

**THE NEW GLOBAL INTELLECTUAL PROPERTY RIGHTS REGIME
AND ITS IMPERIAL DIMENSION**

IMPLICATIONS FOR “NORTH/SOUTH” RELATIONS

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Paper prepared for the 50th BNDS Anniversary Seminar
Rio de Janeiro, Brazil, September 2002

At a time when most people agree that the world's economies are becoming more and more “knowledge-based”, more than ever the international production and circulation of knowledge has turned into a strategic issue. Furthermore, *access* to knowledge has become an increasingly important factor, especially for developing countries that, for the moment, can only make a limited contribution to the production thereof.

And yet, there is little doubt but that the double trend currently characterising the world economy, involving a move towards trade liberalization on one hand and an increasingly intensive usage of knowledge in all spheres of human activity on the other, has also been accompanied by a heretofore unrecognised rise in “*entry barriers*” that *impede access to knowledge*. In actual fact, ongoing changes in Intellectual Property (IP) rights, undertaken at the behest of the United States, have led to the building of barriers that are institutional in nature (i.e., new rights guaranteed under Law and by Courts of Justice) and which reserve the exclusive usage of new knowledge for the benefit of large multinational firms

from the countries of the Centre - at the same time that this exclusive right is being imposed, through international agreements, on the internal markets of developing countries that had once been largely protected from it.

The process we have witnessed in the field of Intellectual Property over the past 20 years is so important and full of consequences that thinking about the forces driving it, and about the role that Intellectual Property Rights (IPR) play as specific “institutional arrangements” which are intended to foster investment in research and innovation (so as to offset the market’s various failures in such domains¹), has become very widespread, paving the way for very discussions and controversies that are highly up-to-date.

The present article is based on an analysis of these new trends in the field of IPR, and of their impact on developing countries. After a brief reminder of the main contents of the new IPR regime that has established itself in the United States since the 1980s before extending worldwide (section 1), we will try to demonstrate how this new regime has concretised changes in the status of patents, with one of its main goals being to enable public authorities to endow large corporations with institutionalised competitive advantages (section 2). We will then look at the imperial dimension of this new regime, and at the paths and means by which it has been extended across the world (section 3), using semiconductors as an example to illustrate this thesis (section 4). We conclude with some of the implications of this analysis.

1. The new Intellectual Property Regime in a nutshell ²

¹ The texts serving as a basis for subsequent thinking in this field, at least until the early 1980s, were notably the writings of Nelson (1959) and Arrow (1962). These two authors demonstrate that given some of the peculiar attributes of “information” when seen as a good (i.e., its indivisibility and the uncertainty that is associated with its production), market economies are under a continual threat of under-investment in research-development. Particular institutional arrangements (allocation of public monies to basic research, IPR to compensate private investors) become necessary from the point of view of social well-being, as long as such arrangements do not encourage the development of anti-competitive practices by the firms that benefit from them.

² This paragraph is a very brief recap of some of the arguments made in Coriat & Orsi (2002). On this topic, the reader can also refer to Jaffé (2000) and to R. Eisenberg (2000).

The new IP regime is basically characterised by the fact that two key areas have been opened up to patenting: *products of research into living entities*, notably research findings relating to the genome; and *software/computer programmes* (including the mathematical algorithms they use), and more recently the so-called “*business models*”.

In both of these areas, where the current scientific and technological revolution has its roots, patentability has been established on the basis of jurisprudential rulings that have “reversed” previous decisions and doctrines, at the end of a long and complex process marked by intensive legal and economic conflicts that were ultimately resolved only by recourse to the highest judicial bodies: the Supreme Court of United States, or depending on the case, the new CAFC (Courts of Appeal for the Federal Circuit) that were set up in 1984 and which in several cases have started to play a decisive role in the modification of prevailing IP doctrine.

- Regarding software and computer programmes, after an initial piece of legislation (the *Computer Software and Amendment Act* of 1980) tried to provide a solution by redefining *copyright* law so that it could cover software, the Courts of Justice forced everyone to go off in another direction when they overruled a previous USPTO decision refusing to grant a patent under the provisions of existing doctrine. By so doing, the Courts catalysed the shift to patentability. Now, in all of the jurisprudential rulings that have been made in an effort to reaffirm the new course, two stand out because of the impact they have had.³ The first (known as *Diamond vs. Diehr*, 1981) states that algorithms can be patented, pushing the door wide-open to the patentability of software. By so doing, the decision overturned previous jurisprudence that had explicitly precluded this possibility⁴. The second decision (*Street Bank Trust vs. Signature*, 1988) opened the breach further, extending the scope of patentable items by including “*business model*” patents, i.e., simple “working methods” relating to

³ On this point the reader should refer to a very precise study by I. Liotard (2002), retracing the history of patentability in this domain. Note P. Samuelson (1998) and Mergès (2001), as well.

