds with intellectual property protection. For example, the sanctity of human and animal life is perceived to be at variance with efforts to patent biotechnological inventions; and technologies such as the terminator gene are felt to run counter to environmental protection and the preservation of biodiversity.

Second, there is the inevitable intellectual/ideological backlash to the headlong embrace of free markets associated with the last 10-15 years. As the pendulum swings back, there is a greater focus now on the *abuse* of intellectual property (IP) protection and a corresponding emphasis on competition and contestability. The recent intellectual property-related cases in the United States involving the prosecution of Microsoft, Intel, and the class action suit against Monsanto are illustrative of this new climate.

Third, private sector pressure in intellectual property-related industries has diminished in the last few years, reflecting the very success of the Uruguay Round. Many of the key commercial issues, at least the big ticket items such as pharmaceuticals and chemicals, were resolved in TRIPs to the broad satisfaction of IP-related companies. While issues and concerns remain, they are not of the same order of magnitude as those prior to the Uruguay Round.

And finally, developing countries have successfully conveyed the sense that the Uruguay Round was imbalanced in its outcome, with TRIPs contributing critically to that imbalance. It would simply be too difficult now to force developing countries to swallow more of the TRIPs pill.

¹ See Subramanian (1994, 1995) and Watal (1999) for illustrative estimates for the magnitude of these welfare costs.

On the other hand, the more sobering news is that there are a number of challenges ahead for India on intellectual property that will need to be addressed, even without the external pressure. The next phase of issues is going to differ from the previous one in one key respect. In the past, India's main task in IP was defensive, to resist external pressure. While obviously difficult, given the magnitude of the pressure, it was also easy in the sense of knowing what had to be done. Now, however, India has "to do" rather than "not do" which entails its own set of challenges. These challenges affect India in each of its locations on the knowledge creation spectrum: as net user, potential net creator, and net creator. This paper argues that the challenges are fourfold:

- ❖ First, to use TRIPs as a mechanism for enforcing India's market access rights in the WTO;
- ❖ Second, to develop policies and mechanisms that serve to mitigate the most egregious impacts of the TRIPs agreement;
- ❖ Third, to identify where India's interests lie in relation to the new technologies (plants, biotechnology) and appropriately adapt intellectual property rights legislation as well as complementary institutions that would allow the benefits of these technologies to be harnessed while minimizing attendant risks;
- ❖ Fourth, to create workable institutions domestically that protect intellectual property/resources created in India which would then serve as a basis for seeking their replication internationally.

With a few exceptions, these challenges will be domestic and will need to be constructively met. In this paper, suggestions are offered on how this might be accomplished in some areas, while in others more questions are raised than answered.

The rest of the paper is organized as follows. Section II elaborates a proposal on the use of TRIPs obligations as an enforcement device. Section III offers suggestions on how domestic policies need to be adapted to cope with the TRIPs agreement. Section IV poses some questions that need to be answered before arriving at policy positions in relation to the new technologies and also draws attention to the regulatory challenges. Section V discusses issues related to intellectual property created by India. Section VI contains a discussion of issues that should be spared time and effort as they are not of real significance even though they have elicited strong positions in India. Section VII presents some illustrative data on patenting in the United States to see how selected developing countries have fared after strengthening their IP regimes, while Section VIII concludes.

II. TRIPs as an Enforcement Device²

There are widespread fears that the quantitative restrictions imposed on textiles and clothing products by industrial countries will not be eliminated early in the next

² This section draws heavily on Subramanian and Watal (1999).

millennium, as required by the Uruguay Round Agreement on Textiles and Clothing (ATC). The stakes are high for India, which should, given the right domestic policy environment, stand to gain from the elimination of the quotas or stand to lose if there is backtracking by trading partners. Does India have the means to ensure compliance with commitments or must India resign itself to ineffectiveness, believing outcomes beyond its power to influence?

We believe that the answer is in the affirmative. But to do so, India must change its draft patent legislation to allow for retaliation in TRIPs for noncompliance by partner countries in areas affecting India's exporting interests. As we demonstrate below, if designed with care, such retaliation can be feasible, effective, and legal. It is noteworthy that recently Ecuador has requested and been granted authorization by the WTO for retaliating against the European Union in the area of services and IP in the controversial bananas dispute.

1. Why TRIPS is a good retaliatory weapon

An effective retaliatory action must possess two features. It must inflict loss or pain swiftly on the party being retaliated against. Second, it must be beneficial to the country taking the action or else it will not be credible. Does retaliation through TRIPS satisfy these two conditions?

A. Effectiveness

India has undertaken serious commitments on TRIPS from which large, multinational corporations based in industrialized countries stand to benefit enormously. For example, the requirement to grant patent protection for pharmaceutical products will begin to reap profits for large, European and US research-based companies in the early years of the next millennium as the first protected products come on to the market. Axiomatically, withdrawing TRIPS benefits must be costly and painful for them. Calculations by Watal (1999) and Subramanian (1995) show that the benefits of TRIPS commitments to large pharmaceutical producers alone could be in the millions of dollars. The first condition of retaliation is therefore satisfied.

