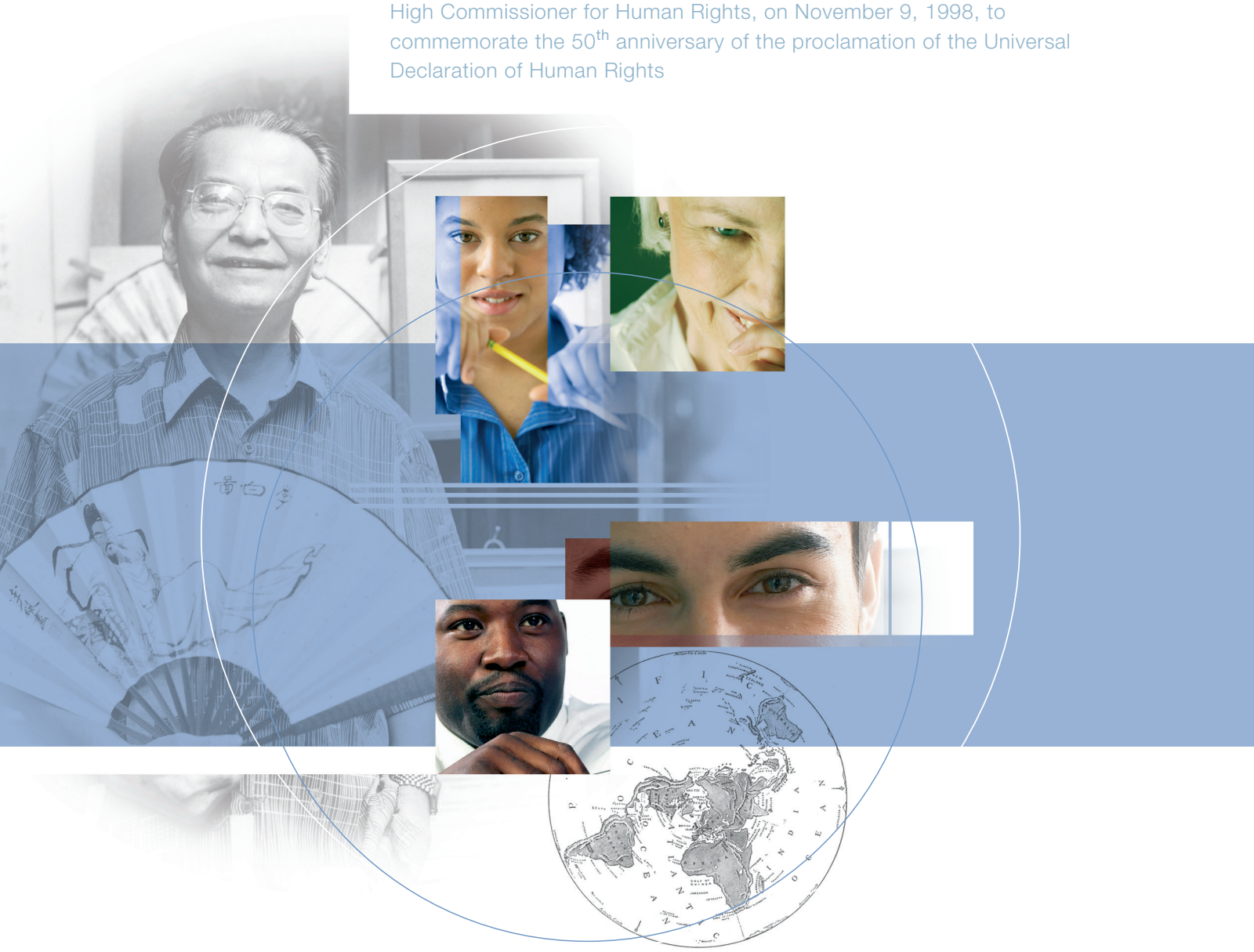
INTELLECTUAL PROPERTY AND HUMAN RIGHTS

The proceedings of a panel discussion, organized by the World Intellectual Property Organization in collaboration with the Office of the United Nations High Commissioner for Human Rights, on November 9, 1998, to commemorate the 50th anniversary of the proclamation of the Universal Declaration of Human Rights



WORLD INTELLECTUAL PROPERTY ORGANIZATION

OFFICE OF THE UNITED NATIONS HIGH COMMISSIONER FOR HUMAN RIGHTS

INTELLECTUAL PROPERTY AND HUMAN RIGHTS

A Panel Discussion
to commemorate the
50th Anniversary of the Universal Declaration of Human Rights

Geneva, November 9, 1998

organized by

the World Intellectual Property Organization (WIPO)

in collaboration with

the Office of the United Nations High Commissioner for Human Rights

WORLD INTELLECTUAL PROPERTY ORGANIZATION
GENEVA

The papers published in this volume were presented at a panel discussion titled "Intellectual Property and Human Rights", organized by the World Intellectual Property Organization (WIPO), in collaboration with the Office of the United Nations High Commissioner for Human Rights (OHCHR), on November 9, 1998.

The views and opinions expressed in the papers are those of their respective authors, and are not necessarily those of WIPO, the OHCHR or any of their Member States.

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FOREWORD

The World Intellectual Property Organization (WIPO) and the Office of the United Nations High Commissioner for Human Rights (OHCHR) take pleasure in issuing the proceedings of the Panel Discussion on "Intellectual Property and Human Rights" which took place in Geneva on November 9, 1998, to mark the Fiftieth Anniversary of the Universal Declaration of Human Rights (UDHR).

Intellectual property rights are enshrined as human rights in the UDHR. Article 27 of the Universal Declaration provides that: "*(1) Everyone has the right freely to participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits*; *(2) Everyone has the right to the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author.*" These rights are further emphasized by Article 15 of the International Covenant on Economic, Social and Cultural Rights, 1966 (ICESCR), Article 19 of the International Covenant on Civil and Political Rights, 1966 (ICCPR), the Vienna Declaration and Program of Action, 1993 (VDPA), and other international and regional instruments.

Intellectual property rights have in recent years become increasingly relevant in diverse policy areas, including trade, health, culture and heritage, investment, environment, food security, and scientific and technological progress. The 1997 reform proposal of the Secretary-General of the United Nations has made human rights a crosscutting issue at the heart of every United Nations activity.

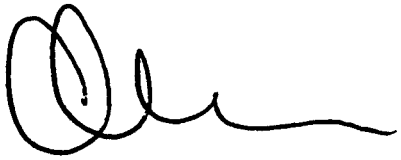
The role of intellectual property law in the progress of societies cannot be overemphasized; appropriate intellectual property protection can contribute to the economic, social and cultural progress of the world's diverse populations. However, the role of intellectual property in development and in related policy areas raises questions that are complex, rapidly evolving, and, at times, controversial.

Both WIPO and OHCHR are committed, consistent with their mandates, to facilitating discussion of such questions and advancing the understanding and appreciation of the role of the intellectual property system in development.

We believe that the papers published in this volume are an important contribution to open and informed discussion of these issues. Each contribution addresses an emerging, complex and crosscutting issue related to intellectual property, human rights and development. The papers were written by specialists from around the world, invited to address these issues in their personal capacities.

If the intellectual property system is to remain an engine for economic, cultural and social development, we must continue to explore such questions and stimulate further discussion. It is our hope that this volume represents a step forward in this process.

Mary Robinson
United Nations
High Commissioner
for Human Rights



Kamil Idris
Director General
World Intellectual Property
Organization

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OPENING ADDRESS

by

Mr. Roberto Castelo, Deputy Director General, WIPO

Ladies and gentlemen, distinguished panelists, it is with the greatest pleasure that I welcome you in the name of the Director General, Dr. Kamil Idris, to this panel discussion on "Intellectual Property and Human Rights", organized by the World Intellectual Property Organization (WIPO), in collaboration with the Office of the United Nations High Commissioner for Human Rights (OHCHR), to mark the 50th anniversary of the proclamation of the Universal Declaration of Human Rights.

On 10 December 1948, the international community adopted the Universal Declaration of Human Rights – a common standard, which recognizes the inherent dignity, equality and fundamental rights of all people in all nations. At the end of 1998, the 50th year since the adoption of the Declaration, it is appropriate to look back and recognize many achievements. Since the adoption of the Declaration, an impressive body of international law has developed, including several Conventions and Covenants. Human rights mechanisms, such as Special Rapporteurs, working groups, committees and commissions, have been established. There is also growing recognition of the central role of human rights in promoting peace and security, economic prosperity and social equity. Now is a fitting time to reaffirm the commitments made 50 years ago, and to continue to strive for even more effective, rigorous and balanced implementation of human rights for all.

Before going any further, permit me to introduce the persons with me on the podium. First, it is an honor to welcome *Mr. Brian Burdekin*, Special Adviser on National Institutions to *Mrs. Mary Robinson*, the High Commissioner for Human Rights. Mr. Burdekin has a long and distinguished career in human rights, and we are delighted that he is here representing the High Commissioner.

Mr. Adama Dieng is Secretary General of the International Commission of Jurists (ICJ). The essential mission of the ICJ, which was established in 1952, is to promote universally the Rule of Law and the legal protection of all human rights, whether they are economic, social, cultural, civil or political. In recent decades, a special focus of the ICJ has been to promote the interdependence and interrelation of economic, social, cultural, civil and political rights, which together contribute to human development. It gives me great pleasure to welcome Mr. Dieng as the Chairman of today's panel discussion.

I am also pleased to extend personal greetings to the expert panelists:

Dr. Peter Drahos, Herchel Smith Senior Fellow, Queen Mary Intellectual Property Research Unit, Queen Mary and Westfield College, University of London, United Kingdom;

Ms. Christine Steiner, General Counsel, The J. Paul Getty Trust, Los Angeles, United States of America;

Ms. Silvia Salazar, Consultant, Central American Economic Integration Secretariat, San José, Costa Rica;

Dr. John Mugabe, Executive Director, African Center for Technology Studies, Nairobi, Kenya;

Dr. Audrey Chapman, Director, Science and Human Rights Program, American Association for the Advancement of Science, Washington D.C., United States of America; and,

Dr. Silke von Lewinski, Head of Department, Max Planck Institute, Munich, Germany.

The character of intellectual property rights as human rights is perhaps not fully appreciated. Article 27.2 of the Universal Declaration provides as follows:

> *"Everyone has the right to the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author."*

The human rights character of intellectual property rights is also recognized in other international and regional instruments, such as the International Covenant on Economic, Social and Cultural Rights of 1966. Further, intellectual property rights have become contextualized in diverse policy areas –for example, trade, health, culture and heritage, investment, the environment, food security, scientific and technological progress.

And yet, despite these growing linkages, the character of intellectual property rights as human rights, as well as the relationship between the right to intellectual property and other human rights, have not been fully explored. The purpose of today's panel discussion is to draw attention to the universality of intellectual property rights, and to the integral role that intellectual property rights may play in contributing to economic, social and cultural development.

Accordingly, following the first paper by *Dr. Peter Drahos*, which traces the origins of the modern intellectual property system and lays the groundwork for understanding its universality, our panelists will each address a specific aspect of the relationship between intellectual property, human rights and economic, social and cultural development.

In her paper, *Ms. Christine Steiner* analyses links between intellectual property and the right to culture, expressed in Article 27.1 of the Declaration as the right "*[f]reely to participate in the cultural life of the community, (and) to enjoy the arts . . .*"

Traditional knowledge systems are a part of the culture and heritage of mankind, and a significant body of traditional knowledge relates to the environment and biological diversity. Thus, *Dr. John Mugabe* addresses the protection of traditional knowledge and technology from the perspectives of intellectual property, environment and human rights.

The relationship between intellectual property and health is the subject of *Ms. Silvia Salazar's* presentation.

Next, *Dr. Audrey Chapman* will analyze the linkage between the right to intellectual property and the human right to share in scientific advancement and its benefits, enshrined in both Article 27.1 of the Declaration, and in Article 15.1(b) of the Covenant on Economic, Social and Cultural Rights, which provides that *"[everyone has the right] to enjoy the benefits of scientific progress and its applications."*

The final paper, by *Dr. Silke von Lewinski*, provides a human rights perspective of the international intellectual property system, and particularly the interaction between the national treatment principle and the human right against discrimination.

The full papers of the experts will be published by WIPO in 1999.

In closing, may I draw your attention to the Preamble to the Convention establishing the World Intellectual Property Organization, which provides that the mandate of WIPO is, *"in order to encourage creativity, to promote the protection of intellectual property throughout the world."*

At WIPO, we believe that intellectual property protection advances economic, social and cultural development. We are also firmly of the view that the pervasiveness of intellectual property requires further solid exploration of the linkages between intellectual property and development. It is the intention of Dr. Idris, the Director General, that WIPO play an appropriate part, consistent with its mandate, to advance understanding and appreciation of ways in which the intellectual property system can serve as an engine for the economic, social and cultural progress of the world's diverse populations.

With these brief opening remarks, I wish you all a most enlightening and successful discussion.

Thank you very much.

OPENING ADDRESS

by

Mr. Brian Burdekin
on behalf of
Mrs. Mary Robinson, United Nations High Commissioner for Human Rights

Excellencies,
Distinguished Participants,
Ladies and Gentlemen,

It is an honor for me to participate in the opening session of this important panel as the representative of the High Commissioner for Human Rights.

This discussion on "Intellectual Property Rights and Human Rights" provides an excellent opportunity for us to focus on one of the major proposals made by the Secretary-General in his reform plan -- namely the involvement of the entire United Nations system in more effectively promoting and protecting human rights. In particular, I believe this initiative constitutes an important step in the process of developing more effective cooperation between the Office of the High Commissioner for Human Rights (OHCHR) and the World Intellectual Property Organization (WIPO).

I am particularly pleased that today's discussion will address the increasingly important relationship between intellectual property and human rights - rights which include cultural heritage, traditional knowledge, the right to health, science and technology, and non-discrimination.

In the brief time available this morning, I would like to touch on three themes - non-discrimination, traditional knowledge and science and technology - themes which, I believe, could serve as a springboard for further developing cooperation between our two organizations.

In referring to the principle of non-discrimination in international intellectual property law, I want to highlight the complementarity of intellectual property rights and international human rights standards. The dominant principle in intellectual property rights of "national treatment" is anchored in the notion of non-discrimination - including on the basis of nationality. More specifically, the Berne Convention for the Protection of Literary and Artistic Works ensures protection of copyright law in foreign States: a measure which promotes recognition of non-discrimination and furthers the universalization of intellectual property rights.

International human rights instruments in fact complement intellectual property law; for example, Article 15 of the International Covenant on Economic, Social and Cultural Rights (paragraph 1(c)) stipulates that everyone has the right:

> "*To benefit from the protection of the moral and material interests resulting from any scientific, literary or artistic protection of which he is the author.*"

States Parties not only have an obligation to respect this right, they are also to ". . . *undertake to respect the freedom indispensable for scientific research and creative activity*" and to ". . . *recognize the benefits to be derived from the encouragement and development of international contacts and cooperation in the scientific and cultural fields*" (paragraphs 3 and 4 of Article 15).

Article 19 of the International Covenant on Civil and Political Rights prescribes that:

"*Everyone shall have the right to freedom of expression; this right shall include freedom to seek, receive and impart information and ideas of all kinds, regardless of frontiers, either orally, in writing or in print, in the form of art or, through any other media of his choice.*"

States Parties to both Covenants are obliged to submit periodic reports to the relevant International Committees outlining the legislative, administrative and other steps taken to ensure the enjoyment of, *inter alia*, intellectual property rights and freedom of expression. During the consideration of these reports, the members of these International Committees can, and do, raise issues of particular concern.

In addition, the Commission on Human Rights' Special Rapporteur on the Right to Freedom of Opinion and Expression has responsibility for investigating and reporting on the implementation of freedom of expression in specific countries. Within the framework of the work of the Special Rapporteur, issues concerning the protection of intellectual property rights may be discussed and brought to international attention.

The rights to intellectual property guaranteed under the two Covenants are further strengthened by the right to non-discrimination. Article 2 of both Covenants requires States Parties to ensure that the rights prescribed apply to all individuals within their territory and subject to their jurisdiction and to ensure that these rights are exercised without discrimination of any kind (including race, color, sex, language, religion, political or other opinion, national or social origin, property, birth or other status).

This guarantee applies to aliens and citizens alike, and encompasses the protection of intellectual property rights. More specifically, differences in treatment between aliens and nationals or between different categories of aliens can only be limited according to law and must be consistent with other rights stipulated in the Covenant. Furthermore, reference is made in the Convention on the Elimination of All Forms of Racial Discrimination, to the term "discrimination" meaning any distinction, exclusion, restriction or preference based on, *inter alia*, national or ethnic origin in the application of human rights and fundamental freedoms, including cultural rights.

Turning now to intellectual property as it relates to traditional knowledge, I welcome the establishment within WIPO of the new program on Global Intellectual Property Issues, and also the decision to examine the benefits which indigenous peoples and local communities are likely to derive from the intellectual property regime. In this context I would like to take this opportunity to congratulate WIPO on the very successful Roundtable on Intellectual Property and Indigenous Peoples held in July, 1998. I hope that this important dialogue with indigenous peoples will be continued and expanded.

I believe that one of the conclusions which emerged from the Roundtable is that the owners of traditional knowledge are less than adequately protected by the present system. This is certainly the message which has been put most forcefully by indigenous peoples taking part in human rights meetings under the auspices of OHCHR. Indigenous peoples have stated that their arts, crafts, sciences, literature, medicines, music and other creative forms of expression are the subject of research and eventual commercial exploitation by others, but that they themselves have frequently been denied any financial benefit.

The intellectual property rights system leaves the issue of medicinal plant prospecting among indigenous peoples to the law of practice. It is suggested that contractual agreements and codes of conduct respond more adequately to indigenous concerns than intellectual property rights. Contractual arrangements used by corporations usually involve contracts with local universities and non-governmental organizations which do the actual sample collection. Indigenous peoples and local communities are not usually mentioned in these agreements and there is no guarantee that they will even be consulted. In my view, it is particularly important that the intellectual property system ensures that indigenous peoples and local communities are consulted and notified by companies and researchers, and that their own procedures and customs are taken into account and their consent sought.

Together we face a number of challenges as we seek to understand and suggest possible solutions to this relatively neglected but important area of human rights. The question of how the present intellectual property regime can protect collective ownership of rights should be addressed. We are familiar with a regime which attributes ownership to individual or legal entities such as companies, but indigenous knowledge is often held in trust by a community rather than as the specifically recognized right of one person. A related concern is appropriate recognition for knowledge that is continuously evolving, and is passed from generation to generation, where we do not have a clear dateline for "discovery" but rather a process of learning over time. Recognition of such knowledge, without a specific date of origin, seems to present considerable difficulties. Finally, in this context, I believe it is important to note that very often indigenous knowledge has close links with spiritual or religious beliefs, the spiritual dimension of which is not easily quantifiable.

As many of you know, the international standard on indigenous rights, ILO Convention No. 169 concerning indigenous and tribal peoples, defines important international legal standards for indigenous rights. It does not, however, confer any special protection on indigenous intellectual property rights.

The United Nations Convention on Biological Diversity (CBD) addresses the rights of indigenous and local communities. Article 8(j) stipulates that each contracting party shall, as far as possible, and as appropriate, respect, preserve and maintain the knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant to the conservation and sustainable use of biological diversity; promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices.

In November 1997, the Conference of Parties to the CBD held an open-ended inter-sessional working group on traditional knowledge and biological diversity in Madrid. That

workshop produced recommendations concerning, *inter alia*, a program of work related to the implementation of Article 8(j). In May 1998, the decision was taken to establish an open-ended working group to address the implementation of Article 8(j) and related provisions.

The draft United Nations Declaration on the Rights of Indigenous Peoples represents an international recognition of the rights of indigenous peoples, including indigenous intellectual property rights. Article 29 provides:

> "*Indigenous peoples are entitled to the recognition of the full ownership, control and protection of their cultural and intellectual rights*", and that, "*They have the right to special measures to control, develop and protect their sciences, technologies and cultural manifestations, including human and other genetic resources, seeds, medicines, knowledge of the properties of fauna and flora, oral traditions, literatures, designs and visual and performing arts.*"

Although this declaration is still a draft, it includes provisions which are considered as minimum standards in the field of indigenous rights by experts on the Sub-Commission on Prevention of Discrimination and Protection of Minorities. The draft is the result of ten years work in the UN Working Group on Indigenous Populations, in which governments, indigenous peoples and communities, independent experts, non-governmental organizations and UN agencies continue to work in close cooperation.

I take this opportunity to also draw attention to the draft principles and guidelines for the protection of the heritage of indigenous peoples prepared by Mrs. Erica-Irene Daes, Special Rapporteur of the Sub-Commission. The draft principles and guidelines establish a solid foundation for future discussion on these matters. In its decision 1998/103, the Commission on Human Rights requested my Office to organize a seminar on these draft principles and guidelines. This Seminar, which you are cordially invited to attend, will be held here in Geneva, from 8 to 10 March, 1999.

It is essential that all of us in the United Nations system continue to study these issues - with the objective of better understanding the nature of traditional knowledge and the scope of indigenous and local communities' intellectual property rights - in order to identify possible legal as well as practical ways of promoting and protecting indigenous and local intellectual property rights.

Ladies and Gentlemen,

The right to development and intellectual property require balancing the private right of the creator or inventor to protection of his or her intellectual property with the right of the community to enjoy the benefits of such knowledge. Domestic law and international treaties on intellectual property usually protect the creator's private right. In recent years, however, some have questioned the primacy accorded to this right - in the interests of economic development.

The World Conference on Human Rights in 1993 emphasized that everyone had the right to enjoy the benefits of scientific progress and its applications. It noted, in particular, that certain advances in the biomedical and life sciences as well as in information technology, may have potentially adverse consequences for human rights. In this respect, an appropriate

normative framework should ensure that the progress of science and technology benefits people without infringing their rights.

However, we are confronted with many challenges in implementing that admonition -- including the problem of guaranteeing the confidentiality of personal medical and other data for the proper protection of privacy. It would therefore appear to be extremely important to promote legislative measures for the protection of personal data in accordance with the Guidelines for the regulation of computerized personal data files. At present, such protection is not guaranteed worldwide.

The benefits of computing - as indeed those of medicine - are beyond doubt. But this does not prevent advances in computing from being used and abused - sometimes to the detriment of human rights and human dignity.

In conclusion, I warmly welcome the initiative taken by WIPO to organize this event and note there are a number of areas in which international intellectual property rights and international human rights law converge, reflecting their complementarity and interdependence. In this sense, the rights are mutually reinforcing and contribute to an enhanced recognition of the universality and indivisibility of human rights.

However, I believe there are clearly important issues of common concern which require continuing, intensive consideration. I am therefore committed to more effective dialogue between our respective institutions, closer collaboration with the various international mechanisms related to State Party reporting, investigative procedures and the exchange of experiences in fora such as the Commission on Human Rights and its Sub-Commission.

I thank you for your attention and wish you success and wisdom in your deliberations.

INTRODUCTORY REMARKS

by

The Chairman, Mr. Adama Dieng
Secretary General of the International Commission of Jurists, Geneva

Mr. Director General of WIPO,
Mr. Representative of the High Commissioner for Human Rights,
Distinguished Experts,
Honorable Guests,
Ladies and Gentlemen,

At a time when so many dramas are assailing our conscience, we did not hesitate to accept the invitation from WIPO and the Office of the High Commissioner for Human Rights to preside over this Panel Discussion "Intellectual Property and Human Rights." As has already been mentioned, this meeting is one of the events marking the Fiftieth Anniversary of the Universal Declaration of Human Rights.

The Universal Declaration was, at the outset, an expression of hope before it evolved into an instrument of progress. For fifty years it has inspired us and retained all its credibility, being able to adapt unceasingly and sing us an ode to progress in which we have been glad to be the chorus. And yet it is not to honor a memory that we have come here today, but rather to make ourselves a promise: a promise to make human rights more than ever into a true priority issue. This is the interpretation that we are placing on this admirable and noble gesture by WIPO which, in collaboration with the Office of the United Nations High Commissioner for Human Rights, has succeeded in bringing together so many eminent experts on intellectual property law and on international human rights law. Whereas international law as devised and applied prior to the Second World War left little room for human rights and concerned itself only with relations between States, the development of a universal legal order has made the individual into a subject of international law.

In this respect it is instructive to refer to WIPO's subprogram 11.1 of the 1998-1999 Program and Budget, which recalls the fundamental and universal nature of intellectual property rights, and is in effect a quotation of Articles 26 and 27 of the Universal Declaration. In an age of virtual universities, mankind's rights to education, culture and scientific progress are revealing their relevance from the point of view of intellectual property. One is bound to note, however, that universal access to property rights has yet to be fully achieved. For evidence of this, it is sufficient to observe the climate of ignorance in many countries of the southern hemisphere in which the intellectual property system is little known to individuals or groups, notably those who are the custodians of traditional cultures and knowledge.

We are pleased to learn that WIPO is convinced that it is possible to afford universal access to intellectual property rights, and that as a result it will be introducing pilot projects to test new courses of action involving use of the intellectual property system. Moreover, in the same context, we are nothing if not gratified to witness the growing interest shown by WIPO in the intellectual property rights of indigenous peoples.

Against the background of this powerful movement which exalts the dignity of mankind and, by means of legal rules, affords access to fundamental rights and freedoms that are equal for all and available to every human being without discrimination, one does have to call attention to the space occupied in the real world by a new phenomenon which could have disastrous consequences for human rights, including intellectual property rights. I am speaking of globalization. As I reaffirmed on the occasion of the three-yearly Commission Meeting of the International Commission of Jurists, which was held in Cape Town in July 1998, if we aspire to a world in which human dignity is no longer treated with contempt, we must work according to the dictates of Article 28 of the Universal Declaration of Human Rights:

> *"Everyone is entitled to a social and international order in which the rights and freedoms set forth in this Declaration can be fully realized."*

It is widely asserted that globalization is irreversible. Whether in finance, the economy, culture, communication, production or elsewhere, the tentacles of globalization are reaching in every direction. In the opinion of Bertrand Renouvain, the ideology of the market seeks to impose global solutions that ignore the historical, cultural, psychological and other elements that give the economic movement its national and local particularities; apart from that, financial logic may result in the ruination of industry, agricultural production and business relations. And believe me, intellectual property rights, inasmuch as they are human rights, are equally at risk. Even the desire for a comfortable existence, which once seemed to be an argument for economic and financial liberalism, is no longer respected today, as market logic engenders unemployment, poverty and misery. All in all, it is the human individual who is denied his ideals, his rights and his dignity.

The basic documents put together by the various experts invited here have already raised a certain number of questions, and I am sure that, by the end of this Panel Discussion, there will be a sufficiently rich harvest of material for a sequel to be envisaged, with each of us working in his own area and in his own country, so that the message may be amplified. That message is at once simple and complex: intellectual property rights are human rights.

THE UNIVERSALITY OF INTELLECTUAL PROPERTY RIGHTS: ORIGINS AND DEVELOPMENT

by

Dr. Peter Drahos, University of London, Herchel Smith Senior Fellow,
Queen Mary Intellectual Property Research Institute,
Queen Mary and Westfield College
(London, United Kingdom)

1. Definitional Observations

'Intellectual Property' is a generic term that probably came into regular use during the twentieth century.[1] This generic label is used to refer to a group of legal regimes, each of which, to different degrees, confers rights of ownership in a particular subject matter. Copyright, patents, designs, trade marks and protection against unfair competition form the traditional core of intellectual property. The subject matter of these rights is disparate. Inventions, literary works, artistic works, designs and trade marks formed the subject matter of early intellectual property law. One striking feature of intellectual property is that, despite its early historical links to the idea of monopoly and privilege, the scope of its subject matter continues to expand. The twentieth century has seen new or existing subject matter added to present intellectual property systems (for example, the protection of computer software as part of copyright, the patentability of micro-organisms as part of patent law), and new systems created to protect existing or new subject matter (for example, plant variety protection and circuit layouts). The strongly expansionary nature of intellectual property systems shows no sign of changing. Internationally, for example, special legal protection for databases remains part of the work program of the World Intellectual Property Organization (WIPO).

Trying to define the essence of intellectual property is difficult. Most definitions, in fact, simply list examples of intellectual property rights or the subject matter of those rights (often in inclusive form) rather than attempting to identify the essential attributes of intellectual property.[2] One should also note that individual intellectual property statutes provide definitions of the subject matter of their application. So, for example, copyright statutes will typically define terms such as 'literary work', as well as stating that copyright in a work consists of particular exclusive rights. Patent statutes define the term 'patent' in terms of invention and then specify the criteria of patentability. The definitional dimensions of intellectual property are further complicated by the fact that intellectual property regimes are the products of different philosophical and legal traditions. The term 'copyright', for example, refers to those common law systems that characterize the exclusive rights of authors in essentially economic terms (the rights to reproduce the work, to publish it and to adapt it are examples). Within civil law systems, the rights of authors are seen, at base, as being about the protection of the authorial personality (the right to be acknowledged as the author of the

[1] It was customary to refer to industrial and intellectual property rights. The term 'industrial' was used to cover technology-based subject areas like patents, designs and trade marks. 'Intellectual property' was used to refer to copyright. The modern convention is to use 'intellectual property' to refer to both industrial and intellectual property.

[2] An example of this approach is to be found in Article 2 (viii) of the Convention Establishing the World Intellectual Property Organization, signed at Stockholm on July 14, 1967.

work and the right to control alterations to the work are the core rights). These systems are not referred to as copyright but rather as authors' rights.[3]

A definition of intellectual property that moves beyond lists or examples and attempts to deal with the essential attributes of intellectual property has to focus on two elements: the property element and the object to which the property element relates. Intellectual property rights are often described as intangible rights. The idea behind this classification is that the object of the right is intangible. All property rights place the rightholder in a juridical relation with others. The key difference between rights of real property and intellectual property rights is that in the latter case the object of the right is non-physical. One can think of it as an abstract object rather than a physical object. It is possible that one can 'own' the abstract object without owning a particular physical manifestation of the abstract object. A letter sent to a friend, for example, results in the property in the letter passing to the friend, but not the copyright.

For the purposes of this paper, we will say that intellectual property rights are rights of exploitation in information. Information is becoming "the prime resource" in modern economic life.[4] Even in apparently non-information industries like agriculture, the control and ownership of genetic information has become a major factor, shaping the structure of that industry. It is precisely because information has become the primary resource that the exploitation of information through the exercise of intellectual property rights affects interests that are the subject of human rights claims. Property rights by their nature allow the rightholder to exclude others from the use of this prime resource and so they are likely to produce instances of rights conflict. To illustrate the point somewhat tersely: property in expression (copyright) conflicts with freedom of expression.[5]

The next section of the paper will, in a brief span, describe the evolution of intellectual property law. The historical focus is on the emergence of intellectual property as part of the positive legal order of states. All societies have had to devise norms for regulating the ownership and use of different kinds of information. Historically, this has been especially true of religious information. One can thus identify customary equivalents of intellectual property.[6] But the western intellectual property tradition is rooted in the idea that intellectual property rights are positive rights created by the state for the benefit of the commonwealth. Within Thomist political theory the validity of positive law was itself to be judged by the axioms of natural law.[7] The norms of positive law had to converge with the divine design which natural law communicated to men. The rules of positive law then met the test of validity, not by being a mirror reflection of some metaphysical counterpart, but rather by whether or not they contributed to the overall divine plan. Conceptually speaking, this allowed someone working within the natural law tradition to recognize the right of a state to modify property rights through the enactment of positive law.

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[3] See Z. Radojokovic, "The historical development of "Moral Right"", (1966) *Copyright*, p. 203.
[4] T. Mandeville, *Understanding Novelty: Information, Technological Change, And The Patent System*, (Ablex Publishing Corporation, Norwood, New Jersey, 1996) p. 3.
[5] For an account of how the conflict might be resolved see Melville B. Nimmer, "Does Copyright Abridge the First Amendment Guarantees of Free Speech and Press?", 17 (1970) *UCLA L. Rev*, p. 1180.
[6] See R.H. Lowie, *Primitive Society* (New York, 1920) pp. 235-243.
[7] Q. Skinner, *The Foundations of Modern Political Thought*, Vol 2, (Cambridge University Press, Cambridge, 1978) pp. 148-149.

The protection of intellectual property at an international level can roughly be divided into three periods. The first period, the territorial period, is essentially characterized by an absence of international protection. The second, the international period, begins in Europe towards the end of the 19th century with some countries agreeing to the formation of the Paris Convention for the Protection of Industrial Property, 1883 (the Paris Convention) and a similar group agreeing to the Berne Convention for the Protection of Literary and Artistic Works, 1886 (the Berne Convention). The third period, the global period, has its origins in the linkage that the United States of America (the U.S.A) made between trade and intellectual property in the 1980s, a linkage which emerged at a multilateral level in the form of the Agreement on Trade-Related Aspects of Intellectual Property Rights, 1994 (the TRIPS Agreement).[8] The dates of the various conventions do not represent a sharp epochal divide. They do mark a significant change in the evolutionary direction of intellectual property protection.

2. The History of Intellectual Property

(i) The Territorial Period

The different subject areas of intellectual property originate in different places and at different times. Very probably all these laws can be traced back to the system of royal privilege-giving which seems to have operated in most of medieval Europe. The Venetians are credited with the first properly developed patent law in 1474. In England the Statute of Monopolies of 1623 swept away all monopolies except those made by the "true and first inventor" of a "method of manufacture." Revolutionary France recognized the rights of inventors in 1791 and, outside of Europe, the U.S.A. enacted a patent law in 1790. These patent laws were nothing like today's complex systems. They were mercifully short, simply recognizing the rights of the inventor. After these beginnings, patent law spread throughout Europe in the first half of the nineteenth century.[9] Statutory forms of trade mark law only make their appearance late in the second half of the nineteenth century, even though trade marks had been in use for much longer.[10] The English courts developed protection for trade marks through the action of passing off.[11] For a variety of reasons, this proved unsatisfactory and statutory systems of trade mark registration began to make their appearance in Europe: England 1862 and 1875, France 1857, Germany 1874 and the U.S.A. 1870 and 1876.[12] Copyright follows a similar kind of pattern, modern copyright law beginning in England with the Statute of Anne of 1709.

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[8] The TRIPS Agreement is binding on all members of the World Trade Organization. See Article II. 2 of the Agreement Establishing The World Trade Organization (the WTO Agreement). Both the TRIPS Agreement and the WTO Agreement are part of the Final Act Embodying The Results Of The Uruguay Round Of Multilateral Trade Negotiations, Marrakech, April 15, 1994.

[9] F. Machlup and E. Penrose, "The Patent Controversy in the Nineteenth Century", 10 (1950) *Journal of Economic History*, pp. 1, 3.

[10] F. Schechter, "The Rational Basis Of Trademark Protection", 40 (1927) *Harvard Law Review*, pp. 813-833.

[11] S. Ricketson, *The Law of Intellectual Property* (Law Book, Sydney, 1984) p. 599.

[12] S Ladas, *Patents, Trademarks, and Related Rights: National and International Protection*, Vol. 1, (Harvard University Press, Cambridge, 1975) p. 8.

The second part of the nineteenth century saw the proliferation in Europe of national intellectual property regimes. It was a period of somewhat chaotic growth with much borrowing and cross-pollination of intellectual property law between states. The principles of patent law to be found in the English Statute of Monopolies were gradually recognized in other states. The English devised the first law on designs in 1787, but they were influenced by the French design law of 1806 when they reformulated their law in 1839. Outside of Europe, intellectual property grew along colonial pathways. So, for example, the self-governing colonies of Australia enacted copyright and patent statutes that were essentially faithful copies of English models.