⁴ See Besen & Raskind (1991) who in their survey on IP provided a precise documentation of this subject.

various types of commercial practices that are said to be automated insofar as they are carried out on an Internet and/or software platform. What is noteworthy here is that patent registrants are not required to disclose which precise computer methods they are using. The treatment of these methods is not the novelty; rather it is the fact that the “concepts” themselves are the object of protection.⁵ Note that these new practices have created immense real or virtual conflicts between patent holders, with each editor using for each software application hundreds of algorithms, many of which are protected today by a patent¹.

- Regarding Living Entities, a first key moment was the U.S. Supreme Court’s 1980 Charkrabarty ruling establishing the patentability of a genetically modified single cell organism. However, this watershed decision was no more than the inaugural act of a series of rulings that culminated, as F. Orsi demonstrates in great detail, in the patentability of partial genes sequences (ESTs) and also of the genes that are implicated in illnesses (F. Orsi 2002). In this process, and besides from the Chakrabarty ruling, at least one other major decision (the “*re Brana*” ruling) has played a key role, since it also overturned previous jurisprudence that had caused the USPTO to be so circumspect about granting patents in this field. *Re Brana* recognises claims on discoveries that have not been made yet, i.e., which have not materialised or even been described for the moment. The establishment of a new IPR in an area that is hypersensitive (because it deals, as we will see, with the status of *basic research* products and both covers and determines policies for accessing healthcare and medicine) was accompanied by, or in certain instances led to, major theoretical controversies (Rai, 2001) and economic battles. At the same time, it also cast a spotlight on the need to rethink the *ethical* dimension of certain IP laws.

⁵ Smets Solanes (2000) offer several typical cases of “business models” that are covered by patents without any disclosure having been made of the computer processes that were used.

¹ More on the contradictions and problems created by such a patent regime in Shapiro, 2002 (

This double (but joint) development of IP rights, that first was enforced in the United States before extending besides most of the developed countries², calls for at least three series of comments.

i) First of all, in both of the areas we examine briefly, it is essential to note that recent (dramatic) changes in IP law have been strongly embedded in the specificities of an American patent law that is predicated on a *common law* regime wherein the essential criterion for patentability is the “utility” the invention is deemed to have. Utility, a property that refers to products of “useful arts”, basically involves industrial and commercial advances enabled by this invention. Under these conditions, in our opinion the aforementioned change was in fact that suddenly it was enough to relax or change the meaning of the word “utility” for non-patentable areas to become patentable. For example, in *re Brana* the Court considered that inasmuch as the very act of highlighting ESTs⁶ was “useful” to future advances in knowledge, these entities had become patentable, despite their status as simple “research tools”.⁷

ii) Another major development is that patent registrants were recognised as having the right to make extensive “claims” pertaining to inventions that *have yet to be made, and which are entirely virtual (since they cannot be predicted)*. For example, disavowing a previous Supreme Court ruling that had specifically warned against this danger, patents were transformed into a veritable “hunting license”.⁸ They no longer constitute a “reward” granted to the inventor in exchange for his/her disclosure of the invention. For

² In Europe, in spite of the 1998 UE Directive, this process of extension of the new right regarding living entities meets some serious opposition

⁶ *Expressed Sequence Tags* or “partial sequences” of genes. The utilisation of this process constitutes an advance in the methods that can be used to identify complete sequences of genes.

⁷ Note on this score that the way in which American law has developed would have been impossible *per se* under Continental European law, where the key distinction is the one that separates “discoveries” (pertaining to knowledge) and “inventions” (pertaining to applied arts) - the latter being the only one area where a patent can be granted. We should however further specify that even under American law, the changes that have been observed were neither grounded in objective fact nor even foreseeable. On this point, see the discussion by F. Orsi (2002).

⁸ This is despite the fact that the Supreme Court had specifically warned that “*a patent is not a hunting license*” in its *Brenner vs. Manson* ruling. (c.f., on this point, see Orsi, 2002 and R. Eisenberg, 1995).

the firm holding the patent, they have become a *right of exploration that is granted in a monopolistic form*, even before any invention has been made and *a fortiori* disclosed.

iii) Lastly, it is clearly no coincidence that that the two areas under examination constitute new and “emerging” *fields in which American academic research has possessed in the past, and still possesses, a considerable relative advantage*. Everything has happened as if the new IP regime intended to ensure that these research advantages could be *immediately* transformed into competitive advantages, with the actual research product being directly covered at a very “upstream” level by patents, thus guaranteeing the right to exclude rival firms. As the present paper suggests below, there is nothing accidental about the public authorities’ decision to help “close” access to a discovery in order to preserve it in a patented form. Nor is it accidental that these patents are granted through *exclusive licenses*³.

The outcome of these changes is that actors’ operating environment is going to be completely shaken up. In the end, this is an important consequence of the mutations we have described, wherein the new regime is characterised by the fact that it comprises a decisive step towards the dissipation of the traditional and prevailing norms of “open science” (Dasbugta & David, 1994). Both for IT and for living entities, the new regime covers areas that feature a largely “*transversal*” dimension, using the specific meaning that Arrow lends to this term when discussing the knowledge products that comprise “inputs” and “raw materials” for many other areas of innovation (Arrow, 1962). The discoveries that will henceforth be patentable are often “upstream” ones located very high up in the innovation chain. This mutation has sparked widespread debate both within the scientific community and also amongst economists who specialise in innovation.