B. Credibility

So too is the second condition, namely that, if retaliation is implemented it will actually make the retaliating country better off in welfare terms. Support for this proposition comes from the many analyses that show that under most circumstances, higher intellectual property protection accorded by India makes it worse off.³ Conversely, withdrawing TRIPS commitments, or reducing the strength of IP protection, must make India better off.⁴ This lends credibility to the threat of retaliation. It must be noted however, that for this proposition to hold, the withdrawal of TRIPS benefits must be

³ A lucid theoretical demonstration of this is presented in Deardorff (1992). Watal (1999) places maximum annual welfare losses in India from pharmaceutical patents alone at around \$140 million. See also Subramanian (1995).

⁴ It should be noted that in the context of retaliation which will be isolated instances of, rather than systematic, dilution of IP protection, the question of the dynamic effects—of innovation and R&D generation—will not arise. Reducing IP protection will therefore confer the static benefits without leading to any dynamic efficiency losses.

accompanied by measures to ensure alternative sources of supply to the market, supply that had hitherto been precluded by the IP protection (see below).

C. Targeting, proportionality, and pointedness

In relation to the first condition of inflicting pain, TRIPS also possesses other desirable properties. First, the retaliatory action can target the partner country that is in noncompliance. If say the EU fails to eliminate a textile quota affecting India, the authorities in that country can target IPRs granted to EU nationals as the objects of retaliatory action. Second, the principle of proportionality—that the retaliatory action should be commensurate with the offending action—can also be respected. The variables for achieving proportionality would be how many IPR owners to affect and for how long. The third really compelling advantage of such retaliatory action is its ability to create pressure on non-complying constituents to revert to compliance with WTO obligations. A typical process of political economy following the threat of retaliatory action would be as follows. Say India threatens non-acceptance of the patent applications of Pfizer and others in retaliation against US textile quotas not being removed as scheduled; Pfizer and others would then have a very strong incentive to lobby the politicians supporting the textiles industry and force remedial action. The more pointed the retaliatory action, the greater the incentive for the affected party to take remedial action, rendering TRIPs an effective retaliatory instrument.

2. *The difficulties with TRIPS as a retaliatory weapon*

Three difficulties present themselves: the private nature of rights; the exclusivity of the rights conferred; the possible constraints imposed by WTO dispute settlement rules; and the possible deterrence of foreign direct investment (FDI).

The private nature of rights

Retaliation by abrogation of IPRs, while possible, has problems, as there are crucial differences between conventional retaliation in goods and retaliation in intellectual property. IPRs are private rights justiciable domestically in the country granting them. If IP rights, once conferred through domestic legislation and pursuant to an act of parliament, are withdrawn, this can be challenged by the affected parties in the domestic courts as being illegal or even unconstitutional. On the other hand, when tariffs are raised in retaliation, the affected foreign supplier has no direct right that he can challenge in the retaliating country's courts. Raising a tariff in most countries can be done through an act of the executive. Private IPRs, granted through legislation, cannot so easily be withdrawn by the executive.

Exclusivity of rights

A practical complication arises when retaliating in TRIPS: benefits will accrue to the retaliating country only if alternative sources of supply quickly substitute for the product whose patent right has been withdrawn. Thus the retaliation must be such as to ensure quick alternative supplies to the market that will dilute or eliminate the legal monopoly granted. Another complication is that the retaliatory action must not be such as to create uncertainty for the alternative suppliers. For example, if the retaliatory action has to be reversed because partner countries come back into compliance, then WTO rules would

require the restoration of IP rights. This would mean that alternative suppliers will have to cease production. This may cause such uncertainty that alternative suppliers might not enter the market in the first place.

*WTO rules on cross retaliation*⁵

Do WTO rules allow such cross-retaliation (i.e. TRIPS for say, textiles)? The WTO Dispute Settlement Understanding deals with compensation and the suspension of concessions in Article 22. It lays down a sequential procedure for cross-retaliation—cross-retaliation can only be resorted to if within-sector retaliation is not feasible or practicable.

The issue is whether such procedures could unduly circumscribe the use of TRIPS as retaliation when partner country infringements are in goods. This depends very much on the interpretation of what is deemed “effective” and “practicable.” On both criteria, especially the second, developing country complainants can reasonably argue that retaliating in the same sector, say other goods for a textiles-related dispute, is ineffective given the size of the market and moreover, would amount to inflicting economic harm on itself. Hence easy recourse to welfare-improving retaliation as in TRIPS should be allowed. The outcome of the arbitration requested by the EU against the authorization granted by the DSB to Ecuador allowing retaliation under GATS and TRIPS in the bananas dispute would be interesting to set the tone for the future use of such cross-retaliation. If the arbitration comes out against Ecuador on this issue, India should seriously consider options for renegotiating the DSU in this regard.⁶

Deterring FDI

The concern exists that the possibility of retaliation will deter FDI. However, as long as the legislation is carefully drafted, to spell out the exact circumstances for retaliation and its withdrawal, and is consistent with international rules, FDI need not be affected. The legislation and its judicious implementation can reassure investors that India is not intent on expropriating foreign property, but is merely seeking to enforce its rights in a manner that is internationally sanctioned.⁷

⁵ We are grateful to Aaditya Mattoo for alerting us to this potential problem.