The territorial period is dominated by the principle of territoriality, the principle that intellectual property rights do not extend beyond the territory of the sovereign which has granted the rights in the first place. The principle is the product of the intimate connections to be found between sovereignty, property rights and territory. It was a principle which courts recognized in the interests of international comity. [13] A world in which states regularly claimed jurisdiction over the property rights established by other nations would be a world in which the principle of negative comity would have largely vanished. The principle of territoriality meant that an intellectual property law passed by country A did not apply in country B. Intellectual property owners faced a classic free-riding problem, or putting it in another way, some countries were the beneficiaries of positive externalities. Dealing with free-riding and positive externalities led states into the next phase of intellectual property protection: the international period.

(ii) The International Period

During the nineteenth century states began to take a greater and greater interest in the possibility of international co-operation on intellectual property. At first this interest manifested itself in the form of bilateral agreements.[14] In copyright, a French decree of 1852 granting copyright protection to foreign works and foreign authors without the requirement of reciprocity did much to keep bilateral treaty-making in copyright alive.[15] Those states that were worried about the free-riding problem began to negotiate bilateral treaties with other states. Those states that saw themselves as recipients of a positive externality remained isolationist. The United Kingdom (the U.K.) and the U.S.A. provide an example of each response. The U.K. found in the eighteenth century that many of its authors were having their works reproduced abroad without permission and without receiving royalties. Much of the "piracy" was taking place in America, where authors like Dickens were very popular with the American public and therefore American publishers.

The Americans were not the only culprits as the following passage from *Hansard (1837)* makes clear:[16]

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[13] *British South Africa Co. v Companhia de Moçambique* [1893] A.C. 602, 622-24.

[14] For the history of these agreements in respect of copyright see S. Ricketson, *The Berne Convention for the Protection of Literary and Artistic Works: 1886-1986* (Center for Commercial Law Studies, Queen Mary College, Kluwer, 1987) pp. 25-38.

[15] H. G. Henn, "The Quest For International Copyright Protection", 39 (1953) *Cornell Law Quarterly,* pp. 43, 45.

[16] Cited in B. Sherman, "Remembering and Forgetting: The Birth of Modern Copyright Law", 10 (1995) *Intellectual Property Journal,* pp. 1, 7.

> "Every work written by a popular author is almost co-instantaneously reprinted in large numbers both in France, Germany and in America and this is done now with much rapidity, and at little expense . . . All the works of Sir Walter Scott, Lord Byron, Messrs. Robert Southey, Thomas Moore . . . and indeed most popular authors are so reprinted and resold by galignani and bardens at Paris."

The UK response to this problem was to pass in 1838 and 1844 Acts that protected works first published outside of the UK. These Acts grounded a strategy of reciprocity. Foreign works would only gain protection in the UK if the relevant state agreed to protect UK works. The 1844 Act saw a considerable number of bilateral agreements concluded between the UK and other European states.[17] International copyright policy in the U.S.A. took a different turn to that of the UK. The U.S.A. Copyright Act of 1790 only granted copyright protection to citizens and residents of the U.S.A. This form of national protectionism prevailed in US copyright policy for a surprisingly long period: "For over a hundred years, this nation not only denied copyright protection to published works by foreigners, applying the 'nationality-of-the-author' principle, but appeared to encourage the piracy of such works."[18] In fact, it was not until after the Second World War that the U.S.A. began to exercise real leadership in international copyright.[19] It did so with a boldness that few could have foreseen.

Like copyright, the different parts of industrial property also became the subject of bilateral treaty making, mainly between European states. By 1883 there were 69 international agreements in place, most of them dealing with trade marks.[20] They operated on the basis of the national treatment principle, this principle itself being the outcome of reciprocal adjustment between states. States had come to accept that if they did not discriminate between nationals and foreigners when it came to the regulation of intellectual property rights, neither would other states. In this way states could secure protection for the works of their authors in foreign jurisdictions.

Bilateralism in intellectual property in the nineteenth century was important in that it contributed to the recognition that an international framework for the regulation of intellectual property had to be devised, and it suggested a content in terms of principles for that framework. But this bilateralism was more by way of prelude. The protection it gave authors was never satisfactory.[21] The main movement towards serious international co-operation on intellectual property arrived in the form of two multilateral pillars: the Paris Convention of 1883 and the Berne Convention of 1886. The Paris Convention formed a Union for the protection of industrial property and the Berne Convention formed a Union for the protection of literary and artistic works.

The Paris Convention had its beginnings in some US disgruntlement with a world fair for inventions which was being planned for Vienna in 1873. These world fairs, like the trade fairs of medieval Europe, were important meeting places. The U.S.A., echoing the fears of other countries, suggested that many inventions at the fair would end up benefiting the

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[17] *Ibid.* pp. 1, 10.
[18] Henn, *op. cit.* pp. 43, 52.
[19] B. Ringer, "The Role Of The United States In International Copyright - Past, Present, And Future", 56 (1968) *Georgetown Law Journal*, pp. 1050-1079.
[20] Ladas, *op. cit.* pp. 43, 54-55.
[21] Ricketson, *op. cit.* p. 39.

Austrian public without foreign inventors seeing any returns. The idea of a unified international patent system had been an idea circulating for some time, Prince Albert having raised the possibility of a harmonized patent system at the London World Exposition in 1851.[22] It was a German engineer, Karl Pieper, who managed to persuade the Austrians to hold in 1873 a Congress for Patent Reform. After another Congress in 1880, the Paris Convention of 1883 was opened for signature. Within 25 years most major trading nations had joined the Convention.

The Berne Convention was also a product of meeting places in Europe.[23] The bilateral copyright treaties that states had signed were more often than not just a paper reality. They also produced great complexity. An author wanting to know the extent of his protection in other countries would have had to consult a series of treaties and domestic laws. Influential authors like Victor Hugo, whose reputations and works crossed boundaries, formed the International Literary Association in Paris in 1878.[24] This Association began to hold regular meetings in Europe. At its 1883 meeting in Berne it produced a draft text of an international copyright agreement. The Swiss government was persuaded to organize an international conference using this draft text as a starting point for a multilateral convention on copyright. Berne became the site of intergovernmental conferences in 1884, 1885 and 1886, the year in which the Berne Convention was completed and opened for signature and ratification to the world at large. Like the Paris Convention, the Berne Convention had as its axis the principle of national treatment and a set of minimum rights which states had to recognize.

The Paris and Berne Conventions ushered in the multilateral era of international co-operation in intellectual property. The twentieth century saw the proliferation of international intellectual property regimes. Examples of areas that became the subject of international agreements include trade marks (Madrid Agreement (Marks), 1891 and Madrid Agreement (Indication of Source), 1891), designs (Hague Agreement, 1925), performance (Rome Convention, 1961), plant varieties (International Convention for the Protection of New Varieties of Plants, Acts of 1961 and 1991), patents (Patent Co-operation Treaty, 1970), semiconductor chips (Treaty on Intellectual Property in Respect of Integrated Circuits, 1989). The Paris and Berne Conventions also underwent numerous revisions.

Treaty-making in intellectual property was accompanied by the rise of international organizational forms. The Paris and Berne Conventions saw the creation of international bureaus (secretariats) which were merged in 1893 to form the United International Bureaux for the Protection of Intellectual Property (known by the French acronym of BIRPI).[25] BIRPI was superseded by a new organization, WIPO, which was established by treaty in 1967. WIPO became a specialized agency of the United Nations in 1974.

The international world of intellectual property over which BIRPI and then WIPO presided was a world in which sovereign states had agreed to certain foundational principles,

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[22] F-K Beier, "One hundred years of international co-operation - the role of the Paris Convention in the past, present and future", 15 (1984) *International Review of Industrial Property and Copyright Law*, pp. 1, 2.

[23] In the case of copyright the first crucial international meeting was the Congress on Literary and Artistic Property held in Brussels in 1858. See Ricketson, *op. cit.* pp. 41-46.

[24] M. Kampelman, "The United States and International Copyright", 41 (1947) *American Journal of International Law*, pp. 406, 410-411.

[25] A. Bogsch, *Brief History of the First 25 Years of the World Intellectual Property Organization* (World Intellectual Property Organization, Geneva, 1992) pp. 7-8.

the most important being the principle of national treatment. But by no means was it a world in which there was a harmonization of technical rules. States retained enormous sovereign discretion over intellectual property standard setting. The U.S.A. continued with its 'first to invent' patent system while other countries operated with a 'first to file' system. Civil code countries recognized the doctrine of moral rights for authors while common law countries did not. Developing countries (and for a long time many developed countries) did not recognize the patenting of chemical compounds. Standards of trade mark registration varied dramatically, even between countries from the same legal family. The law of unfair competition was a projection of local instinct even though the Paris Convention required all member states to protect against it.

Despite the fact that WIPO in 1992 administered 24 multilateral treaties, it presided over an intellectual property world of enormous rule diversity. By 1992 the organization also sensed, perhaps more strongly than anyone, the sea change that was about to take place in the regulation of intellectual property. The General Agreement on Tariffs and Trade (the GATT), across the road from WIPO in Geneva, was about to see to that. WIPO stood by as trade lawyers forced the world of intellectual property into the global era.

(iii) The Global Period

During the international period the harmonization of intellectual property was a painstakingly slow affair. After the Second World War more and more developing countries joined the Paris and Berne Conventions. These conventions ceased to be Western clubs and under the principle of one-vote-one-state, Western states could be outvoted by a coalition of developing countries. Developing countries were not simply content to play the role of a veto coalition. They wanted an international system that catered to their stage of economic development and so, in the eyes of the West at least, they began to throw their weight around. In copyright, led by India, developing countries succeeded in obtaining the adoption of the Stockholm Protocol of 1967. The aim of the Protocol was to give developing countries greater access to copyright materials. Its adoption provoked something of a crisis in international copyright.[26] The Paris Convention also became the subject of Diplomatic Conferences of Revision in 1980, 1981, 1982 and 1984 with developing countries pushing for more liberal provisions on compulsory licensing.

During the 1960s, India had experienced some of the highest drug prices in the world. Its response was to design its patent law to help to bring about lower drug prices. Under Indian law, patents were granted for processes relating to the production of pharmaceuticals, but not for chemical compounds themselves. When it came to reforming the Paris Convention, countries like India pushed for provisions that would give developing countries more and more access to technology that had been locked up by means of patents. For India this was rational social policy for the educational and health care needs of its citizens. For the U.S.A., it was a case of free-riding. The U.S.A. in particular found itself more and more isolated at meetings relating to the Paris Convention.[27]

[26] H. Sacks, "Crisis in International Copyright: The Protocol Regarding Developing Countries" (1969) *Journal of Business Law*, p. 26.
[27] S. K. Sell, "Intellectual Property as a Trade Issue: From the Paris Convention to GATT", XIII (1989) *Legal Studies Forum*, pp. 407-422.

The international period was a world in which a lot of free-riding was tolerated. The only enforcement mechanism under the various intellectual property treaties were appeals to the International Court of Justice and most states took reservations on such clauses. No state was in a position to cast the first stone when it came to free-riding. The U.S.A. was not a member of the Berne Convention, but U.S. publishers took advantage of its higher standards of protection 'through the back door' method of arranging simultaneous publication in a Berne country like Canada.[28]

Not everybody in the U.S.A. was happy with this *laissez faire* attitude towards the enforcement of intellectual property rights. For the U.S. film and pharmaceutical industries in particular, intellectual property (copyright for the former, patents for the latter) represented the backbone of their industries. For pharmaceutical companies like Pfizer, intellectual property was an investment issue. They wanted to be able to locate production anywhere in the world safe in the knowledge that their intellectual property would be protected. Within the lobbying networks that had been organized by these global business entities, an idea began to be bounced around between a small group of consultants, lobbyists and lawyers who traveled these networks - that of linking intellectual property to trade.[29] There were two obvious advantages of such a move. First, if a set of intellectual property standards could be made part of a multilateral trade agreement it would give those standards a more or less global coverage. Second, use could be made of the enforcement mechanisms that states had developed for settling trade disputes.

During the 1980s, the U.S.A. reshaped its trade law to give it a series of bilateral enforcement strategies against countries it considered had inadequate levels of intellectual property enforcement or which were weak on the enforcement of such rights.[30] In 1984, the U.S.A. amended its Trade Act of 1974 to include intellectual property in the 'section 301' trade process. The 1984 amendment had a sequel in the form of the Omnibus Trade and Competitiveness Act of 1988. This latter Act strengthened the 301 process by adding more processes called 'Regular 301', 'Special 301' and 'Super 301.'[31] Essentially these provisions required the Office of the United States Trade Representative to identify problem countries, assess the level of abuse of US intellectual property interests and to enter into negotiations with those countries to remedy the problems. Ultimately, if this proved futile, the U.S.A. could impose trade sanctions. Countries caught up in the 301 process came to learn a simple truth. If they failed to act on intellectual property they would, sooner or later, face retaliatory action from the U.S.A.

At the Ministerial Meeting at Punta del Este in September of 1986, the meeting which launched the Uruguay Round of trade talks, intellectual property was included as a negotiating issue. The U.S.A. had the support of Europe, Canada and Japan for the inclusion of intellectual property in the Round but it was basically a U.S. initiative. It was the U.S.A.,

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[28] Henn, *op. cit.* p. 65.

[29] For the history of this see P. Drahos, "Global property rights in information: the story of TRIPS at the GATT", 13 (1995) *Prometheus*, pp. 6-19.

[30] See M. Blakeney, *Trade Related Aspects of Intellectual Property Rights* (Sweet & Maxwell, London, 1996) Ch.1.

[31] M. Getlan, "TRIPS and Future of Section 301: A Comparative Study in Trade Dispute Resolution", 34 (1995) *Columbia Journal of Transnational Law*, pp. 173, 179.

more specifically the U.S. business community, which had made all the running on the matter of intellectual property.

On 15 April 1994, the Uruguay Round concluded in Marrakech with the signing of the Final Act Embodying The Results Of The Uruguay Round Of Multilateral Trade Negotiations. More than 100 countries signed the Final Act. It contained a number of agreements including the Agreement Establishing the World Trade Organization and the TRIPS Agreement. The TRIPS Agreement was made binding on all members of the World Trade Organization (WTO). There was no way for a state that wished to become or remain a member of the multilateral trading regime to side-step the TRIPS Agreement.

(iv) Post-TRIPS

The TRIPS Agreement marks the beginnings of the global property epoch. The TRIPS Agreement is built on the edifice of the principles of territoriality and national treatment. But it also represents the beginnings of property globalization. Via the trade linkage, the TRIPS Agreement reaches all those states that are members of the multilateral trading system or which, like China, wish to become members. The regional commercial unions that have developed in the last few years have as one of their key objectives the implementation of the TRIPS Agreement.[32] More generally, intellectual property has come to feature strongly in regional arrangements of the 1990s, particularly trade arrangements.[33] The North American Free Trade Agreement (NAFTA) contains extensive provisions on intellectual property. Those provisions in fact served as something of a model for what might be achieved in respect of intellectual property at the multilateral level during the Uruguay Round of negotiations. In a recent survey of the role of intellectual property in regional commercial unions, Blakeney has identified different forms of co-operation and convergence on intellectual property law taking place amongst the states of the Central European Free Trade Agreement, the Association of South East Asian Nations, the Mekong River Basin Countries and the Asia Pacific Economic Co-operation Forum.[34]

In the past states have been able to steer their way through the international intellectual property framework by taking reservations on clauses in treaties or by not ratifying certain protocols or conventions. All of the TRIPS Agreement is binding on all members of the WTO. The TRIPS Agreement incorporates various other intellectual property conventions by reference. States, therefore, have to implement a common and enlarged set of intellectual property standards, standards that become common to more states by virtue of their participation in regional and multilateral trade regimes. More and more standards are becoming mandatory rather than permissive for states. States, for example, have less discretion to determine what can be patentable and what cannot.

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[32] M. Blakeney, "The Role of Intellectual Property Law in Regional Commercial Unions in Europe and Asia", 16 (1998) *Prometheus*, pp. 341, 349.

[33] An early example of regionalism in intellectual property are the Montevideo Conventions of 1889 which dealt with patents and trademarks, involving Argentina, Bolivia, Brazil, Chile, Paraguay, Peru, and Uruguay. The Treaty of Rome (1957), the treaty that constituted the European Common Market, provided for conditional protection of national intellectual property rights in Article 36.

[34] Blakeney, "The Role of Intellectual Property Law in Regional Commercial Unions in Europe and Asia", *op. cit.* pp. 341-349.

The post-TRIPS era has been a period in which countries have had to engage in the task of national implementation of their obligations under the TRIPS Agreement. Least-developed countries have the advantage of a ten year transitional period under the agreement, but they have been under pressure from developed countries to move sooner rather than later on its implementation. The TRIPS Agreement operates under an institutional arrangement designed to promote compliance. The WTO Agreement establishes a Council for TRIPS, which is required to monitor members' compliance with their obligations under the agreement. The practice which seems to be developing is that states like the U.S.A. and Europe are asking other states to explain their intellectual property laws and whether they comply with the TRIPS Agreement. The monitoring by the Council for TRIPS, the active interest of the U.S.A. and Europe in the enforcement of intellectual property obligations, and the fact that disputes under the TRIPS Agreement can be made the subject of proceedings under the dispute resolution mechanism of the Final Act, mean that obligations of the TRIPS Agreement will over time become a living legal reality for states rather than suffering the fate of so many conventions, that of remaining paper rules.

The post-TRIPS period has also seen multilateral treaty-making in intellectual property continue. On December 20, 1996, under the auspices of WIPO, the WIPO Performances and Phonograms Treaty and the WIPO Copyright Treaty were concluded. The U.S.A. was one of the main agitators for a new international instrument to deal with the entry of copyright into the digital age. As part of its National Information Infrastructure Initiative in 1993, the U.S.A. had established a working group on intellectual property rights. This working group recommended in a report in 1995 that the distribution right of copyright owners be clarified to include transmission, and that the law prohibit the circumvention of copyright protection systems.[35] The U.S.A. sought to globalize this copyright owner's agenda by pushing for the inclusion of some new form of communication right in an international instrument. The negotiating history of these two treaties is significant in that copyright owners met with organized resistance from copyright users. The U.S.A. consumer movement, for instance, was particularly active in successful opposition to the proposed database treaty. Copyright owners had both wins and losses at these negotiations. The Copyright Treaty grants copyright owners a right of communication to the public, but recognizes the right of states to determine the extent of the copyright owner's right of distribution.

All this suggests that future multilateral treaty-making in intellectual property will be a complex game fought out between user and owner groups, groups whose membership transcends national boundaries. Library groups, educational institutions, internet service providers and developers of software applications are likely to unite to oppose large software companies and publishers on matters of copyright reform. Indigenous peoples non-governmental organizations (NGO's), and environmental NGO's are likely to unite to fight the extension of the patent system to higher order life forms. Intellectual property policy has become a highly politicized arena in which state and non-state actors will continue to contest not just the rules of intellectual property, but also the roles of markets and government. Triumphs of the scale of the TRIPS Agreement may in the future be much harder to secure.

The TRIPS Agreement is but one part of a much deeper phenomenon in which intellectual property is playing a crucial role - the regulatory globalization of the norms of

[35] The Report of The Working Group on Intellectual Property Rights, *Intellectual Property and the National Information Infrastructure* (Information Infrastructure Taskforce, United States of America, September 1995).

contract and property. Property law constitutes the objects of property; contract enables the exchange of those objects. Through contract the objects of property become tradeable capital. Together these norms constitute markets. This is a phenomenon we shall come back to in the last section of the paper.

An illustration of this phenomenon is the link between intellectual property and investment. The international regulation of investment for most of its history has occurred bilaterally. States over the years have created a web of bilateral investment treaties. Intellectual property, like any other asset, can be made the subject of a treaty. One aspiration in the Uruguay Trade Round, held mainly by international business, was that the Round would deliver a comprehensive multilateral agreement on investment that would free business from the restrictions on investment that were to be found in bilateral treaties. The ink eventually dried on a far more modest investment agreement - the Agreement On Trade-Related Investment Measures (the TRIMS Agreement). This agreement applies only to trade in goods. Since the TRIMS Agreement, negotiations at the Organization for Economic Cooperation and Development (the OECD) have seen the emergence of a draft text for a Multilateral Agreement on Investment (the MAI). The MAI negotiating text has gone through a number of changes, but all versions have defined investment to include every kind of asset including intellectual property rights.[36]

Intellectual property norms are also becoming a part of the emerging *lex cybertoria* - the trade norms of cyberspace. The International Chamber of Commerce (the ICC) in a recent discussion paper stated that "[i]n cyberspace, all assets are intangible and can be classified as intellectual property."[37] More generally, governments and business non-governmental organizations (NGO's) have agreed that the intellectual property issues raised by electronic commerce have to be clearly settled. So far norm-setting on the intellectual property issues has proceeded largely by way of model laws that have been generated by international organizations of states (for example, the UNCITRAL Model Law on Electronic Commerce), national law reform bodies (for example, the work of National Conference of Commissioners on Uniform State Laws on Article 2B (dealing with the licensing of intellectual property rights)) or business NGO's (for example, the ICC).

3. Human Rights, the Right of Property and Intellectual Property

The previous section showed that intellectual property rights are part of a complex regime of bilateral, regional and multilateral treaties that has been evolving since the nineteenth century. This section looks briefly at the extent to which intellectual property rights have been recognized in the human rights regime. The following two sections then explore the relationship between intellectual property rights and human rights.

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[36] The text of the MAI is available at http://www.oecd.org/daf/cmis/mai/maitext.pdf. The MAI negotiation like the Uruguay Trade Round is proving to be a protracted affair. The application of the MAI to intellectual property raises some as yet unresolved conceptual problems. Amongst other things, the regulation of intellectual property rights by governments (for example, compulsory licensing) might constitute expropriation for the purposes of the investment regime. Moreover, since, on one view, intellectual property rights are monopoly rights they might be argued to stand in the way of investment flows just as much as they facilitate them. Clearly some clever drafting will be required to overcome these kinds of potential problems.

[37] International Chamber of Commerce, "E-commerce roles, rules and responsibilities: A roadmap", June 4, 1998, p. 11.

The international document, which can perhaps be said to constitutionalize the human rights regime, is the Universal Declaration of Human Rights, 1948 (the UDHR). The UDHR does not expressly refer to intellectual property rights, but Article 27.2 states that "Everyone has the right to the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author." At the same time Article 27.1 states that everyone has "the right freely to participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits." Article 27 thus carries with it a tension familiar to intellectual property law - the tension between rules that protect the creators of information and those that ensure the use and diffusion of information. The recognition of the interests of authors in the UDHR is complemented by the proclamation in Article 17.1 of a general right of property. This Article states that "[e]veryone has the right to own property" and 17.2 states that "[n]o one shall be arbitrarily deprived of his property." The implication of Article 17.2 is that states do have a right to regulate the property rights of individuals, but that they must do so according to the rule of law.

The rights of the UDHR are further developed in the International Covenant on Civil and Political Rights (the ICCPR), 1966 and the International Covenant on Economic, Social and Cultural Rights (the ICESCR), 1966. In the atmosphere of the cold war, led by the former Soviet Union, newly emergent sovereign African and Asian states shaped the drafting of the two covenants with a view to emphasizing the rights of self-determination, national sovereignty over resources and freedom from racial discrimination.[38] The general right of property with its impeccable liberal pedigree stretching back to the Declaration of the French Revolution and the Bill of Rights of the U.S.A. did not make it into the two Covenants. Article 15.1 (c) of the ICESCR recognizes the right of an author to "benefit from the protection of the moral and material interests resulting from any scientific, literary or artistic production" produced by the author. By implication the article assumes that authors are entitled to the protection of their interests. The right recognized in Article 15. 1(c) is itself one element of a general right, the other two elements being essentially rights of access to cultural life and to the benefits of scientific progress. Together the two Covenants place a discernible emphasis on the interests that humans have in the diffusion of knowledge.[39]

The two Covenants along with the Declaration form the edifice upon which the international law of human rights rests, the International Bill of Rights as they are generally called.[40] Some international human right instruments do recognize a general right of property or something close to it. The African Charter on Human and Peoples' Rights, 1981[41] in Article 14, guarantees the right to property, although it then goes on to recognize that that right may be encroached upon in the "interest of public need or in the general interest of the community". The American Convention on Human Rights, 1969, in Article 21.1, recognizes a right of property, a right which no one is to be deprived of "except upon payment of just compensation" (see Article 21.2). A right to property was not included in the European Convention of Human Rights and Fundamental Freedoms, 1950 because of controversy over

[38] J. W. Nickel, *Making Sense of Human Rights* (University of California Press, Berkeley, 1987) pp. 66-67.
[39] See, for example Article 11 of the ICESCR (promoting the dissemination of knowledge in the context of freedom from hunger), Article 15.2 (stating that the right in article 15.1 requires states to take steps to diffuse science and culture), Article 15.3 (requiring respect for freedom of scientific research) and Article 19.2 of the ICCPR (linking freedom of expression to the flow of information).
[40] H.J. Steiner and P. Alston, *International Human Rights In Context* (Clarendon Press, Oxford, 1996) p. 121.
[41] 21 ILM (1982) 59-68.

its drafting, but a right to peaceful enjoyment of one's possessions was included in Article 1 of Protocol 1.[42] That Article then goes on to recognize the right of a "State to enforce such laws as it deems necessary to control the use of property in accordance with the general interest."

The status of the right of property in international law raises some complex issues. It does seem uncontroversial to suggest that the right of property forms part of the norms of international law. States through practices and treaties routinely recognize the property rights of their citizens as well as those of other states and their nationals. Without that recognition travel, diplomacy, investment and international commerce would be impossible. The difficult issues relate to the nature and scope of the right. Is it a negative right (the right not to have possessions interfered with) or does it include positive elements (the right to acquire property)? The right of property can, using a variety of legal taxonomies, be disaggregated into a number of different types (real, personal, equitable, tangible, intangible, documentary, non-documentary and so on). Does the recognition of a right of property in international law apply with equal force to all the different types of property that can be identified? Do all, some or any of these different kinds of property rights qualify as fundamental human rights?

In an interesting discussion of these issues, Schermers concludes that most property rights cannot be included in the category of fundamental human right.[43] His argument assumes that human rights and property rights can be broken up into categories. Fundamental human rights, he suggests, are "human rights of such importance that their international protection includes the right, perhaps even the obligation, of international enforcement."[44] Most property rights, he suggests, do not fit into this category. Certainly it is hard to see how intellectual property rights do. He suggests that the only possible exceptions to this are those needs-based personal property rights, without which the exercise of other rights like the right to life would be meaningless. Moreover, the absence of the general right of property from the ICCPR weakens the claim that it is part of customary international law.[45] Attempting to put property rights into the category of fundamental human rights also encounters a conceptual problem. Both private international and public international law recognize the right of sovereign states to regulate property rights, to adjust them to economic and social circumstances.[46] Yet this is precisely not the way in which we think about fundamental human rights norms that prohibit genocide, torture and slavery, norms that at least some scholars argue are part of customary international law.[47] States cannot adjust these norms to suit their convenience. In the case of property, however, not only is it convenient for states to adjust property norms, but it seems vital to the development of their economies that they have the power to do so. It is for this kind of reason that the European Commission of Human Rights concluded that the grant under Dutch law of a compulsory licence in a patented drug

[42] For a discussion, see F. G. Jacobs and R. C. A. White, *The European Convention On Human Rights*, 2nd. ed. (Clarendon Press, Oxford, 1996) pp. 246-247.
[43] H. G. Schermers, "The international protection of the right of property", in F. Matscher and H. Petzold (eds.), *Protecting Human Rights: The European Dimension* (Carl Heymanns Verlag KG, Köln, 1988) pp. 565-580.
[44] *Ibid.* pp. 565, 579.
[45] R. B. Lillich, "Global Protection of Human Rights" in Theodor Meron (Ed.), *Human Rights In International Law: Legal And Policy Issues* (Clarendon Press, Oxford, 1984, 1992 reprint) pp. 115-170, 157.
[46] During the drafting of article 17 of the Universal Declaration it was agreed that ownership of property was subject to national laws, but that there was no need to state this in the Declaration. See Lillich, *ibid.* pp. 115-170, 157, fn. 29.
[47] For an argument to this effect see A. D' Amato, *International Law: Process and Prospect* (Transnational Publishers, Dobbs Ferry, New York, 1987) Ch.6.

was not an interference in the patent holder's rights under Article 1 of Protocol 1 of the European Convention of Human Rights. The "compulsory licence was lawful and pursued a legitimate aim of encouraging technological and economic development."[48]

Thinking about the right of property in the context of human rights reveals nicely the 'paradox of property.' At one level it is inconceivable that the development of human personality and the protection of individual interests within a group can take place in the absence of property rules that guarantee the stability of individual possession. Yet within the context of the social group no other rules require the continuous adjustments that the rules of property do.[49] Modern governments continuously change the rules relating to the use of land, personal chattels, tax, welfare and so on. In modern societies property rights are in a constant state of adjustment. They are the means by which governments solve externality problems. It is for this reason we find that, when a general right of property is recognized in a human rights instrument, it is made subject to some sweeping public interest qualification.

Within information societies, societies where more and more individuals make their living through the production, processing and transfer of information, the paradox of property intensifies. One reason is that information in various complex ways becomes implicated in the exercise of fundamental human rights. So, to take an example, freedom of expression in a preliterate, pre-industrial world is a classical negative right. In the global digital village, however, the right of freedom of expression becomes a means by which to protect other more complex activities than simply the right not to be interfered with when one stands on a soapbox in the park. Citizen groups begin to demand access to the media so that their interests *qua* citizens are recognized. Freedom of communication is appealed to in this process, not as a classical negative right, but rather as a right of access, a positive right. Expression itself takes on many more forms. The complex jurisprudence that has arisen in the U.S.A. around freedom of speech is testimony to the way in which changing technological contexts force us to reconceptualize rights.[50]

Another reason that the paradox of property continues to deepen in our world is that the human rights regime continues to expand, so much so that some scholars have called for quality control on the origination of such rights.[51] The result of this expansion is that many more interests become the subject of rights claims, claims that involve use of information. Human rights scholars talk of three generations of human rights: classical rights (first generation), welfare rights (second generation) and peoples' rights or solidarity rights (third generation). These third generation rights are the subject of continuing debate at the levels of conceptual coherence, identification, and status in international law.[52]

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[48] Application 12633/87 *Smith Kline and French Laboratories Ltd v The Netherlands*, 4 October 1990, (1990) 66 European Commission of Human Rights, *Decisions and Reports*, 70, 80.

[49] The right of governments to regulate the ownership of property through positive law was recognized by natural rights theorists like Locke. See P. Drahos, *A Philosophy of Intellectual Property* (Dartmouth, Aldershot, 1996) pp. 48-53.

[50] See T. Campbell and W. Sadurski, (Eds.) *Freedom of Communication* (Aldershot, 1994); F Schauer, *Free Speech: a philosophical enquiry* (Cambridge University Press, Cambridge, 1982). On copyright, internet and freedom of speech see S. Fraser, "The Conflict Between the First Amendment and Copyright Law and its Impact on the Internet", 16 (1998) *Cardozo Arts & Entertainment Law Journal*, pp. 1-52.

[51] P. Alston, "Conjuring up new human rights: a proposal for quality control", (1984) 78 *AJIL, p.* 607.

[52] For a discussion of the issues, see J. Crawford (Ed.), *The Rights of Peoples* (Clarendon Press, Oxford, 1988).

For our purposes it is important to note that the identification and recognition of such rights in international law offer more potential points of conflict or tension with intellectual property rights. It is tension and conflict that is involved rather than breach. Human rights instruments tend to be drafted at the level of principle and in open textured ways. The precise content of these rights is difficult to formulate. Moreover, many of these instruments exist in that twilight zone of normativity known to international lawyers as soft law. These instruments are often recommendatory for member states or represent the views of NGO's. The Declaration of Principles of Indigenous Rights, 1984, for example, is a declaration of the Fourth Assembly of the World Council of Indigenous Peoples. The Convention on Biological Diversity, 1992[53] does recognize the concept of indigenous intellectual property, but it does so in language that requires a specification of content through protocols and other instruments.[54] By sharp contrast, most of the norms of international intellectual property law derive from treaty law.[55]

One candidate for a peoples' right is the right to development. The content of this right is, naturally enough, the subject of debate.[56] The Declaration on the Right to Development, 1986[57] is vague about the positive obligations of assistance that the right places on those against whom the right is being asserted.[58] Bedjaoui, in his discussion of the right, maintains that it involves the right of a people to choose its own model of development (by implication a negative right) as well as the right to receive a share of resources that under the principle of the common heritage of mankind belong to all states (by implication a positive right).[59] Clearly, there is considerable tension between intellectual property rights and the right to development. Patent systems, for example, restrict access to life-saving drugs, by raising the price of those drugs. Raising drug prices globally will, all else being equal, generally adversely affect the health of the populations of poorer states.[60] The preventable death of large

[53] 31 ILM (1992) 818.

[54] On the issue of 'softness' of norms in the environmental context see J. Ayling, "Serving Many Voices: Progressing Calls For An International Environmental Organization", 9 (1997) *Journal of Environmental Law*, pp. 243, 255-258.

[55] There are examples of where the concept of indigenous intellectual property gains some recognition in treaty law. The most obvious example is the Convention on Biological Diversity. Article 8(j) of that Convention requires states to respect, preserve, maintain and promote indigenous knowledge and lifestyles relevant for the conservation and sustainable use of biodiversity. Article 16.2 of that same Convention provides that any technology which is the subject of intellectual property rights and which is transferred pursuant to the objectives of the Convention must be transferred "on terms which recognize and are consistent with the adequate and effective protection of intellectual property rights". Article 18.1 of the Convention to Combat Desertification, 1994 also makes it clear that the process of technology transfer must take account of the need to protect intellectual property rights.

[56] For a history of the right in the North-South context, see P. Alston, "Revitalizing United Nations Work on Human Rights and Development", (1991) 18 *Melbourne University Law Review*, p. 216.

[57] United Nations General Assembly Resolution 41/28.

[58] Article 4.1 provides that States have the duty to take steps, individually and collectively, to formulate international development policies with a view to facilitating the full realization of the right to development.

[59] See M. Bedjaoui, "The Right to Development" in M. Bedjaoui (Ed.), *International Law: Achievements and Prospects* (UNESCO, Martinus Nijhoff Publishers, Paris and The Netherlands) pp. 1177-1193.