However important these mutations are, it remains that they only account for some of the changes that have been introduced. To apprehend all of the effects of this new era of IP,

³ Under the proviso of a “*preference for American industry*”, (as stipulated in the Bayh-Dole Act [c.f., *infra* section 2]).

R&D and innovation interrelationships, we should review some of the provisions of the basic law in this field, i.e., the Bayh-Dole Act, which the U.S. Congress adopted in 1980.

2. From “exclusive licenses” to an “American preference”: changes in the status and role of incentives

Studies of the direct effects of the Bayh-Dole Act have already built up a substantial body of literature (Mowery et al., 1999; Mazzeloni & Sampat, 2002). All that remains for us now is to briefly review the essential points of this corpus before starting on our prime objective, which is to raise questions about the true meaning of this Act, given that the new measures it establishes should be apprehended in the light of the other changes that have affected the American national innovation system.

Sticking to the letter of the Bayh-Dole Act, the crux of this new law is presented by its commentators as being its introduction of a double change, consisting of: i) the establishment of a *principle* (as opposed to a dispensation, this being the case prior to the Act's being voted in) giving institutions that receive public funding (universities and public research establishments) the right to register patents on their discoveries; ii) the possibility for such entities to sell the exploitation of said patents as *exclusive rights* to private firms and/or to found “joint ventures” with them (the universities acting as partners).

In addition to these provisions, whose significance has often been highlighted, we should also add another one (which, to our knowledge, has received little or no notice in literature on this topic) - *Section 204* of the same Bayh-Dole Act. This affirms an “*American preference*” whenever exclusive licenses are granted, a provision we will return to at the end of the present section.

Regarding the first two series of provisions and without entering at present into a debate as to whether such measures encourage the development of innovation (or are likely to do

so in the future ⁹), we would simply like to revisit the significance of the complementarity effect that is born out of *the coexistence of the new IPR regime being set up and the enactment of Bayh-Dole*. Everything here stems from the fact that insofar as the main centres for the production of scientific knowledge (universities and public laboratories) *can grant their products in the form of exclusive licenses*, they are being used as instruments for appropriating basic knowledge. This is achieved through a series of “bilateral monopolies” (c.f., Dasbugta & David, 1994) that universities and public laboratories share with private for-profit organisations.– actions that put the finishing touches to the process by which the outcomes of fundamental research are turned into private commodities (c.f., Eisenberg, 2000; Orsi, 2002])

We should therefore take one step further and state that what we are dealing with here is a *fundamental shift in the way in which patenting is being justified*. In terms of incentive theory, this means that the inventor’s “rewarding” justification can no longer be invoked since, as Mazzoleni & Nelson (2000) note, the research we are dealing with is publicly funded, i.e., in this specific instance “*patenting [has already been] paid to inventors*”. There is no reason whatsoever that society should be “rewarding” an inventor undertaking research with tax money that has already been collected from the citizenry. It should therefore be admitted that one surreptitious side effect of the measures that the U.S. Congress have introduced is this entirely different (and radically new) type of “incentive” being given to firms that have *not* participated in fundamental research, in an effort to get them to commit to marketable products. What’s more, and this is key in our opinion, firms are being induced (through the benefit of exclusive licences) to commit themselves *before* any such product has actually manifested itself. This particular type of incentive, which Mazzoleni & Nelson (2000) refer to as an “*induced commercialisation theory*” may deserve attention. At least it raises two series of comments. First of all, the reward is no longer *a posteriori* (since the novelty, the non-obviousness and the utility have already been established). Instead, it occurs *a priori*, causing a transformation in the status of the patent, which transmogrifies from an *exploitation right* to an *exploration right*. Secondly, given the *exclusive* nature of the licenses whose delivery the U.S.

⁹ A discussion on this topic can be found in Mazzoleni & Sampat (2002).

Congress is authorising, in principle the firm seems to be committing itself to an innovation path that is built around a whole series of *a priori* granted bilateral monopolies. This path is preferred to competition between innovators benefiting equally from free access to the products of basic research, the prevailing system up until now and in fact the very heart of public policy until the beginning of the 1980's. The confusion this causes has created a situation that is far from the "optimum" envisaged under incentives theory. This raises questions about the real finality of the new orientation.