⁶ Paradoxically, in the Uruguay Round, it was India that was in the forefront arguing against cross-retaliation as a “safeguard”, fearing that it would be used to enforce obligations on TRIPS and GATS. These “safeguards” are of course counterproductive to their interests. India was unable to see a key characteristic of an asymmetric system: that compliance by the weak cannot be avoided, with or without retaliation, but that rules and effective retaliation may be necessary to ensure compliance by the strong. It was therefore not recognized that: (i) industrial countries would not need to go as far as cross-retaliation in goods for securing compliance by developing countries in TRIPS; and (ii) developing countries had potential power through cross-retaliation in the very TRIPS obligations that many of these countries perceived to be burdensome.

⁷ Most bilateral investment treaties require that intangible assets such as intellectual property be protected in accordance with national law. As long as national law also specifies clearly the circumstances under which intellectual property protection can be modified, these treaties would not be affected by the proposal on retaliation.

3. *Design of retaliation*

The difficulties described above are not, however, insuperable. India's draft patent legislation can be carefully designed to ensure that they are addressed or overcome.

A. *The private nature of rights*

The fact that IPRs are private rights conferred under domestic law requires that their revocation—partial or complete (see below)—must also be built into the law, particularly in countries where international law is not self-executing. India's domestic legislation implementing the TRIPS agreement must clearly specify that the country's executive reserves the right to revoke or dilute these rights in the event that partner countries are found to be in noncompliance with commitments that affect India's interests. The retaliation provisions should not be such as to engender the perception of India as a renegade state, acting outside the pale of reason. Rather, they should be broadly consistent with international trading rules, which will ensure their good standing in the international arena and also confer legitimacy on the retaliatory actions, should they ever be used.

B. *Exclusivity of rights*

What form should retaliatory action take, taking into account the problems arising from the exclusive nature of rights that are conferred? It is important to note that retaliation merely by delaying the grant of the patent will not satisfy the first principle of retaliation, namely of inflicting harm on the affected party. For example, in the case of pharmaceuticals, delaying patent grant may not reduce the effective economic life of the patent because regulatory approval is typically obtained long after the patent is granted. Several feasible options present themselves.

First, retaliatory action can include the suspension of acceptance of patent or design applications from the targeted country for the time of non-compliance. However, non-acceptance of applications must not result in loss of priority rights as in that case, the punitive measure would result in a loss of IP rights over the entire duration of the right, which may not be proportional to the nullification and impairment that is sought to be compensated.

Second, retaliatory action could take the form of awarding compulsory licences. The legislation could clearly specify that they will be granted in cases when foreign countries do not comply with WTO obligations affecting India. In granting such licences, the conditions that would normally be applied to them, specified in Article 31 of TRIPS, need not be respected. Clearly, if such compulsory licences were granted in pharmaceuticals or chemicals, marketing approval for these products would also need to be granted expeditiously.

Another possibility is for the government to choose products that are reaching the end of their patent life and to shorten or terminate their protection so that competitors can quickly enter the market. In these cases, the problem of reversal of the retaliatory action would not arise as the patent may expire by the time the dispute is settled. Yet another

possibility would be to target copyrights and trademarks where copying is swift and easy.

C. WTO-consistency

The language on retaliation in domestic legislation should be carefully drafted to ensure that the discretion to use or authorize retaliation is typically exercised only after the multilateral dispute settlement process has worked its way through the dispute and has decided in favor of the developing country. If it is further specified that this discretion can only be exercised after explicit authorization is granted by the DSB, retaliation would be strictly WTO-consistent.

Of course, domestic legislation need not preclude entirely the possibility of retaliatory action where partner countries are so egregiously in violation of their commitments that retaliatory action would be warranted even in the absence of explicit authorization by the WTO dispute settlement body. The kind of situation envisaged here resembles that of the EU in the banana dispute. Noncompliance has been so protracted and the balance of legitimacy so overwhelmingly against the EU, that it is hard to imagine retaliatory action being seriously questioned in the WTO.

If the arguments made about the effectiveness of such retaliatory action are right, its very threat--its very presence in domestic legislation-- could lead to improved compliance by developed countries who would typically be the targets of such action. The threat may seldom have to be converted into a reality.

Of course, one obstacle to effective implementation of such retaliation could be the possible hurdles implicit in the procedures on cross-retaliation specified in WTO dispute settlement rules. It may be necessary to clarify the rules to ensure that easy access to cross retaliation is permitted. Of course, we would strenuously insist that such clarification is unnecessary as the rules, particularly the “practicable” and “effective” conditions, would permit a case to be made in favor of easy recourse to retaliation in TRIPS.⁸

III. Developing Domestic Policy Instruments and Institutions

Coping with TRIPs: Compulsory Licensing and Competition Policy: As mentioned above, TRIPs will impose costs, at least in the pharmaceutical sector. Sometime in the middle of the next decade, when the first patented products come on to the market, prices of patented drugs will be higher than they otherwise would have been by margins that are uncertain but nevertheless positive. How should India cope?