[60] Within India, for example, the National Working Group on Patent Laws has pointed out that the implementation of the TRIPS Agreement will cause drug prices to rise dramatically. The drug Zantac retails in India for 18.53 rupees, in the UK at the equivalent of 484.42, and in the USA at the equivalent of 1050.70. Under the TRIPS Agreement, India is obliged to introduce product patents for medicines. Pakistan has introduced product patents. Zantac now retails in Pakistan at the equivalent of 260.40 rupees i.e. 11.27 times its price in India. See B.K. Keayla, *New Patent Regime: Implications for Domestic Industry, Research & Development and Consumers* (National Working Group on Patent Laws, New Delhi, January 1996) p. 20.

numbers of a state's population lowers its stock of human capital thereby interfering in its development prospects. The argument has a particular bite in the context of information, since information once in existence can be made available at zero or little cost. The recognition of a right to development might be the basis on which to argue that states should co-operate in lowering levels of intellectual property protection in some areas, or at least not advance those levels. However, it is important to note that there is no necessary conflict between the right of development and intellectual property. If it turns out to be empirically true that intellectual property rights contribute to economic development, there is no conflict.[61]

The precise content of cultural rights are amongst the most difficult to formulate of all peoples' rights. Nevertheless in those instruments that deal with cultural rights in the context of peoples' rights one can discern two broad principles, the thrust of which run counter to the policies of western intellectual property regimes. The first is a proprietarian principle in which the right of a people to claim its entire culture is recognized. An example is Article 14 of the Universal Declaration of the Rights of Peoples, 1976[62] which simply states that "every people has the right to its artistic, historical and cultural wealth." Similarly, the Declaration of San José, which elaborates and condemns the concept of 'ethnocide', claims that Indian peoples have natural and inalienable rights of access, use, dissemination and transmission in the cultural heritage of their territories.[63] A proprietary claim to an entire cultural heritage is not a right that is presently recognized by western intellectual property systems. The second principle evident in peoples' cultural rights is, somewhat paradoxically, a principle of cultural diffusion, based on the idea that cultures are part of a global intellectual commons to which all humans have some rights of access. The UNESCO Declaration of the Principles of International Cultural Co-operation, 1966, for example, in Article VII.1 states that "[b]road dissemination of ideas and knowledge, based on the freest exchange and discussion, is essential to creative activity, the pursuit of truth and development of the personality." At the abstract level, a principle of cultural diffusion is not necessarily inconsistent with western

[61] This, of course, is the million dollar question. Most of the empirical evidence that exists on this question has been gathered in patents field. Much of the evidence here suggests that developing countries in particular are better off without the patent system or at least lower levels of protection. For early important work, see F. Machlup, "An Economic Review of the Patent System" (Study No. 15 of the Subcommittee on Patents, Trademarks, and Copyrights of the Committee on the Judiciary, U. S. Senate, 85th Congress, Washington D.C., 1958); E.T. Penrose, "International Patenting and the Less-Developed Countries", 83 (1973) *Economic Journal*, p. 766; R. Väyrynen, "International Patenting as a Means of Technological Dominance", 20 (1978) *International Social Science Journal*, p. 315. For a synthesis of much of the literature see A.S. Oddi, "The International Patent System and Third World Development: Reality or Myth?", (1987) *Duke Law Journal*, p. 831; J. Nogués, "Patents and Pharmaceutical Drugs: Understanding the Pressures on Developing Countries", 24 (1990) *Journal of World Trade*, p. 81. For a discussion of patents in the context of trade and technology policy, see B. Lyons, "International Trade and Technology Policy" in P. Dasgupta and P. Stoneman (Eds.) *Economic Policy and Technological Performance* (Cambridge University Press, Cambridge, 1987) pp. 169-205; A. Subramanian, "The International Economics of Intellectual Property Right Protection: A Welfare-Theoretic Trade Policy Analysis", 19 (1991) *World Development* pp. 945-956. For an example of literature that deals with the impact of the patent system on a medium sized country see *The Economic Implications Of Patents In Australia* (Australian Patent Office, Canberra, 1981); Industrial Property Advisory Committee, *Patents, Innovation And Competition In Australia* (Australia, 1984). For a recent critical discussion of intellectual property and conventional economics see D. Lamberton, "Innovation and Intellectual Property" in M. Dodgson and R. Rothwell (Eds.), *The Handbook of Industrial Innovation* (Elgar, Aldershot, 1994) pp. 301-309.

[62] Its status is described by Crawford as an '[u]nofficial declaration of scholars and publicists; basis for activities of Permanent Peoples' Tribunal, a private foundation.' See J. Crawford (Ed.), *The Rights of Peoples* (Clarendon Press, Oxford, 1988) p. 187.

[63] See Articles 7 and 8 of UNESCO Latin-American Conference, Declaration of San José, 11 December 1981, UNESCO Doc FS 82/WF.32 (1982), extracted in Crawford *op.cit.* pp. 202-203.

intellectual property regimes, since most of those regimes allow their subject matter to fall back into the commons under certain conditions. But as was noted at the beginning of this paper, intellectual property systems are expanding in scope and strength of protection. At the concrete level it is hard to see how a principle of cultural diffusion is to work, if the practical effect of increasingly stronger intellectual property regimes is to raise the cost of educational, cultural and scientific information. Putting a price on or increasing the price of information necessarily inhibits its diffusion.

More generally, peoples' rights are increasingly being used in campaigns by indigenous groups all over the world to reclaim or protect their traditional lands and resources. These include traditional resource management techniques, biological resources, and specific knowledge about the practical uses of those biological resources.[64] Protecting these informational resources within the context of the existing intellectual property regime raises some well-known problems. The present international intellectual property regime, as we have seen, is a western positive law regime that has been shaped by liberal political traditions. National intellectual property systems around the world link the origination of rights to individual persons and maximize the capacity of individual owners to trade in these rights. The sharp divisions, for example, that western lawyers draw between real and personal property rights do not resonate in indigenous cultures where the connections between land, knowledge and art form part of an organic whole. The practical outcome for indigenous groups is that many of their traditional informational resources fail to obtain protection.[65] Often this means that they can be freely appropriated.

The response of indigenous peoples, as well as western NGO groups,[66] has been to begin a political struggle to change the existing intellectual property regime. During the course of this struggle, intellectual property has become linked to much bigger issues including the sovereignty and self-determination of indigenous peoples, the protection of culture, food security, biodiversity, sustainable development, health policy and biotechnology.[67] In these contests, for activists, peoples' rights have become the language of emancipation, western intellectual property regimes the medium of oppression. Indigenous groups have generated numerous declarations condemning prevailing intellectual property systems as, in the words of the COICA statement, 'colonialist', 'racist' and 'usurpatory'.[68]

One important point about these declarations is that they do not, however, abandon the concept of intellectual property altogether. Instead they assert and call for the recognition of

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[64] For a comprehensive discussion of the recent history see J. Sutherland, "Representation of indigenous peoples' knowledge and practice in modern international law and politics", 2(1) (1995) *Australian Journal of Human Rights*, pp. 39-57; J. Sutherland, "TRIPS, Cultural Politics and Law Reform", 16 (1998), *Prometheus*, pp. 291-303.

[65] See M. Blakeney, "Protection of traditional medical knowledge of indigenous peoples", (1997) 6 *EIPR*, p. 446; J. Tunney, "E.U., I.P., Indigenous People and the Digital Age: Intersecting Circles", (1998) 20 *EIPR*, pp. 335-346.

[66] The Rural Advancement Foundation International (RAFI) is a western NGO that has been particularly active and successful in the cause of farmers' rights and the recognition of sustainable use of biodiversity.

[67] The links between biodiversity, sustainable development and indigenous knowledge are recognized in the Convention on Biological Diversity. See Articles 8(j), 10(c) and 18(4). See also Principle 22 of the Declaration of the UN Conference on Environment and Development (1992) and Chapter 26 of Agenda 21.

[68] The COICA Statement, 1994, Statement by the Coordinating Body of Indigenous Organizations of the Amazon Basin, on intellectual property rights and biodiversity.

indigenous intellectual property rights.[69] Indigenous peoples, it seems are seeking to make intellectual property serve a function beyond that of appropriation of value. They want property to function in a way that allows them to control the use of cultural information which in some deep sense is part of them, to which they are attached, cultural information they do not necessarily want to become the subject of global processes of commodification and appropriation. For them, intellectual property should first and foremost function to preserve their way of life.

4. Intellectual Property Rights: Universally Recognized or Universal Rights?

It is an empirical fact, as the historical survey in section 2 has shown, that intellectual property rights are universally recognized. Does it follow from their universal recognition that they are universal norms (in other words, human rights)? If we define universal norms as those that are universally recognized, the answer is obviously yes. This definitional solution would probably be unsatisfactory to someone within the human rights tradition, especially for those theorists who defend human rights within a framework of moral realism.[70] For moral realists, the existence of universal rights is not contingent upon the test of recognition. If universal moral rights exist, they do so outside the framework of positive law. Even for non-moral realists, a simple recognitional test seems an unsatisfactory way of deciding whether or not something has the status of a human right. The norms of etiquette that govern the interaction of travelers at international airports around the world are examples of widely recognized norms. Does it follow that the right to queue, for instance, has the same universal status as the rights of life and liberty? There seems to be 'something more' involved in the idea of a universal human rights norm whether or not one is a moral realist.[71]

One means by which to derive this 'something more' for intellectual property norms would be to argue that intellectual property rights are a species of natural right. One argument for justifying the existence of intellectual property rights is to claim that they are natural rights. Presenting intellectual property as a human right using the conceptual apparatus of natural right theory faces a number of difficulties. The first is that, even if one can justify the right of private property as a natural right, one is left with the question of whether intellectual property rights are natural property rights. A possible reply here is that intellectual property rights must be property rights because legislatures around the world declare them to be personal property rights. This begs the question. The existence of a natural right by definition cannot depend on a legislative declaration.

There are other problems. Intellectual property rights exist for a limited period of time, or their continued existence is subject to requirements of registration. The strongest

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[69] Two Australian examples of this are the *Julayinbul Statement on Indigenous Intellectual Property Rights* and the *Mataatua Declaration on Cultural and Intellectual Property Rights of Indigenous Peoples*. See H. Fourmille, "Protecting Indigenous Property Rights in Biodiversity", (March 1996) *Current Affairs Bulletin*, pp. 36-41.

[70] Moral realists defend the proposition that moral values are objective. For moral realists moral truth exists.

[71] Nickel, for instance, in describing the conception of human rights to be found in the Universal Declaration, states that "human rights are held to *exist independently* of recognition or implementation in the customs or legal systems of particular countries" (his emphasis). See J. W. Nickel, *Making Sense of Human Rights* (University of California Press, Berkeley, 1987) p. 3. See also M.J. Perry, "Are Human Rights Universal? The Relativist Challenge and Related Matters", 19 (1997) *Human Rights Quarterly*, pp. 461-509.

candidates for natural rights must surely be the right to life and liberty. We do not think of those rights as having a limited tenure in the life of the rightholder. We also think of human rights as rights that belong to all humans (see Article 2 of the UDHR). Can we plausibly say that all states should enact a petty patent system, and those that do not breach a human right? Nor does the conceptual apparatus of natural rights theory lead neatly from the exercise of labor to a natural right of property.[72] Within natural rights theorizing about property it was accepted that property rights had about them a conventional character and could be circumscribed by the state.

A second conceptual path to the conclusion that intellectual property rights are fundamental human rights would be to suggest that rights that protect the connection between a creator of an information product and the information product belong in the category of human rights because they protect the personality of the creator. A personality based approach to justification already serves to underpin the civil law systems of author's right. One issue is whether a personality based theory could plausibly underpin all intellectual property rights.[73] It might turn out that very few intellectual property rights make it into the category of human rights. Even if we accept that there is a personality right that belongs in the category of human rights, it does not follow that all intellectual property rights protect the personality interest of originators of intellectual property.

A third line of argument might be to simply defend the recognitional test of human rights and say that, because intellectual property rights are widespread in international law, they are human rights. This leads us back to the problem we began with. Is it the case that the universal recognition of a norm turns it into a human rights norm? It is important also to note that this line of argument would have to deal with the kind of problems (described earlier) that Shermers mounts for the view that the right of property is a fundamental human right.

The upshot of this short discussion is that the view that all intellectual property rights are human rights by virtue of their universal recognition is problematic.[74] This should cause no great surprise. Having one's artwork copied is not the same as being stripped of one's bedding, food, medicines or other personal possessions that form the essentials of a daily existence. This still leaves the issue of how we might conceptualize the relationship between intellectual property norms and human rights. The next section suggests how this might be done.

5. Intellectual Property and Human Rights: An Instrumental View

It is now accepted in rights theory that the existence and exercise of some rights presupposes the existence of other rights.[75] Philosophers now agree or concede that the

[72] See Drahos, *A Philosophy of Intellectual Property*, *op. cit.* Ch.3.

[73] For a discussion see J. Hughes, "The Personality Interest of Artists and Inventors in Intellectual Property", 16 (1998) *Cardozo Arts & Entertainment Law Journal*, p. 81.

[74] One might note in passing here that human rights activists could easily claim that intellectual property rights are indirectly implicated in human rights abuses. So, for example, the argument would run that the global protection of intellectual property rights forms part of the structure that allows multinationals to locate in those poor countries where labor standards are low or non-existent.

[75] See, for example, H. Shue, *Basic Rights* (Princeton University Press, Princeton, 1980).

classical negative rights of traditional liberalism require for their exercise other kinds of rights. Rights of freedom need to be accompanied by welfare rights. Rights, as it were, come in clusters. It is also clear that important complementarities obtain between rights. So, for instance, the right to education, on the face of it, aids the meaningful exercise of a right of freedom of speech.

Some rights, then, are instrumental in securing the feasibility of claiming other types of rights. The central claim of this section is that the rights created through the enactment of intellectual property laws are instrumental rights. Ideally, under conditions of democratic sovereignty, such rights should serve the interests and needs that citizens identify through the language of human rights as being fundamental. On this view, human rights would guide the development of intellectual property rights; intellectual property rights would be pressed into service on behalf of human rights.

Of course, the history of intellectual property does not square with this ideal. It has as much to do with powerful elites using such privileges to obtain economic rents for themselves as it has to do with parliaments working on behalf of citizens to design rights that maximize social welfare. This should not surprise us. The economic theory of legislation, the theory of public choice, argues that legislation is essentially a market process in which legislators and interest groups transact business in a way that sees the public interest subordinated to private interest.[76]

Yet the ugly truths that public choice scholars reveal about this or that bit of legislation should not blind us to a broader historical truth concerning the way in which property rights have in the long sweep of the history of western states come to serve humanist values. Moving across a history that begins roughly in the fifteenth century we can advance three generalizations.[77] States have made increasing use of property rules, both civil and criminal, for a variety of purposes. Property rights have become progressively more secure and progressively more immune from arbitrary confiscation by the ruling power. The evolution of the law of contract has made it more possible to negotiate transfers of property with certainty of effect.

These trends towards the expansion, security and negotiability of property have been more or less universal. States which did not guarantee property and contract did not flourish economically compared to states that did. Those states that failed to pursue the goal of efficient property rights paid the price in terms of reduced growth and loss of hegemony.[78] Property and contract law have indeed been foundational to enabling capitalism to take off. While some states were slow to learn this, today there is no national regime on the globe that has not accepted it as a lesson of history. (Although it should be said that, while the formal law of every state stands behind secure property rights and the enforcement of contracts by courts that are independent of the state, in many parts of the world the independence of the judiciary is a fiction.)

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[76] For an introduction to the economic literature see I. Mclean, *Public Choice* (OUP, Oxford, 1991); D.A Farber, and P.P Frickey, *Law and Public Choice* (University of Chicago Press, Chicago, 1991).

[77] For a further discussion see J. Braithwaite and P. Drahos, *Global Business Regulation* (forthcoming 1999), Ch. 2.

[78] D. C. North, *Institutions, Institutional Change And Economic Performance* (Cambridge University Press, Cambridge, 1990) p. 139.

The emergence of well defined, secure property rights was a part of a much broader historical process in which absolute monarchies and their legitimating political philosophies lost their institutional dominance to be replaced by the institution of the modern state and secular political philosophies that recognized the rights of individuals within and against the state.[79] Peasants, serfs and vassals became citizens and citizens came to hold property rights created by the sovereign of the state. Women stopped being property of their husbands and became property owners. In all this the creation of secure, well defined property rights that citizens could trade gave expression to a deeper philosophy of the equality and freedom of man. The idea of a natural right of property was one crucial premise in John Locke's rejection of the absolute authority of Kings. Redefining, rethinking, redistributing property has always been one way, perhaps the most important way, in which political ideas and philosophies have made themselves concrete in the world.

We now live in an era when capitalist economies, led by the U.S.A., have progressively become information economies. Intellectual property regimes have moved to the center stage of trade regulation and global markets. The old capitalism was a capitalism of goods, factories and labor. These days, factories and labor, even skilled labor, are in abundant supply. The new capitalism is at its core about the control of information and knowledge. It is for this reason that issues concerning the design of intellectual property rights and contract have become so important and pressing.

The institutional design issues raised by intellectual property (and contract) are not simply issues of legal technicality or even economic ones. Property, as this section has argued, is an instrument on which the deeper notes of our political philosophies are to be sounded. Property regimes should serve those values, those needs and interests we identify as fundamental through our moral and political philosophies.[80] The problem we face in the present time is that the institution of intellectual property has globalized without some set of shared understandings concerning the role that that institution is to play in the employment, health, education and culture of citizens around the world. Linking intellectual property to human rights discourse is a crucial step in the project of articulating theories and policies that will guide us in the adjustment of existing intellectual property rights and the creation of new ones. Human rights in its present state of development offers us at least a common vocabulary with which to begin this project, even if, for the time being, not a common language.

Generally speaking, those thinkers whom we regard as having an important role in the formation of modern political thought said nothing or very little about intellectual property. To illustrate: John Locke's discussion of property in Chapter V of the *Second Treatise* has inspired discussions of Lockean theories of intellectual property,[81] but there is not one mention of intellectual property in that chapter. Hegel in his *Philosophy of Right* makes some brief passing observations concerning property and products of the mind.[82] Kant, despite

[79] The change in ideological thinking that accompanied these processes is traced by Skinner, *op. cit.*

[80] See J. Waldron, "Nonsense upon stilts? - a reply" in J. Waldron (Ed.), *'Nonsense Upon Stilts': Bentham,, Burke and Marx on the Rights of Man* (Methuen, London and New York) p. 174.

[81] See, for example, J. Hughes, "The Philosophy of Intellectual Property", 77 (1998) *Georgetown Law Journal*, pp. 287-366; H. M. Spector, "An Outline of a Theory Justifying Intellectual and Industrial Property Rights", (1989) 8 *EIPR*, pp. 270-273; W. J. Gordon, "A Property Right in Self-Expression: Equality and Individualism in the Natural Law of Intellectual Property", 102 (1993) *Yale Law Journal*, p. 1533.

[82] G.W.F. Hegel, *Philosophy of Right*, T.M. Knox, tr., (Clarendon Press, Oxford 1952, 1st ed., 1967) p. 68.

being given the credit for inspiring the system of authors' rights, wrote about authors and the nature of genius rather than intellectual property law.[83] The truth is that, at best, intellectual property has been little more than a side-show in our broader intellectual traditions. Even within economics the role of information has, until comparatively recently, been largely ignored.[84]

One factor which helps to explain this neglect is the fact that the development of intellectual property policy and law has been dominated by an epistemic community comprised largely of technically minded lawyers. In their hands intellectual property has grown into highly differentiated and complex systems of rules. The development of these systems has been influenced in important ways by the narrow and often unarticulated professional values of this particular group. For policy makers around the world, the challenge of the coming bio-digital millennium will be to define efficient property rights in information. The precise nature and scope of these property rights will affect not only the workings of the intellectual property regime, but the trade and competition regimes.[85] No legislature, no policy-maker can, in the quest for efficient property rights, afford to rely on a narrowly constituted epistemic community. The stakes are too high.

Ideally the human rights community and the intellectual property community should begin a dialogue. The two communities have a great deal to learn from each other. Viewing intellectual property through the prism of human rights discourse will encourage us to think about ways in which the property mechanism might be reshaped to include interests and needs that it currently does not. Intellectual property experts can bring to the aspiration of human rights discourse regulatory specificity. At some point the diffuse principles that ground human rights claims to new forms of intellectual property will have to be made concrete in the world through models of regulation. These models will have to operate in a world of great cultural diversity. Moreover, the politics of culture is deeply factional, globally, regionally and locally. It is in this world that the practical issues of ownership, use, access, exploitation and duration of new intellectual property forms will have to be decided. It is here that intellectual property experts can make a contribution.

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[83] S. Strömholm, "Droit Moral - The International and Comparative Scene from a Scandinavian Viewpoint", 14 (1983) *International Review of Industrial Property and Copyright Law* 1, p. 11.

[84] For the history of the economics of information see D. M. Lamberton, "The Economics of Information and Organization", in M. E. Williams (Ed.), *Annual Review of Information Science and Technology,* Vol. 19, (American Society for Information Science and Technology, White Plains, NY, 1984) pp. 3-30.

[85] See C. Arup, "Competition over Competition Policy for International Trade and Intellectual Property"; W. A. Rothnie, "Trade, Competition and Intellectual Property"; J. Walker, "The Interface between Intellectual Property Rights and Competition Law and Policy: An Australian Perspective", all contained in P. Drahos (Ed.) Special Issue of Vol. 16 (1998) of *Prometheus* on Trade and Intellectual Property, pp. 351-393.

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INTELLECTUAL PROPERTY AND THE RIGHT TO CULTURE

by

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1. Introduction

This paper considers the meaning, content, and role of the right to culture on the occasion of the 50th anniversary of the proclamation of the Universal Declaration of Human Rights (the UDHR). Specifically, what is the relationship between culture and intellectual property? What is culture, and the preservation of culture? Is it a collective or individual right? How, if at all, do individual property rights harmonize with collective rights of culture?

Culture reflects the common meanings of a society. Cultural meaning, whether presented as a common language, visual images, or traditional forms of performance, is imparted through the recognizability and readability of the visual and written language. If words, pictures, designs and variants, monuments, performance, and sculpture are to hold a common meaning, they must be used, adapted, and protected. Culture is transmitted in the form of the classical categories of the arts (dramatic and musical performance, writings, and visual arts), or in the form of traditional categories of the arts (images, symbols, crafts, oral and performance arts) rooted in tribal, religious or ethnic culture. Culture is protected, if at all, by a system of intellectual property. Intellectual property systems vigorously protect the classical categories of the arts, but these systems are less certain in protecting traditional forms of art.

The globalization of culture has consequences and counter-reactions. Demands for the possession of the past and control of representation of the present are numerous and varied. For example:

- the recent embargo on permitting the Chinese 400 year-old kunqu opera, "The Peony Pavilion", to travel to New York because the updated production skewed (and allegedly defiled) the traditional presentation of a Chinese cultural icon;

- the on-going demands from source countries for repatriation of, most notably, the Elgin Marbles, and other treasures of cultural property;

- recognition of the ethical and moral imperative to right the wrongs of cultural despoliation by Nazi forces in World War II;

- the international meeting of cultural ministers held in the summer of 1998 to protest popular cultural dominance by the United States of America (the U.S.A.) and discuss preservation and protection of nations' cultures (the U.S.A. was not invited to participate, but did attend as an observer);

- control over the representation and dissemination of cultural traditions of indigenous people, including protests against fashion uses of cultural symbols that represent certain

traditional ceremonies and spiritual endeavors, where these symbols are used in ways that are offensive to the culture; and

- numerous other instances of interested parties seeking to claim and control cultural metaphors.

Cultural autonomy and preservation are at the heart of the right to culture; how does a society balance the competing right of private ownership against collective use of protected intellectual property?

This paper proceeds from the experience of a legal practitioner under the intellectual property system of the U.S.A., where a separate right to culture is not expressly recognized, but where the established principles of constitutional law balance individual ownership of rights with collective social rights. The tension, and its resolution, is nowhere more apparent than in the cultural arena. American intellectual property law is contained in the body of the U.S.A. Constitution, which also contains the First Amendment, the source of expressive liberties. These expressive rights include the right of all persons to enjoy freedom of speech, freedom of religion, freedom of assembly, and other rights commonly cherished as American cultural ideals; these same rights have a prominent place in the UDHR.

Although not expressly acknowledged as a "right to culture", the U.S.A. constitutional system provides a balance of economic and non-economic cultural ideals.[1] Intellectual property provides a conditioned monopoly, a property right flowing to creators or to purchasers of the intellectual labors of others. The property right is limited by certain societal interests that make the monopoly less complete. For example, the long duration of ownership a copyright owner enjoys is significantly limited by fair use; patent protection provides societal benefit by providing a short duration of exclusivity; trademark protection requires

[1] This is in contrast to constitutions of certain nations established in the latter part of the Twentieth Century. For example:

India (1950):

The constitution of India declares in Part III Fundamental Rights, that the state will support the cultural and educational rights of the people of different religious, cultural, and language backgrounds. Article 29 clause (1) of the constitution provides that "Any section of the citizens residing in the territory of India or any part thereof having a distinct language, script or culture of its own shall have the right to conserve the same." This clause protects minorities' interests in cultural rights. India's constitutional expression of a right to culture advances one of the goals of the Declaration of Human Rights.

The Republic of Benin (1990). Title II. Individuals have equal access to health, education, culture, information.

Equatorial Guinea (1991). Title I, Articles 2-8 outlines the role of the state in defending the sovereignty of the nation and promoting culture, creativity, research, and conservation.

Constitution of the Congo (1992).

Title II Fundamental Rights and Liberties

Article 35 [Culture]

"(1) Citizens shall possess a right to culture and to the respect of their cultural identity. All the Communities composing the Congolese Nation shall possess the freedom to use their languages and their own culture without prejudicing those of others.

(2) The State shall have the duty to safeguard and promote the national values of civilization, such spiritual materials as well as cultural traditions."

Article 55 [Right to Development]

"The Congolese People shall have the right to economic, cultural, and social development."

strict procedural proof and constant use in order to retain the exclusive rights attached to the mark.

The rights of an individual, whether personal or corporate, to enjoy the ownership of intellectual property are limited, and this delicate balance takes many forms. There are instances where the rights of an individual will supersede the property rights of another individual or of a community. For example, the Visual Artists Rights Act of the U.S.A. gives to an individual artist who has parted with a work certain rights that are not possessed by the owner of the work (or by the copyright holder if different from the artist); the rights of free speech may allow an individual to make use of the work of another without restriction or permission. The copyright principle of fair use, allowing one to use the protected work of another without permission, fosters the very creativity copyright law was designed to protect. In certain instances, such as zoning regulations or censorship laws, the rights of the community may supersede those of the individual, and inhibit a copyright owner's exclusive right to display a work as the owner sees fit; architectural schemes are protected, but can be "borrowed" for certain uses; the rights of Native American tribal groups challenge long-standing notions of ownership. This paper examines these tensions with particular reference to copyright and trade mark law, comments on the resolution, and concludes that the system provides a robust American right to culture.

2. Intellectual Property Defined

The Constitution of the U.S.A. encourages cultural development and dissemination by promoting the progress of science and useful arts. Article I, Section 8 delegates the power to Congress to grant copyright protection. It states:

> "The Congress shall have the Power . . . To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries . . ."
> (Article I, Section 8 of the Constitution).

The goal of copyright and patent law is "to promote the progress of science and useful arts."

(i) Copyright

The scope of copyright in the U.S.A. is defined in the Copyright Act, 1976, Title 17, U.S. Code:

"§102. Subject matter of copyright: In general

(a) Copyright protection subsists, in accordance with this title, in original works of authorship fixed in any tangible medium of expression, now known or later developed, from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device. Works of authorship include the following categories:

> (1) literary works;
> (2) musical works, including any accompanying words;

(3) dramatic works, including any accompanying music;
(4) pantomimes and choreographic works;
(5) pictorial, graphic, and sculptural works;
(6) motion pictures and other audiovisual works;
(7) sound recordings; and
(8) architectural works.

(b) In no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated or embodied in such work."

Copyright owners have certain exclusive rights. These include the rights:

(1) to reproduce the copyrighted work in copies or phonorecords;
(2) to prepare derivative works based upon the copyrighted work;
(3) to distribute copies or phonorecords of the copyrighted work to the public by sale or other transfer of ownership, or by rental, lease, or lending;
(4) in the case of literary, musical, dramatic, and choreographic works, pantomimes, and motion pictures and other audiovisual works, to perform the copyrighted work publicly;
(5) in the case of literary, musical, dramatic, and choreographic works, pantomimes, and pictorial, graphic, or sculptural works, including the individual images of a motion picture or other audiovisual work, to display the copyrighted work publicly; and
(6) in the case of sound recordings, to perform the copyrighted work publicly by means of a digital audio transmission.

For a work to be protected by copyright, it must be original and contain an expression of the author's creativity. The amount of originality or creativity needed to pass the threshold is not high; a change in color or medium is not enough to pass the threshold, but a change in angle or lighting might be. To be protected, the work must be fixed in a tangible medium of expression, so that an object can be perceived, reproduced, or expressed for more than a brief duration. Copyright protects expressions, but not ideas, procedures, processes, systems, methods of operation, concepts, principles, or discoveries. The copyright holder's rights include the economic rights to reproduce, create derivatives, distribute, display, perform, and alter the work. These "bundled" rights are divisible, and it is assumed that the right remains with a creator unless explicitly transferred. These rights are not unlimited, however; it should be noted also that the Copyright Act places certain statutory limitations on the exclusive rights of copyright owners.[2]

[2] Limitations on the exclusive rights of copyright owners are contained in the Copyright Act (Title 17, U.S. Code). These include:

1. §106A--Visual Artists Rights Act--provides limited rights of attribution and integrity to prevent intentional distortion or mutilation of work prejudicial to author's reputation.

2. §107-- Fair use (see Section 3 "Limitations" below.)

(footnote continues on the next page)

(ii) Trade Marks

Trade marks are signifiers used by manufacturers and merchants to identify goods or services and to distinguish them from those of other manufacturers and merchants. A trademark may protect words, marks, designs, colors, sounds, names, symbols, clothing, and buildings.[3] Rights in a trade mark generally depend on the actual use of the mark on goods that are sold in connection with the advertising or sale of services. These rights can continue indefinitely as long as the mark is neither abandoned nor improperly used, so as to become generic.[4]

Restricting the use of a trademark in some circumstances is acceptable, but controlling or inhibiting a trade mark use may stifle cultural development and limit freedom of expression

3. §108--Reproduction by libraries and archives under certain limitations and for certain purposes.

4. §109—"First Sale" doctrine-- owner of a copy may sell or display it without permission of copyright owner.

5. §110--Performance or display for instructional activities (face-to-face teaching), or transmission in educational setting, or certain performances for the benefit of charities.

6. §111--Secondary transmissions to private lodgings or by nonprofit organization.

7. §112--Ephemeral recordings for archival preservation.

8. §113--Limits scope of exclusive rights in pictorial, graphic, and sculptural works.

9. §114--Limitation on exclusive rights in sound recordings.

10. §115--Compulsory license for making and distributing phonorecords.

11. §116--Compulsory licenses for public performances by means of coin-operated phonorecord players.

12. §117--Reproduction of computer programs for use of computer programs or for archival purposes.

13. §118--Use of copyrighted material by educational broadcast stations.

14. §119--Secondary transmissions for private home viewing.

15. §120--Modifies Architectural Works Protection Act to allow pictorial representations of copyrighted architectural works and allowing owners of copyrighted architectural works to alter or destroy them.

[3] A successful use of intellectual property rights to enforce a cultural product is found in the longstanding and careful enforcement of the term "champagne", sought to be used generically to describe sparkling wine, but diligently controlled as the designation of products from one wine-producing region of France.

[4] In 1946, the U.S. A. Congress codified trademark protection in the Lanham Act. The Lanham Act recognizes that individuals associate a mark or symbol with a party's goodwill and reputation in goods or services. It restricts the mark's use to the exclusive trademark owner, rewarding the party that expended resources to develop a mark of identification for the product. Traditionally, trademarks aid consumers in identifying products and protect consumers from deceptive advertising about a product's source and quality. The goal of trademark protection is to ensure commercial morality, foster creativity, and encourage fairness to consumers. S.Rep. No. 1333, 79th Cong. 2d Sess. (1946), reprinted in 1946 U.S.C.C.A.N. 1274.

in violation of the Constitution.[5] Trade marks or trade dress (*i.e.*, protection for the way a thing looks) hold great promise for protection of traditional design and craft. The issues are many: what are the protectable elements?; what is the "mark?", the "actual use?", and the "goods?"; who owns it?; where is the mark registered, and for what purposes? Exploiting the economic value of intellectual property is an important goal in protecting cultural expressions, not only to provide control over uses of cultural elements, but also to generate needed revenue for development of future projects that protect and preserve cultural expression.

3. Limitations on Ownership of Intellectual Property

(i) Free Speech

The First Amendment to the U.S.A. Constitution affords the expressive protections of speech, assembly, and religion, ensuring the rights to practice and preserve culture. Artistic expression often takes the form of symbolic or visual speech that expresses critical social commentary, satire, and religious or political ideas through stories or images.[6] Courts examine, when affording protection to artwork, whether the protection extends to the message, (*i.e.*, the values depicted in the image), or to the visual image itself. The First Amendment triggers protection where the social or political message is at the heart of the visual image. For example: the First Amendment protects parody when the parody comments on the original work;[7] a symbol placed on an American flag is protected by the First Amendment as a non-verbal expression of protest and dissent;[8] a mural portraying the plight of Mexican-American laborers constitutes a form of expression protected by the First Amendment;[9] a political cartoon representing critical opinion in symbolic form expresses an idea rooted in art and is protected by the Constitution;[10] a poster featuring a drawing of a

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[5] One U.S.A. appellate judge, dissenting in a carefully-watched case, *White v. Samsung Electronics America*, 989 F.2d 1512 (1993), summed up the potential to stifle creativity and development of national culture. "Clint Eastwood doesn't want tabloids to write about him. Rudolf Valentino's heirs want to control his film biography. The Girl Scouts don't want their image spoiled by association with certain activities. George Lucas wants to keep Strategic Defense Initiative fans from calling it 'Star Wars'. Pepsico doesn't want singers to use the word 'Pepsi' in their songs. Guy Lombardo wants an exclusive property right to ads that show big bands playing on New Year's Eve." (at 1512-13.) Note that this example raises not only trademark parody, but also the right of publicity (in contract) and the right of privacy (in tort).

[6] Visual artwork is equally an embodiment to artistic expression as is written text, at times they are indistinguishable. *Bery v. City of New York*, 97 F.3d 689, 695 (2nd Circuit 1996).

[7] *Cliffs Notes, Inc. v. Bantam Doubleday Dell Pub. Group* (2nd Circuit 1989) 886 F. 2d 490.

[8] *Spence v. Washington*, 418 US 405, (1974); See also, *Radich v. New York*, 401 U.S. 531, rehearing denied 402 U.S. 989 (1971). Radich used the American flag as a tool to create art and to make a political statement protesting the Vietnam War. The sculptures constituted an expression of speech which constitutes both a work worthy of copyright protection and protection by the First Amendment freedom of speech clause.

[9] *Latin American Advisory Council v. Withers*, No. 74 Civ. 2717 (N.D. Ill. Nov. 22, 1974) (Mem. and Order); (Protection afforded to the mural as an artistic expression of an idea).

[10] *Yorty v. Chandler*, 13 Cal. App. 3d 467, 91 Cal. Rptr. 709 (1970) (dismissing defamation claim based on political cartoon depicting Mayor of Los Angeles surrounded by medical orderlies, insinuating his mental state); *Hustler Magazine v. Jerry Falwell*, 485 U.S. 46, 108 S. Ct. 876, 99 L. Ed. 2d 41 (1988) (parody advertisement for liquor, portraying a conservative religious public figure in an unflattering context, was protected as an artistic expression of an idea and constitutional).

scantily-clad politician with propaganda supporting equal rights for women represents a visual expression of a political message, and constitutes free speech.[11]

Historically, the First Amendment has been concerned with keeping particular spaces open to free speech – spaces such as public squares, broadcast channels, publications such as books and newspapers, and recently cyberspace; whereas intellectual property, a bundle of property rights, has traditionally been concerned with fencing the space and narrowing the unregulated reach of that space. It must, however, be emphasized that both concepts are concerned with artistic creations and inventions because intellectual property protects users as well as owners.