Here we find another key provision in Bayh-Dole: the aforementioned Section 204, which becomes paramount. Entitled "*Preference for United States Industry*", 204 states that the new rights being granted to publicly funded universities and institutions (and in particular the right to patent and sell discoveries as exclusive licenses) does not apply "*unless...any product embodying the subject invention or product through the use of the subject invention will be manufactured substantially in the United States*".¹⁰

This is a key provision. It tends to indicate that, replacing the previous preoccupation with Welfare that had provided the theoretical justification for the institutional arrangements that were supposed to act as the drivers of innovation (Arrow, 1962; Nelson, 1959), now there was another, much more prosaic concern, consolidating a dangerous proximity between the new IP regime and some of the industrial strategic policy theses¹¹ that were being formulated at the same time. Section 204 is a very specific measure – after all, the relative institutional advantages that firms are being given in the form of exclusive licenses are only being offered to those companies that can bolster the American industry. The upshot is that very peculiar series of institutional complementarities¹² have materialised within the American NIS (National Innovation

¹⁰ A dispensation is given in case "*unsuccessful efforts have been made to grant licenses to potential licensees that would be substantially likely to manufacture in the USA, or where under the circumstances domestic manufacture is not commercially feasible*" (section 204 of the Bayh-Dole Act).

¹¹ For a book that argues unmitigatedly in favour of such strategic industrial policy theses, see the collection of articles published by L. Tyson (1996), former "Head of the Council of Economic Advisers" under President Clinton. For a criticism thereof, see notably Baghwati, 1996, as well as Coriat, 2000.

¹² Here we will be applying the concept of "institutional complementarity" using the strongest sense of the term, i.e., with the meaning that is notably applied by Aoki (2000) when he defines a situation of "institutional complementarity" as one that involves a *coexistence of institutional rules of varying origins* wherein new or original spaces of action are opened up for agents; such rules constituting new resources

System), with a chain being built up between ‘*upstream*’ patents (notably those that pertain to the products of basic research), exclusive licenses and a ‘preference for American industry’. In other words, a licensing process that gives holders the right to exclude non-American rivals goes hand in hand with this “preference”. Moreover, it is noteworthy that this is happening as early as the scientific discovery potentiality *exploration* phase. What this reveals is an intention to “confiscate” knowledge by establishing institutional forms and rules that erect entry barriers. By so doing, the American administration is providing its national firms with an opportunity to develop a whole set of legally guaranteed rents, often even before one red penny has been invested in research. In other words, the U.S. Congress is setting up a *virtual rent market* at bargain basement prices¹³.

These considerations assume even greater importance if they are analysed alongside the systematic group measures taken at the same time in another field to ensure the international defence and promotion of the new IP regime that American firms have been awarded.

3. From “301 Special” to TRIPS: the international promotion of the American norm

At the same time that a regime that was “internal” (to American law) was being altered as aforementioned, the U.S. government was committing itself to an active policy involving an *international defence and promotion of the new regime*. With the 1994 signing of TRIPS, this process would lead to the establishment of a worldwide IPR regime whose principles replicate the main orientations of an “internal” American regime.

The main instrument of this action was the adoption, under “Section 301”, of the 1984 *Trade Act*, a set of specific stipulations intended to promote and ensure international compliance with the IPR awarded to American firms by U.S. national entities. These

agents can mobilise in such a way as to serve strategies that are then able to take on original dimensions or objectives. (On this point, also see Coriat & Weinstein, 2002).

provisions are regrouped into a specific sub-section of “Section 301” called “301 Special”, and entirely devoted to IPR. They were reinforced by the 1988 *Omnibus Trade and Competitiveness Act*, which continues still comprises U.S. law in this area.¹⁴

By virtue of these provisions, the United States unilaterally awards itself the right to take reprisals against countries that, *even if they are complying with international agreements in this area* (such as those that have been codified by the Geneva and Paris conventions, which come under the aegis of the WIPO), are said to be contravening stipulations that are meant to protect American firms’ IPR. In particular, the Law asserts that the U.S. Trade Representative must undertake unilateral action when s/he detects actions that can be deemed “unreasonable”. In Bayard & Eliot’s understanding, according to Article 301 (d) (3) (2) an action is deemed “unreasonable” when it appears to be “*inequitable and unfair in the some way or the other, even if it does not necessarily violate the United States’ international rights, or even if it isn’t incompatible with them*” (Bayard & Eliot, 1994). Bhagwati in particular, in a series of high-profile essays, has emphasised the exorbitant nature of these stipulations, which constitute in his opinion a stance of “aggressive unilateralism” that is capable, in his own words, of putting the world trade system “at risk”.¹⁵

This new link between the new IPR regime and the stipulations of U.S. foreign trade law has given American authorities a room to manoeuvre that they have exploited actively. What they have been doing in practice is to deploy a two-step strategy.

First of all, the provisions of “301 Special”, which have been abundantly used, permit the government of the United States, in the person of the U.S. Trade Representative, to include recognition of U.S. firms’ IPR in the bilateral agreements s/he negotiates with various countries. Towards this end, the Trade Representative has a wide range of

¹³ Market entry costs are lessened since the discovery is being funded publicly. Moreover, the right to explore the virtual rent mostly pays for itself if the royalties on it are transferred back to the universities – something that can occur any time that the discovery has becomes self-funding.