⁸ Finally, TRIPS as retaliation offers one tantalizing possibility. While India should use retaliation in a manner that is strictly compatible with WTO rules, India could also choose to emulate the infamous “Section 301” of the United States trade law and enlarge the scope of such retaliation to cover other situations of potential detriment to it. Just as Section 301 prior to the Uruguay Round was wielded to cover IPRs that were then beyond the scope of world trading rules, India could provide for retaliation if partner countries sought to impose excessive labor or environmental standards that are currently outside WTO rules. A difficult question is whether it is in India’s or the system’s interest to counter vigilantism with its own image.

The two most important policy instruments available to developing countries to mitigate some of the effects of the high levels of patent protection are compulsory licensing and competition policies. In principle, the flexibility associated with compulsory licensing can be exploited to dilute some of the effects of patent protection. This flexibility comes in 2 forms: first, countries are virtually unrestricted in the circumstances under which they can grant compulsory licences.⁹ Second, while a number of conditions need to be fulfilled when these licences are granted, there is sufficient discretion available to national authorities to meet these conditions while at the same time diluting the monopolistic impact of the proprietary protection granted in the first place (Wattal (1998)).

From a TRIPs perspective, the advantages of deploying competition policy are twofold. First, there is a wide degree of latitude in determining the optimal degree of protection that balances the need to foster innovation while ensuring technological diffusion. And it is understood, even in industrial countries, that this balance—often blurred and always shifting—is determined by the joint action of IPR and competition policies. Put crudely, the standards set for anti-competitive practices can be such as to dilute the effects of IPR protection without running foul of the minimum standards laid out in the TRIPs agreement. For example, what constitutes abusive pricing is a question that will admit of a wide variety of answers. India can exploit this latitude through implementation of competition policies and mechanisms to implement them.¹⁰

The second advantage of using competition policies follows from the language of the TRIPs agreement. There is even greater flexibility in the use of compulsory licences—in two key respects—when they are granted to remedy anti-competitive practices,¹¹ which could be usefully harnessed by developing countries.

In the light of the above, two key tasks face India. First, to strengthen the patent law and implementation apparatus so that India is able to use compulsory licensing effectively.¹² A number of specific questions need to be answered in creating an effective system of compulsory licensing. What guidelines need to be provided so that the minimum procedures that TRIPs requires—making efforts to obtain a voluntary licence—are met? Is it enough if the potential compulsory licensee writes a letter to the patent holder seeking a voluntary licence or must a minimum period of delay be allowed for a response? How long should such a period be? TRIPs allows enough discretion for India to write these guidelines in a way that can make the process efficient, but these need to be elaborated and enacted expeditiously.

⁹ The only grounds on which compulsory licences cannot be granted is non-working of the patent locally which is discussed in section II. B above.

¹⁰ Of course, competition policies should be motivated by wider concerns of making markets competitive.

¹¹ When compulsory licences are used to remedy anti-competitive practices, the TRIPs agreement provides that (i) no case needs to be made that the patentee was unwilling to license the patent on reasonable commercial terms as a precondition for granting the compulsory licence; and (ii) the principle that remuneration for the compulsory licence should be “adequate” need not be respected.

¹² Although India’s patent laws have provided for compulsory licensing, no serious need to use it ever arose because of the level of IP protection.

Another important question relates to the number of compulsory licences that are awarded. In principle, the more the licences the more competitive the market outcome. How will these be chosen and by whom? What expertise and market information will the granting authority need to have before making decisions on compulsory licences. How will royalty be determined? Again, Article 31 (h) of TRIPs makes clear that royalty rates can be related to the value of the compulsory licence and not to the value of the patent. This would allow royalty to be related to the final price charged by the licensee. The more the compulsory licences, the lower will be final prices, permitting lower royalty payments.

Effectiveness of compulsory licensing will require minimizing legal uncertainty for the licensee. If, for example, appeals against the grant of compulsory licences become routine and litigation protracted, the compulsory licensees will not be able to start production, thwarting the objective of diluting monopoly protection. India should consider creating a special administrative tribunal that will hear appeals related to compulsory licences and expeditiously dispose of them. In fact, a general presumption should be created that production under compulsory licences can take place even if an appeal is pending before the relevant administrative authority. Safeguards to protect the interests of the compulsory licensees, provided for under Article 31 (g) of TRIPs, need to be built into the guidelines which would create an economic climate relatively free of uncertainty, making production under compulsory licensing an attractive proposition.

Finally, India will need to address the question of how to design regulatory approval procedures in the event that compulsory licences are generously awarded so as to facilitate the easy marketing of drugs produced under such licences.