(ii) Visual Artists Rights Act (VARA)

A recently-enacted U.S.A law limits the exclusive rights of a copyright owner in a manner different from the First Amendment. The Visual Artists Rights Act (VARA)[12] amends the Copyright Act by granting additional rights (prospective only) to artists that are independent of the rights of reproduction, adaptation, derivative preparation, and performance. The law provides, in essence, that an owner of a work of art (or the copyright thereto) is not free to alter or mutilate the work. The Act provides limited moral rights; it grants the visual artist the limited rights of integrity and attribution. These rights are independent of the exclusive rights of copyright and are "personal" rights (as contrasted with the "property" rights of copyright). The Act covers works of visual art, including: "pictorial, graphic, or sculptural works; paintings, drawings, prints, sculpture, and still photographic images produced for exhibition" in a single copy or limited edition of at most 200 copies signed and consecutively numbered by the artist, or bearing an identifying mark if a sculpture.[13] The Act provides:

- two types of *integrity* rights:

1 - the right to prevent deliberate mutilation, distortion or modification of work if prejudicial to the artist's reputation; and
2 - the right to prevent destruction of a work of recognized stature.

- three types of *attribution* rights:

1 - the right to have artist's name appear when the work is on display;
2 - the right to prevent use of artist's name with work the artist didn't create;
3 - the right to prevent use of name with work that has been mutilated, distorted or otherwise modified in a way prejudicial to the artist's honor or reputation.

[11] *Penthouse International, Ltd. V. New York City Transit Authority*, 599 F. Supp. 1338 (S.D.N.Y. 1984) (discussing poster in New York City subway system depicting former Vice President of the United States wearing "ERA-Yes" banner).
[12] 17 U.S.C. §106A (VARA also amended the "work of visual art" defined in 17 U.S.C. § 101.)
[13] VARA excludes reproductions such as "posters, maps, globes, charts, technical drawings, diagrams, models, applied art, motion pictures and other audiovisual works, books, magazines, newspapers, periodicals, databases, electronic information services, electronic and similar publications, advertising, merchandising, promotional and packaging materials", and excludes also any works made for hire.

The rights are personal to the artist, and exist only for the artist's lifetime. Thus, one may transfer the copyright interest in a work, in whole or in part, but retain, by operation of this law, the personal rights of attribution and integrity. The rights may be waived by the artist, but cannot be transferred, sold or otherwise alienated. The Act also provides that an artist has the right to claim the work as his or her own and to disclaim work created by others that are misattributed. The Act has not generated significant case law,[14] but this is expected to be a growing area of the law.

(iii) Fair Use

A prominent limitation on the exclusive rights of an intellectual property owner is the concept of fair use. Fair use, an equitable doctrine that balances the rights of a copyright owner with those of society, speaks to specific uses of copyrighted works that are considered *fair* under the Copyright Act. Fair use is not, on the one hand, "free" use, nor, on the other, "fettered" use. It acknowledges the tension between an owner's financial security interests and society's access to intellectual property. Fair use strives to ensure that an author's exclusive bundle of property rights will not hinder the very creativity the law was designed to foster. Recognizing that new works draw inspiration from older works and that productive use of older works promotes the progress of science, arts, and literature, fair use permits certain good faith uses that, in another context, would be infringement. These uses can include criticism, comment, news reporting, teaching, scholarship, and research.

The fair use test is a four-pronged, case-specific analysis.[15] It examines

[14] The only significant cases to date raising questions under VARA are *Moncada v. Rubin – Spangle Gallery, Inc.*, 835 F. Supp. 747 (S.D.N.Y. 1993) (Artist's mural painted over.); and *Carter v. Helsmley – Spear, Inc.*, 861 F. Supp. 303 (S.D.N.Y. 1994), rev'd and vacated in part, affirmed in part, 71 F.3d 77 (2d Cir. 1995), cert. denied, 116 S.Ct. 1824, 134 L.Ed.2d 930 (1996). (Site-specific sculpture dismantled.) An earlier celebrated case involving the large-scale sculpture of Richard Serra, *Titled Arc*, was decided against the artist on a work for hire theory in the pre-VARA era. *Serra v. United States General Services Administration*, 847 F.2d 1045 (2d Cir. 1988) affirmed 667 F.Supp. 1042 (S.D.N.Y.) 1987). The obvious inequities of this case played prominently in the passage of VARA.

[15] §107. Limitations on exclusive rights: Fair use

Notwithstanding the provisions of Sections 106 and 106A, the fair use of a copyrighted work, including such use by reproduction in copies or phonorecords or by any other means specified by that section, for purposes such as criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research, is not an infringement of copyright. In determining whether the use made of a work in any particular case is a fair use the factors to be considered shall include –

> (1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes;
>
> (2) the nature of the copyrighted work;
>
> (3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and
>
> (4) the effect of the use upon the potential market for or value of the copyrighted work.

The fact that a work is unpublished shall not itself bar a finding of fair use if such finding is made upon consideration of all the above factors.

(1) the purpose and character of the new work's use; (2) the nature of the original work; (3) the amount and substantiality of the portion used in relation to the original work as a whole; and (4) the economic effect on the original work's actual and potential markets. The prongs cannot be evaluated in isolation as a mathematical formulation, but rather the test is a "totality of the circumstances" analysis. The flexibility inherent in the test often leaves users and providers unsure whether the contemplated use is a fair use, but the case-by-case analysis is a precisely-tailored discipline that serves to curb excessive or sweeping misuses. Because of the uncertainty inherent in the fair use test, users often prefer licensing schemes that grant permission for blanket uses.

The four-part test contained in copyright law is not the only measure of fair use; courts look to other factors as well. For example, it is relevant whether the taking is socially desirable or creative conduct that stimulates the public interest. Occasionally, the public interest is considered to be a fifth prong. Courts disagree as to whether obscene use bars a fair use finding, and lack of good faith generally weighs against fair use, as does failing to provide credit or attribution (thus akin to plagiarism). Some commentators note that these other factors should be weighed because copyright takes place in a social context and certain considerations may influence equitable outcomes. Other commentators view additional factors - good faith, artistic integrity, and privacy - as distractions in balancing the goals of copyright.

Trade mark law, like copyright law, contains fair use principles that mediate potential conflicts with free speech and expression. Artists often use in cultural expression the symbols and images protected by trademark. An individual's artistic interpretation or use of a product as a commercial or societal icon does not, generally, confuse or diminish the owner's exclusive product identification. One prominent example of this use is the work of Andy Warhol, an artist who never sought permission for depictions of his frequently-used commercial products, including his signature portraits of the Campbell's Soup cans.[16]

Fair use in the trademark context arises where a trademark becomes part of the product, such that its role as an identifier becomes less important than the functional characteristics of the product.[17] In the U.S.A., it is a *fair* use for a competitor to describe aspects of his own goods by using a competitor's registered trademark.[18] Parody traditionally constitutes a fair use of a trademark if consumers clearly understand that the trademark is the subject of comment and not sponsored by the trademark's owner;[19] examples of trademark parody are

[16] *New York Times*, June 16, 1996, at 12A (John W. Smith, archivist of the Andy Warhol Museum in Pittsburgh.)
[17] A use of a trademark is fair if (1) the product or service in question cannot be identified without using the trademark; (2) only a portion of the mark, or marks, may be used as is reasonably necessary to identify the product or service; (3) the user must not do anything with the mark that suggests sponsorship or endorsement by the trademark holder. *New Kids on the Block v. News Am. Publishing, Inc.*, 971 F.2d 302, 308 (9th Cir. 1992).
[18] 15 U.S.C.A. 1115(b)(4). "That the use of the name, term, or device charged to be an infringement is a use, other than as a mark, of the party's individual name in his own business, or of the individual name of anyone in privity with such party, or of a term or device which is descriptive of and used fairly and in good faith only to describe the goods or services of such party, or their geographic origin."
[19] *New York Racing Association, Inc.v. Perlmutter Publishing, Inc.*, 95 CV 994, 1996 U.S. Dist. LEXIS 11764 (N.D.N.Y. July 19, 1996) dismissed, 1997 U.S. Dist. LEXIS 4607 (N.D.N.Y. April 9, 1997). (Defendant's use of the association's registered trademarks in painting's title was protected by the First Amendment); *Yankee Pub. V. News America Pub., Inc.*, 809 F. Supp. 267, 272, 279 (S.D.N.Y. 1992) ("parody is merely an example of the types of expressive content that are favored in fair use analysis under the Copyright Law and the First Amendment deference under the Trademark Law.")

many and varied, but the most significant is where the trademark is the prime target of parody,[20] such as in the case of Warhol's depictions of ordinary commodities, because that use triggers the fair use defense as a cultural representation.

Architecture is a form of cultural expression protected in the U.S.A by both trade mark and copyright. Copyright provides architects, as authors of architectural works, protection for their designs,[21] and grants to third parties the affirmative right to photograph publicly accessible buildings and to freely distribute and display those photographs. The free exchange of ideas, and the freedom to borrow and expand on those ideas, are integral to the design process; copyright protection tailored to the particular nature of architectural design benefits the public and advances cultural development.

In contrast, however, in trade mark law, architectural works are properly protected where the design is the "signature" style of the architect.[22] Copyright law permits individuals to photograph architectural designs, but trade mark law preempts the right freely to use a trade marked architectural creation. Some buildings in the U.S.A. currently under trade mark include the Chrysler Building and Guggenheim Museum in New York, the Transamerica Pyramid in San Francisco, the Wrigley Building and Citicorp Center in Chicago, and The Rock and Roll Hall of Fame in Cleveland. Trade mark protection for buildings is limited, however, as it precludes another party from designing a building in the same shape.[23]

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[20] For example, *Girl Scouts of America, v. Bantam Doubleday Dell Publishing Group*, 808 F. Supp. 1112 S.D.N.Y. 1992), affirmed, 996 F. 2d 1477 (2d. Cir. 1993) (discussing First Amendment artistic expression superseding property right afforded by trademark); *New Kids on the Block v. News Am. Publishing, Inc.*, 971 F.2d 302, 308 (9th Cir. 1992) (providing fair use test for trademarks); *Pillsbury Co. v. Milky Way Prods.*, 215 U.S.P.Q. (BNA) 124 (N.D. Ga. 1981) (parody advertising characters engaged in lewd conduct does not infringe trademark); *L.L. Bean, Inc. v. Drake Publishers, Inc.*, 811 F. 2d 26 (1st Cir.) cert. denied, 483 U.S. 1013 (1987) (portraying fake products and nude models to parody a mail order catalog constitutes fair use of trademark); *Eveready Battery Co. v. Adolph Coors Co.*, 765 F. Supp. 440, 448-50 (N.D. Ill. 1991) (fair use of trademark for imitation of a trademarked character to hawk another type of product, where the parody is obvious to the viewer.)

[21] Prior to 1990, copyright law gave virtually no protection to architectural structures, but in 1990 Congress amended the Copyright Act to include The Architectural Works Copyright Protection Act, meriting "architectural works" a category of copyrightable subject matter. The Act protects overall form, arrangement and composition of spaces, and elements in the design. 17 U.S.C. 101.

[22] Lanham Act §43 (a), 15 U.S.C. §1125 (a) (1988):

(a) Any person who, on or in connection with any goods or services, or any container for goods, uses in commerce any word, term, name, symbol, or device, or any combination thereof, or any false designation of origin, false or misleading description of fact, or false or misleading representations of fact, which-

(1) is likely to cause confusion, or to cause mistake, or to deceive as to the affiliation, connection, or association of such person with another person, or as to the origin, sponsorship, or approval of his or her goods, services, or commercial activities by another person, or

(2) in commercial advertising or promotion, misrepresents the nature, characteristics, qualities, or geographic origin of his or her or another person's goods, services, or commercial activities, shall be liable in a civil action by any person who believes that he or she is or is likely to be damaged by such act.

[23] *Associated Hosts of California, Inc. v. Moss*, 207 U.S.P.Q. (BNA) 973 (W.D.N.C. 1979); *Two Pesos, Inc. v. Taco Cabana, Inc.*, 505 U.S. 763 (1992); *White Tower System, Inc. v. White Castle System of Eating Houses Corp.*, 90 F.2d 67 (6th Cir.), cert. denied, 302 U.S. 720 (1973) (holding uniquely designed building could serve as distinctive mark); *Fotomat Corp. v. Ace. Corp.*, 208 U.S.P.Q. (BNA) 92 (S.D. Cal. 1980) (commercial "huts" in parking lots considered arbitrary and fanciful in their design). A recent U.S. case addressing trademark protection for prominent buildings is *Rock and Roll Hall of Fame and Museum, Inc. v. Gentile Prods.*, 943 F. Supp. 868 (N.D. Ohio 1996). In this case, the trial court enjoined the selling of a poster of a photograph of the

(footnote continues on the next page)

4. Limitations on Ownership of Cultural Property

The above provides examples of the intersection between artistic freedom and the regulation of intellectual property in order to support a culture that flourishes by virtue of owning and borrowing. Discussed below are two prominent examples of the right to culture in an emerging field, that address *physical* property, rather than *intellectual* property, although the intellectual property aspects and ramifications can be readily seen. These two areas are repatriation of Native American human remains and associated funerary objects, and repatriation of Nazi-era war booty that may be found in the collections of U.S. museums. These repatriation examples are instructive because they resolve difficult questions of ownership *versus* ethics in a responsible manner. These repatriation efforts are grounded fundamentally in morality and cultural imperative, and the principles of ownership and strict procedural proof are not the sole considerations.

(i) Rights of Indigenous Persons

The Native American Graves Protection and Repatriation Act (NAGPRA),[24] aims to protect Native American human remains and cultural objects that fall within the definition of cultural patrimony. Prior to the 1990 passage of NAGPRA, the Antiquities Act provided some protection for Indian tribal artifacts by prohibiting the excavating, injuring, appropriating, or destroying of objects of antiquity found on federal lands. It established criminal sanctions but failed to protect adequately Native American objects of cultural and historic importance. Private collectors freely bought cultural items, either looted or illegally purchased from a tribe, and money was to be made from knock-offs without any respect for the authentic. Pressure from tribal groups, a moral concern for preserving tribal culture, and ethical issues raised by collectors' actions, spurred legislators to enact NAGPRA.

The Act defines cultural patrimony, and institutes criminal sanctions for illegal trafficking. The Act protects Native American burial sites on federal and tribal lands and controls the removal of human remains, funerary objects, sacred objects, and items of cultural patrimony. It requires federal agencies and museums receiving federal funding to catalog human remains and associated funerary objects, to make the information available to tribal groups upon request, and to repatriate where appropriate.

The Act confirms that certain objects central to a tribe's culture or religion belong to that tribe and not to its individual members. NAGPRA will protect a cultural item as cultural patrimony only if the Native American group has considered it cultural patrimony and inalienable. Individual members cannot appropriate or convey cultural patrimony, but it should be noted that the Act does not prohibit the sale of personal property of tribal members.

distinctive I.M. Pei-designed building with the text: *The Rock and Roll Hall of Fame and Museum in Cleveland.* The trial court ruled that the museum's trademark in the building supersedes the photographer's right to sell the poster. The trial court explained that the "likelihood of confusion" between the poster and the museum's trademark would irreparably harm the museum's licensing program and revenues, but the appellate court disagreed, sending the case back to the trial court. It remains an open question, then, whether trademark protection safeguards the owner's right to decide what uses are deemed desirable, or whether protection stifles creativity and limits cultural dissemination; this area can be expected to give rise to additional case law.

[24] 25 U.S.C. §§ 3001-3013.

Thus, ambiguities or controversies can be expected to arise, and NAGPRA includes a mediation scheme for resolution of contested matters.

It is, obviously, but a small step from control of objects, *per se*, to control of representations of those objects (including photographs, designs, film, or other images) and U.S.A museums have been respectful of those claims, although most would not consider the institution legally bound to do so. This area is being developed by case law in other countries, notably Australia,[25] where individuals and indigenous groups are testing in the courts issues of representations of their cultures.

(ii) Repatriation of Looted Property

The importance of cultural property is underscored as American and European nations grapple with the present day consequences of the Nazi-era despoliation of Jewish and other cultures through systematic looting and destruction of paintings, monuments, cultural artifacts, and other objects that hold and transmit cultural value. The recent guidelines promulgated by the Association of Art Museum Directors (AAMD), an organization of the largest U.S.A art museums, recognize the importance of art as a cultural vehicle and condemn a system that permitted its illegal seizure.

The guidelines advise each member museum to develop a policy governing the legal, ethical, and managerial practices concerning the legal status of the institution's collections; to review the provenance of works in their collections to determine whether the works should be restituted; to repatriate works where claims can be established; to request extensive documentation concerning the provenance of future gifts, bequests and purchases; and to make the collections information accessible to the public for examination and research. As is the case with NAGPRA, the guidelines contemplate a mediation process for handling and resolving claims that may be presented. By taking an active role in repatriating works of art unlawfully confiscated during the World War II-era, museums communicate to the public the significance of cultural property and the moral obligations that attach to it.

5. Conclusion

The right to culture gains a new meaning as new rules emerge for intellectual property in response to technological advances. Article 27 of the UDHR recognizes the importance of preserving culture: "Everyone has the right freely to participate in the cultural life of the community, to enjoy the arts and share in scientific advancement and its benefits".

The major and, arguably most pervasive, systems for transmitting culture are the education system, the entertainment industry, and commercial advertising. These systems are built on intellectual property, including art and information concerning visual language. These areas have, to date, conveyed interpretations of culture in a one-way, content-controlled

[25] Three recent Australian cases that have received wide attention are *Bulun Bulun v. Nejlam Investments and others* (Unreported Case, Federal Court Northern Territory (1989) *discussed in* Golvan, C., "Aboriginal Art and Copyright", *1* (1996) *Media and Arts Law Review,* 151; *Yumbulul v. Aboriginal Artists Agency Ltd.* (1991) 21 I.P.R. p.481; and *Milpurrurru v. Indofurn Pty. Ltd. and others* (1995) 30 I.P.R. 209.

manner. Technological advances encourage the opportunity for many to participate and interact, and the opportunity to make new rules. The effect of technology on cultural property, including expressions of folklore, is not yet entirely clear, but the following expectations have emerged. Technology can:

- empower cultures because these tools can be used for identification, interaction, entertainment, and exchange of ideas;
- allow preservation of minority languages for communicating, teaching, and participating in the minority/majority dialog;
- enhance development and preservation of culture by aiding documentation of expressions of folklore;
- provide new marketing opportunities for cultural resources, including performance, handicrafts, the visual arts, and other cultural expression;
- enable monitoring and policing of illicit exploitation of cultural resources, because a system of rights without enforcement is merely an illusory right.

There are opportunities, but also challenges. It is recognized that globalization threatens community and local culture by virtue of the wide reach of communications tools dominated by a few select voices. The right to culture, then, must include the tools to own and preserve cultural manifestations and, at the same time, to utilize and exploit the cultural resources of the majority culture.

The intellectual property system of the U.S.A. may provide some guidance in enforcing the economic rights of culture; the U.S.A. assumes the "right to culture" through a strong property-based intellectual property system that protects works of artistic, literary, and other expression. It nourishes that system by allowing fair use of an intellectual property owner's exclusive rights in order to encourage the free development of a national culture. Intellectual property laws provide individual and communal rights to cultural property through a system of owning and borrowing, the "pull-and-tug" of, on the one hand, protecting commercial properties such as Hollywood hits or household products; and, on the other, protecting social protest and borrowing protected symbols for social or political comment.

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EDITED TRANSCRIPT OF DISCUSSION

Question/Comment

Dr. Drahos spoke about tensions between certain intellectual property rights and certain human rights. As an example, he referred to patents for drugs. As we know, patents for drugs protect the interests of research scientists, but sometimes they harm a fundamental human right, which is the right to health. What we need is some balance between the interests of the research scientists and those of populations. It is true that in many countries we try to give non-voluntary licenses to solve this problem. In some other countries, apart from patents, we have an additional protection certificate for pharmaceutical products. By way of solution, I would like to suggest that in intellectual property rights we take account of different rights and interests in providing protection for pharmaceutical research.

Dr. Drahos

Thank you very much for those observations. The reconciliation of the conflicts between intellectual property rights and other areas of the human rights regime has to be achieved in the design of the intellectual property right. This follows very much from the conception of intellectual property rights as instrumental rights, and in the case of pharmaceutical drugs there are a number of possible institutional solutions that might be considered. Licensing, of course, is one of them, but there might be contractual solutions. The key to institutional design solutions is flexibility, both regionally as well as at the national level.

Question/Comment

First of all we would like to thank the World Intellectual Property Organization (WIPO) very much for this event. It has provoked much thought. What presents some slight discomfort is that when we use the vocabulary of human rights in an intellectual property context, there seems to be some room for confusion. I take the point of Dr. Drahos that the vocabulary may be common but the language is not, and perhaps that is where the confusion is. For instance, when we talk in terms of human rights there is a sense of "fundamental rights." The connotation is that these are more invaluable than intellectual property rights as embodied in specific agreements. When we are talking about intellectual property rights as human rights, what are we talking about? Are we talking about intellectual property rights in a general, abstract sense as referred to in the Universal Declaration of Human Rights (UDHR) or in the International Covenant of Economic, Cultural and Social Rights (ICESCR)? Or, are we talking about the rights which have been defined by specific agreements on intellectual property? I think that it would be going too far to say that the rights enshrined in the Agreement on Trade-Related Aspects of Intellectual Property Rights (the TRIPS Agreement) are human rights. There seems to be a slight overstretching there, but perhaps somebody could comment.

When we are talking in human rights instruments about things which impinge upon the rights to benefit from literary and scientific endeavors, the rights which are talked about are those granted to the authors, and not to the owners *per se*, so that there is a distinction between the authors and owners, which may be corporations. Must not a distinction be made between the author and the owner?

Another term which was used was the question of national treatment as a human right. This is an interesting concept, but does national treatment amount to non-discrimination, as the term is used in the human rights context? I am not so sure, because national treatment in the trade or intellectual property contexts is not something which is fundamental and which must be granted. It is a concession, which is negotiated and given with certain derogations and with transitional periods. Should we automatically bring this over as a concept from the human rights discourse and put it into the intellectual property discourse? Again there seems to be perhaps a need for clarification.

Finally, I completely agree with what Dr. Drahos said when he reminded us that property rights are subject to continuous adjustment. Perhaps that is where the solution lies when we seek to reconcile the whole problem of over-protection and under-protection. I think this will be a theme which will recur constantly throughout this discussion. How do we reconcile, from a human rights perspective, the question of certain instruments which tend to predispose towards over-protection and which then naturally impact negatively on broader developmental rights?

Dr. Drahos

I agree with the broad thrust of those comments. In my paper I do ask the question, how are we to classify intellectual property rights? If you look at the scholarly literature on this particular issue, and I was so grateful that other people had looked at this issue, what you would find is that scholars break down human rights into numerous categories. One category is the category of fundamental human rights, by which they understand things like the prohibition on genocide. Then there are also other categories of human rights. We as intellectual property practitioners will tell you there are many different kinds of intellectual property rights so the big question is, do all intellectual property rights fit into the category of fundamental human rights? It would be surprising if the answer to this question was yes. After all, the right to a petty patent system stands in stark contrast to the prohibition on genocide. We do not think of the prohibition of genocide as something that can be adjusted and yet whether or not one has a petty patent system depends on the state of development of the relevant country. So it seems to me that a lot of work has to be done in terms of desegregating human rights and looking at the typology of human rights and meshing that with different kinds of intellectual property rights. It may be that some intellectual property rights fit into the category of fundamental human rights, because in the world that we are moving into the right to be acknowledged as the source of a work and the right to have one's reputation protected may be essential to one's daily existence. Certain needs-based personal property rights may indeed fit into the category of fundamental human rights.

This seems to me a relatively unexplored area where a lot more work needs to be done.

Question/Comment

First and foremost, I would like to join the other participants in thanking the speakers who have illuminated us on this very important topic, as well as WIPO for organizing this meeting. In this regard, we hope that this meeting would be the first in a series of meetings and it is also our fervent hope that this is not just taking place in light of the 50th anniversary of the UDHR. I think that it is very relevant that, as part of the Secretary-General's reform

efforts in order to make human rights the common language within the United Nations system, we should delve into this question deeper in the future.

Article 27 of the UDHR says that everyone has the right to freely participate in the cultural life of the community and so on, and in the second part it says that everyone has the right to the protection of his or her moral and material interests. Now, is there a difference between what has been mentioned as to right to culture and right to the preservation of culture, especially within the context of globalization?

Secondly, I join the previous speaker in saying that there is always the danger when we try to merge two separate fields, and one feels that we are comparing apples with oranges. What is the solution to all this? Within intellectual property law, it is quite certain that you would have regulatory mechanisms and all that. In fact, is it possible in the first place? Secondly, is it desirable? I think Dr. Drahos has just now alluded to this difficulty. I was wondering whether it is desirable to speak a common language, concretized in national regulations, when we talk about intellectual property rights and human rights in general.

Ms. Steiner

I would like to address the question on the distinction, if any, between the right to culture and the right to preservation of culture. I do not see a distinction between the right to culture itself and the importance of preserving culture. To me, the right to culture includes preservation, access, display, control, exploitation, manipulation and management of cultural assets.

Dr. Drahos

It seems to me that whether one likes it or not, the human rights system is differentiating and expanding. Human rights scholars talk about the first generation, the second generation, and the third generation of human rights. Similarly, it is abundantly clear that the intellectual property system is differentiating and expanding. We can now meaningfully talk about the regulatory globalization of intellectual property. Moreover, there are three kinds of globalization going on in the world, which would affect this intersection between human rights and intellectual property. There is the globalization of markets; and there is the globalization of regulation. One can have the globalization of markets without the globalization of regulation; for example, gambling is essentially globalized without there being regulatory globalization. Finally, there is the globalization of firms. All three forms of globalization are creating new complex sorts of interdependency. It seems to me that we do not really have a choice. The question is not whether we should have a dialogue about this or not, but where should this dialogue take place, in which fora?

Question/Comment

Let me start by thanking WIPO and the United Nations High Commissioner for Human Rights for organizing this meeting. A very thought provoking issue is the notion of the "right to development" in the context of human rights. In an international context that is characterized by an emphasis on trade, and we talk about the World Trade Organization (the WTO) in this case, how are we going to succeed in creating new rules and new norms that take care of these new notions that are being discussed now?

Question/Comment

During the recent WIPO Standing Committee on Copyright, the *sui generis* protection of non-original databases was on the agenda. Naturally, developing countries raised their concerns and needs from the development standpoint. Their needs are essentially with respect to education and health, just to mention a few. It is not always very easy to reconcile the two imperatives, that which is linked to the respect for intellectual property rights and that which has to do with human rights. The problem facing us is how can we ensure that the two imperatives are reconciled and properly so? As we speak now so much of globalization, at a time when we are in a society which is a society of information, it is imperative that we ensure that we make consistent efforts to reconcile human rights and intellectual property rights.

Question/Comment

Dr. Drahos referred several times to the first generation, second generation and third generation rights. I think we should dispense with this, because there is a general consensus in the international human rights community that this is something that belongs to the past. In fact, if you look at the Vienna Declaration from the World Conference in 1993, it states very clearly that all rights are indivisible and interdependent. Therefore it is very difficult at this time to say that some rights are more important than others. Particularly in the context of intellectual property rights, the threat is much more on economic, social and cultural rights. Those are the rights that need to be stressed and there is a danger that if we make these divisions, those rights will continue to be marginalized.

I do not know if it was intentional but none of these speakers this morning spoke about the WTO and the TRIPS Agreement and I think it is very important to reflect on that experience. Whether intellectual property rights are related to human rights and whether the two systems are compatible, are not theoretical questions. We have experienced that the TRIPS Agreement has had and often has an adverse impact on human rights and I was wondering if Dr. Drahos had a comment. It is very important to also say that, and this was again stressed in the Vienna Declaration, human rights are the first and primary responsibility. So it is not a question of one system being more important than the other. The human rights system has to underpin all other efforts and the protection of vulnerable communities has to be the primary objective. I think it is from that context that we have to look at intellectual property. I was wondering if Dr. Drahos had a comment on the WTO.

Dr. Drahos

Yes, it would be nice if someone asked an easy question. On the issue of first, second and third generation rights, I should emphasize that the historical part of my paper makes it clear that the picture has changed and I am aware of these developments.

On the deeper and more complex issue of the role of the WTO, clearly, it is a crucial standard-setting body in the intellectual property arena and we can say that, as a result of the work of the WTO, intellectual property at the regulatory level, not in terms of markets but at the regulatory level, has globalized. The problem, however, is that this institution of property has globalized without a common set of understandings and a shared set of experiences about the purpose of this institution. That is a crucial problem. Now, it is correct that the human rights discourse is fundamental within democratic societies. The whole point of human rights is that they serve citizen welfare. The problem now is that at the moment we have this globalized property institution without some set of shared understandings. Indeed, at the moment, even an appreciation of where all of these issues might be discussed is lacking. It seems to me that the answer is that there is no one forum that has as an exclusive monopoly to discuss these issues. We are better off by beginning a kind of global dialogue in many fora approaching this in a way where some common understandings about the role and purpose of intellectual property might evolve. In other words, what we want to support here is a kind of global web of dialogue in which there are many participants.

INTELLECTUAL PROPERTY AND THE RIGHT TO HEALTH

by

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1. Introduction

This paper deals with the subject of the various relations existing between intellectual property and the right to health. Reference will be made, within the industrial property system, especially to patents, as a crucial instrument in the development of the pharmaceutical industry, which in turn has afforded the world's population greater and better access to health systems. Clearly therefore, it is by no means frivolous to suggest that industrial property protection systems, by means of patents in this case, have managed to make a profound contribution to the development and improvement of the health of the general public throughout the world, by creating a situation in which the right to health, as a first-generation human right, namely one of those relating to the individual, becomes a reality.

Clear though the above premise is, it is also fair to say that the subject of the protection of pharmaceuticals and especially drugs by means of intellectual property rights has given rise to major discussions on the world stage. Those discussions have stirred up serious antagonism, above all between developed and developing countries, and have been the cause of intensive debate at international gatherings. It is perhaps in the field of health that the most questions have been asked about intellectual property and its role as a promoter of development, as health is a factor that is crucial to the survival and welfare of mankind.

It would appear however that the differences of opinion were overcome in the course of the discussions during the Uruguay Round of trade negotiations, which culminated in the signature, by almost every country in the world, of the Agreement on Trade-Related Aspects of Intellectual Property Rights, forming Annex 1C of the Agreement Establishing the World Trade Organization (the TRIPS Agreement). The Agreement obliges signatory countries to give patent protection to drugs, along with other inventions, for a period of 20 years. There is some controversy as to the grounds on which the developing countries agreed to the proposals of the more developed countries on this subject, but what is certain is that, when an international undertaking of such magnitude has been made, any discussion of the implications that it would have for the health systems of the least developed countries seems redundant, as the political decision has already been taken.

We therefore move on to deal with another subject that is closely related but still relevant and which has given rise to serious discussion in industrialized as well as in less developed countries, concerning access to biological resources. Access to genetic resources is a subject that has come under discussion relatively recently and has become important as the search for new drugs, new therapies and new cures in our planet's biodiversity has intensified. The search for curative substances in nature is nothing new: plants especially have long been the source of miracle cures, but now, while pharmaceutical companies continue to develop drugs on the basis of sophisticated computer work, there is a resurgence of interest in medicinal plants and in natural substances with biological properties. The event that has brought new insight into the subject is the emergence of the new biotechnology, which

shortens time-spans and promises great revelations in this area. For that reason, the more powerful pharmaceutical companies are turning their attention to the planet's forests in search of plants, animals, fungi and also microorganisms that are a potentially rich source of active ingredients suitable for transformation into drugs.

This interest has at the same time aroused controversy regarding the possibility of intellectual property rights being improperly asserted in order to appropriate the products of biological diversity without corresponding compensation for the country, area, tribe or ethnic group that provides the biological resource or raw material for its development. The debate has thus focused on the need, assuming the possibility of patents being obtainable for natural products, with the exclusive rights that they bring, for there also to be the possibility of recognition and due economic compensation for the person or persons who provide the raw material. This debate has also borne fruit with the signature of an international undertaking to grant such rights in accordance with the United Nations Convention on Biological Diversity, 1992 (the CBD). The problem that has arisen has to do with the implementation of the CBD, which is presenting difficulties of a practical nature.

Another major subject that arises when the issue of the relations between intellectual property and the right to health is introduced is bioethics. It is a subject that has also been seriously debated worldwide in connection with the possibility of using intellectual property to secure exclusive rights in human body parts. The debate came into the open above all with the implementation of the Human Genome Project, whereby all human genes are to be sequenced with a view to treating a number of diseases by means of gene or genetic therapy. The legal, ethical, philosophical and religious implications of such a project, and of the idea of patenting parts of the human body, has aroused protest on the part of various groups, and it is still uncertain just what the repercussions will be for the development of society.

This paper therefore aims to take a broad, sweeping look at the patenting of pharmaceuticals, and the controversy that has arisen between developing and developed countries on the subject, and to show how that controversy was brought to an end in an international treaty; it will then consider the subject of access to biological resources as a source of raw material for the development of new drugs. The first part will thus deal with subjects like the patent system, the pros and cons of the patenting of pharmaceutical products, the relevant provisions of the TRIPS Agreement and the matter of parallel imports and the exhaustion of intellectual property rights, the latter two being still contentious at the world level.

The second part will deal with access to biological resources and the relevant provisions of the CBD, with one or two practical examples of solutions to some of the conflicts that have arisen out of its implementation.

Finally, a third part will deal with the subject of bioethics, with special reference to the Human Genome Project and the United Nations Educational, Scientific and Cultural Organization (UNESCO) Declaration on the Human Genome and Human Rights.

2. The Right to Health

The right to health is provided for in Article 25 of the Universal Declaration of Human Rights of December 10, 1948 (the UDHR). That Article provides that "Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control."

As we see, the State cannot guarantee an individual's right to health in the same way as the other rights could be implemented, such as the right to freedom for instance; health is therefore a product of the combined action of a series of variables, some of which are beyond human control. What the State does have to guarantee, however, is the combination of situations which, like food, nutrition, medical assistance, hygiene, etc., contribute to the improvement of health.

Within that set of variables, access to drugs and techniques for therapeutic diagnosis, and also access to sophisticated apparatus for the diagnosis, prevention and cure of disease, become essential factors guaranteeing the health of human beings.

3. The Patent System

Before dealing with the patent system, it seems appropriate to speak briefly of intellectual property in general. Intellectual property is the generic term used to designate the subjective rights that the various legal orders grant to the creators of immaterial assets of intellectual origin. Those immaterial assets may be of two kinds, namely either literary and artistic creations or distinctive signs and inventions. Intellectual property therefore establishes the protection of ideas and designs in art and technology, in industry and in trade.