¹⁴ A more detailed analysis of the form in which such stipulations feature in successive versions of U.S. Foreign Trade law (until the 1988 *Omnibus Trade and Competitiveness Act*, which is still in effect) is offered in our article Coriat (2000). On this topic, see also Zhang (1994).

instruments at his/her disposal, ranging from the threat of reprisals to concessions in other fields of international trade. Hence the first action taken by the Trade Representative in the name of Section 301 back in 1985, against the Brazilian Computer Law; with a second action being taken against Korea in 1986 (Bayard & Eliot, 1994).¹⁶ In the same spirit, albeit by a somewhat different route, the “*Caribbean Basin Economic Recovery Act*” (a 1983 trade treaty between the United States and Caribbean zone countries) left it up to the discretion of the President of United States to assess whether the signatory Caribbean countries are complying with the Treaty and practicing a satisfactory IPR policy - this being defined as a mandatory precondition before such countries could enjoy the tariff preferences the Treaty offers (Bayard & Eliot, idem). Along these same lines, the NAFTA negotiations were an opportunity to add an essential chapter, with countries being required to sign up to a legislation that was based on American law (and this, well before TRIPS was signed) before they could enjoy the Treaty’s free-trade provisions.

Later on, there would be a major change in the American authorities’ strategy, with the U.S. insisting during the Uruguay Round on the inclusion of an IP chapter. After long and complex negotiations (opposing the western countries to most of the southern ones), this process would finally culminate in 1994 in the Marrakech agreements that have become known as TRIPS. Although the final text of the TRIPS agreement contains various exceptions and modifications (essentially relating to the WTO’s desire to take into account some of the provisions of WIPO-supervised Treaties)¹⁷, what it has done is force all signatory countries to alter their national legislations, thus converging towards the new norm that the United States set up in the 1980s. As Reichman & Lange note, the paradox is at its peak here, since we go from a situation that was reflecting the widest possible diversity of national patent regimes (recognised as a necessity given the

¹⁵ On this topic, see his 1991 essay, whose title, quite significantly, is *The World Trading System at Risk*.

¹⁶ This book, from which we have taken the elements in this paragraph, offers a very detailed analysis of the measures that preceded the adoption of 301 Special, plus case studies relating to its implementation.

¹⁷ For example, in the field of bio-pharmaceuticals, “in case of a health emergency” the TRIPS text authorises a country to promote specific policies. As C. Mfuka (2002) reminds us, this is a provision that, in principle, should help certain countries coping with the AIDS pandemic (notably Brazil and South Africa) to free themselves from some of the more restrictive TRIPS rules. However, it is also noteworthy that such stipulations have not prevented several major conflicts from developing.

variations between different countries' level of development) to one of the most homogeneous and standardised legal regimes in the world (Reichman & Lange, 1998).

The semiconductors example we will be presenting now provides a particularly clear illustration of this “double-triggered” strategy that drove this transition from an extremely heterogeneous situation to TRIPS, highlighting all the while the “imperial vocation” of the type of IP regime that was first installed in the United States.

4. An illustration: the example of the Semiconductor Protection Act (SCPA)

To fully apprehend the significance of the SCPA¹⁸ (which set up an original IP right for semiconductors, known under the name of “*mask rights*”), we have to situate the context in which discussions pertaining to the new law developed. As R. Hunt reminds us, as the 1980s dawned the United States was traumatised by the withdrawal of its major semiconductor firms (led by Intel and Motorola) from the international market. According to this author “*in fact, trends within that industry became a catalyst for dramatic changes in the way U.S. protects intellectual property*” (Hunt, 1999). After decades of unchecked domination, the U.S. was feeling quite resentful about its loss of competitiveness in a field it had created and in which it had excelled, at least until the early 1980s. Faced with an impressive rise in the power of semiconductor firms from Japan (or even Korea, already), American business first pretended it was a victim of Asian rivals' use of “reverse engineering” practices – despite the fact that amongst American firms these were also common practices, given that they allowed for rapid and continuous technological progress. R. Hunt resumed the situation back then as follows: “*Within the U.S. semiconductor industry, reverse engineering was a well-established practice. But by the late 1970s, American firms objected to similar behaviour by Japanese firms when they began to increase their market share in the more standardised products, such as computer memory chips. The level of competition eventually became so intense that, by the mid-1980s, most American companies abandoned these segments*

¹⁸ SCPA: the Semiconductor Protection Act, enacted by Congress in 1984, established a new IP right for “masks”. This basically refers to microprocessor design. For a detailed presentation of the history of SCPA and its contents, see Hunt (1999) as well as Radomski (2000)

entirely...When it became clear they could no longer dominate Japanese firms on the basis of production technology alone, American firms attempted to consolidate their comparative advantage in research and development. To do this, they would have to find ways of reducing their competitors' ability to reverse-engineer their products (...) To that end, American companies began to lobby Congress to increase intellectual property protection for their semiconductor designs" (R. Hunt, 1999).