The second task is to expeditiously implement a strengthened competition policy and institutions so that adequate experience is gained by the time competition laws have to be used to offset the impact of the TRIPs agreement.

IV. IP and Regulatory Policies for the New Technologies

India's draft legislation provides plant variety protection similar to that foreseen under UPOV 1978. In the patent legislation, there is an exclusion for 'plants and animals and essentially biological processes for the production of plants and animals other than microbiological processes.' Although this exemption for biotechnology is up for review under TRIPs, it does not seem likely that India will be under external pressure to close this exemption because of the unsettled nature of the debate in Europe in particular.¹³ Nevertheless, irrespective of these external influences, India will need to assess the costs and benefits of higher IP protection in these areas.

¹³ Although, Europe has formally closed this exemption, the situation has become muddled because of the decision of the Netherlands, which voted against the European Directive, to challenge the Directive in the European Court of Justice (see Watal (2000)).

There may be reasons to believe that the economics of IP protection in relation to these new technologies may be different than that in the case of pharmaceuticals. In pharmaceuticals, the negative welfare impact arises from the likelihood that no real dynamic benefits will accrue to India to offset the static costs of a more monopolistic market structure resulting from higher IP protection. Dynamic benefits could, in principle, be threefold which can be called the *knowwho*, *knowwhat*, and *knowwhere* benefits. Higher IP protection accorded by India could lead to increased research: *by* Indian nationals (*knowwho*); *on* technologies or products of interest to India (*knowwhat*); or *in* India (*knowwhere*). Each of these creates benefits either in terms of the higher profits accruing to India, cheaper or increased variety of products, and/or increased transfer of technology.

In pharmaceuticals, there was reason to believe that the scope for inducing these benefits was small. By contrast, in agriculture there is greater scope for some if not all of these benefits to be realized. Pray and Ramaswami (1999) show that sizable benefits result from private research in inputs, in the form of increased yields in maize, sorghum, and millet, of which more than 80 percent is appropriated by the farmer. Much of this private research takes place in India, and although multinationals carry out most of the research, there is scope for indigenous involvement in this research capability. Thus, the dynamic benefits can be substantial. For sure, enhancing research in agriculture will require a multi-pronged approach, including greater public support and involvement (see Pray and Basant (1999)), but the need for adequate proprietary protection should be considered more seriously.

On biotechnology, three points can be made, two relating to the IP aspect—namely whether IP protection should be granted—which are distinct from that relating to the commercial *use* of products that have benefited from this technology. For India, biotechnology probably resembles pharmaceuticals more than agriculture in terms of the *knowwho* and *knowwhere* benefits. For the foreseeable future, serious research is likely to be undertaken by large foreign companies located outside India. The scope for the *knowwhat* benefits may be greater than in the case of pharmaceuticals because it is possible that protection by India could provide the incentives for greater research on genetically modified crops suited to Indian agroclimactic conditions. If such research is induced, the potential gains could be enormous. It could be the case that genetically modified technologies holds enormous promise for Indian agriculture and for alleviating rural poverty.¹⁴ China and Argentina, and to a lesser extent, Brazil have become major users of these technologies. More work is therefore needed to ascertain the relevance of these dynamic benefits to India and hence to underpin policy positions relating to IP protection.

The second point relates to the consequences of firms being able to create technological protection (the terminator gene and the greater research in hybrids where second generation seeds are genetically weak, are examples of endogenously chosen

¹⁴ It was recently announced that genetically modified rice could help reduce iron deficiency anemia or vitamin A deficiency.

technological protection) as an alternative to legal protection.¹⁵ The implication is that ultimately, countries may not be able to influence the final market structure in cases involving such technologies. If legal protection is denied, firms may be able to secure it through technological means. Either way, creators of these technologies will have strong market power. In such a situation, countries may need to reevaluate their approach to IP protection. Legal IP protection could be moot or even the less bad adoption if its absence leads to extra effort and cost in creating technological protection which will eventually be passed on to consumers and users of such technologies. Again, more research is necessary to understand the consequences of technological protection as an alternative to legal protection.

On commercial use, concerns have been expressed in India as in the developed countries about the ethical, environmental, and safety risks associated with the new technologies. These concerns are very real and need to be addressed. Public policy choices will need to be made based on complex trade-offs between economic benefits and non-economic risks, where the benefits and risks may be subject to deep uncertainty and arouse strong emotions. For these choices to be made and command the public's trust and confidence, there must be strong and transparent domestic institutions that ensure that these technologies and the products derived from them are appropriately regulated and the risks minimized. Institutions must provide for public processes that promote reasoned debate and allow competing claims to be heard and assessed. Creating these institutions or strengthening existing ones will be a major challenge ahead.