It is precisely because there are differences between the protection of literary and artistic creations on one hand and distinctive signs and inventions on the other that legal literature has divided intellectual property, the overall generic term, and created two subfields called copyright and industrial property. Copyright serves to protect the manifestations of intelligence and art, and above all creations in the sphere of what is aesthetically pleasing. The important thing about this subfield is that copyright protects the conception or the form of expression of the ideas, but not the ideas themselves. That means that there may be paintings or books on one and the same subject, created by different persons; each of those persons will have his own very special way of dealing with the subject, and it is precisely the manner or form in which he does so that is protected by copyright.

Industrial property, on the other hand, relates to objects that can be used in technology and industry, meaning commercial signs like trade marks, trade names and so on, and inventions in their various forms, such as utility models and industrial designs. Industrial creations, unlike literary and artistic creations which contribute to an environment of intellectual or aesthetic enjoyment, are characterized by their usefulness and serve a particular economic purpose.

It is therefore important to focus on patents as the means of protection for inventions. An invention may be defined as an idea that purports to solve a technical problem. This accounts for the social function that has been attributed to inventions as factors promoting development and as essential components of any economic organization. Patents, for their part, are the titles conferred by the State that attest the grant of exclusive rights to the inventor for the exploitation of his invention.

The patent is the reward or inducement that the State grants the inventor for his contribution to the solution of a problem in technology or industry. It is an arrangement between the State and the inventor whereby the latter decides to disclose and publicize his invention to society, in exchange for which the State assures him that no one thereafter will be able to copy it without his consent. The patent thus performs a twofold function as an inducement to invent on the one hand and as an essential factor of scientific and technological progress on the other. Most of the research and development that is done at present takes place on the basis of very sound patent protection systems that guarantee the exclusive right to work the invention. The world is passing through an age of modernization on such a scale that a business's most prized asset is its human resources as a fount of ideas which, with the support of a research infrastructure, has ensured that scientific progress does not come as a surprise. More important than their material stocks, in the opinion of businesses, are their stocks of immaterial products of the mind, which are what give them an edge over the competition.

Patents originated with the Venetian Decree of 1474 and the British Statute of Monopolies of 1623. While it is possible to find forerunners of patents that predate the Venetian Decree, such as the privileges granted by certain kings, doctrine has decided that the Venetian Decree is the world's first true patent law.

What the Decree laid down was that any person who in the city of Venice made a new or ingenious device and registered it at the Office of the *Provededori de Commun* (municipal registrars) secured the privilege that consisted in all other persons being prohibited from making another device identical or similar to it for a period of ten years.

For its part, the Statute of Monopolies represents the culmination of the privileges granted by the British Crown, and, by eliminating all monopolies except those relating to licenses for the exploitation or making of new products, exalts the principle of novelty and practically establishes that only those monopolies that protect a novel activity are lawful. The exception written into the Statute allowed letters patent for a period of 14 years for the exclusive exploitation, for the benefit of the true and first inventor, of any type of new manufacture within the realm. Indeed the Statute actually went further in its definition of novelty, establishing that the manufactures in question were required not to have been used by others.

While it is true that the literature regards these two legislative texts as the predecessors of the modern patent system, it should perhaps be pointed out that the Industrial Revolution, and in the course of it the invention of the steam engine, was the real generating and driving force of the patent system. This was due to the fact that, with the possibility of using machines to produce goods, and the growing demand for those goods, came a change in the organization of manufacturing industry and in people's customs. At that point another substitute for quality was introduced, namely novelty. It then became important to

manufacture new goods and to devise novel ones and improve those already in existence, all of which accounted for the very real importance of inventiveness and the emerging need to provide adequate legal protection for the inventor as a means of encouraging him and promoting inventive activity.

Historically it is also important to say that the transformation of economic activity, from a limited and obstacle-ridden pursuit in the Middle Ages to the free enterprise that followed the Industrial Revolution, conjures up an economic scene in which the value of invention is exalted and which ultimately explains the universal recognition of the exclusive rights of inventors.

Now we could mention, among the precursors of modern industrial property law, the 1778 Constitution of the United States of America, which allowed Congress to grant authors and inventors exclusive rights in their works and inventions for a specific period, and from which in turn emerged the 1790 Patent Act; one could also mention the French Law of 1791, which recognizes inventors' rights as sacred and inviolable property rights.

Now that we have established where our present patent systems come from, it is interesting to take a look at their particular characteristics. It has already been mentioned that patents are titles conferred by the State, so that the rights actually represent recognition by the State. They do not legally come into being until such time as the State has caused them to be recognized by means of a procedure laid down in its legislation. As a general rule the inventor applies to a public office, usually a registry, where he has to provide a clear and concise description of the invention by filing various documents accompanied, where possible, by the corresponding drawings.

The inventor has to describe the invention clearly and in detail. The description has to be sufficient for a technical person with average skill in the field to be able to carry out the invention by following the instructions given by the inventor. The fundamental part of the description is called the claims; these constitute a set of coordinates, as it were, that demarcate the scope of the invention. The claims thus serve to define the extent of the exclusive rights, as the protection is determined solely by the information that they provide.

For an invention to be eligible for patenting, it has to comply with three universally accepted requirements. They are novelty, inventive step and industrial applicability. An invention is novel if it was not known previously, in other words has not been anticipated. Two types of novelty stem from this basic concept, namely relative and universal novelty. Relative novelty has to do with the technical solution embodied in the invention not having been previously known in a particular territory or area, while universal novelty, as its name suggests, relates to non-preexistence or non-anticipation anywhere in the world. The latter type of novelty is the most widely recognized internationally.

Inventive step is a rather more subjective criterion, and it is also known as non-obviousness, or the fact of the invention not being obvious to a person with average skill in the field concerned. Apart from being novel the invention must, in order to qualify for protection, have required a certain degree of ingenuity; it must reflect an element of creativeness, and be more than just the result of daily experience or of knowledge *per se*.

As a practical solution to a problem in industry, the invention must be useful, must possess a certain usefulness or, as some legislation puts it, it must have industrial applicability. This requirement means that the invention has to have an essential aim, it has to serve a purpose in the outside world.

All specific legislation takes care to put a different slant on the formalities to be complied with to qualify for patent rights; it lays down the conditions, criteria and forms to be met for all these requirements to be fulfilled. One thing that must be emphasized is the fact that patent systems are territorial. This shows up in the fact that the patent, like any other instrument issuing from the authorities, is effective only within the specific territory of the State that grants it. Another characteristic is that patents have only temporary validity; the protection that they afford is limited in time, the actual term being laid down in the relevant legislation. What is more, the rights acquired are entirely transferable, like all other kinds of right, by the usual means specified in civil law. Generally the only requirement imposed on transfer is publicity, for the sake of third-party legal security.

Last but not least, the rights conferred by the patent generally relate to the exclusive use, during a specific period, of the invention that forms the subject matter of the patent. Use is a generic term that has been defined by some legislation as the patent owner's right to exploit the invention exclusively, or to prohibit third parties from exploiting it without his consent. Exclusive use thus encompasses acts of manufacture, importation, placing on sale, sale, marketing, industrialization, etc., in fact any act that entails making the patented product or process available to the public.

4. Patents for Pharmaceutical Products

Obviously, as technical and industrial needs and economic organization have evolved, patent law has itself evolved in recent years. In Europe above all, where it originated, the relevant provisions went on from being a vehicle for promoting the development of local industry and became a factor of the internationalizing phenomenon that has made it possible for the owners of patents to work them at the international level.

It is thus worth noting that patent law has evolved and continues to evolve in line with the economic and technical-industrial necessities of the country in which it operates. This moreover explains the concept of industrial property in general being an instrument of development, a tool which, depending on the shape given it, is capable of influencing the economic and ultimately the social development of the country in which it is applied.

Countries have been designing the provisions of their patent laws according to their particular levels of development and specific needs. One thing does have to be superimposed on that picture, however, namely the results of various analytical exercises of an economic nature that have considered the economic effects of innovative activity. It has for instance been accepted that, while it is true that the grant of exclusive, indeed monopolistic rights in some cases makes for a short-term distortion of the economy, that is the price that a market economy has to pay if it is to have access to technological innovations. Even though there is no world consensus on whether or not patent rights should be called a monopoly, with some saying that they should and others emphatically contradicting them, one thing that is acknowledged is the effects, in economic terms, that patent provisions have in a particular

economic environment. Perhaps the most widely discussed effect is the higher prices charged for patented products.

It is for these reasons that the patent protection of innovations concerned with chemical, pharmaceutical and food products has been one of the most controversial subjects in industrial property. The exclusion of chemicals from patentability occurred for the first time in history in a German law of 1877. The reasons given at the time were that it was necessary to reinvigorate an industry that was lagging behind its counterparts in other countries. Even before that, a French law of 1844 had expressly excluded pharmaceutical chemicals from patentability.

The subject of the patent protection of pharmaceutical compositions is vitally important. First it is a subject with strong social connotations: it touches on areas as sensitive as health and man's quality of life, even his survival. Secondly, the chemical and pharmaceutical industry depends to a large extent on costly research and development programs for the production of new inventions, which means that it is more necessary than in other areas of industry to be able to protect them with patents. This is compounded by the fact that chemical and pharmaceutical products are more often than not relatively easy to copy.

It is said that, once they had achieved a certain level of development of their pharmaceutical industries, the developed countries amended their legislation to extend patent protection to pharmaceutical products. What is certain is that it was not until 1960 that France introduced protection, with Germany following in 1968, Italy in 1978, and Japan and Switzerland in 1976 and 1977 respectively. Meanwhile, ironically at the same time, the majority of the developing countries, acting in response to economic policies of import substitution and to a general feeling that intellectual property protection systems were not conducive to scientific and technological development, indeed actually hampered it, took steps to exclude chemical, pharmaceutical and food products from patentability. It was argued at the time that the scientific and technological gap separating developed from developing countries was too wide, and that patent systems were quite simply liable to widen it further. From that point of view, therefore, there were indications of a serious threat to any prospects of the right to health being guaranteed.

Since then controversy has raged within the transnational chemical and pharmaceutical industry, with support from the governments of developed and developing countries. Various kinds of argument have been put forward in the course of the debate; on the one hand there are the pharmaceutical patent's detractors, who point mainly to the increase in the price of drugs and the consequent restriction of access to them for certain sectors of the population; on the other hand it is said that the grant of protection will bring about the removal of a local industry that owes its very existence to the possibility of reproducing and marketing the innovations of the transnational pharmaceutical industry, causing an adverse balance of payments effect attributable to the encouragement of drug imports.

The defenders of drug patenting, for their part, base their reasoning on the general assumption that intellectual property protection is an inducement to scientific and technological development. The incentives that will make members of a community decide to invest in research and the development of new knowledge are constituted in the modern world by intellectual property protection. According to this argument, the patent system has shown itself to be the only efficient means of promoting research and development for the

acquisition of new knowledge, which eventually brings about an improvement in social and economic well-being. Other arguments put forward are usually the promotion of technology transfer, the stimulation of direct foreign investment and the guarantee of product quality.

This paper is not the place for analyzing the two positions and establishing which is the right one; its aim is quite simply to give an objective account of the evolution of the concepts, above all when the only consensus that has been achieved is that there is no consensus. Literature is full of studies seeking to demonstrate the validity of one or other of the two positions either from a legal or from an economic standpoint; there are strong and weak arguments at both extremes, and much of the analysis is actually empirical in nature; what is certain is that the subject is a very complex one which lends itself to many different interpretations. Recently, in a World Bank-sponsored discussion on the Internet on the general subject of the appropriateness or otherwise of protecting intellectual property in developing countries, the difference of opinions was flagrant.

Even though the discussion is as animated as ever, it does seem to have been overtaken by events, above all if we consider the fact that the majority of countries have already acknowledged the idea of patenting for pharmaceutical products and processes for a period of 20 years, namely in the framework of the Uruguay Round of trade negotiations that resulted in the creation of the World Trade Organization (WTO), and specifically the adoption of the TRIPS Agreement.

After many years of arduous discussion, the developing countries endorsed the developed countries' plans to strengthen intellectual property systems by means of more extensive harmonization and standardization of criteria, the aim being to remove the distortions that can occur in international trade on account of weak intellectual property protection laws. The arguments in favor of greater and more effective protection for intellectual property rights focused on the view that, in a globalized world economy strongly biased towards free international trade, there is a need for strong protection systems capable of promoting innovation and scientific and technological development. Another point that was made had to do with the great losses that piracy inflicted on transnational companies at world level.

For the purposes of the subject of this paper, the TRIPS Agreement provides that the Members of the WTO, and therefore the signatories of the Agreement, will have to grant protection by means of patents, namely process as well as product patents, in all areas of technology, including the chemical, pharmaceutical and food sectors. Even though the Agreement does provide for certain exceptions, the sectors in question were not among them. The obligation includes the grant of protection for a period of 20 years. Other provisions have to do with the possibility of granting compulsory licenses and reversing the burden of proof in the case of processes that are alleged to have infringed process patents.

Owing to the arduous nature of the discussions, the developed countries eventually agreed to allow less advanced countries transition periods for the implementation of their obligations under the Agreement. As a result, countries that do not accord protection to chemical, pharmaceutical and food products now have until the year 2005 to bring their legislation into line with the TRIPS provisions. But even before that, the countries are under the obligation to provide in their administrative procedures for a means whereby patent applications for such inventions may be filed, those applications being subject, as from the

date of implementation of the Agreement, to the patentability criteria laid down in it as if the criteria were already in operation in the country concerned on the filing date of the applications, or, if a priority date could be and actually were claimed, on the filing date of the priority application. Likewise the patent protection date is established in accordance with the Agreement, from the grant of the patent and throughout the balance of its term, as from the filing date of the application. This system has come to be known as the "mailbox" or "black box" system.

Another provision closely related to the previous one relates to the situation where, if a product is the subject of a patent application according to the procedure described, exclusive marketing rights are granted for a period of five years calculated from the time at which marketing approval is obtained in the country concerned, or until a product patent is granted or refused in that country, whichever period is shorter; this is conditional on a patent application having been filed and a patent having been granted for the product, and marketing approval having been obtained in another Member of the WTO after the date of entry into force of the TRIPS Agreement.

In spite of the entry into force of the TRIPS Agreement, the state of protection of pharmaceutical products is still not uniform throughout the world. Some countries had already amended their legislation, even before signing the Agreement. Some were compelled to do so by the risk of economic reprisals from their main trading partners, while still others acted in expectation of possible access to better and wider markets. The majority of the small, less developed countries, however, are making use of the transitional periods that the Agreement has allowed them, and have not amended their legislation. What is certain is that by the year 2005 patents for pharmaceutical products will be a reality on a world scale, and that those countries that do not grant them and are Members of the WTO will be exposed to dispute settlement procedures within the framework of the Organization, and to the corresponding economic reprisals.

One important point that should also be mentioned in closing this subject is that some developed countries, especially the United States of America, find that the provisions of the TRIPS Agreement still do not provide sufficient protection for the pharmaceutical industry. They therefore advocate a bilateral arrangement with the introduction of a retroactive system whereby, in countries where there has hitherto been no protection for pharmaceutical products and the law changes, a period of grace is allowed during which it is possible to patent products that have already been patented in other countries, but have not yet been actually marketed in those countries. This system is known as the pipeline system, and has been introduced in the legislation of a number of countries including Mexico and Brazil.

5. Parallel Imports

Another subject that is related to the patenting of pharmaceutical products, although in fact it is one that could be applied generally to all products protected by intellectual property rights, is that of parallel imports.

Any discussion of parallel imports is bound to include the matter of the exhaustion of intellectual property rights. As mentioned in earlier paragraphs, the patent system grants the owner of a patent the exclusive right to use, or work, the patent within a specific territory, and

that obviously includes marketing. When exclusive rights are granted, the legislation has also to provide for the degree of control that the owner should be allowed over the marketable products protected by the intellectual property rights. It therefore has to decree whether the rights are exhausted on the first sale or whether the owner continues to enjoy the rights regardless of how many commercial transactions take place. This is particularly important in an age of booming international trade, and in practical terms serves to deal with the risk of a patented product having been legitimately introduced into a country, being potentially exportable, by a third party and not by the owner, to another country in which the third party would then also enjoy protection.

Under the provisions of the TRIPS Agreement, importation is one of the rights conferred on the owner of the patent, but it will be up to the legislation of each country to determine the scope of those rights, as the TRIPS Agreement does not settle the matter of exhaustion.

The parallel imports question is of particular relevance to the pharmaceutical industry, being capable of weakening its position on the world market. Parallel imports can be defined as a practice in international trade whereby a distributor, without any concession or license from the owner of the patent, purchases patented products in countries where the price is low and sells them in countries where higher prices are charged, in spite of the fact that there are companies in the latter countries that have been licensed to distribute the products by the owner of the patent.

A parallel import situation therefore arises whenever the following three conditions are met: there is a patented product, there is a price difference that makes importation attractive, and there is an intermediary operating alongside the patent owner's legitimate licensee.

As the situation is one determined by price, the fact that a product is or is not patented on a given market has a bearing on that situation, as it is well known that, if patents are not granted, there is a risk of copies or imitations being produced that can be brought on to the market at lower prices due to the fact that the manufacturer does not have to recoup the high research and product development costs involved; all he has had to do is analyze the product, work out its composition and manufacture it. Where there is inequality in the levels of protection of pharmaceutical products, there are bound to be distortions owing to the possibility of the same products being brought on to the market but coming from an unauthorized third party. And then of course there are those, above all in developing countries, who regard allowing parallel imports as providing access to pharmaceutical products at prices that the people can more easily afford.

With regard to exhaustion in the national context, legal literature and legislation have consistently held that the first disposal of goods exhausts the patent rights. So, on distributing the patented goods on the market, the owner or a third party authorized by him loses control over them. This happens because it is necessary to ensure the free availability of merchandise in such a way that the owners of the intellectual property rights in particular goods do not restrict their free circulation.

The effect of the application of the exhaustion of rights principle is that the owner of the patent loses the power to prevent or limit the circulation of the protected goods once they have been sold by him or with his consent. However, the principle applies only to the rights

pertaining to circulation, and to articles brought on to the market. The loss of control does not in any way empower the acquirer of the patented goods to manufacture new goods, as in that case he would still be infringing the patent.

The picture changes completely when it comes to applying the exhaustion principle in the context of international trade. There is no consensus on the approach to be adopted where the first sale of the patented product occurs abroad. Legal literature and case law have both opted for different solutions in specific cases, taking into account the different perceptions in various parts of the world of the underlying foundation of patent protection, the different territoriality criteria and the specific conditions written into such licenses as are granted.

Finally, it has to be understood that, while the subject of parallel imports is acknowledged to be closely tied up with that of patent rights, the problem that such imports represent is not an intellectual property problem alone, because in any situation that arises out of price differentials, regardless of whether or not the products involved are patented, there need only be a sufficiently attractive difference in price for someone to contemplate taking advantage of it.

6. Access to Biological Resources

A large part of the analysis that follows, concerning the controversy that has arisen from the possibility of acquiring patents for biological material, and access to such material, is attributable to the evolution undergone by the patent system itself, which, having been a system applied to inanimate objects or processes involving inert material, has become a system applicable also to live material. It is therefore important to give an account of the way in which that evolution took place if the picture is to be properly understood.

It has to be accepted that patent systems were devised for the protection of processes and inanimate objects, and that, because the principles enshrined in them were thus intended for inert material, applying them to living organisms has been a whole new challenge for industrial property.

The United States of America (the U.S.A.) was the pioneer in the grant of protection to living organisms. In 1930, the Plant Patent Act granting protection to asexually reproduced plants was enacted. Basically, the Act introduced a special regime for this type of plant that was different from the system of utility patents prevailing in the country.

Later on, in Europe, a new system of intellectual property rights for the exclusive protection of new varieties of plants began to emerge during the 1950s. This was a *sui generis* protection system for new varieties or strains of plants. The system protected the creations of plant breeders that materialized as new plant forms.

When we discuss the possibility of patenting living organisms, notably plants, we shall be referring first to the way in which the subject evolved in certain industrialized countries. We would start by saying that, in the U.S.A., the Patent and Trademark Office traditionally considered natural products and living organisms to be products of nature and therefore not patentable. The only exception made to that rule was when certain patents were granted to

Louis Pasteur in 1873; in them, recognition was given to claims of processes that involved yeasts, which for the purpose were assimilated to a manufacturing process.

Nevertheless, the Court of Appeal ruled in a 1977 case that, even though natural products *per se* could not be patented, it was possible to acquire protection for any new form or composition. So, if man were capable of isolating a natural element that did not exist as such in nature, and of giving it a function, that element was patentable. This stance led to the acceptance of purified natural products as being new and patentable. From that decision onwards, patents began to be granted for living organisms.

In 1980, the Supreme Court ruled, in the celebrated *Diamond v. Chakrabarty* case, that a patent should be granted for the first genetically modified bacterium capable of cleaning up oil slicks. The court ruled that a living, man-made microorganism had to be protected under legislation of the U.S.A. as a product or composition of matter. That decision gave the U.S.A. Patent and Trademark Office a legal framework within which to grant patents both for plants and for non-human animals. It is worth mentioning that this decision refers to a utility patent concept, in contrast to the patent concept of the Plant Patent Act which was mentioned at the beginning of this subsection.

In 1985, a patent was granted for a variety of maize that contained an increased level of the amino acid trytophane, and in 1988 the first patent was granted for a genetically altered animal, namely a rat that was given a uniform susceptibility to cancer, which made it an excellent instrument for research on possible cures for the disease.

The situation in the U.S.A. has evolved to such an extent that even human genetic material has since been patented. It is now possible in that country to patent genes, their location, the means of locating them, gene techniques, cloning techniques, diagnostic probes, etc.

In Europe, the European Patent Office granted the first patent for a microorganism in 1981, while the first patent for a plant was granted in 1989, even though the legal provisions on the subject were not clear. The patent for the "oncorat" was granted in 1992 on the ground that the modified rat did not conform to the existing provision that precluded the patenting of animals. Very recently a number of very bold provisions have been enacted on the patenting of biotechnological inventions. Briefly put, the recent European Directive provides that it is possible to patent inventions that contain biological material or processes by which biological material may be produced. It nevertheless still excludes animals, plant varieties and essentially biological processes for the production of plants and animals from patentability. Likewise excluded from patentability are the human body, at whatever stage of its formation and development, and the mere discovery of one of its elements, including gene sequences or partial gene sequences.

While one could describe the foregoing as progress, the legal protection of living organisms has been the subject of much discussion. It involves ethical, philosophical, religious and political considerations, and these have fuelled the debate on whether or not it is right to protect inventions of this kind by means of intellectual property rights. For instance, the small number of patents that have been granted for plants and animals in the European Union have been officially opposed by a number of organizations. More than 80 non-

governmental organizations collectively filed a legal objection to the grant of the patent for the oncorat. We shall consider this subject in greater detail in the section on bioethics.

Now that it has been established that it is possible to obtain industrial property protection for living organisms, it becomes important to deal with the subject of access to biological resources.

The relations between intellectual property protection and access to biological resources have been a very popular subject in recent years, its popularity being due to the fact that both issues have taken on considerable economic importance. In the first instance there are inventions, translated into scientific and technological and hence socio-economic development, and then there are natural resources, which are vital to the survival of the planet.

As with any human interest subject, it is possible to consider the relation between intellectual property rights and biological diversity from several different angles. On closer analysis, one sees that the subject is a very broad one with many different facets and therefore susceptible to many different approaches. In this section, therefore, we aim to give a general picture of what lies behind its popularity, without attempting to go to any length on account of space considerations. The general objective is to introduce the subject and set out its most important features, in an attempt to give an overall picture.

It is important to take another aspect into account, namely the fact that, when dealing with the possibility of having access to a country's biological resources, in conjunction with the possibility of using them for the production of inventions qualifying for intellectual property protection, one has to consider sensitive aspects such as life, the preservation of the environment, food resources, prospection for biological resources, health, the conservation of species, technology transfer, etc., which bring a great many highly involved ethical, legal and philosophical considerations into play.

Also, before going into greater depth on this subject, it is advisable to define just what is meant by intellectual property and what is meant by biological diversity, as both terms have been tortuously used in the discussions that have taken place on the subject.

For that reason, when it comes to the definition of the intellectual property concept, attorneys and professionals from other disciplines, such as biologists, philosophers, etc., tend not to speak the same language. The former refer to a stricter, more technical conception of intellectual property, speaking of patents, trademarks, industrial secrets and so on. The professionals from other disciplines, for their part, refer to it in a broader way as a means of protecting innovation, including by non-traditional methods, and this explains why concepts such as the rights of farmers and discoverers and the protection of traditional knowledge, among others, have arisen.

On the other hand, according to the CBD, "'Biological diversity' means the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems." The term has to be contrasted with that of genetic resources, which refers more specifically to genetic material "of actual or potential value" to humanity. Genetic resources is the more suitable term when speaking of plants in the context of their genetic improvement or the manipulation of their genetic

material. In the context of intellectual property the reference would thus be to patents and plant breeders' rights, or any other *sui generis* system for the protection of plant varieties, in line with the TRIPS Agreement.

Similarly, when we speak of bioprospecting, another highly fashionable term, above all in relation to the development of pharmaceutical products, we are referring to the use of biological diversity as a source of novel secondary metabolites to produce goods, which for the time being means above all pharmaceutical goods, but which could include goods of other kinds, such as perfumes. So in this context it is possible also to use the terms natural biological resources or natural products.

As we see then, even though there are certain conceptual differences, there is an inevitable interrelationship, as genetic resources are the product of biological diversity. The point that has to be made here is that, when referring to genetic resources, there is a stronger link to agriculture, whereas when referring to bioprospecting the stronger link is to the pharmaceutical industry.

These differences are important in any attempt to relate the concepts to intellectual property rights, as, depending on what is being referred to, it will be dealt with in one way or another. For instance, when speaking of access to biological resources, it is necessary to set it against a background of patenting products derived from a natural resource.

Traditionally biodiversity was considered a resource of mankind. This conception gave it the status of a common inheritance or heritage, although in fact, because it belonged to the human race, it belonged to everyone and no one, and anyone could make use of it. So free access to biological resources and germplasm was the order of the day. This was the premise, for instance, that has underlain the whole of world agricultural development, which has taken place over millennia and involved the participation of many peoples who have imparted their knowledge and culture.

As industrial property has evolved, however, and with it the possibility of affording legal protection to living organisms, thereby making it possible for the owner to secure exclusive rights in the use of the protected material, profound contradictions have begun to emerge, arising from the fact that biodiversity has become a raw material for the development of new products, and above all pharmaceutical products.

It is well known that the geographical distribution of biodiversity is very uneven, and it often happens that it is concentrated in less developed countries with little territorial scope and limited research and development potential. It has not been said lightly that the countries of the Third World possess "green wealth," which has also been called green oil or green gold.

This is what makes for the great ironies where products developed with extracts originating in a specific country, on being transformed in laboratories in industrialized countries, become commercially valuable goods that are sold and distributed throughout the world, passing through the hands of transnational companies, without the country of origin deriving any benefit from the exercise. Cases begin to arise such as that of the red periwinkle of Madagascar, where a pharmaceutical company, using this natural resource, patented

Vincristine, which is used for the treatment of leukemia in children, and earned millions for the company without Madagascar receiving any recognition at all for its involvement.

There does not seem to be a logical explanation for this state of affairs, as petroleum, for instance, which is also a natural resource, has never been considered common property, and the few countries lucky enough to have oilfields on their territory have extracted great economic rewards from the situation. So the fact that all countries have cost-free, unrestricted access to the natural resources of another country without the latter being given credit for its contribution as the provider of the biological resource is inexplicable but nonetheless a fact, like many others in this world.

The wide-ranging discussions that have taken place on the subject throughout the world, together with some resolutions of the Food and Agriculture Organization (FAO) on its repercussions in agriculture, provided background to what was negotiated and settled in 1992 at the United Nations Conference on Environment and Development in Rio de Janeiro, the result of which was the signature of the CBD by 157 countries.

The signature of this Convention stirred up great controversy and confrontation between developed countries and the Third World, owing to the fact that it's proposals radically altered the picture described earlier.

Briefly, as far as our subject is concerned, the Rio Convention was a reaffirmation of the value of genetic resources for the future of mankind, and the sovereign right of every State to its biological diversity. Clearly it has caused a complete break with the established scheme of things, in the sense that biological diversity has ceased to be freely accessible and is now a resource specific to each country.

In particular, Article 3 of the Convention provides that "States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies." This provision is enlarged upon in Article 15, which empowers States to control access to the resources by legislation, opening the way to negotiations between parties for the fair and equitable sharing, (with the party providing the resources), of the results of research and development activities and the benefits deriving from commercial and any other exploitation.

It is important to point out that the Convention departs from the classical format for international treaties of its kind by including matters pertaining to trade, intellectual property and technology transfer in an environmental context.

Technology transfer, which is dealt with in Article 16, was perhaps the most hotly debated subject of the Conference. The Article establishes the importance of technology transfer to the attainment of the objectives of the Convention, including the transfer of biotechnology, and also the importance of the transfer taking place on "concessional and preferential terms" for developing countries. It further recognizes the existence of traditional and indigenous technology.

Even though what the developing countries achieved can be regarded as considerable, it is only logical to assume also that many subjects were left on the drawing-board, and that the negotiations were tough, to such an extent indeed that the U.S.A. refused to sign the

Convention, arguing failure to respect intellectual property rights and possible economic prejudice to its biotechnological and especially pharmaceutical industries. The main obstacle that the companies complained of was that the Convention favored the grant of compulsory licenses, a policy to which the U.S.A. is vehemently opposed. With the change of government, however, and after a change of heart on the part of the companies, President Bill Clinton signed the CBD, although it has yet to be ratified by Congress.

When intellectual property is related to biological diversity, the first questions that arise have to do with the notion of biological and genetic resources actually being property, in other words marketable, a matter which undoubtedly involves ethical considerations. Other matters raised by this topic are the appropriation without due recognition, either moral or economic, of indigenous knowledge that has been handed down from generation to generation, the difficulty of setting a value on biological diversity, the scientific and technological gap separating developed and underdeveloped countries and the problem of identifying all those involved in the development of the product, to mention only a few. By all accounts the use of intellectual property rights for protection in this area is coming up against a barrage of criticism.

When pressed, however, underdeveloped countries see that they are faced with the great dilemma of having to have sufficient protection, as otherwise barriers will go up to deny them access to the technology of the future that is capable of bringing them their much-desired development. The very point of protecting innovation is that innovation is thereby promoted, so refusing to protect it would ultimately be worse than all the questions that arise.

In spite of the great international debate that has taken place on these issues, as we have seen, there is still no clear picture of how access to biological and genetic resources is to be controlled, or how a certain level of ownership of such resources is to be achieved. Since the entry into force of the CBD, only about ten of the 168 countries that ratified it have actually enacted laws implementing it, and almost all of those are open to criticism, especially with respect to the practical difficulty of regulating this area of concern. Two examples are the Philippines and Costa Rica.

The practical difficulty lies in the search for a middle path between the regulation of research and development and its encouragement, so that the country may be assured of sovereignty over its biological resources and at the same time given the means of promoting and supporting innovation.

Some methods that have been used for recognizing the contribution of regions or peoples in the development of pharmaceutical products are particular types of law, like those already mentioned, and private contracts. They provide an interesting source of information on how some of the questions are being settled in the form of relatively recent specific cases in a continuously evolving field. The reservation has to be made that space precludes an actual evaluation of the good and bad features of the examples, which will be merely listed.

The first and perhaps the earliest example has to do with the Natural Products Division of the U.S.A. National Cancer Institute (NCI). The method used by the NCI is that of collection contracts, which are backed up by the so-called Collection Charter, the purpose of which is precisely to solve the problems that confront a research institute when part of its activities involve the gathering of natural products in developing countries. The Charter

therefore contains provisions on matters such as the use of indigenous knowledge, technology transfer, intellectual property and conservation.

Another very interesting example is the model provided by Andes Pharmaceuticals, Inc. This company was created by professionals from various disciplines in North and South America whose sole purpose was the practical implementation of all the objectives of the CBD. In its profile, Andes states that it is committed to the equitable distribution of income, genuine transfer of technology, the promotion of sustainable development and the improvement of world health. The Andes model is highly interesting to analyze, but what we wish to point out for the time being is the intellectual property pledges that it makes. In that respect Andes has imposed on itself the objective of according the status of inventor to all parties contributing to the development of an invention, as a kind of recognition of the value of indigenous knowledge, and of compensating individuals and communities in the best way possible, even though that may entail departing from the traditional stereotypes of recognition and compensation.

Another model worth mentioning is that of the National Institute of Biodiversity of Costa Rica (InBIO). InBIO was set up as a private institution in the public interest with a view to compiling the most exhaustive inventory possible of the country's biodiversity and making a practical reality of the axiom "I know, I save and I use." The proposals of InBIO regarding Costa Rican biodiversity are based on sustainable development and on the firm conviction that Costa Rican society can reap major benefits from the conservation and rational use of its biological resources.

As part of this working scheme, InBIO signed a scientific collaboration agreement with Merck, Sharp and Dohme in 1991. In the contract, InBIO undertook to provide extracts from the Costa Rican forests to be studied for their suitability or viability as ingredients of new drugs, for which it would be paid an initial cash sum and thereafter royalties on sales should the extracts eventually be made into products and brought on to the market.

What the agreement between InBIO and Merck means for Costa Rica is a share in possible revenue, participation of the University of Costa Rica in the production of the extracts, technical cooperation in training, equipment and infrastructure, and above all international recognition for the first time, by a transnational pharmaceutical company, of the involvement of an underdeveloped country in the development of its products. The benefits for Costa Rica also included the matter of conservation, as under an agreement signed between InBIO and the Ministry of Environment and Energy a large portion of the revenue from the agreement will serve to build up national conservation programs and enhance environmental protection.

In spite of these benefits, and the fact that the debate on the contract with Merck drew attention to the systematic, totally uncontrolled stripping of the Costa Rican forests by unscrupulous operators, there was a great deal of opposition to it. InBIO had to face extensive questioning, and was accused of supposedly commercializing the national heritage. Since then, a major part of Costa Rican society has understood the motive that brought about the signing of the agreement and the benefits offered by it, and at the international level there is even general recognition and admiration. The conclusion was reached that as in any event the forests were being ruined by the clandestine tapping of their biological resources, it was better that it be done in a sustainable way, and that the country be assured of the economic

benefits that it deserved. In that way the InBIO-Merck agreement eventually became a model or example to be followed by underdeveloped countries.

Undoubtedly this situation contains within itself great challenges for the future of industrial property, especially patents. The need to recognize the value of indigenous or traditional knowledge once again refocuses the inventor concept, which at the outset denoted an individual and then grew to mean a group or team. Now, for the purposes of inventions deriving from biological products, what is needed is a still-broader perception of the concept to include the recognition, in the making of the invention, of a whole series of collaborators without whose contribution the end product would never have seen the light of day.

It is also interesting to mention that, speaking of recognition, one should also be speaking of compensation, and it is there that the greatest challenges are to be found. How is compensation to be given? Should individuals or whole communities be compensated? What kind of compensation is the most appropriate? Not one of these questions has yet been given a reply on which the world has been unanimous.

Another area in which there is much work to be done concerns the framing of minimum provisions for bioprospecting contracts and contracts for the transfer of genetic material. Such contracts should conform to the new principles or models that we have mentioned.

The thing to do seems to be to strike a balance between protection, recognition and compensation for all those involved in the process, meaning countries, communities, companies and individuals. Some *sui generis* proposals put forward for the recognition of indigenous innovation have included the creation of so-called Intellectual Property Rights of the Community, affording intellectual property protection to plant genetic resources by introducing rights for farmers and plant improvers.