In the end, in an environment marked by a "*diminished giant syndrome*" (Baghwati, 1991), this lobbying would culminate in the 1984 adoption of the SCPA. However, the story does not end here. In fact, this is where it begins. This is because the SCPA, alongside stipulations providing for the establishment of a new "mask" law", *contains a series of clauses that are intended to ensure the law's promotion at an international level*. These are codified in sections 902, but mainly 914, of the SCPA.

This final section contains a series of measures that allow the United States Trade Representative to *extend American law* either to countries showing "*good faith efforts*" to comply with SCPA stipulations, or else who are introducing national legislations that are similar to it. It remains that this provision, which appears to be quite generous, met with sharp criticism because of the fact that in practice this extension of American law was not without conditions. Radomski reminds us on this score that, "*in effect, the U.S. government is demanding access to foreign government documents and reserves the right to criticise the foreign legislation. This may be viewed by some foreign governments as a usurpation of their sovereignty*" (Radomski, 2000). What he is stating is that this national law was in a sense conceived of from the very outset as if it were an imperial law, or at the very least, as if it had an imperial vocation, with the U.S. unilaterally seizing the right, under certain conditions, to extend its own national law, complementing the right it granted itself just as unilaterally under "301 Special" to pursue alleged "*infringers*".

The bottom line for these strange provisions is, as Radomski also notes, that "*the purpose of section 914 was to encourage the rapid development of a new worldwide regime for the protection of semiconductor chips*" (Radomski, op.cit.).

In actual fact, via detours and protocols we will describe, the new American national law as incorporated into the SCPA has rapidly become international law. Everything happens according to a two-step process: i) the law is first grounded in bilateral agreements, and ii) once this has been achieved, these bilateral agreements are introduced as evidence to international bodies who are to promote them to the status of a multilateral agreement and make them into an international standard. The general mechanism described in the paragraph above (with bilateral agreements first being put under pressure from 301 before being transformed into multilateral agreements) is particularly well illustrated by semiconductors, a domain in which events have unfolded as follows:

i) The bilateralisation process

On one hand, SCPA rights were already being extended back in 1985, under 904, to Great Britain and Australia¹⁹. On the other hand, after due negotiation, the United States' main commercial partners in this field fell into step with American law and modified their own national legislations. This also happened to Japan in 1985 with its enactment of the "Semiconductor Layout Act" and to the EU with its 1987 Directive. Then came the *Korean Act*, although this did contain a "compulsory licensing" clause that came into effect in three situations (national defence; protection against anticompetitive practices by patent holders; and abuse of a dominant position in semiconductor layout).

In the end, with stipulations 902 and 914 having gone a long way to achieve their goals, the time came to shift from bilateral agreements to generalised multilateral agreements.

ii) The shift to multilateralisation, was a more complex, two-step process

¹⁹ Even though, as Radomski also notes, "*neither of these countries made significant progress at that time in passing sui generis laws for the protection of computer chips*" (op.cit.). Moreover, and in actual fact, at the time a copyright law that differed quite noticeably from SCPA covered Great Britain. However, starting in 1989, British law would be brought closer to American law through an amendment of the *Copyright, Design and Patent Act*.

The first efforts in this respect failed. Starting in 1989, negotiations had begun at the behest of the United States on a putative treaty to be called the WIPIC (*Washington Intellectual Property in Respect of Integrated Circuits*). Discussions were carried out under the aegis of the WIPO²⁰, the only organisation at the time that was authorised to deal with intellectual property at an international level. As Radomski notes, the atmosphere in Washington was “controversial”, with no fewer than 5 proposals being debated. All were based on SCPA provisions, but the Third World resisted in three areas: preservation of the possibility of compulsory licensing; safeguarding of the principle that conflict resolution should take place under auspices of the WIPO; and the lack of any sanctions in case of “innocent infringement” (with the American contingent demanding a payment of royalties when this does happen).

The second attempt was crowned with success, becoming the TRIPS treaty, which was signed in 1994. Note its articles 35 to 38, dedicated to “IC Topography Protection”.

The main reason for TRIPS’ success stemmed from the fact that within the wider framework of the WTO, the USA could bring additional bargaining power to the table, something it could not achieve within the framework of the WIPO, where negotiations were only supposed to cover provisions relating to IPR. Access to domestic markets, higher export quotas, lower customs barriers for different types of products – all of this was put on the table in exchange for signatory countries’ commitment to introduce national legislation based on the SCPA model. In and of itself, *the shift in the negotiating framework from the WIPO to the WTO was already a major victory for the USA*. Besides from the fact that the U.S. was able, within the “global” framework of the WTO, to fully wield its bargaining power by including access to its domestic market in the equation, there is also the fact that with the WTO the United States is no longer the minority of one that it had been in the WIPO, where the “one nation/one vote” principle prevailed (Zhang, 1994).