V. Harnessing India's Intellectual Property

Leading up to Seattle, India made proposals in the WTO seeking international protection for two types of intellectual property created in India: indigenous/traditional knowledge and genetic resources and geographical indications such as Darjeeling, Basmati etc. These are very sensible and long overdue proposals, but a note of caution may be in order here. While seeking protection of genetic resources and traditional knowledge is important, it is not clear at this stage how valuable in economic terms such protection will turn out to be even if it can be feasibly implemented. This uncertainty should condition how much India is willing to "give up" in any international negotiation to attain the goals in this area.

Genetic resources and indigenous knowledge: India has advanced the notion of farmers' rights and their right to remuneration for the use of endoplasm, seeds, and other genetic material used by foreign companies in the pharmaceutical and biotechnology sectors (see Shiva (1994)). In an ironic reversal of the rhetoric of the 1980s when developing countries were accused of piracy, it is now the industrial countries that stand accused of "biopiracy."

¹⁵ Although MONSANTO has recently announced a policy that the terminator technology would not be further developed, this issue of technological protection is not likely to disappear.

The Convention on Biological Diversity (CBD) makes a useful start in requiring registration systems that would identify and document the sources of genetic material and indigenous knowledge. This could provide the basis for the sharing of benefits from the use of such material and knowledge. The requirement in the CBD that those who use such material should obtain the prior informed consent of the country of origin of the material is also a useful step. One way of reconciling the TRIPs agreement and the CBD is for TRIPs to incorporate this obligation of prior informed consent as a condition for obtaining a patent that uses genetic resources.¹⁶

However, these are just starting points. The goal in this area must be to devise a system of internationally recognized proprietary rights for genetic resources and indigenous knowledge. Such a system could represent a market-based response for international cooperation. Its logic would be to address a potential market failure in relation to the maintenance and creation of genetic resources and indigenous knowledge (see Sedjo (1992), Subramanian (1992), and Cottier (1998)). To be sure, there are several unresolved issues relating to the feasible operationalization of this idea and this is where greater time, energy, and research effort should be devoted by India.

As a starting point, India along with other developing countries, must attempt to create *domestic* systems for the protection of traditional knowledge, including farmers rights. India's efforts at pioneering legislation entailing registration of traditional knowledge and the establishment of a National Community Gene Fund are significant developments although it is disappointing that the notion of farmers' rights (as opposed to farmers' privilege) does not feature prominently in the draft plant variety law. If such systems can be shown to work domestically, that will strengthen India's case for seeking to replicate internationally. It is insufficient now to complain against biopiracy without simultaneously offering concrete suggestions for preventing it.

Implementing such a scheme will run into opposition from industrial countries. First, it will be argued that property rights cannot be accorded to things found in nature—this principle underpins patent systems all over the world. But the riposte must be that this legal principle does not always accord with the economic rationale for proprietary protection, which is to reward any effort whose fruits are ex post appropriable and hence subject to market failure. And the case for proprietary protection for traditional knowledge/genetic resources can be shown to be a response to this type of market failure. Second, there will be advocacy of the voluntary cooperation route, letting pharmaceutical companies enter into contracts with countries/communities that possess such resources as in the case of Merck and Costa Rica. But voluntary cooperation, though welcome, cannot be guaranteed in all instances; moreover, the terms of such cooperation will necessarily be influenced by whether or not there are prior rights to such resources. If these rights are internationally recognized and infringements credibly punishable, the reward for maintaining the resources will be higher than it otherwise would be.

¹⁶ Alternatively, as proposed by Watal (2000), the obligation of prior informed consent can be imposed prior to the commercialization of the patent.

Geographical Indications: The European Union is seeking extra protection for geographical indications originating in its territories such as those relating to wines and spirits. India has sought similar protection for names such as Basmati and Darjeeling. Here too, the principle embraced by India is appropriate. The problem will be to demonstrate how such names, which have been in the public domain for years, can be restored to proprietary protection. The case of the patenting of Texmati in the US also served to demonstrate how inadequately prepared we are and how weak our own case was in preventing the appropriation of Indian intellectual property. For example, because of divergence of interests domestically, India was unable to establish that Basmati was a valid geographical indication domestically. Here too, India needs to ensure that all potentially valuable geographical indications are registered and protected domestically, which could then serve as the basis for seeking higher protection for Indian indications along the lines foreseen in Article 23 of TRIPs.

VII. Second Order Issues

A number of other issues have generated a lot of controversy in India. In this section we discuss them, seeking to explain why they may be relatively unimportant, and implying that scarce resources should be more effectively deployed elsewhere.