Other proposals advocate the use of a public defender or ombudsman to protect the rights of communities and countries, inventors' certificates, the implementation of the WIPO/UNESCO Model Provisions on Expressions of Folklore and the creation of "rights in traditional resources" involving intellectual property rights, but with a broader coverage including the recognition of human, religious, territorial and cultural rights.

Obviously these proposals raise enormous question marks, and it is precisely for that reason that they have been called major challenges: they call for a serious commitment to discussion, analysis and the drawing of conclusions that will satisfy all parties.

7. Bioethics

As a final point for this paper, and without claiming to have been exhaustive in our treatment of the subject, we shall touch on bioethics. As a set of standards that govern the life of mankind, ethics have always been present at all stages in the development of science and technology.

We have already mentioned in this article how science and technology have evolved in such a way that scientists are now capable of things that once would have been the stuff of a science fiction novel, including for instance the cloning of higher mammals. Biotechnology

is the technique that consists in using live organisms to produce goods and conduct processes. It has been used since ancient times in the fermentation processes for the production of beer and cheeses, but it was not until recent times, with scientists devising the techniques of genetic engineering and thereby developing the ability to manipulate living creatures genetically, that mankind has had to face up to the most serious questions that science has presented it with.

With the discovery in 1953 of the structure of deoxyribonucleic acid (DNA) by James Watson and Francis Crick, enormous scientific expectations were entertained regarding that most intimate component of the human being, his genetic code, the genetic information or the set of hereditary characteristics of his organism that are handed down to his descendants.

Knowledge of the human genome, added to the possibility of isolating human genes, which came about in 1977, and the possibility of genetic manipulation of organisms, aroused great scientific interest in this field, with the opportunities that it offered for preventing and curing diseases that until then had been difficult to eradicate from the human race.

The genome is the assemblage of hereditary material that every living being possesses and passes on to its descendants. It consists of two filaments, each one more than a meter in length and chemically known as DNA. It is in DNA that the genetic information received from one's parents is located. The filaments are joined to each other in a spiral or double helix form in every one of the cells of an organism, and split when the cells divide in the chromosomes, of which man has 23 pairs. The filaments are made up of nucleotides, and the nucleotides in turn are made up of base pairs, numbering three billion in a human being.

The component that lends DNA it's informative property may be described as a lateral protrusion of each of the chains of the double helix, which is matched to a similar component on the other chain according to strict rules, which gives the chains the appearance of the steps on a spiral staircase constituted by the double helix shape. Given that the components constituting this sort of stairway are not equal to each other, it is in the sequence that they adopt along the length of the molecular chains that the genetic information is found. In that way, if the sequential dynamic of one of the chains is not known, it may be immediately deduced from the complementary chain.

All this gave its importance to the Human Genome Project, which started in the U.S.A. in 1990 and has since been endorsed by a large number of countries around the world. The main objective of the Human Genome Project is the identification of the approximately 80,000 genes that constitute human DNA, and the working out of the sequences of three billion chemical bases that form it, their incorporation in databases and the development of instruments to analyze them.

The Project was originally calculated to last for some 15 years, but it was announced recently that special equipment could be used to reduce that time considerably; its cost has been put at three billion dollars. It is financed for the most part with U.S.A. Government funds and is overseen by the Office of Research and Environmental Health of the Energy Department and by the National Genome Research Center of the country's National Institutes of Health. It is important to point out that the information generated in the course of the project is included in publicly available databases.

All this information means that, in practical terms, scientists are capable of diagnosing, preventing and curing diseases, even before birth, collaborating in criminal investigations, contributing to paternity research and also working in labor, insurance, marital and other environments. On the evidence, the possibilities that this conjures up seem bound to be given a favorable reception, but one thing that is certain is that the subject of genetic diagnosis has aroused controversy owing to the sheer extent of those possibilities.

Without claiming to encompass all the questions asked, it could be said that the main concerns have ranged from the religious viewpoint, according to which man has no right to manipulate life, that being God's preserve, to more down-to-earth questions such as: Will the development of a "super race" be possible? Will mankind once again experience the horrors of the Nazi era? How is genetic information to be dealt with? Should a person be told that his or her organism is predisposed to contract a particular disease? Could an insurance company refuse insurance on the basis of genetic information? Can a genetic examination be demanded prior to marriage? Who decides what is good and bad? How far should science go?

All these questions and the obsession with finding answers to them have caused the emergence of what is called bioethics, a discipline that encompasses a set of questions with an ethical dimension, in the sense that the values and questions involved can only be settled by elective acts, made possible by the ever-greater ability of science and technology to encroach on human life.

Bioethics has also had to deal with the arguments stirred up by the possibility of patenting genes and other parts and components of the human body. As we said in earlier paragraphs, by dint of very broad interpretation of U.S.A. laws on the isolation and the function of products found in nature, it has become possible in that country to patent isolated genes, gene therapies, cloning techniques, cell lines and *ex-vivo* gene therapies that include human cells among other things, and more recently sequences of human genetic material.

By the beginning of the 1990s, the U.S.A. National Institutes of Health were already embroiled in a controversy arising from its plan to patent so-called expressed sequence tags, fragments of DNA that represent the expression of genes, without identifying the gene, so that, while it is known that the genes are from a human body, it is not known actually what gene is involved, or what its function is. The scandal reached such proportions that the NIH abandoned their plan, and indeed the Director at the time was forced to resign. In spite of the controversy, the U.S.A. Patent and Trademark Office subsequently announced that it had granted the patents to private companies. The magazine *Nature* reported that during the period between 1991 and 1995 1,175 patents were granted to 300 organizations for human gene sequences, with an average of three sequences per patent, many of them in Europe and the U.S.A., but all originating in North America and above all Japan.

To give an idea of the importance of the information to transnational pharmaceutical companies, it has been published that SmithKline invested 125 million dollars in research on the human genome for the use of its sequences in the creation of new products; Pfizer paid InCyte 425 million dollars for access to its data bank; Hoffman La Roche signed an agreement with Millennium for 470 million dollars for research on the specific genes that cause diabetes, asthma, arteriosclerosis and cancer. It is however interesting to note for instance that, while the company SmithKline Beecham, in collaboration with Human Genome

Sciences, plans to sequence, map and patent everything that it is possible to patent of the human genome; the pharmaceutical giant Merck, for its part, thinks that the human genome should not be patented. For that reason it is sponsoring a group at Washington University in St. Louis for the sequencing of the human genome and then making the information available to the public free of charge. These conflicting positions give an idea of the contentious nature of the subject.

The ethical debate going on around biotechnology is based on the fear that biotechnology has the potential for manipulating and altering the human race, and that if such things were to happen without control, they could end in the extinction of mankind. One can thus understand the emotional content of the subject and the reasoning that has induced governments and companies to set up bioethics forums. Bioethical studies attempt to strike a balance between the benefits deriving from gene therapy and genetic research and the risk of harm to individuals, society and the human race in general.

With regard to the Human Genome Project, the team of scientists working on it, grouped in an organization known by the acronym HUGO, have expressed special concern that the Project should be governed by bioethical principles. That means that the consent of the patient to the taking of samples will be crucial and, as for the information produced, most of the public will be guaranteed access to it. As far as patenting is concerned, the main worry of the members of HUGO is that the patents granted may prevent them from achieving their objective of mapping the human genome. In a public statement, HUGO expressed concern that the partial patenting of DNA sequences without identification would benefit the scientists who made routine discoveries, but penalize those who ascertained biological function or application. A strategy of that type would hamper the development of therapeutic and diagnostic methods, which was clearly not in the public interest. For their part, they promised early disclosure of information on the genome with a view to speeding up its dissemination and thereby promoting research on the functional aspects of genes.

It can thus be seen that the key discussion in this case has to do with the lack of functionality at the time of patenting the gene, sequence or cell line. That has been one of the severest criticisms of many of the patents that have been granted, as it amounts to obviating, or more accurately broadening, the criterion of the industrial applicability or usefulness of the invention.

Whether or not the patenting of gene therapy and genetic research is going to benefit society will depend on an analysis of the pros and cons traditionally associated with patenting in general, which it might be useful to summarize at this point:

Arguments in Favor

- Patents promote innovation and dissemination of innovation.
- Patents provide a means of licensing technology at all levels.
- Patents are a means whereby the investor can recover his investment, and without which he would not invest.
- Patents tend to go only to technology that has commercial value.

Arguments Against

- The owner of the patent may abuse his exclusive position on the market.
- Patents are prohibitively expensive for developing countries.
- Patents promote the secrecy of information.
- Patents delay the publication of information that is of value to health.

- Patents are obtained only in areas where the law permits them, and are therefore controlled by the State.
- Patenting is costly, and therefore promotes the protection of marketable technology only.
- Patents may preclude an indigenous community that contributed to the development of an invention from using it.
- Patents reward the rich and penalize the poor, as their main effect is to raise prices.

In addition to the above considerations there are those of ethical, philosophical and religious character, which in many cases are stronger than the economic ones. It would have to be established whether the benefits to society in terms of improved human and animal health care, food safety, environmental protection and so on are greater than the concerns expressed. What one should not lose sight of however is the human rights aspect. Obviously, from an ethical point of view, no person, corporation, organization or society should be granted exclusive rights in parts of the human body or in a clone of a human being. There are no benefits that would justify waiving such restrictions.

It was precisely in response to an urge to intervene in this discussion and with a view to establishing firm foundations for these ethical considerations that the United Nations, mainly through one of its agencies, UNESCO, has for a number of years been working on a declaration that aims to reinsure the rights and liberties of every individual within a society in the event of action on the human genome. Human dignity has to prevail over any scientific interest.

The Declaration, which has been discussed in draft form and revised for a number of years, provides that its underlying principles are recognition of the inherent dignity and inalienable right to equality of all members of the human family.

It also contains seven chapters that touch on subjects like research on the human genome, the rights of the persons involved in that research, the conditions governing the conduct of scientific activity and the duty of States to show solidarity towards individuals, families and population groups who are vulnerable to genetic diseases. It also commits States to fostering the international dissemination of scientific knowledge on the genome, and international scientific cooperation on the subject between industrialized and developing countries.

The Declaration was unanimously approved by the UNESCO General Conference in November 1997, and was described as a UNESCO contribution to the celebration of the Fiftieth Anniversary of the UDHR in 1998. All the provisions of the Declaration are relevant and interesting, but the following in particular should be highlighted.

As mentioned, the Declaration starts with the premise that the human genome underlies the fundamental unity of all members of the human family, as well as the recognition of their inherent dignity and diversity. In a symbolic sense, it is the heritage of humanity.

In another area of concern, it provides that the human genome in its natural state should not be a source of financial gain. Neither should any research on the human genome, in particular in biology, genetics and medicine, prevail over respect for the human rights, basic

freedoms and human dignity of individuals or groups of people. Consequently practices contrary to human dignity, such as the cloning of human beings, should not be permitted.

Finally there are two stipulations closely related to intellectual property protection, namely that benefits from advances in biology, genetics and medicine concerning the human genome should be made available to all, with due regard for the dignity and human rights of each individual, and that the freedom of research, which is necessary for the advancement of knowledge, is part of freedom of thought. Research on the human genome must seek to offer relief from suffering and to improve the health of individuals and humankind as a whole.

8. Conclusions

Throughout man's history, the relations between the concepts of intellectual property protection and the right to health have caused serious controversy, but in one way or another these have been overcome by the signature, in the international field, of international agreements that have shed light on the discussions or provided what was more often than not a pragmatic solution to them.

Regrettably, the gap between developed and developing countries is a variable concept that is present in all discussions. Mankind as a race seems to have had difficulty in acknowledging that, as long as there is injustice, hunger, disease and pollution in the world, one cannot speak of the dignity of mankind.

There is therefore an obligation on all human beings, and especially, in this context, on those engaged in the study of intellectual property, to give its human dimension to the discipline that we are developing, duly mindful of the fact that intellectual property is not an end but a means to an end, and that ultimately what we all have to achieve is the development of mankind as a whole, without discrimination of any kind, this being indeed the aim pursued by the Universal Declaration of Human Rights.

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EDITED TRANSCRIPT OF THE DISCUSSION

Question/Comment

May I inform the meeting that an *ad hoc* meeting was held in the World Health Organization (WHO) to examine the accessibility to affordable drugs by developing countries. It was resolved several years ago that the WHO should examine the question of the impact of the TRIPS Agreement and the WTO's trade regulations on accessibility of drugs. All developed and developing countries have accepted that accessibility to drugs by developing countries is paramount in pharmaceutical policy. This could be one of the exceptions to the WTO's regulations. It has been stated by Dr. Gro Harlem Brundtland, Director General of the WHO, that in developed countries there is one pharmacy for 1,000 to 2,000 people and in the developing countries we have just one pharmacy for 1 million people. She also states that the gap between developed and developing countries in regard to the accessibility of drugs is unacceptable for all of the people which are involved in drug policies. A draft resolution, named the Revised Drug Strategy, is going to be considered by the Executive Board of WHO.

Question/Comment

This discussion is very important. Developing countries are not just consumers of drugs, we also produce drugs, but unfortunately our pharmaceutical products have problems in being patentable. These are not inventions; these are discoveries because they have already existed in nature so that is the first obstacle. The second obstacle has to do with community knowledge, that which belongs to groups, and to individuals. The trap that faces developing countries is that very often we seek to patent our pharmaceutical products within the framework of positive law on intellectual property. However, a more subtle approach would be to seek a *sui generis* type of protection.

Ms. Salazar

The last speaker touched on the most significant difficulty which is that it is impossible to use traditional systems to protect certain types of knowledge. I would also like to emphasize that we are, in my opinion, dealing with two related but different issues. One has to do with regulation of access to biological resources. We recognize that the raw resource as such does not mean that a drug will be produced. Drug development requires a research process and industrial development so that the product can be sold to pharmacies. Another topic, which is different but closely linked, is the type of recognition given to traditional knowledge. If we apply this to the pharmaceutical sector we have to recognize that in very many cases the research is based on traditional popular knowledge with regard to the various applications that can be had from various plants. This is all linked to the fact that our countries need to have this traditional knowledge recognized as a contribution to the development of pharmaceutical products.

Question/Comment

I would like to thank the speakers for their excellent presentations. Their presentations bridge the gap in my mind between human rights and intellectual property rights. My question goes to Ms. Salazar. The discussion on intellectual property rights and the right to health reminds me of traditional medicine which should properly be protected under the

existing system. If not, should we establish new norms to give special protection to traditional medicine?

Question/Comment

The WHO had a discussion on the list of essential drugs and in this connection dealt with the exclusion of patentability of certain essential drugs. Many of the products which are listed as essential drugs are or were patented. I would like to know the opinion of Ms. Salazar on the list of these essential drugs and the link to the TRIPS agreement and human rights.

Ms. Salazar

With respect to traditional medicine, I can give you only a general overview of the possibility of protecting it using the intellectual property system. We have to have a case-by-case study of this but in most cases the problem has to do with the requirement of novelty.

With respect to the comments raised by the previous speaker, I did get some information on the discussions which are taking place at the WHO on the possibility of excluding certain essential drugs from being patented. I understand that this proposal was not successful. We have to look at why this proposal did not meet with success within the framework of an organization which I am sure is concerned with the improvement of health.

Question/Comment

I have a question concerning the suggestion that medicinal products (drugs) do not grow on trees. I think the whole problem is that they do grow on trees. We have an intellectual property protection system that protects the rights of companies that develop pharmaceuticals, but we lack a system that protects the rights of nature and of the trees where these medical products grow. The pharmaceutical companies could not do anything if they did not use the raw materials that are given by nature.

Secondly, it was also said that one could not see how patenting biological material will further economic development or hinder it. That is a controversy, but it was also mentioned in Europe, in the first stage of the development of patenting, France and Germany excluded patenting pharmaceutical products precisely to develop their industries. So what is the lesson we can take from that? Does it not show that the pharmaceutical industries in France and Germany developed because patenting was excluded?

Ms. Salazar

I share some of the comments that you raised, but unfortunately I cannot agree with you that drugs grow on trees. I tried to make it clear in my presentation that developing a drug requires a whole process so that the drug can, for example, be marketed through pharmacies. I think that it is important in this discussion to speak the same language and to use the same terminology. In a sense, I agree with you that biodiversity is a source of raw material for deriving these drugs, but just as apples grow on trees, we cannot draw an analogy between drugs and apples. It is a whole process, which requires many years of research and development so that these drugs can be accessible to the public in the way that we have access to them now. I do not want you to think that I am defending some positions which have been

presented by multinational companies in various international forums. On the contrary, I am in favor of developing countries and I am from one of such countries, but I think that in this discussion we cannot try to do the impossible. The fact that drugs are accessible to the world's population in the way that we are used to, where we can go to a pharmacy and buy them, requires a whole research and development process and, of course, investment.

INTELLECTUAL PROPERTY PROTECTION AND TRADITIONAL KNOWLEDGE

An Exploration in International Policy Discourse

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1. Traditional Knowledge as Intellectual Property

> "Indigenous cultural knowledge has always been an open treasure box for the unfettered appropriation of items of value to Western civilization. While we assiduously protect rights to valuable knowledge among ourselves, indigenous people have never been accorded similar rights over their cultural knowledge. Existing Western intellectual property laws support, promote, and excuse the wholesale, uninvited appropriation of whatever indigenous item strikes our fancy or promises profit, with no obligation or expectation to allow the originators of the knowledge a say or a share in the proceeds."[1]

(i) Nature of Traditional Knowledge

The notions of traditional knowledge, indigenous knowledge and indigenous peoples have acquired wide usage in international debates on sustainable development as well as those on intellectual property protection. However, their usage is often subject to confusion. There have been various efforts to define the concepts of traditional knowledge, indigenous knowledge, and indigenous peoples, but there are so far no universally adopted definitions. Different persons define them differently depending on their intellectual persuasion and professional interest. And many often use the concept of traditional knowledge interchangeably with that of indigenous knowledge.

Stephen Brush has defined indigenous knowledge as "the systematic information that remains in the informal sector, usually unwritten and preserved in oral tradition rather than texts...[It] is culture specific, whereas formal knowledge is decultured."[2] One may well ask whether Brush's definition of indigenous knowledge and his distinction between such knowledge and that which he terms "formal knowledge" stands repeated empirical testing. First, he reduces (perhaps unconsciously) knowledge to information and as such misplaces the "practical or skills aspect" of indigenous knowledge holders: one who possesses knowledge usually has skill and experience in the particular problem domain but one may possess information without experience and skill. Knowledge (whether indigenous or non-indigenous) is associated with practical experience and skill in solving a particular problem while holding information (for example, about indigenous activities) does not necessarily endow one with skill and experience in solving a problem. As Greaves asserts: "indigenous knowledge is, in the main, something more than matter-of-fact information. Rather, it is usually invested with a sacred quality and systemic unity, supplying the foundation on which

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1 Greaves, "Tribal Rights" in Brush and Stabinsky (Eds.) *Valuing Local Knowledge: Indigenous Peoples and Intellectual Property Rights* (Island Press, Covelo, 1996).

2 *Ibid.* p. 4.

members of a traditional culture sense their *communitas*, personal identity, and ancestral anchorage."[3]

Secondly, Brush's classification of knowledge into indigenous and formal fails not only because there are striking similarities across the two classes, but also for the reason that indigenous information could be formalized. It could be codified in ethno-botanical databanks and packaged for use in the formal sector, for example by modern pharmaceutical industries.

The International Labor Organization (ILO) Convention Concerning Indigenous and Tribal Peoples in Independent Countries defines indigenous peoples as:

> [P]eoples in independent countries who are regarded as indigenous on account of their descent from populations which inhabited the country, or a geographical region to which the country belongs, at the time of conquest or colonization or the establishment of present state boundaries and who irrespective of their legal status, retain some or all of their own social, economic, cultural and political institutions.[4]

The ILO Convention definition carries four vital factors of time, geographical space, resilience, and territorial occupation by outside populations to be considered in any discussion of indigenous peoples and knowledge.

In a recent publication Darrell Posey and Graham Dutfield tend to use the concepts of indigenous peoples and traditional peoples interchangeably.[5] While we appreciate the conceptual difficulties that one runs into in any attempt to define the two related concepts, we eschew the use of the two as synonymous. In this study we subscribe to the ILO Convention definition of indigenous peoples and define traditional peoples as those who hold an unwritten corpus of long-standing customs, beliefs, rituals and practices that have been handed down from previous generations. They do not necessarily have claim of prior territorial occupancy to the current habitat; that is, they could be recent immigrants. Thus traditional peoples are not necessarily indigenous but indigenous peoples are traditional.

Indigenous knowledge, as far as we are concerned, is that knowledge that is held and used by a people who identify themselves as indigenous of a place based on a "combination of cultural distinctiveness and *prior territorial occupancy* relative to a more recently-arrived population with its own distinct and subsequently dominant culture".[6] Traditional knowledge is, on the other hand, that which is held by members of a distinct culture and/or sometimes acquired "by means of inquiry peculiar to that culture, and concerning the culture itself or the local environment in which it exists."[7] Indigenous knowledge fits neatly in the traditional knowledge category but traditional knowledge is not necessarily indigenous. That is to say, indigenous knowledge is traditional knowledge but traditional knowledge is not necessarily

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3 *Ibid.* p. 26.

4 Article 1, International Labor Organization Convention Concerning Indigenous and Tribal Peoples in Independent Countries, June 1989 (referred to as Convention 169).

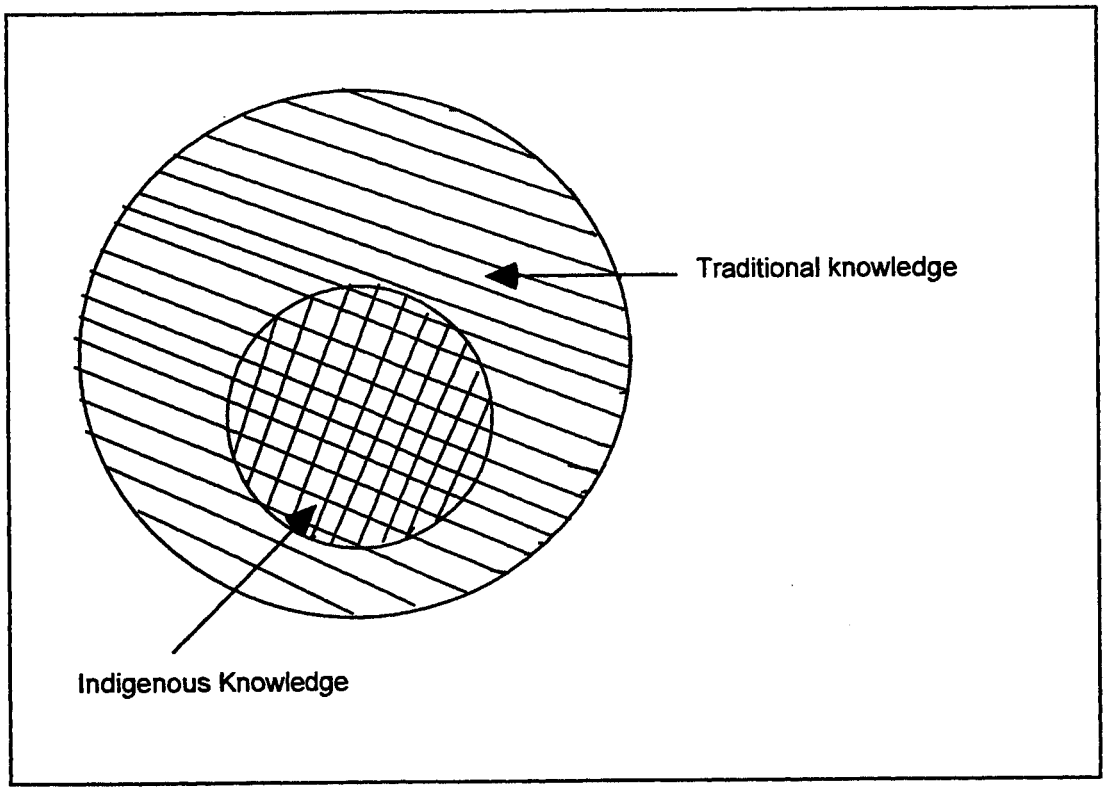
5 Posey and Dutfield, *Beyond Intellectual Property* (International Development Research Center, Ottawa, 1996) pp. 3 and 22-41.

6 UNEP/CBD/COP/3/Inf. 33, Annex 2.

7 *Ibid.*

indigenous.

Figure 1: Traditional knowledge system



Traditional knowledge is thus the totality of all knowledge and practices, whether explicit or implicit, used in the management of socio-economic and ecological facets of life. This knowledge is established on past experiences and observation. It is usually a collective property of a society. Many members of the particular society contribute to it over time, and it is modified and enlarged as it is used over time. This knowledge is transmitted from generation to generation. According to the United Nations Environment Program (UNEP), this knowledge "can be contrasted with cosmopolitan knowledge, which is drawn from global experience and combines 'western' scientific discoveries, economic preferences and philosophies with those of other widespread cultures."[8] It is generally an attribute of a particular people, who are intimately linked to a particular socio-ecological context through various economic, cultural and religious activities.

Traditional knowledge is dynamic in nature and changes its character as the needs of the people change. It also gains vitality from being deeply entrenched in people's lives. It is difficult to isolate or archive traditional knowledge from traditional people. Examples of traditional knowledge include knowledge about the use of specific plants and/or parts thereof, identification of medicinal properties in plants, and harvesting practices.

[8] UNEP/CBD/COP/3/Inf. 33., p. 9.

There is an adequate and growing evidence of traditional knowledge and associated practices contributing significantly to the conservation and enhancement of biodiversity.[9] Local people embodying traditional lifestyles and knowledge have devised and deploy various technologies to conserve the environment in general and biodiversity in particular.

[9] Biodiversity is defined as "the variability among living organisms from all sources including, *inter alia,* terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems." See Article 2, Convention on Biological Diversity, 1992.

Local communities and households in different parts of Africa have accumulated a broad technological knowledge base to conserve and sustainably use plant genetic resources. They deploy different and unique technological systems to conserve and use plants and their genetic components. These systems include home gardens, seed banks and sacred groves. The home gardens are mainly small plots of land within the homestead on which several species, sometimes up to 100 or more, of plants are domesticated. Many local and traditional communities in Africa conserve rare medicinal plants in home gardens. They select and conserve specific species of plants whose medicinal values and properties they know. They domesticate these in small gardens normally at the back of their homesteads.

Apart from home gardens, seed banking is another established local conservation system. In Ethiopia, for example, the Tigray communities' efforts specifically address these problems: the loss of traditional seeds (genetic resources) and the traditional knowledge for selection and conservation. With financial support from some non-governmental organizations (NGO's), the Tigray farmers have established a community seed bank that currently holds seeds of a wide range of traditional crops. The seeds are selected by the local farmers based on specific cultural, technological and ecological criteria. The farmers select seeds on the basis of:

(a) better crop stand: that is, sample seeds are selected from fields with high-yields and high quality seeds;
(b) plant vigor: that is, they select seeds from plants that show traits of resistance against disease and pests; and
(c) seeds on which cultural knowledge has been accumulated by the communities are selected. However, the farmers are also interested in new seeds and knowledge. Moreover, they stress the importance of transmitting the selection skills to new generations. This ensures that technological knowledge and skills for genetic resource conservation are retained in the community: institutional memory is sustained through generations of social change.

The seeds selected by the Tigray farmers are stored under special containers that are moisture free or have low moisture content. The seeds are then invested in the custody of local women who frequently check the seeds to ensure that they are viable and free from pest infection. The women occasionally sun-dry the seeds. They also grow samples of the seeds in home gardens to ensure that the stored seeds retain their regenerative potential.

One important feature of the Tigray form of institutional organization is that it facilitates easy sharing or exchange of seeds among the farmers and even outside communities. One channel of seed exchange is the practice of offering a portion of the best-selected seeds as gifts to the poor in connection with the St. Mary celebration in the Orthodox church. Because these are considered blessed seeds, the poor will take some home and plant them.

Source: Mugabe, 1994. *Technological Capability for Environmental Management: The Case of Biodiversity Conservation in Kenya.* Ph.D. Dissertation Submitted to the University of Amsterdam, The Netherlands.

Contributions of indigenous and other traditional peoples to the global crop production system have well been documented.[10] It is estimated, for example, that the economy of the United States of America (the U.S.A.) alone has annual sales at least US$ 50 million from genes of 15 major crops that were first cultivated and enhanced by traditional peoples.[11]

(ii) Traditional Knowledge and Biodiversity Prospecting

Over the past decade or so, biotechnology, pharmaceutical and human health care industries have increased their interest in natural products as sources of new biochemical compounds for drug, chemical and agro-products development.[12] The decade has also witnessed a resurgence of interest in traditional knowledge and medicine. This interest has been stimulated by the importance of traditional knowledge as a lead in new product development. Of the 119 drugs developed from higher plants and on the world market today, it is estimated that 74% were discovered from a pool of traditional herbal medicine.[13] It has been estimated that the annual world market for medicines derived from medicinal plants discovered from indigenous peoples amounted to US$ 43 billion in 1985.[14] A report prepared by the Rural Advancement Fund International (RAFI) estimated that at the beginning of the 1990s, worldwide sales of pharmaceuticals amounted to more than US$130,000 billion annually.[15]

Developing countries and their traditional peoples have contributed considerably to the global drugs industry. Okoth-Owiro and Juma have estimated that plant-derived prescription drugs in the U.S. originate from 40 species of which 50% are from the tropics. The 20 species generate about US$4 billion for the economy of the U.S.A.[16] The search for these plants has been accompanied by appropriation of traditional knowledge. For example in the 1970's, the National Cancer Institute (NCI) of the U.S.A. invested in extensive collections of *Maytenus buchananii* from Simba Hills of Kenya. NCI was generally led by the knowledge of the Digo communities - indigenous to the Simba Hills area - who have used the plant to treat cancerous conditions for many years. More than 27.2 tons of the shrub were collected by the NCI from a game reserve in the Simba Hills for testing under a major screening program.[17] The plant yields maytansine which was considered a potential treatment for pancreatic cancer. All the

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10 See, for example, Kloppenburg, *First the Seed: The Political Economy of Plant Biotechnology 1492-2000* (Cambridge University Press, Cambridge, 1988).

11 Roht-Arriaza, "Of Seeds and Shamans: The Appropriation of Scientific and Technical Knowledge of Indigenous and Local Communities", 17 (1996) Michigan Journal of International Law, pp. 919-963.

12 Reid *et. al.*, (Eds.), *Biodiversity Prospecting: Using Genetic Resources for Sustainable Development*, (World Resources Institute, Washington, D.C., 1993).

13 Laird "Natural Products and the Commercialization of Traditional Knowledge" in Greaves, T. (Ed.), *Intellectual Property Rights for Indigenous Peoples: A Sourcebook* (Society for Applied Anthropology, Oklahoma City, 1994) pp. 145-149.

14 Posey and Dutfield, *op. cit.* p. 34.

15 RAFI "Conserving Indigenous Knowledge: Integrating Two Systems of Innovation" (A study prepared for the United Nations Development Program (UNDP), New York, 1994).

16 C. Juma and J.B. Ojwang, *In Land We Trust: Environment, Private Property and Constitutional Change*, (ACTS Press, Nairobi, 1996) pp. 282-283.

17 C. Juma, *The Gene Hunters: Biotechnology and the Scramble for Seeds* (Zed Books and Princeton University Press, London and Princeton, 1989).

material collected was traded without the consent of the Digo, neither was there any recognition of their knowledge of the plant and its medicinal properties.

The NCI has also collected *Homalanthus nutans* from the Samoa rainforests. The plant contains the anti-HIV compound prostratin. The collection was undertaken on the basis of traditional knowledge.[18] The NCI has also benefited from traditional knowledge of local communities living around Korup Forest Reserve in Cameroon. The Institute has collected *Ancistrocladus korrupensis* from the reserve to screen for an anti-HIV principle, Michellamine B. This bio-prospecting effort has progressed into pre-clinical development. The NCI and other drug research and development organizations continue to invest considerable sums of money to prospect for plants containing useful chemicals, and many of them are investigating the efficacy of traditional medicines.

Although trade in medicinal plants from developing countries has increased in the past few decades with more drugs developed, few if any benefits accrue to the source countries and the traditional communities. Total trade in herbal remedies and botanicals in 1995 yielded over US$ 56 billion and the only payments to the communities were for the manual labor involved. According to Posey, less than 0.001% of profits from drugs developed from natural products and traditional knowledge accrue to traditional people who provided technical leads for the research.[19]

There are, however, a few exceptions. These include Shaman Pharmaceuticals and the Body Shop.[20] Shaman develops new therapeutics by working with indigenous peoples of tropical forests. The Body Shop is bioprospecting in the Kayapo area of Brazil extensively drawing on traditional knowledge of the Kayapo Indians. It has invested in ethnobotanical research for the development of new ingredients for its body-care products.[21] In 1991, the Body Shop had at least 300 products with annual sales of US$90 million. By 1995, its annual sales stood at least at US$ 200 million.

Both Shaman and the Body Shop have developed mechanisms for returning some of the benefits from the commercialization of medicinal plants and traditional knowledge to the traditional people. The Body Shop also sponsors projects to assist local people to establish enterprises for processing crude products.

On the whole, a significant part of the global economy is based on the appropriation and use of traditional knowledge. Indeed, traditional knowledge is increasingly contributing to production in modern economies where property rights are inimical to community intellectual property. Modern economic policies and laws (particularly modern property laws) undervalue this knowledge: at best they ignore it and at worst they contribute to its destruction.

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18 Posey and Dutfield, *op. cit.* page 35.

19 Posey, "Intellectual Property Rights for Native Peoples: Challenges to Science, Business, and International Law", (Paper presented at the International Symposium on Property Rights, Biotechnology and Genetic Resources, Nairobi Kenya, 1991).

20 These are pharmaceutical companies whose product development activities are largely based on traditional knowledge. They have established systems to recognize the value of traditional knowledge and to provide a certain measure of compensation to local people for the knowledge.

21 Laird, *op. cit.*

> "Traditional knowledge plays a significant role in industry R&D programs. ... But traditional knowledge has been and continues to be an element in the commercialization of natural products, it is currently supplied to commercial interests through databases, academic publications or field collections and it should be paid for in some form. This form will to some extent be dictated by the market, but should also be established in light of the fact that . . . , the market will not reflect the true commercial value of traditional knowledge."[22]

Traditional people (particularly the indigenous ones) and their knowledge are, however, threatened with destruction. Modest estimates show "that 85 Brazilian Indian groups became extinct in the first half of this century. In the Amazonian region, ... on an average, one Amerind group has disappeared for each year of this century."[23] The destruction of traditional people and their knowledge is caused by many interrelated and complex factors. They include destruction of ecosystems in search for expanded agricultural lands, deforestation associated with harvesting of timber and other forest products, and appropriation of traditional knowledge with no rewards to the holders of that knowledge.