²⁰ The World Intellectual Property Office. Remember that at the time, the WIPO was the only guardian of international intellectual property treaties. It was therefore a *mandatory point of passage* for any multilateral IP agreement. We should also note that any new agreement under the aegis of the WIPO could

These elements explain why the final agreement was reached, with the Third World yielding on the 3 sensitive points that had stymied the putative Washington Treaty (no compulsory licensing, resolution of conflicts within a WTO framework, payment of royalties even in case of “innocent infringement”). In the end, as Radomski says, the protection granted under TRIPS “*was even greater than the one SCPA provided*” (idem).

In other highly sensitive areas, processes similar to the ones we have just described were pursued so as to arrive at TRIPS. A good example is bio-pharmaceuticals, where the IPR regime that prevails in most developed countries is in the process of being extended to the Third World. American proposals in this area quickly met with the approval and support of the large pharmaceutical multinational companies. During the Marrakech negotiations, a veritable coalition of “the powers that be” was able to impose a shift to a property right regime in the field of medicine, something that, will deprive (and already deprives if we consider the case of the AIDS pandemic) tens of millions of people across the world of access to healthcare.

*

Established in the aforementioned circumstances, it is no surprise to discover that TRIPS’ application has caused major conflicts, notably in public health matters. Given that their effects on North-South trading, such as we can begin to assess and measure them (Aboites & Cimolli, 2002) seem to be totally incapable of dissipating trade-related inequalities (contrary to what proponents of this policy have purported), what we have witnessed in many areas is the spectacle of major conflicts.

One notable example from the highly sensitive field of access to healthcare and medicine is anti-AIDS therapy, where treatment is based on ARVs that are covered by patents.

only be achieved with a majority of two-thirds of the member countries, according to a one country/one vote principle.

Since TRIPS, production (or importing) of generic products to the countries of the South has been frozen. Recent conflicts between pharmaceutical companies and the government of South Africa, or between the United States and Brazil, relating to the right to make use of compulsory licensing so as to get generic medicine produced at a lower cost (Orsi et al., 2002) provide a clear illustration of the type of economic and ethical North-South relational problems that can stem from the enforcement of the new IP law. The situation seems to be all the more untenable seeing as during the post-September 2001 anthrax attacks, the United States did not hesitate to trigger compulsory licensing clauses and pass orders to their pharmaceutical firms for tens of millions of units of a medicine that was covered by a patent belonging to the Bayer Company, which was forced to agree to drastic cuts in its sales price. In these sorts of conditions and still within the framework of the same type of problem, how long can we keep the countries of the Third World from using competitive mechanisms to ensure their procurement in ARVs?

Underlying the current malaise is the fact that in the new IP doctrine, the very reference to the theory of welfare is in upheaval. “Social” usefulness no longer seems to provide the foundation for patents and other IPRs. Instead, a chain has been set up with a view towards providing those firms that benefit from the new IPR with relative advantages that are developed institutionally and *a priori*, the implied argument being that what is good for them is necessarily good for the world economy. The “*American industry preference*” that is stipulated in Section 204 of the Bayh-Dole Act seems to constitute one leg of a broader action whose purpose is to ensure the international applicability of the new legal regime that the United States has set up. Analogous measures have often been taken in the world’s other wealthy nations. As such, in terms of access to knowledge a veritable coalition of the “strong” is governing the new world order.

If the world’s economies have truly become more knowledge-intensive, cutting off access to knowledge (through an extension of patents, which are nothing but pure institutional barriers) is surely not the most suitable way to help developing countries to grow so that

they are able to stand on their own two feet and make their own contribution to the overall growth and Welfare that we should be envisaging⁴.

If the goal is to go from a system that is constantly leading to confrontation to one that highlights co-operation, it is urgent that the rules relating to TRIPS be reviewed and redefined.

⁴ Not to mention the problems and contradictions that this creates within the developed countries' own innovation systems. If knowledge is transformed into a merchandise that can be appropriated in a private form, what is happening is that innovators are being given a number of hurdles that they have to overcome. This leads to something that Heller & Einsenberg (1998) call the "anti-commons tragegy". For further discussion on this point, see Rai (2001) as well, plus Coriat & Orsi (2002), Coriat, Orsi, Weinstein, 2002