Extension of the “non-violation” exemption: Under TRIPs, intellectual property matters cannot be subject to “non-violation” complaints until 2000. To understand what this means, it is useful to recall that WTO dispute settlement rules provide two avenues or bases for challenging partner country actions (or claiming that there has been “nullification and impairment of benefits”). The first basis for a challenge is when the partner country has breached the rules of the WTO (the “violation” route). The second basis is when a partner country takes action that may lead to nullification and impairment even though a rule may not have been explicitly breached. While somewhat arcane as a legal concept, the essential point to note is that the hurdles for successfully mounting non-violation complaints are many and near-insurmountable.¹⁷

Developing country fears on this issue stem from the perceived vulnerability of price controls and other drugs-related policies, which though not in overt contravention of TRIPs rules, could nevertheless be challenged for impairing the benefits under the agreement. A successful non-violation complaint may be particularly difficult in TRIPs because IPRs are negative rights; i.e., they are rights that allow action against infringement by third parties. IPRs themselves do not confer positive rights such as the right to produce or market a product. To be sure, a price control dilutes the value of the monopoly, but legally IPRs do not guarantee a monopoly. Hence, a price control, as long as it is implemented in a manner that ensures that other producers do not infringe the patent, cannot be seen as nullifying and impairing benefits. Of course, disallowing the non-violation avenue as a source of complaints would provide a cast-iron guarantee for developing countries to preserve domestic policy options such as price controls. But if

¹⁷ In the entire history of the GATT/WTO, there have been only 8 non-violation complaints (out of a total of more than 300) and none has been successful. The recent complaint by the US against Japan’s domestic distribution system was dismissed by a WTO panel.

the reasoning described above is correct, the chances are not high that non-violation complaints would ever seriously threaten important domestic policies. Hence, while it would be useful to foreclose this option, the value of such foreclosure may not be too great.

Transfer of technology: India has expended a lot of effort over decades seeking international mechanisms for the transfer of technology. This is a laudable objective. But the experience of the last 20 years in international fora suggests that there has been some lack of clarity on how this is to be concretely achieved. For a long time, developing countries such as India were persuaded into believing that the vehicle for attaining this objective was through multilateral action on restrictive business practices and transfer of technology provisions. But it was always clear that these actions could in any case be taken by India domestically through its own competition laws. Specific answers to the following questions need to be provided before a cogent position on what we should seek internationally can be formulated: (I) what can international action do that India cannot do on its own to ensure the transfer of technology?; and, (ii) what concrete actions of industrial country governments that do not involve coercion of private sector corporations or are otherwise unrealistic will help achieve transfer of technology. It is possible that international cooperation can help in securing improved transfer of technology by addressing negative spillovers from developed to developing country markets. Instances of such spillovers and the appropriate remedial action need to be clearly identified by India and placed on the negotiating agenda.¹⁸

Parallel Imports: The TRIPs agreement allows countries to choose whether to allow or disallow parallel imports (i.e., imports that are put on the market in another country with the consent of the patent holder). At stake here is whether right holders can prevent parallel imports and sustain price discrimination across markets or be forced into a uniform monopoly. India holds a very strong position on this issue, in favor of preserving the right to allow parallel imports. At first blush, this appears to be paradoxical: first, theory would suggest that for a small market with a higher elasticity of demand, prices would be higher under a uniform monopoly than under a discriminating monopoly. India should therefore argue against parallel imports. Second, theory also suggests that it is the regime in the larger (industrial country) market that determines whether price equalization or discrimination will prevail. Developing countries' regime appears to be irrelevant in determining the final price outcome. Thus not only should developing countries not be arguing for *their* right to allow parallel imports but paradoxically arguing against the right of industrial countries to allow parallel imports. In this instance, notwithstanding their best efforts, their wishes seem to have been granted (at least in the patent area) because of the workings of political economy in which industrial country producer interests (against parallel imports in their market) have prevailed.

¹⁸ For example, abuses of IP rights in foreign markets (through patent pooling or acquisition of other rights) can inflict welfare losses on developing countries. These could be more effectively addressed at source than at destination requiring the cooperation of the large countries. This cooperation can then be embodied in multilateral rules.

As against these theoretical arguments, there seems to be the empirical perception that developing countries (South Africa is a recent example) can find lower-cost source of parallel imports. Given these contrasting considerations, it is difficult to have a strong view in either direction. On balance, therefore India should probably not expend too much effort attempting to change or even resist pressures to change the status quo.

Compulsory licensing for non-working: Recently, developing countries have been attempting to resurrect the right to grant compulsory licences if patent owners do not “work” the patent (i.e. produce the patented product) locally. India should resist raising this Lazarus from the dead. For three reasons. First, from a systemic perspective, it cannot be an efficient allocative principle if all countries required that production be located in their jurisdiction: comparative advantage could not be reasonably exploited.

Second, in the area of pharmaceuticals where compulsory licences are most frequently employed, a non-working provision is either misguided or probably a non-credible threat. It is misguided because it is premised on the view that a domestic monopoly is significantly better than an import monopoly. Say in response to the threat of compulsory licensing for non-working, a pharmaceutical company decides to locate in India to “work” the patent. The provision would have achieved its objective of securing working but without addressing the underlying problem of monopolization. Working is therefore not the objective to aim for, and especially not in the case of pharmaceuticals because technology transfer can be effected through imitation rather than requiring local production. On the other hand, where technologies cannot be easily imitated, the threat of compulsory licensing is not credible: even if the patent owner refuses to comply with the provision, alternative sources of production may not be easy to find.

Finally, TRIPs disallows compulsory licensing on grounds of non-working and seeking to reverse this for little obvious gain could again represent an inefficient use of negotiating coinage.