Concern over the growing interest in and economic importance of traditional knowledge as well as the loss of this knowledge has generated a wide range of public policy issues including those associated with intellectual property protection. "Growing interest and catapulting markets in 'natural' food, medicinal, agricultural, and body products signals increased research activities into traditional knowledge systems. Now, more than ever, the intellectual property rights of native peoples must be protected and just compensation for knowledge guaranteed. We cannot simply rely upon the goodwill of companies and institutions ... If something is not done now, mining of the riches of indigenous knowledge will become the latest - and ultimate - neocolonial form of exploitation of native peoples."[24]

(iii) Intellectual Property Rights in Traditional Knowledge

Intellectual property law has recently received attention as a motor for technological innovation and industrial change. It has also been seen as a tool for promoting the conservation of biological diversity, sustainable use of its components, and for ensuring that benefits arising from the utilization of genetic resources are shared in a fair and equitable manner among the relevant stakeholders.[25] Critics argue that intellectual property protection increases the costs of products, promotes genetic monoculture by concentrating industrial and agricultural activities on a few cultivated varieties or species, and, when extended to plants and animals, is in conflict with the morals of many societies.

Intellectual property laws vary in nature and scope from one country to another. Intellectual property protected in one country may not be recognized in another country. Despite the existence of various international agreements that attempt to harmonize

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22 Laird, *op. cit.* p. 154.

23 Posey, "Intellectual Property Rights for Native Peoples: Challenges to Science, Business, and International Law", *op. cit.* p. 3.

24 *Ibid.* p. 7.

25 Gollin in Reid *et. al.* (Eds.), *op. cit.* pp. 159-197.

intellectual property protection, there are still differences among national laws, especially those regarding patents. For example, while the U.S.A. and countries in the European Union allow patent protection over genetically engineered organisms which meet the normal requirements for patentability, many other countries are opposed to extending patents to such subject matter.

There are also differences in the duration of patent protection. The period for which an inventor is granted a patent varies from one country to another. In addition, different countries have different conditions for the disclosure of information concerning the invention. While some (for example, the U.S.A. and the European Union countries) have strict conditions and mechanisms for enforcing patent application requirements, others (particularly those of the developing world) have weak institutional arrangements for ensuring compliance with disclosure requirements.

These differences in national application of intellectual property law are at the center of much of the debate on the intellectual property rights of indigenous and local peoples. The case of traditional knowledge of indigenous and local peoples has opened debate on the adequacy and ethics of intellectual property protection. The debate (particularly the absence of consensus on whether and how to extend intellectual property protection to traditional knowledge) has so far shown these issues are complex and controversial. This is partly because of differences in conceptual treatment and often lack of clarity on the two concepts of traditional knowledge and intellectual property. It is also because a scant body of information is available to those responsible for policy and law making, at both national and international levels. In addition, these issues are often debated in isolated United Nations, business sector and non-governmental organizations' conferences---each with its distinct sectoral interest and focus in the subject. For example, dialogue (within the ILO and the United Nations Working Group on Indigenous Populations, amongst others) on the human rights of indigenous peoples has seldom addressed, at least consistently, issues of intellectual property rights in traditional knowledge. The World Trade Organization (WTO) regime has not confronted the implications of its Agreement on Trade-Related Aspects of Intellectual Property Rights (the TRIPS Agreement) for the protection and use of traditional knowledge. On the whole, international debate on issues of intellectual property protection in general and rights in traditional knowledge in particular, is characterized by tension and inconsistency.

However, environmental non-governmental organizations (NGO's), anthropologists and the Convention on Biological Diversity (the CBD) have begun to create a strong political foundation for addressing these issues in a holistic manner. The CBD's holistic nature and its large and diverse constituency open to NGO's has provided, at least in the recent past, an intergovernmental forum where these issues are being debated with a certain measure of coherency.

The debate in the CBD and other forums now oscillates between two extremes: one position that advocates the extension of intellectual property protection to cover traditional knowledge, even including patenting of that knowledge, and another position that promotes the *status quo* where such knowledge is treated as a public good. Those who subscribe to or promote the first position often advance the following arguments. First, they argue that extending intellectual property protection to traditional knowledge will in fact promote technological innovation as it would facilitate the dissemination and development of that knowledge in the modern economic space. Second, recognition of intellectual property rights

in traditional knowledge could generate incentives for local and indigenous peoples to conserve the environment and manage biodiversity. Third, the industrialized countries have a moral obligation to ensure that indigenous and local peoples receive a fair and equitable share of benefits arising from the use of their traditional knowledge and commercialization of genetic resources.[26] Proponents of this view further suggest that traditional knowledge should be validated.

Those who oppose the extension of intellectual property protection to traditional knowledge have argued that such a move would in fact destroy the social basis for generating and managing the knowledge. Traditional knowledge, as we have observed, is communal property, passed on from one generation to the next. If it is protected under intellectual property law it would be privatized, and this may deny future generations and industry access to such knowledge. As has been stated:

> "It is crucial to remember that the underlying purpose of IPR is to turn knowledge into a marketable commodity, not to conserve such knowledge in its most fitting cultural context. This goal necessarily translates into a focus on segregating and isolating information into identifiable and manageable pieces that can be protected by law as intellectual property. In contrast, ethnobotanical knowledge by its very nature is integrative, holistic, and synergistic. It is most meaningful *in situ* where plants are understood in relation to the ecological and cultural environments in which they have been grown, managed, and used by local residents. IPR departs from such traditions by valuing the discrete properties of plants that can most easily be taken out of their natural and cultural context and replicated through artificial selection in a laboratory or greenhouse. Given the legal premises upon which IPR are based, it is unlikely that IPR will ever be a useful model for protecting ethnobotanical knowledge."[27]

The two groups—proponents and opponents of intellectual property rights in traditional knowledge—express legitimate concerns. The problem is in the nature of intellectual property law as established and enforced on the basis of Western capitalistic models. Let us now examine various intellectual property law regimes to establish their adequacy in protecting traditional knowledge.

(a) The Paris Convention for the Protection of Industrial Property

The Paris Convention for the Protection of Industrial Property, 1883 is an international legally binding agreement concerning property rights in patents, utility models, industrial designs, service marks, indications of source or appellations of origin and trademarks. The Convention had, as at December 1998, 151 Member States. Article 1 of the Convention defines the scope of industrial property. It states in Article 1(3) that "[i]ndustrial property shall be understood in the broadest sense and shall apply not only to industry and commerce proper, but likewise to agricultural and extractive industries and to all manufactured or natural

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[26] This argument was expressed in this manner during the negotiations of the CBD and is still prevalent in biodiversity debates at both national and international levels.

[27] Nabhan *et. al.* in Brush and Stabinsky, *op. cit.* p. 193.

products, for example, wines, grain, tobacco leaf, fruit, cattle, minerals, mineral waters, beer, flowers, and flour."[28]

Article 2 sets conditions for national treatment—each Contracting Party to the Convention must grant the same intellectual property protection to nationals of other Parties that it gives to its own nationals. Article 5(a) of the Convention allows Parties to pass legislation that would grant compulsory licenses in order to prevent abuses resulting from the exercise of exclusive rights.

It is possible for innovations of indigenous and local peoples to be protected under the trademark, utility models, industrial designs, service marks, and indications of source or appellations of origin provisions of the Paris Convention. In this respect, Article 7 of the Convention is worth noting. It allows member countries to "accept for filing and to protect collective marks belonging to associations the existence of which is not contrary to the law of the country of origin, even if such associations do not possess an industrial or commercial establishment."[29] If indigenous and local peoples form associations that are legally legitimate in their countries, it is possible for them, as a collectivity, to acquire collective marks.

This Convention does not, however, contain provisions for granting patents to traditional knowledge *per se,* or any other kind of knowledge for that matter, although it recognizes and would protect modern industrial products and services generated from that knowledge.

(b) Plant Breeders' Rights

Plant breeders' rights are used to cover plant varieties.[30] They vest exclusive exploitation rights in the developers of new varieties of plants as an incentive to pursue innovative activity and to enable breeders to recover their investment in breeding. Like most intellectual property rights, plant breeders' rights are limited in time, at the end of which the varieties pass into the public domain.

The 1978 and 1991 Acts of the International Convention for the Protection of New Varieties of Plants ("the UPOV Convention") establish minimum international standards for the protection of plant breeders' rights. Both Acts are administrated by an intergovernmental organization, the International Union for the Protection of New Varieties in Plants (UPOV).

Plant breeders' rights under the UPOV Convention provide intellectual property protection to plant varieties that are distinct, novel, uniform and stable. These conditions or requirements are similar to those for patenting although the requirements of "novelty" and "distinctiveness" for purposes of plant breeders' rights are interpreted more leniently than for patent protection. Plant breeders' rights are useful regimes for countries that do not wish to extend patents to plant varieties and other living organisms. However, in 1991 several amendments that tilt plant breeders' rights more towards patents were introduced in the

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28 Goldstein *et. al., Selected Statutes and International Agreements on Unfair Competition, Trademark, Copyright and Patent* (The Foundation Press, Inc., New York, 1997) p. 420

29 *Ibid.* p. 431.

30 Most developed countries, including European Union members and the U.S.A, exclude life forms in their purely natural state from patent protection.

UPOV Convention. First, there was an expansion of subject matter for protection under the regime of plant breeders' rights. The 1978 Act of the UPOV Convention provided protection only to plant varieties of nationally defined species. The 1991 Act extends protection to varieties of all genera and species. In addition, the revised UPOV Convention has extended protection to commercial use of all material of the protected variety while the 1978 regime restricted the commercial use of only the reproductive material of the variety. Secondly, the "farmer's privilege" in the 1978 Act is more limited in the 1991 Act, under which it is left to Member States of UPOV to determine on a discretionary basis whether or not to exempt from the breeder's rights any traditional form of saving seed. Under the 1991 UPOV Convention, a farmer who produces a protected variety from farm-saved seeds is guilty of infringement unless the national law provides otherwise. This weakens the economic position of rural farmers and stifles local and traditional innovations. In addition, the UPOV Convention does not contain any provisions for recognizing the knowledge and other contributions that indigenous and local peoples make to plant breeding programs. In our view, therefore, plant breeders' rights as embodied in the 1991 Act of the UPOV Convention are inadequate in protecting traditional knowledge of indigenous and local peoples.

(c) Protection of traditional knowledge under TRIPS

The negotiation and adoption of the TRIPS Agreement as part of the Uruguay Round in 1994 have added new dimensions to the debate on intellectual property rights in traditional knowledge. The TRIPS Agreement sets minimum standards for countries to follow in protecting intellectual property. Its objective is stated in the preamble as "to reduce distortions and impediments to international trade, and taking into account the need to promote effective and adequate protection of intellectual property rights, and to ensure that measures and procedures to enforce intellectual property rights do not themselves become barriers to legitimate trade."[31] Countries that ratify the Agreement are expected to establish comprehensive intellectual property protection systems covering patents, copyright, geographical indications, industrial designs, trademarks, and trade secrets.

However, Article 1 of the TRIPS Agreement (on the nature and scope of the obligations) provides some flexibility in the implementation of the provisions of the Agreement. It states in paragraph 1 of that Article that "[m]embers may, but shall not be obliged to, implement in their domestic law more extensive protection than is required by [the] Agreement, provided that such protection does not contravene the provisions of [the] Agreement."[32] According to Dutfield, parties to the TRIPS Agreement can invoke this provision to enact legislation for protecting traditional knowledge. He asserts "[T]he absence of any mention of traditional ... knowledge in the Agreement, does not prevent any Member from enacting legislation to protect such a category of knowledge."[33]

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[31] Goldstein *et. al. op. cit.* p. 435.

[32] *Ibid.* p. 436.

[33] Dutfield, *Can the TRIPS Agreement Protect Biological and Cultural Diversity?* (Biopolicy International No. 19, ACTS Press, Nairobi, 1997) p. 16.

After reviewing the TRIPS Agreement, we consider that it is not possible to protect traditional knowledge under current patent law.[34] The TRIPS Agreement requires Member States to provide patent protection for "any inventions, whether products or processes, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application."[35] The "inventive step" and "capable of industrial application" requirements are deemed "to be synonymous with the terms 'non-obvious' and 'useful' respectively."[36] Traditional knowledge products fail the test for patenting on one, or all, of the "new", "inventive step" and "industrial application" standards. On the "new" standard they will probably fail because by its very nature traditional knowledge has been known for some length of time. One could try and argue that traditional knowledge is new to the world outside of the community from which it came but this is unlikely to succeed.

Article 29.1 of the TRIPS Agreement requires that a patent applicant disclose sufficient and clear information regarding the invention so that another person "skilled in the art" would be able to reproduce the product or complete the process. This is a standard patent law condition. Opponents of patenting have been quick to point out that this condition of information disclosure could erode the rights of indigenous and local people because it would make traditional knowledge easily available to commercial entities. Given the absence of financial and organizational competencies of indigenous and local peoples to monitor and enforce patents in modern economic space, their knowledge could easily be used without due compensation.

On the whole, in our view, the conditions set under the TRIPS Agreement do not enable the patenting of traditional knowledge and/or traditional innovations.

Article 27.2 of TRIPS states that "[m]embers may exclude from patentability inventions, the prevention within their territory of the commercial exploitation of which is necessary to protect *ordre public* or morality, including to protect human, animal or plant life or health or to avoid serious prejudice to the environment, provided that such exclusion is not made merely because the exploitation is prohibited by domestic law."[37] The notions of *ordre public* (public order) and morality are not defined in the Agreement. However, it is clear that those inventions that cause injury to human, animal and plant life as well as the environment may be excluded. States are given flexibility to adjudicate. Some may still provide patent protection for inventions that cause damage to the environment. Patenting of genetically-engineered organisms and life forms is generally possible under these provisions. Further, it is also possible for a State to provide patent protection to a modified gene or a whole organism which meets the normal requirements for patentability.

Article 27.3(b) of the TRIPS Agreement has generated controversy and opportunity. It states that "[m]embers may also exclude from patentability... plants and animals other than microorganisms, and essentially biological processes for the production of plants or animals

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[34] Some limited protection of traditional knowledge would be possible using regimes of copyright, trade secrets and geographical indications. These measures do, however, have their own limitations in protecting traditional knowledge as the intellectual property of traditional and local peoples. The problem, as we shall show, is because of the rigidities built in to these measures and the very nature of traditional knowledge.

[35] Goldstein *et. al, op. cit.* p. 448. Article 27.1 of the TRIPS Agreement.

[36] Dutfield, *op.cit.* p. 24.

[37] Goldstein *et. al. op. cit.* p. 448. Article 27.2 of the TRIPS Agreement.

other than non-biological and microbiological processes. However, Members shall provide for the protection of plant varieties either by patents or by an effective *sui generis* system or by a combination thereof. The provisions of this sub-paragraph shall be reviewed four years after the entry into force of the WTO Agreement."[38]

First, there is controversy as to what "an effective *sui generis*" regime is. "Effectiveness" of the *sui generis* system is not defined. The nature of a *sui generis* system is also left to individual members to determine. According to the Crucible Group report of 1994, [t]he term *sui generis*, ..., may offer a wider range of policy choices because it could presumably include any arrangement for plant varieties that offers recognition to innovators—with or without monetary benefit or monopoly control."[39] If there is any dispute on the nature and minimum standards of "an effective *sui generis*" system, the WTO is itself the mechanism for adjudication.

Second, it has also been noted that multinational companies and developed countries are likely to promote plant breeders' rights as the effective *sui generis* system. "[Plant breeders' rights] may be used as a measure of effectiveness under the TRIPS Agreement thereby limiting the ability of developing countries to develop a system to properly reflect their own social and economic needs."[40] They will require or encourage developing countries to establish the UPOV arrangement. This, as Johnston and Yamin have rightly observed, could potentially remove plant varieties from the scope of the CBD and may significantly undermine the rights of local farmers. It could also erode prospects of ensuring that benefits from the use of plant genetic resources are shared in a fair and equitable manner.[41]

The TRIPS Agreement has, on the other hand, generated new opportunities to develop alternative property rights regimes which are ethically, socially and environmentally appropriate to the needs and conditions of indigenous and local people in developing countries. As stated earlier, under Article 27.3(b) of the TRIPS Agreement Members may establish effective *sui generis* regimes. This is an opportunity which developing countries should quickly tap by devising and promoting non-patent measures. They could easily lose out if Article 27.3(b) were to be removed from the Agreement during its review in 1999. Some developed countries, particularly the U.S.A., are already campaigning for its removal so that no restrictions are imposed on the patenting of life forms.

The TRIPS Agreement itself does not provide any protection for the traditional knowledge and innovations of indigenous and local people but it creates flexibility for establishing alternative non-conventional intellectual property protection measures.

On the whole, conventional intellectual property law does not cover inventions and innovations of indigenous and local peoples. Their contributions to plant breeding, genetic

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[38] Goldstein *et al.*, *op. cit.* p. 448. Article 27.3 of the TRIPS Agreement.

[39] The Crucible Group, *People, Plants and Patents* (International Development Research Center, Canada, 1994) p. 53.

[40] Johnston with Yamin, in J. Mugabe *et. al.* (Eds.), *Access to Genetic Resources: Strategies for Sharing Benefits* (African Center for Technology Studies (ACTS) Press, Nairobi, 1997) p. 251.

[41] *Ibid.* p. 260.

enhancement, biodiversity conservation and global drug development are not recognized, compensated and even protected. Similarly, the traditional knowledge of indigenous and local peoples is not treated as intellectual property worth protection, while the knowledge of modern scientists and companies is granted protection. As such, the patentability of products and/or processes derived from traditional knowledge of indigenous and local peoples poses a number of critical questions associated with compensation for the knowledge, and protection against future uncompensated exchange of the knowledge.

The imbalances in the intellectual property system have been created and are sustained by established mechanisms of accessing the modern economic space and power. Indigenous and local people often experience insecure resource tenure, are financially weak, and lack institutional arrangements to safeguard their property rights. Thus, the issues extend to fundamental and more complex questions of human rights of these peoples.

(iv) Traditional Knowledge and Indigenous People in the Human Rights Agenda

The debate on the protection of traditional knowledge by intellectual property law has recently moved to the human rights forums. There are a number of reasons for this. First, the appropriation of the knowledge by industrialized country firms and scientists without fair compensation or reward to indigenous and local peoples is now seen as contravening fundamental moral, ethical and legal norms that protect people from any form of economic, ecological, political and social abuse. Second, knowledge of indigenous and local peoples is their property and there is no reason why international law should discriminate against them and create barriers to their enjoyment of the rights in that property. The concern in the human rights forums is therefore whether and how to apply international human rights standards and laws to protect traditional knowledge of indigenous and local peoples as their intellectual property.[42]

Existing international and national laws and programs do not *explicitly* recognize rights in traditional knowledge as part of the bundle of human rights. The Universal Declaration of Human Rights, 1948 (the UDHR) and the International Covenant on Economic, Social and Cultural Rights, 1966 (the ICESCR) contain provisions that could be interpreted to cover rights of indigenous and local peoples. For example, Article 1 of the ICESCR "establishes the right of self-determination, including the right to dispose of natural wealth and resources. This implies the right to protect and conserve resources, including intellectual property."[43] Posey goes on to argue that Article 7 of the UDHR can be used to extend intellectual property to the traditional knowledge of indigenous peoples. Article 7 states that "All are equal before the law and are entitled without any discrimination to equal protection of the law. All are entitled to equal protection against any discrimination in violation of this Declaration and against any incitement to such discrimination."[44]

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42 See, for example, Posey, D. in Sanchez and Juma, *Biodiplomacy: Genetic Resources and International Relations* (African Center for Technology Studies (ACTS) Press, Nairobi, 1994).

43 *Ibid.* p. 125.

44 Universal Declaration of Human Rights in L. Guruswamy *et. al.*, *Supplement of Basic Documents to International Environmental Law and World Order: A Problem-Oriented Coursebook* (West Publishing Co., U.S.A.,1994) p. 1137. Emphasis is mine.

It is important to note that Article 27 of the UDHR could be invoked, albeit implicitly, to argue for protection of traditional knowledge of indigenous and local peoples as well as demand for the sharing (with the peoples) of benefits arising from the use of that knowledge. Article 27.1 reads: "Everyone has the right freely to participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits." This provision provides a 'soft legal basis' for indigenous and local peoples to be entitled to benefits arising from the use of their knowledge and resources. Denying them access to the benefits would be construed as an abuse of their human rights. Article 27.2 states that: "[e]veryone has the right to the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author." Indigenous and local peoples have moral, cultural and material interests in their traditional knowledge and thus (invoking the UDHR) these interests should be protected by protecting that knowledge and its products.

On the whole, the UDHR contains provisions on a wide range of civil, political, economic, social and intellectual rights. As already observed, it is Article 27 of the Declaration that is particularly relevant to the issue of intellectual property protection of traditional knowledge. There are, however, a number of limitations to using it as a legal instrument to protect traditional knowledge of indigenous and local peoples. First, while traditional knowledge is a collective property and generates collective rights, the UDHR largely provides for individual rights.

> "Generally, the rights of indigenous peoples are said to include rights to land, natural resources, self-determination, and culture. Inherent in each of these rights is the concept of collective rights. Indigenous groups often do not have a concept of individual private ownership of property. ... Traditional knowledge may also be collectively owned. Traditional western legal concepts, however, do not generally include the notion of collective rights. The emphasis has been on individual rights *vis-a-vis* the state. This emphasis may limit the utility of Western concepts in helping indigenous peoples maintain their identity and rights in the face of pressure to assimilate and yield to the "modern" world."[45]

The problem is not just with the Western legal concepts but with many of the human rights theorists. They assert that collective rights are not human rights. For example, Jack Donnelly has stated that "[a]ny rights that might arise from solidarity would not be human rights."[46]

The second limitation of the UDHR is that responsibility for enforcing its provisions is vested in the state. However, as Audrey Chapman has observed many "states have been reluctant to grant subnational minorities the rights of peoples."[47]

The ILO was the first United Nations agency to address issues of indigenous peoples' rights. In 1926, the ILO established an expert committee to develop international standards

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45 Axt *et. al., Biotechnology, Indigenous Peoples, and Intellectual Property Rights* (Congressional Research Services Report for Congress, Washington, D.C., 1993) p. 27.

46 Donnelly, *Universal Human Rights in Theory and Practice* (Cornell University Press, New York, 1989) p. 144.

47 Chapman, in Greaves (Ed.), *op. cit* p. 216.

for the protection of native workers. This committee generated the basis for the adoption, in 1957, of the Convention Concerning the Protection and Integration of Indigenous and Other Tribal and Semi-Tribal Populations in Independent Countries. This Convention, commonly referred to as Convention 107, essentially dealt with measures to integrate indigenous peoples into modern production systems. This Convention was revised in June 1989 as Convention 169 Concerning Indigenous and Tribal Peoples in Independent Countries. The revised Convention eschews the approach of promoting the assimilation of indigenous and tribal peoples. It promotes the protection of indigenous peoples as distinct and separate peoples. Article 2.2(b) provides that governments shall have the responsibility of developing measures for "promoting the full realization of the social, economic and cultural rights of these peoples with respect for their social and cultural identity, their customs and traditions and their institutions." Article 5(a) provides that "the social, cultural, religious and spiritual values and practices of these peoples shall be recognized and protected, and due account shall be taken of the nature of the problems which face them as groups and individuals." These provisions should be broadly read to include recognition and protection of traditional knowledge of the peoples.

Convention 169 also contains provisions that explicitly recognize collective rights of indigenous peoples. For example, Article 13.1 states that "governments shall respect the special importance of the cultures and spiritual values of the peoples concerned of their relationship with the lands or territories, or both as applicable, which they occupy or otherwise use, and *in particular the collective aspects of this relationship.*"[48] This provision provides a basis for arguing for the enlargement of intellectual property regimes to accommodate collective rights of indigenous peoples. However, the Convention has not been adequately invoked to create the legal basis for creating intellectual property rights in traditional knowledge of indigenous peoples. It has not been ratified by many States.

The adequacy of Convention 169 is a concern of some indigenous groups and NGO's. These groups have been concerned with a number of the provisions of the Convention. First, the Convention only requires that indigenous peoples be consulted on matters affecting them. It does not require that the consent of these peoples be sought before measures affecting them are instituted. Second, the groups are of the view that provisions dealing with land and natural resources are inadequate.

The rights of indigenous peoples have also been articulated in the United Nations Economic and Social Council. In 1972, the Council established under its Commission on Human Rights a Sub-Commission on the Prevention of Discrimination and Protection of Minorities. The Sub-Commission commissioned a study on discrimination against indigenous populations. The study, completed in 1983, concluded that existing human rights standards are not fully applied to indigenous peoples, and that international legal instruments are not "wholly adequate for the recognition and promotion of the specific rights of indigenous populations as such within the overall societies of the countries in which they now live."[49] It recommended that a declaration leading to a convention be adopted. In addition, the Sub-

[48] International Labor Organization Convention (No. 169) Concerning Indigenous and Tribal Peoples in Independent Countries, in Guruswamy, L. *et. al. op. cit.* p. 1173.

[49] United Nations Document E/CN.4/Sub.2/Add.4. para 625.

Commission recommended the establishment of a Working Group on Indigenous Populations to:

> (1) "review developments pertaining to the promotion and protection of the human rights and fundamental freedoms of indigenous populations, . . .and;
> (2) give special attention to the evolution of standards concerning the rights of indigenous populations, taking into account both the similarities and differences in the situations and aspirations of indigenous populations throughout the world."

In 1984, the Sub-Commission directed the Working Group to focus its attention on the preparation of standards on the rights of indigenous populations, and accordingly to consider the drafting of a body of principles on indigenous rights based on relevant national legislation, international instruments and other judicial criteria and consider the situation and aspiration of indigenous populations throughout the world.

The Working Group has prepared a Draft Declaration on Indigenous Rights. The Draft Declaration contains provisions on the protection of intellectual property rights in traditional knowledge. Paragraph 12 of the text completed at its eleventh session in 1993, which is the most current draft, provides that:

> "[i]ndigenous peoples have the right to practice and revitalize their cultural traditions and customs. This includes the right to maintain, protect and develop the past, present and future manifestations of their cultures, such as archaeological and historical sites, artifacts, designs, ceremonies, technologies and visual and performing arts and literature, as well as the right to the restitution of cultural, intellectual, religious and spiritual property taken without their free and informed consent or in violation of their laws, traditions and customs."[50]

Paragraph 29 states that:

> "Indigenous peoples are entitled to the recognition of the full ownership, control and protection of their cultural and intellectual property. They have the right to special measures to control, develop and protect their sciences, technologies and cultural manifestations, including human and other genetic resources, seeds, medicines, knowledge of the properties of fauna and flora, oral tradition, literatures, designs and visual and performing arts."

It recognizes that the traditional knowledge of indigenous peoples is not eligible for protection under conventional intellectual property laws and therefore "special measures" are required.

On the whole, the Draft Declaration contains provisions that would provide comprehensive protection of indigenous peoples and their traditional knowledge. However, the Declaration is simply a statement of principles with no legally binding status.

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[50] Draft Declaration on the Rights of Indigenous Peoples, as agreed upon by the members of the Working Group on Indigenous Populations at its Eleventh Session, August 23, 1993, United Nations Document E/CN.4/Sub.2/1993/29.

(v) Indigenous and Local Peoples' Concerns in the Global Environmental Agenda

Issues of indigenous and local peoples' rights have been extensively discussed in global environmental processes. The World Commission on Environment and Development (WCED) established in 1982 by the United Nations General Assembly devoted attention to issues of indigenous peoples, particularly their knowledge in the sustainable development process. The Commission observed that:

> "Tribal and indigenous peoples will need special attention as the forces of economic development disrupt their traditional lifestyles—lifestyles that can offer modern societies many lessons in the management of resources in complex forest, mountain, and dryland ecosystems. Some are threatened with virtual extinction by insensitive development over which they have no control. Their traditional rights should be recognized and they should be given a decisive voice in formulating policies about resource development in their areas."[51]

The Commission calls for "the recognition and protection of their traditional rights to land and other resources that sustain their way of life—rights they may define in terms that do not fit into standard legal systems."[52] It further recommends that local institutions through which indigenous and local peoples socialize and conduct their economic activities should be strengthened. Though it did not explicitly address the question of intellectual property protection of traditional knowledge, it created a political framework for addressing these issues within environmental circles.

The United Nations Conference on Environment and Development (UNCED) held in 1992 at the recommendation of WCED addressed issues of intellectual property rights in traditional knowledge and innovations. Agenda 21 adopted by more than 160 states at the UNCED contains a whole chapter on indigenous peoples' concerns and makes a wide range of recommendations on how these peoples' rights should be protected.

Chapter 26 of Agenda 21 begins by noting that indigenous peoples and their communities, which represent a significant percentage of the global population, have developed a holistic relationship with the natural environment. Over many generations, they have developed a "holistic traditional scientific knowledge of their lands, natural resources, and environment."[53] It observes that "indigenous peoples and their communities shall enjoy the full measure of human rights and fundamental freedoms without hindrance or discrimination" and recommends that governments should adopt policies and/or legal instruments that will protect intellectual and cultural property of indigenous peoples.

Another output of the UNCED, the Rio Declaration, also recognizes the role of indigenous and local people in global efforts to achieve sustainable development. Its Principle 22 states that: "[i]ndigenous people and their communities and other local

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51 World Commission on Environment and Development, *Our Common Future* (Oxford University Press, Oxford, 1987) p. 12.

52 *Ibid.* p. 115.

53 Agenda 21, 1992 (Chapter 26, section 1).

communities have a vital role in environmental management and development because of their knowledge and traditional practices. States should recognize and duly support their identity, culture and interests and enable their effective participation in the achievement of sustainable development." This view is echoed by the Forests Principles[54] also adopted at UNCED. For example, Section 5(a) of the Forests Principles recommends that "[n]ational forest policies should recognize and duly support the identity, culture and the rights of indigenous peoples, their communities and other communities and forest dwellers. Appropriate conditions should be promoted for these groups to enable them to have an economic stake in forest use, perform economic activities, and achieve and maintain cultural identity and social organization, as well as adequate levels of livelihood and well-being, through, *inter alia,* those land tenure arrangements which serve as incentives for the sustainable management of forests." Section 12(d) goes further to recommend that "[b]enefits arising from the utilization of indigenous knowledge should therefore be equitably shared with such people."

The CBD, which was signed by more than 150 states during UNCED, also explicitly recognizes the rights of indigenous and local peoples in traditional knowledge and innovations. Its preamble states: "the close and traditional dependence of many indigenous and local communities embodying traditional lifestyles on biological resources, and the desirability of sharing equitably benefits arising from the use of traditional knowledge, innovations and practices relevant to the conservation of biological diversity and the sustainable use of its components."[55]

Articles 8(j), 10(c) and 18.4 make reference to the rights of indigenous and local people. Article 10(c), for example, provides that each Contracting Party "shall [p]rotect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements." Article 18.4 defines technologies broadly to include "indigenous and traditional technologies."

Article 8(j) is perhaps the most authoritative provision dealing with traditional knowledge. It provides that each Contracting Party shall, as far as possible and as appropriate, "subject to its national legislation, respect, preserve, and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant to the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices."[56]

There are a number of limitations with Article 8(j) in so far as the question of intellectual property rights in traditional knowledge is concerned. First, the Convention leaves the protection of the knowledge, innovations and practices of indigenous and local communities to the discretion of parties. Some parties to the CBD may in fact invoke language of Article 8(j) not to undertake any measures that protect indigenous and local peoples' knowledge, innovations and other rights. Language such as "subject to national

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54 "Non-Legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation, and Sustainable Development of all Types of Forests."

55 Convention on Biological Diversity, 1992.

56 *Ibid.*

legislation" and "as far as possible and as appropriate" was promoted during the negotiations for the CBD by governments that did not want to commit themselves to protection of indigenous peoples and their rights.

Second, Article 8(j) does not talk of protection of the knowledge but merely calls on parties to "respect, preserve and maintain" it. It does not guarantee indigenous and local people any rights in traditional knowledge.

Limitations of Article 8(j) have been recognized by parties to the Convention. This is implicit in a number of the decisions that the Conference of Parties (COP) to the Convention has so far made. For example, the third COP held in Argentina in November 1996 agreed (in Decision III/14) on the need to "develop national legislation and corresponding strategies for the implementation of Article 8(j) in consultation with representatives of their indigenous and local communities." The Parties also agreed to establish an inter-sessional process to advance further the work on the implementation of Article 8(j) and related provisions. In support of this process, the Executive Secretary of the CBD was requested by the COP to prepare background documentation on the following issues: (i) consideration of linkages between Article 8(j) and such issues as technology transfer, access, ownership of genetic resources, intellectual property rights, alternative systems of knowledge protection and incentives; (ii) elaboration of key terms of Article 8(j); and (iii) a survey of activities undertaken by relevant organizations and their possible contributions to Article 8(j).

Paragraph 9 of Decision III/14 recommended that a workshop on traditional knowledge and biodiversity be convened, prior to the fourth COP, to deliberate on the implementation of Article 8(j), assess priorities for the future work by Parties and by Conference of the Parties, and provide advice to COP on the possibility of developing a work plan on Article 8(j) and related provisions including modalities for such a work plan.

In response to this decision, a Workshop on Traditional Knowledge and Biological Diversity was held in Madrid, Spain from 24 to 28th November 1997 at the invitation of the Government of Spain.

The Madrid workshop discussed a wide range of issues. There was consensus at the workshop that Article 8(j) of the CBD did not provide an adequate legal basis for protecting knowledge and innovations of indigenous peoples. Several of the participants called for a thorough re-examination and revision of current intellectual property protection systems to create flexibility for protecting indigenous knowledge and innovations. Others called for the establishment of a *sui generis* system that recognizes collective rights of indigenous and local peoples. It is important to note that some of the participants at the workshop argued that indigenous peoples are peoples with inalienable *a priori* rights and therefore they, in these rights, qualify to be parties to the Convention.[57]

A document prepared for the fourth COP by the Executive Secretary of the Convention states that many governments are not implementing Article 8(j). None of the studies submitted by governments and other bodies to the CBD Secretariat "refers to a single piece of

[57] See also Final Document of the Second International Indigenous Forum on Biodiversity, 1997. UNEP/CBD/TKBD/1/3 Annex 1.

legislation which specifically addresses the implementation of Article 8(j), but rather, its implementation is carried out, sometimes indirectly, through provisions contained in a wide variety of statutes regarding such matters as land tenure, protected areas, protection of endangered species, land development, water quality . . . and so on. This wide variety of statutes is sometimes further complicated because similar legislation often exists at national, sub-national and local levels, with resultant inconsistencies."[58]

Concerns on intellectual property protection of traditional knowledge have occupied the agenda of the COPs. The third COP called for dissemination of case studies on the relationships between intellectual property rights and the knowledge, innovations and practices of indigenous and local communities. COP 4, in Decision IV/9, recognized the importance of making intellectual property-related provisions of Article 8(j) and related provisions of the Convention on Biological Diversity and provisions of international agreements relating to intellectual property mutually supportive, and the desirability of undertaking further cooperation and consultation with the World Intellectual Property Organization.[59]

The COP further decided that an *ad hoc* open-ended inter-sessional working group composed of Parties including indigenous and local communities be established to, *inter alia*, "provide advice as a priority on the application and development of legal and other appropriate forms of protection for the knowledge, innovations and practices of indigenous and local communities . . ."[60]

On the whole, these efforts are being made a result of the recognition that the Convention does not contain adequate legal obligations to protect any property rights of indigenous and local peoples in their traditional knowledge.

2. Towards Alternative Regimes

The preceding sections have shown that conventional international intellectual property law does not, at least adequately, protect the traditional knowledge of indigenous and local peoples. The international community has recognized that there is need to devise new regimes or enlarge existing ones to accommodate the protection of traditional knowledge. However, so far no coherent and inclusive international efforts are being made to address this concern.