References

- Aboites J. et Cimolli (2002) Intellectual Property Rights and National System of Innovation. Some Lessons from the Mexican experience, forthcoming in *Revue d'Economie Industrielle*,
- Aoki M. (2000) *Information, Corporate Governance and Institutional Diversity*, Oxford University Press
- Arrow, K. (1962) "Economic Welfare and Allocation of Resources for Inventions", in, R.R. Nelson, ed., *The Rate and Direction of Inventive Activity*. Princeton, NJ : Princeton University Press.
- Besen M., Raskind (1991) "An introduction to the Law and Economics of Intellectual Property" in *Journal of Economic Perspectives*, vol 5, Number 1, Winter, pp 3-27
- Bhagwati J. (1991) *The World Trading System at Risk*, Princeton University Press.
- Bayard T. et Elliott K. (1994) *Reciprocity and Retaliation in US Trade Policy*, Institute for International Economics, Washington DC.
- Coriat B. et Orsi F (2002) "Establishing a New Regime of Intellectual Property Rights in the United States. Origins, Content, Problems". forthcoming, *Research Policy*.
- Coriat B., Orsi F. Weinstein O. (2002) "Science Based Innovation Regimes and Institutional Arrangements : from Science Based "1" to Science Based "2" Regimes, paper presented to the Druid Summer Conference, Copenhagen, submitted to *Industry and Innovation*.
- Coriat B. et Weinstein O. (2002) "Organizations, Firms and Institutions in the generation of innovations", *Research Policy*, February, 31 : (273-290)
- Coriat B. (2000) "Entre Politique de la Concurrence et Politique Commerciale: quelle place pour la politique industrielle de l'Union Européenne" in Lorenzi, Cohen (eds) *Les politiques Industrielles Européennes*, Cahiers du Conseil d'Analyse Economique, 1^{er} Ministre, La Documentation Française, Paris
- Dasgupta, P. and P. David (1994). "Toward a New Economics of Science." *Research Policy* 23(5): 487 - 521.
- Eisenberg, R. (1995). "Corporate Strategies and Human genome" in *Intellectual property in the realm of living forms and materials.*, Acte du Colloque Académie des Sciences, octobre, eds Technique et Documentation, p.85-90.
- Eisenberg, R. (2000) "Analyse this : A Law and Economics Agenda for the Patent System", *Vanderbilt Law Review*, Vol 53:6.
- Heller M. A. and Eisenberg R. (1998) "Can Patent Deter Innovation? The Anticommons in Biomedical Research", *Science*, vol 280, 698-701
- Hunt R. M. (1999) Patent Reform : A Mixed Blessing for the US Economy, in *Business Review*, *Federal Bank of Philadelphia*, Nov-Dec
- Jaffe B. J. (2000) "The US patent system in transition: policy innovation and the innovation process", *Research Policy*, 29, (531-557)
- Liotard I (2002) "La Brevetabilité des logiciels : les étapes clés de l'évolution jurisprudentielle aux Etas Unis", forthcoming, *Revue d'Economie Industrielle*, Paris.
- Mazzoleni R. et Nelson R. (2000) "The costs and benefits of Strong Patent Protection. A contribution to the Current Debate", *Research Policy*.
- Merges R. (2001) "As Many as Six Impossible Patents before Breakfast: Property rights for Business Concepts and Patent System Reform", *Berkeley Technology Law Journal*.
- Mfuka C. (2002) "Accords ADPIC et Brevets Phramaceutiques : le difficile accès des pays en développement aux médicaments Anti-Sida", ce n°
- Mowery, D. C., Nelson, R. R., Sampat, B. N., Ziedonies, A. A. (1999), " The effects of the Bayh-Dole Act on US University Research and Technology Transfer" in Branscomb L, Kodama F and Florida R, (eds).

- Mowery D. C. and Rosenberg N. (1993) "The US National Innovation System" in Nelson R. *National Innovation Systems.. A Comparative Analysis, Oxford University Press.*
- Nelson, R. (1959) "The simple economics of basic scientific research". *Journal of Political Economy*, 67,p: 297-306.
- Orsi F. (2002) "La constitution d'un nouveau droit de la propriété intellectuelle sur le vivant aux Etats Unis : Origine et signification d'un dépassement de frontières". forthcoming in *Revue d'Economie Industrielle*
- Orsi F., Coriat B., Weinstein O. (2002) *From Marrakkech to Doha : some reflexions on the foundations of patents regimes in the Pharmaceutical industry*, paper presented to the XIVth International AIDS Congress, Barcelona, June.
- Radomski (2000) "The SCPA sixteen years after", *Berkeley Law and Technology Journal*.
- Rai A. K. (2001) "Fostering Cumulative Innovation in Biopharmaceutical Industry: The Role of Patents and Antitrust", *Berkeley Technology Law Journal*, vol 16, N°2
- Reichman J. and Lange D (1998) "Bargaining around the TRIPS agreement : the case for ongoing public-private initiatives to facilitate worldwide property transactions", *Duke Journal of Comparative & International Law*, Vol 9:11.
- Samuelson P. (1998) "Economic and Constitutional Influences on Copyright Law in the United States", <http://www.berkeley.edu>
- Shapiro C. (2001) *Navigating the Patent Thicket: Cross Licenses, Patents Pools, and Standard-Setting*, available at <http://haas.berkeley.edu/~shapiro/thocket.pdf>
- Smets-Solanes J.P (2000) *Stimuler la concurrence et l'innovation dans la société de l'information*, Document de Travail, Version 1.0, beta 5, photocopié
- Tyson L (1996) *Who's Bashing Whom ? Trade Conflicts in High Technologies Industries*, Institute for International Economics, Washington DC.
- Zhang S. (1994) *De l'OMPI au GATT. La protection internationale des droits de propriété intellectuelle*, ed IITEC, Paris.