Caveat to external pressures

Although external pressures on India in the field of IP are going to be minimal, there is one caveat to this general presumption. This relates to developments in WTO dispute settlement on IP. Ambiguity permeates the TRIPs agreement. It is up to the dispute settlement process either to resolve this ambiguity or to entrust this task to the political (negotiating) process. There is increasing concern that the dispute settlement process in the WTO may be tending toward judicial activism and this may have ramifications for TRIPs and developing countries. Developing countries will therefore need to keep a watchful eye on how TRIPs provisions are interpreted. A few cases currently going through the dispute settlement process will be particularly important to monitor. They relate to the ability of countries to facilitate quick entry of generics upon patent expiration (Canada versus EU) and to the protection that needs to be accorded to test data (Argentina versus US). If TRIPs rules are consistently interpreted to favor high IP protection, some offsetting political initiative would need to be mounted by developing countries such as India.

VII. Domestic Inventive Activity: Whither India

What scope is there for India to become a more active center for research and development activity and can intellectual property protection help? This is, of course, a very difficult question to answer because it has multiple aspects relating not just to IP protection, but more importantly to science and technology policy, public sector involvement in research, education etc.

Table 1 and Chart 1 below depict trends in patenting in the United States by some of the more important developing and developed countries. Data on patenting in the US is probably a reliable indicator of the inventive activity in these countries because the US market is the most likely target for potential patent applicants. Table 1 clearly highlights the technological gap between these two sets of countries. Clearly, the US and Japan continue to be eons ahead of all developing countries.

Two interesting questions from India's perspective are first, and India's relative ranking amongst developing countries, and second, the experience of other developing countries that have strengthened their IP protection over the last decade.

Table 1 shows that India, despite its history of inward orientation and weak IP protection, does not fare too badly when compared with other developing countries (Table 1). In terms of patent grants, it ranks seventh, behind Taiwan, South Korea, Israel, South Africa, Hong Kong, Singapore, but ahead of the other large developing countries including Brazil and China. Interestingly, in the most advanced technological sector—biotechnology—India ranks xx and not very far behind Taiwan and South Korea.

Chart 1 depicts the patenting activity of four developing countries—South Korea, Taiwan, Chile, and Mexico—that undertook revisions to their patent legislation over the last 10-15 years. Panels A and B refer respectively to patent grants and applications, while Panel C relates to patents granted in the chemical sector.¹⁹ All the panels point to a common trend: while South Korea and Taiwan witnessed a surge in patenting after their IP regimes had been strengthened, no such effect was discernible in Mexico or Chile, which continue to be characterized by a very low level of inventive activity.

Clearly, therefore, strengthening IP protection does not appear to be a sufficient condition for increased inventive activity. But does India share more the characteristics of South Korea and Taiwan or of Mexico and Chile? Like the former group, India has a diversified industrial and technological base, a well-educated and highly skilled workforce (at least in selected sectors), and some core research capability. Looking ahead, it is possible therefore that the strengthening of India's patent laws will lead to developments that resemble more closely those of Korea and Taiwan than Mexico and Chile. It goes without saying that realizing this objective will require a more concerted policy effort going beyond IP protection. But there may be grounds for guarded optimism. Indeed, there is a discernible surge in patent applications by Indians since the

¹⁹ It is interesting to look at the chemical sector because IP protection has been shown to have a more significant impact on R&D activity in this sector than in others.

mid-1990s, although from a very low base. With the right policies, this early promise could be translated into serious strides in long term inventive activity and long run growth performance.

VIII. Conclusion

While external pressure to change intellectual property (IP) regimes has abated, India faces other challenges: as a net user, potential net creator, and net creator of knowledge and intellectual property. The challenge is unique in each of these areas. As a net user, an important challenge is to mitigate the most egregious impacts of the TRIPs agreement, particularly in the case of pharmaceuticals. Compulsory licensing and competition policy offer the most promising avenues for achieving this and India needs to expeditiously implement them and render them effective in the near future. As a net user, India can use its TRIPs obligations to enforce its market access rights in the WTO. Accordingly, consideration should be given to revising the draft IP legislation to allow for retaliation in TRIPs for failure by trading partners to adhere to their market access commitments affecting India.

On the new technologies, particularly in agriculture, India needs to identify where it is located on the technology spectrum. There is some evidence that it could be a potential net creator of IP. Based on such an assessment, intellectual property rights legislation should be appropriately designed. At the same time, strengthening complementary regulatory institutions would allow the benefits of these technologies to be harnessed while minimizing attendant risks.

As a net creator of technology (in the area of genetic resources, traditional knowledge, and geographical indications), the challenge is to establish workable domestic systems for protecting such technology. This could then serve as the basis for seeking their protection internationally.

Finally, the recent experience of developing countries that share India's knowledge-generation characteristics suggests that India should not be overly pessimistic about its potential to move along the knowledge spectrum even in areas, such as pharmaceuticals and chemicals, where it is currently a net user of intellectual property.

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