There are a number of alternatives that countries could exploit to protect traditional knowledge of indigenous and local peoples. The first is *trade secrets*. While there is excessive attention being placed on patents and their restrictive nature in relation to the protection of traditional knowledge, trade secrets have not been adequately exploited by national institutions and local peoples to protect the knowledge. It is however known that

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58 Implementation of Article 8(j) and Related Provisions, 1998. UNEP/CBD/COP/4/10.

59 Decisions Adopted by the Conference of Parties to the Convention on Biological Diversity at its 4th Meeting, 1998.

60 Decisions Adopted by the Conference of Parties to the Convention on Biological Diversity at its 4th Meeting, 1998.

traditional peoples have used—and possibly continue to use—trade secrets to protect their knowledge. However, this form of protection of traditional knowledge is generally not institutionalized: institutions to safeguard trade secrets of indigenous and local peoples are either weak or absent in most countries. It is therefore crucial that national legislation be enlarged to contain specific measures that would enable indigenous and local peoples to apply trade secrets to protect their knowledge and innovations. Such measures may include explicit articulation of traditional knowledge as subject matter for protection through trade secrets. In addition, there are a wide range of institutional barriers to the commercialization of traditional knowledge and innovations in modern economic space. For example, current economic policies of most countries are inimical to the direct use of traditional innovations and placement of such innovations on modern economic space. They fail the test of rigidly established industrial standards. Such policies should be reviewed with the view of making them more accommodative of traditional knowledge and innovations. There is need for more research to be conducted to explore the potential application of trade secrets. The World Intellectual Property Organization (WIPO) and organizations such as the African Center for Technology Studies (ACTS), the World Conservation Union (IUCN) and UNEP could invest in such studies. The studies could also cover assessment of how well other forms of non-patent intellectual property protection would be applied to protect traditional knowledge.

Second, countries should invest in the creation of *sui generis* legislation suitable to their cultural and political conditions. They should explore the development of systems that will first and foremost protect traditional knowledge as intellectual property of indigenous and local peoples. Such systems should also encourage (or even require) the flow of benefits from bioprospecting to indigenous and local peoples. According to Dutfield, "legislation could be drafted in such a way as to allow a community to become the successor in title of . . . discovery and development process. Under this interpretation, indigenous communities would have the right to protect traditional practices utilizing intellectual property rights mechanisms, stopping the usual appropriation by others of the commercial value arising from their knowledge. As a right holder, they would have exclusive rights to withhold from third parties their consent to make, use, an offer for sale, or import the plant variety that they developed."[61]

Third, it is crucial that new research be conducted on traditional forms of intellectual property and how traditional knowledge was/is protected by indigenous and local peoples in different parts of the world. Case studies illuminating how indigenous and local peoples perceive intellect and whether they treat it as property worth protecting would be useful. This work would form the basis for national and international processes to establish property protection regimes suitable for traditional knowledge and innovations.

[61] Dutfield, *op cit.* pp. 39-40.

3. Conclusions

This paper has provided a review of literature on intellectual property protection and traditional knowledge. In our view, conventional intellectual property law does not adequately cover or protect traditional knowledge and innovations of indigenous and local peoples. However, non-patent forms of intellectual property protection could be exploited to protect the knowledge and innovations. For example, trade secrets and trade marks offer flexibility for protecting traditional knowledge and innovations. Indigenous and local peoples do not have strong institutional arrangements to safeguard their property and enforce trade secrets and trade marks in modern economic space. We propose that countries invest in the establishment of *sui generis* regimes covering traditional knowledge and rights.

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EDITED TRANSCRIPT OF THE DISCUSSION

Question/Comment

It is easy in a discussion like this to tell very simple truths, and perhaps what I am now going to say will fall into that category. I am not afraid of that because I think it is a good category. WIPO has made a lot of effort in bringing knowledge to the world about the advantages of intellectual property rights. I think there is a firm basis of knowledge, which could be used to combine with the traditional knowledge of indigenous communities. I think organization among indigenous communities is something which is more necessary at this stage than any new formal set of rights. Without an organization which transcends the boundaries of this or that nation, I think developing countries would have great trouble in finding international acceptance for specific rights formulated in the way that the discussion has until now often been phrased.

Question/Comment

I would also like to thank WIPO for organizing this very interesting seminar which is, for people who are not experts in this field, of primary importance and interest. A few days ago, at a seminar organized by the United Nations Conference on Trade and Development (UNCTAD), I heard an interesting example which had to do with a frog in Costa Rica. If my memory serves me right, it has biological or physiological properties which makes it possible to extract a very powerful anaesthetic, fifty times more powerful than morphine for example. It has been patented. How can we protect traditional knowledge or to what extent does this have to deal with traditional knowledge or this whole topic of biodiversity?

Second, what would be a specific example of protection of traditional knowledge, and how can one protect traditional knowledge to the extent that it would be useful and actually produce innovations?

Dr. Drahos mentioned the example of the differences in price between pharmaceutical products in different countries of the world. He gave the example of India and Pakistan. How does one fix or set prices for pharmaceuticals, because this has to do with supply and demand? Since cancer is on the rise, medicines used for treating cancer are costing more and more. So perhaps you can enlighten me on this aspect. How does one set the prices of drugs? Does it have to do with supply and demand?

Lastly, Ms. Salazar said that she was in a difficult situation because she is aware of very good arguments in favor of and against patents and drugs. I do not really have a clear vision of both positions. As has already been pointed out, this is a subject of a long discussion at the WHO and it has not yet been resolved. Could you give us a very brief summary of the importance of patents with respect to research and development? I think that it is very important to hear your opinion on whether drugs grow on trees or not. Can you illustrate the benefits that can be derived from patents and what are the supposed benefits for developing countries?

Dr. Mugabe

The question was how does one protect traditional knowledge? I hope from my presentation it was clear that it is very difficult for a number of reasons. One is the nature of

traditional knowledge itself, as traditional knowledge is to a large extent communal but the intellectual property protection system tends towards privatization of that knowledge and this has consequences for the holders of that knowledge. However, there are opportunities to use trade secrets law and possibly trade marks in protecting that knowledge. You will appreciate that in many developing societies, African ones in particular, holders of traditional medicinal knowledge use and have used trade secrets to protect that knowledge for many years. You can protect it by not putting it in the public domain and you can restrict its transfer within a particular community. I see that as one approach which is still being used in traditional societies. Now, when we come to patents, it becomes very complex. Patents do not protect knowledge but rather inventions and innovations. It appears to me that we seem to have taken the position that intellectual property protection is the only condition or incentive for innovation. What are the preconditions for innovation? There is evidence in fact that firms consider whether or not to acquire a patent on a new drug. Not all drugs put on the market are patented. Some firms are investing in other strategies such as marketting the product so fast that by the time others start imitating or copying you have reaped most of the benefits. There is a tendency to treat patents, and intellectual property protection generally, as the only condition for innovation.

Dr. Drahos

There is no quick answer to the question that the last speaker from the floor asked. About the only place where supply and demand work perfectly is in the model of perfect competition in the minds of the economist. In the real world, with respect to drug prices there are many factors that affect them, some countries are monopsonists, that is to say there is one buyer in the market. So, for example, in Australia, the Government is the sole buyer of drugs. This gives it bargaining power and it passes on the cost of those cheaper drugs to the Australian community. Other countries run regulatory schemes that are similar. Another factor that affects drug prices, and this applies to all intellectual property rights, is whether an intellectual property rights owner has the right to control importation or not. If the intellectual property owner has the right to control importation then the intellectual property owner can price discriminate. This can sometimes be beneficial, but sometimes it might not be. In just the same way a restaurant, for example, can offer a Tuesday lunch special for students and yet charge business customers much higher prices on Friday and Saturday night. The drug company might choose to price discriminate in the way that is favorable. There are lots of other factors as well. It is not easy to give a quick answer.

Ms. Salazar

It is difficult in so little time to give a summary of everything I want to say, but I will attempt to do so. The last speaker mentioned the case of the frog in Costa Rica. This has happened not just with frogs but with many other species as well. However, we should differentiate between what should be settled by intellectual property legislation and what should be settled by other kinds of laws. What has been patented is not the frog itself, but a substance which is extracted from the frog. Many people involved in this kind of discussion find this very confusing. The problem you have raised cannot be solved within the framework of intellectual property law but instead in terms of regulating access to biological resources. I consider that it is positive for the human race as a whole to have access to an anaesthetic or some substance, which removes pain better than morphine. So the fact that there is a company interested in extracting the substance and interested in investing in this

pharmaceutical product and then taking it to the market is a good thing. However, one must also bear in mind that the supplier country is entitled to some kind of compensation for its contribution to the process. A country which protects, for instance, frogs which may be difficult to find in the world and which make it easier for firms to carry out research and extract the substance, should be compensated. Another topic of discussion is that of the possibility of patenting life-matter as found in nature. There is a major discussion internationally going on as to what is a "discovery" and what is an "invention." I agree with most environmentalists that there is some cause for concern about the fact that elements of biodiversity as found in nature have been patented. Some of these patents have later been overturned in court cases because they correspond to elements that were already existing, so the element of invention or novelty is not there.

The main argument in favor of patenting pharmaceuticals is that patenting provides incentives for research and development. I think this is of fundamental importance if human beings are going to have access to drugs. The pharmaceutical industry worldwide could certainly not have developed to the extent to which it has unless it had an ally in the patent system. Of course, the first argument against this is increasing prices. However even here there is no consensus as to whether this is being caused by patent protection. Many people cite certain examples, for example, penicillin. This substance was invented and was not protected initially. It was not accessible to the whole of society until the United States army took a particular interest and ordered it to cure its soldiers. Another very topical example is the malaria vaccine found by a Colombian doctor. He voluntarily did not seek a patent so that the vaccine could be more publicly available.

A HUMAN RIGHTS PERSPECTIVE ON INTELLECTUAL PROPERTY, SCIENTIFIC PROGRESS, AND ACCESS TO THE BENEFITS OF SCIENCE

by

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1. Introduction

Intellectual property regimes seek to balance the moral and economic rights of creators and inventors with the wider interests and needs of the society. A major justification for patents and copyrights is that incentives and rewards to inventors result in benefits for the society. The United States Constitution, written in 1787, for example, vests the Congress with the power "To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respectful Writings and Discoveries."[1] Two hundred years later, the World Intellectual Property Organization (WIPO) links the existence of an equitable and modernized patent system to incentives for inventiveness and innovative activity, a willingness to invest in industrial applications, and a favorable climate to the transfer of technology.[2]

A human rights approach to intellectual property takes what is often an implicit balance between the rights of inventors and creators and the interests of the wider society within intellectual property paradigms and makes it far more explicit and exacting. The International Covenant on Economic, Social and Cultural Rights (the ICESCR) is the major international human rights instrument addressing these issues. Article 15 specifies that States Parties, that is the countries that have ratified or acceded to this instrument, "recognize the right of everyone" both "to enjoy the benefits of scientific progress and its applications"[3] and "to benefit from the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author."[4] To achieve these goals, the Covenant mandates that States Parties undertake a series of steps. These include "those necessary for the conservation, the development and the diffusion of science and culture."[5] More specifically, States Parties "undertake to respect the freedom indispensable for scientific research and creative activity."[6]

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[1] Article 1, Paragraph. 8, Section 8, *The Constitution of the United States of America (U.S.A)*, adopted 1787, Washington D.C.: U.S. Government Printing Office, 1985.
[2] *Intellectual Property Reading Material*, (World Intellectual Property Organization (WIPO)), Publication 476E, Sections 4.60 and 4.61, p .59.
[3] Article 15.1. (b), *International Covenant on Economic, Social and Cultural Rights*, henceforth ICESCR, adopted 16 December 1966, 993 U.N.T.S. 3 (entered into force 3 January 1976), G.A. Res. 2200 (XXI), 21 U.N. GAOR Supp. (No. 16), p. 49, U.N. Doc. A/6316 (1966).
[4] Article 15.1 (c), ICESCR.
[5] Article 15.2, ICESCR.
[6] Article 15.3, ICESCR.

Further, States Parties make the commitment to "recognize the benefits to be derived from the encouragement and development of international contacts and cooperation in the scientific and cultural fields."[7]

To be consistent with the norms in the ICESCR, a human rights approach differs in a number of regards from the standards set by intellectual property law. In brief, it requires that the type and level of protection afforded under any intellectual property regime directly facilitate and promote scientific progress and its applications and do so in a manner that will broadly benefit members of society on an individual, as well as collective level. It establishes a higher standard for evaluating patent applications, namely that the proposed invention also be consistent with the inherent dignity of the human person and with central human rights norms. Because a human right is a universal entitlement, its implementation should be measured particularly by the degree to which it benefits those who hitherto have been the most disadvantaged and vulnerable.[8] A right to the benefits of science and technology assumes that both individuals and communities will have easy access. Additionally, a right to the benefits of science and technology cannot be achieved in the absence of careful government policies to determine priorities for investment in and the development of science. The human rights principle that every citizen shall have the right and opportunity to take part in the conduct of public affairs[9] mandates a right of choice for members of society to be able to discuss, assess, and have a role in determining major scientific and technological developments.[10] And finally, a human rights approach entails a right of protection from possible harmful effects of scientific and technological development, again on both individual and collective levels. These considerations go well beyond a simple economic calculus.

Although more than 130 countries have become States Parties to the ICESCR[11] and therefore are legally obligated to comply with these standards, too often, policy makers and legislators do not factor human rights considerations into decision-making on intellectual property regimes, and instead rely primarily on economic considerations. In part this situation reflects intellectual fragmentation of spheres of knowledge and interest. Intellectual property lawyers tend to have little involvement with human rights law, and few human rights specialists deal with science and technology or intellectual property issues. In addition, although many members of the scientific community have become human rights advocates, particularly in societies that do not respect human rights norms, their activities have generally been practical rather than theoretical. Their involvement has sought to bring about fundamental political reforms consistent with a respect for human rights or aimed at protecting colleagues who are being persecuted. Work on broader issues related to the role and nature of science has dealt primarily with the freedom indispensable for scientific

[7] Article 15.4, ICESCR.

[8] A. R. Chapman, "A Human Rights Approach to Health Care Reform," in A. R. Chapman, (Ed.), *Health Care Reform: A Human Rights Approach* (Washington, D.C.: Georgetown University Press), p.153.

[9] Article 25 (a), *International Covenant on Civil and Political Rights*, adopted 16 Dec. 1966, 999 U.N.T.S. 171 (entered into force Mar. 1976), G.A. Res. 2200 (XXI) 21 U.N. GAOR, Supp. (No. 16) at 52, U.N. Doc.A/6316 (1966).

[10] C.G. Weeramantry, "The Problems, the Project, and the Prognosis," in C.G. Weeramantry, (Ed)., *Human Rights and Scientific and Technological Development* (Tokyo: United Nations University Press, 1990), p. 14.

[11] As of 15 January 1998, 137 countries had ratified ICESCR. These numbers have been relatively stable for the past decade. See Paragraph 53, Commission on Human Rights, "Follow-Up to the World Conference on Human Rights: Five Year Review of the Implementation of the Vienna Declaration and Program of Action," Interim report of the United Nations High Commissioner for Human Rights, E/CN.4/1998/104, dated February 20, 1998.

research and creative activity and to a lesser extent on the concomitant responsibilities of scientists. Even public interest science advocates concerned with the application of science to promote human welfare generally use the vocabulary of scientific responsibility rather than human rights.[12]

An additional complication is that Article 15 of the ICESCR can be characterized as the most neglected set of provisions within an international human rights instrument whose norms are not well developed. As has been noted by analysts, the implementation and monitoring of the rights articulated in the ICESCR have generally been hampered by various conceptual and methodological difficulties.[13] Much has been written about the lack of intellectual clarity as to the definition and scope of these rights.[14] The provisions in Article 15 share in these problems. Understanding of the full implications of economic, social, and cultural rights is less advanced than is the case with civil and political rights. In contrast with civil and political rights, the rights contained in the ICESCR, with the exception of the labor-related articles, are not grounded in significant bodies of domestic or international jurisprudence. Most of these rights were first articulated and recognized in the Universal Declaration of Human Rights (UDHR)[15] and then given greater specificity in the ICESCR. This is the case with regard to the provisions of Article 15. Although intellectual property claims, cultural life, and scientific advancement were certainly well discussed topics prior to 1948, they were not considered to be human rights. Added to these limitations, the literature conceptualizing the scope of Article 15 and related State Party obligations is even sparser than most of the other rights defined in the ICESCR.

Moreover, economic globalization and increasing privatization and commercialization of science has made it even more difficult to achieve the various balances envisioned in Article 15. These trends have affected the very conduct and nature of science. Because science is one of the most international of all activities, advances in science require freedom of inquiry, the full and open availability of scientific data on an international basis, and open publication of results. Until recently most developed countries provided extensive public funding for basic scientific research so as to assure widespread availability of and access to the findings.[16] Large government investments in basic research and development made it possible to argue that the conduct of scientific research, including the maintenance and distribution of scientific data, was a public good. Research scientists actively pursued dissemination of research results through publication and often seemed disinclined to patent their discoveries.[17] However, an evolution of government policy, beginning in 1980 with the

[12] See, e.g., J. T. Edsall, *Scientific Freedom and Responsibility: A Report of the AAAS Committee on Scientific Freedom and Responsibility* (American Association for the Advancement of Science: Washington, D.C., 1975).
[13] See, e.g., A. R. Chapman, "A 'Violations Approach' for Monitoring the International Covenant on Economic, Social and Cultural Rights," *Human Rights Quarterly* 18 (1996):pp. 23-66.
[14] See, e.g., Philip Alston, "Out of the Abyss: The Challenges Confronting the New U.N. Committee on Economic, Social and Cultural Rights," *Human Rights Quarterly* 9 (1987):pp. 332-81.
[15] *Universal Declaration of Human Rights* (UDHR), adopted December 10, 1948, G.A. Res. 217A (III), 3 U.N. G.A.O.R. (Resolutions, part 1), U.N. Doc.A/810 (1948).
[16] Committee on Issues in the Transborder Flow of Scientific Data of the National Research Council, *Bits of Power: Issues in Global Access to Scientific Data*, (Washington, D.C.: National Academy Press, 1997), pp. 17, 133.
[17] A. E. Carroll, "A Review of Recent Decisions of the United States Court of Appeals for the Federal Circuit: Comment: Not Always the Best Medicine: Biotechnology and the Global Impact of U.S. Patent Law," *The American University Law Review* 44 (Summer, 1995): no. 24.

adoption of the Bayh-Dole Act in the U.S.A., inclined many governments to encourage the private commercial development of publicly funded research. Subsequently many of these countries also began to privatize activities previously delivered by the public sector and to facilitate the generation and distribution of scientific data on a commercial basis. This development, in turn, stimulated pressures for new and broader forms of intellectual property rights to protect economic investments.

The implications of these developments are several. Commercialization has introduced market considerations into the conduct of science. It has eroded the distinction in many areas of scientific research between basic research, where intellectual property rules are primarily concerned with the attribution of ideas and findings, and applied research, where intellectual property and proprietary concerns predominate. This has particularly been the case in computer science and biotechnology.[18] Commercialization has also changed intellectual property from a means to provide incentives to researchers and inventors to a mechanism to encourage investment and protect the resources of investors. Corporate investment in scientific research and development has imposed constraints on science's tradition of open publication. In many scientific fields, particularly the life sciences, some scientists are delaying publication and withholding data so as to secure intellectual property rights.[19] There is widespread concern in the scientific community that privatization, accompanied by legal restrictions and high prices, will restrict scientists' access to data needed for their research.[20] A report by the National Research Council of the U.S. Academy of Sciences comments as follows on these trends:

> Science operates according to a "market" of its own, one that has rules and values different from those of commercial markets. While protection of intellectual property may concern a scientist who is writing a textbook, that same scientist, publishing a paper in a scientific journal, is motivated by the desire to propagate ideas, with the expectation of full and open access to results. To commercial publishers (including many professional societies), protection of intellectual property means protection of the right to reproduce and distribute printed material. To scientists, protection of intellectual property usually signifies assurance of proper attribution and credit for ideas and achievements. Generally, scientists are more concerned that their work be read and used rather than that it be protected against unauthorized copying. These conflicting viewpoints pose challenging problems for science and the rest of society.[21]

That these trends have occurred within the context of economic globalization has further complicated the situation. Globalization is inimical to human rights considerations in a variety of ways. The first is the values orientation it promotes. A human rights approach is predicated on the centrality of protecting and nurturing human dignity and the common good. It evaluates science according to its ability to promote these goals. In contrast, commercialization and privatization place greatest emphasis on the profitability of science and its contributions to economic competitiveness. Economic globalization also promotes a reliance on the market and translates other values into economic or property discourse. Studies have shown that conceptions and assumptions underlying property discourse tend to

[18] Committee on Issues in the Transborder Flow of Scientific Data, *Bits of Power, op. cit.* pp.133-134.
[19] E. Marshall, "Secretiveness Found Widespread in Life Sciences," *Science* 276 (April 25, 1997), p.525.
[20] Committee on Issues in the Transborder Flow of Scientific Data, *Bits of Power, op.cit.* p. 111.
[21] *Ibid.*, p 5.

influence and crowd out other modes of valuation. The presumption is that all other modes of valuation can and should be translated into market terms.[22]

Additionally, globalization encourages a reconceptualization of the role of the state, reducing its regulatory and redistributive functions and privatizing the performance of many services.[23] This is problematic for the realization of human rights. The recognition of rights confers reciprocal duties and obligations for their realization, and human rights law usually vests these responsibilities in the state. Thus an ambitious human rights agenda, particularly in relationship to the realization of economic, social, and cultural rights, requires a strong and effective state. However, at century's end key elements of the welfare state model are being cast aside and the resources invested in the state are being downsized. In this reorientation, the state is increasingly viewed as a mechanism for establishing the conditions for private actors to fulfill their goals. This often comes at the expense of assuming direct responsibility for social welfare and the common good, as defined by human rights norms. In the process governments are becoming increasingly responsive to the influence of strong economic interests to the detriment of the effectiveness of institutions representing broader constituencies.

This paper will deal with these issues. It is written in three major sections. The first conceptualizes the scope and limitation of the portions of Article 15 of the ICESCR relating to science and technology. The second and third sections of the paper are in the form of case studies of two contested subjects, gene patenting and database protection. Both of these issues have attracted considerable attention in recent years. They are also topics with which the Directorate of Science and Policy Programs of the American Association for the Advancement of Science has been involved.

2. Conceptualizing Article 15 of the ICESCR

(i) Universal Declaration of Human Rights

Article 15 of the ICESCR builds on the text of a parallel article in the Universal Declaration of Human Rights. The first paragraph of Article 27 of the UDHR states that "Everyone has the right freely to participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits." The second paragraph of Article 27 adds a second provision: "Everyone has the right to the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author."

Like other provisions of the UDHR, the context for drafting Article 27 was the widespread reaction to the Nazi genocide and the brutality of World War II. Science and technology had played an important role in the war and served as an instrument of the Holocaust. Therefore it is not surprising that some eminent members of the scientific

[22] See, e.g., E. R. Gold, *Body Parts: Property Rights and the Ownership of Human Biological Materials* (Washington, D.C.: Georgetown University Press, 1996).

[23] K. Tomasevski, "The impact of globalization on the enjoyment of economic, social and cultural rights in OECD countries," draft paper commissioned by the American Association for the Advancement of Science, 1997.

community took an active part in the public debate after the war regarding the development of a code of universal human rights norms. They included Julian Huxley, the British biologist and writer who served as the first director of the United Nations Educational, Scientific and Cultural Organization (UNESCO), the American chemist W.A. Noyes, and J.M. Burgers, a member of the Royal Netherlands Academy of Science.[24] Additionally, the discussion within the United Nations Commission on Human Rights during the drafting process for the UDHR alluded to the misuse of science and technology by the Hitler regime and the need for safeguards to protect science from being applied for harmful purposes.

Conceptualizing science within a human rights framework, however, required more than just insulating science and technology from potential misuse or even protecting the public from exposure to the harmful effects of science. Like the language in other provisions of the UDHR, Article 27 recognizes a series of rights or claims. All of these rights, including those related to science and culture, are considered to be universal, vested in each person by virtue of their common humanity. The human rights articulated in the UDHR are also held to exist independently of recognition or implementation in the customs or legal systems of particular countries. Human rights are held to comprise important norms that create *prima facie* obligations, particularly on the part of governments, to take positive measures to protect and uphold these rights.[25]

The wording of Article 27 is noteworthy in a number of regards. It goes beyond recognizing a right to benefit from science applications to articulate specifically that everyone has the right "to share in scientific advancement and its benefits." This language emerged from concerns expressed by some members of the drafting committee operating under the aegis of the United Nations Commission on Human Rights that scientific activities, as well as literary activity, were elitist in nature. Paragraph 2 on "the protection of moral and material interests" reflected a variety of interests. One impetus was a desire by some drafters to harmonize the UDHR with the provision on intellectual property in The American Declaration on the Rights and Duties of Man, 1948. Other members of the Committee expressed a desire to use the moral authority of the United Nations (the U.N.) to protect all forms of work, intellectual as well as manual. The provision survived criticisms by some members of the drafting committee that intellectual property needed no special protection beyond that afforded generally by property rights (already in Article 17 of the UDHR), as well as claims that special protection for intellectual property entailed an elitist perspective.

The UDHR was adopted unanimously by the General Assembly on December 10, 1948. As a General Assembly action, the UDHR is aspirational or advisory in nature. It does not legally bind member states of the U.N. to implement it. Over time, however, the UDHR has gradually assumed the status of customary international law. It is considered to be the single most authoritative source of human rights norms. Nevertheless, some provisions, particularly

[24] This discussion of the historical background to the drafting of Article 27 relies on Richard Pierre Claude, "Scientists' Rights and the Right to the Benefits of Scientific Progress." The paper was commissioned by the Science and Human Rights Program of the American Association for the Advancement of Science (Washington, D.C.) and presented at the Hebrew University in 1998. Claude drew on the Official Records of the Third session of the General Assembly, Part I, "Social and Humanitarian Cultural Questions," Third Committee, Summary Records of Meetings, September 21 -December 8, 1948, pp. 619-635.

[25] J. W. Nickel, *Making Sense of Human Rights: Philosophical Reflections on the Universal Declaration of Human Rights* (Berkeley and Los Angeles, University of California Press, 1987), p. 3.

those dealing with basic civil and political rights, have gained more recognition than the provisions dealing with economic, social and cultural rights. Despite a rhetorical commitment to the indivisibility and interdependence of human rights, the international community has consistently treated civil and political rights as more significant than economic, social and cultural rights.

The original plan within the United Nations was to follow the Universal Declaration with the adoption of a series of treaties that would make its provisions more specific and binding on those countries that became States Parties by ratifying or acceding to these instruments. Because of Cold War hostilities, as well as reduced support for human rights treaty-making by the United States, the procedure was delayed. Drafts of two international covenants, one on civil and political rights and the other on economic, social and cultural rights, originally submitted to the General Assembly in 1953, were not approved until 1966. Both came into force in 1976 when the thirty-fifth nation signed these instruments.[26] The ICESCR and the ICCPR, along with the UDHR, are said to constitute the universal bill of human rights. Together they set the minimal standards of decent social and governmental practice.

(ii) Comparing Provisions of the UDHR and Article 15 of the ICESCR

The language in Article 15 of the ICESCR builds on but also differs from the UDHR in a number of ways. Much like the Universal Declaration, the first paragraph recognizes three rights—the right of everyone:

(a) To take part in cultural life;
(b) To enjoy the benefits of scientific progress and its applications;
(c) To benefit from the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author.

It is relevant to note that the intellectual property provision in the UDHR was carried over into the ICESCR despite the fact that the article on the right to property was not. the ICESCR has no equivalent to the Universal Declaration's Article 17.1 language that "Everyone has the right to own property alone as well as in association with others." Nor does it make the commitment found in Article 17.2 that "No one shall be arbitrarily deprived of his property."

Most notably, because the ICESCR has the status of a treaty and as such is legally binding on those nations that become States Parties, the text of Article 15 in the ICESCR articulates a series of responsibilities for States Parties that were absent from the Universal Declaration. It uses the format of "steps to be taken." In doing so, the ICESCR translates the aspirational language of the Universal Declaration into specific legal obligations. These are outlined in Paragraphs 2 through 4:

[26] Nickel, *Making Sense of Human Rights, op.cit.* pp 5-6.

(2) The steps to be taken by the States Parties to the present Covenant to achieve the full realization of this right shall include those necessary for the conservation, the development and the diffusion of science and culture.

(3) The States Parties to the present Covenant undertake to respect the freedom indispensable for scientific research and creative activity.

(4) The States Parties to the present Covenant recognize the benefits to be derived from the encouragement and development of international contacts and cooperation in the scientific and cultural fields.

(iii) Limited Availability of Resources for Conceptualizing the Content of Article 15

As noted above, there have been few efforts to conceptualize the scope of Article 15 and the resultant obligations of States Parties. There is not a body of national or international law on this subject. The United Nations Committee on Economic, Social and Cultural Rights, the treaty monitoring body that oversees compliance with the ICESCR, has not engaged in efforts to interpret this Article. The Committee has not held a day of general discussion on the portions of the article relating to science and technology. Nor has it initiated a process to draft a general comment to clarify its normative content. During the 1970's the Secretary-General of the U.N. and specialized agencies prepared a number of substantive reports on scientific and technological developments and their impact on human rights for presentation to the General Assembly of the U.N. and the Commission on Human Rights, but these studies did not result in standard setting. Also in the mid-1970s socialist countries took the initiative and developed a "Declaration on the Use of Scientific and Technological Progress in the Interests of Peace and for the Benefit of Mankind."[27] While this Declaration was approved by the General Assembly, many Western countries decided to abstain because of the references to "liberation movements" in the text, and as an action of the General Assembly it is not legally binding. Moreover, academic literature more often focuses on the potential problems rather than the contributions of science and technology. One of the few sources addressing broader issues of science and technology within a human rights framework is a collection of articles entitled *Human Rights and Scientific and Technological Development.*[28] This publication was sponsored by the United Nations University and edited by C.G. Weeramantry, currently a justice on the International Court in The Hague.

(a) Article 15.1 (b): The right of everyone to enjoy the benefits of scientific progress and its applications

As conceptualized in this paper, the right of everyone to enjoy the benefits of scientific progress and its applications has three central components:

- A right of access to beneficial scientific and technological developments;

[27] "Declaration on the Use of Scientific and Technological Progress in the Interests of Peace and for the Benefit of Mankind," proclaimed by General Assembly Resolution 3384 (XXX) of November 1975.
[28] Weeramantry, (Ed)., *Human Rights and Scientific and Technological Development, op.cit.*

- A right of choice in determining priorities and making decisions about major scientific and technological developments;
- A right to be protected from possible harmful effects of scientific and technological development, on both individual and collective levels.

As interpreted through a human rights lens, a right of access at a minimum entails that the freedom and opportunity to benefit from scientific and technical advancement be broadly diffused within a nation "without discrimination of any kind as to race, color, sex, language, religion, political or other opinion, national or social origin, property, birth or other status."[29] It also requires governments "to ensure the equal right of men and women to the enjoyment"[30] of the benefits. The U.N. Committee on Economic, Social and Cultural Rights interprets these nondiscrimination clauses as requiring States Parties to eliminate both *de jure* and *de facto* forms of discrimination that adversely affect the realization of the rights covered by the Covenant. These obligations have also been interpreted as requiring both negative measures to prevent discrimination and positive "affirmative action" type initiatives to compensate for past discrimination.[31] To fulfill these requirements, the U.N. Committee places considerable emphasis on the realization of the human rights of women, minorities, the poor, and other disadvantaged groups both in their reporting guidelines and in their review of State Party reports.

What, then, does this mean for interpreting the right to benefit from scientific advances? It certainly imposes a different standard from the current tendency to favor the interests of large corporations or to promote the abstract principle of scientific competitiveness. A human rights approach establishes a requirement for the state to undertake a very rigorous and desegregated analysis of the likely impact of specific innovations, as well as an evaluation of proposed changes in intellectual property paradigms, and to utilize these data to assure nondiscrimination in the end result. When making choices and decisions, it calls for particular sensitivity to the effect on those groups whose welfare tends to be absent from the calculus of decision-making about intellectual property: the poor, the disadvantaged, racial, ethnic and linguistic minorities, women, rural residents. Consequently, in undertaking these determinations the status of the middle class, the comforts that are likely to accrue to the affluent, or the potential profits to investors count for much less than improving the status of the vulnerable and bringing them up to mainstream standards.

The human rights principle of self-determination enumerated in the ICESCR and the various civil and political rights defined in the ICCPR emphasize the right of all members of society to participate in a meaningful way in deciding on their governance and common future. This translates into a right to societal decision-making on setting priorities for and major decisions regarding the development of science and technology. While this is easy to affirm in principle, it is very difficult to achieve in practice because political institutions have not kept up with technological change. In the early 1980s, C.G. Weeramantry wrote a book entitled *The Slumbering Sentinels* which examines the implications of unfettered

[29] Article 2.2, ICESCR.
[30] Article 3, ICESCR.
[31] P. Alston, "The International Covenant on Economic, Social and Cultural Rights," in *Manual on Human Rights Reporting*, U.N. Doc. HR/PUB/91/1 (1991), p. 47.

technological advance.[32] He commented then that the speed of technological change had left social and political institutions unprepared with the result that technology was leading rather than being shaped by governmental policy.[33] He also identified various power shifts related to technological change, particularly the concentration of power in transnational corporations and these corporations' ability to find a common interest with personnel in government departments at the expense of the democratic process. Further contributing to the inadequacy of political structures in the face of technological changes, Weeramantry pointed out that decisions of major importance involving the use of technology are often taken at the highest legislative and executive levels, to which public interest groups often have little access. The counter-side to inadequate public representation is the growth of the power of lobbyists and their ability to undermine socially beneficial measures.

All of these trends have been further accelerated in the past fifteen years. Weeramantry advocated the need to undertake broad reforms to reorient the political process so as to assure that science and technology policy not be dictated from the top or shaped by a few powerful interests, but this has not taken place. Instead the rapid development of science and technology and the pressures imposed by economic globalization have shifted the balance even further away from citizens' control. A recent paper written by the Center for International Environmental Law describes the situation with regard to the formulation of intellectual property law as follows:

> "Intellectual property laws are defined through closed, secretive international negotiations dominated by industry – and are then brought to national legislatures as *faits accomplis*, without democratic deliberation. Combined with the technical, arcane nature of intellectual property legal specialty, this has helped corporate interests to avoid public scrutiny and expand their control over developments in applications such as electronic information, biotechnology or pharmaceuticals. Industrial country governments promote corporate interests in expanded intellectual property rights in the name of maximizing national competitiveness in a global marketplace."[34]

The World Trade Organization's role in standard setting, particularly in light of the closed nature of its proceedings and its lack of concern for democratic procedures or human rights principles, has been of particular concern to many non-governmental organizations, human rights advocates, and environmental groups. Intellectual property is covered by the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights, 1994 (the TRIPS Agreement). This Agreement, which was a product of the Uruguay Round of trade talks, sets minimum standards for national protection of intellectual property rights and imposes enforcement measures, including the potential for trade sanctions against WTO members who do not comply with WTO rules and procedures. The power of the WTO has been described as "unprecedented in the field of intellectual property protection."[35]

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[32] C.G. Weeramantry, *The Slumbering Sentinels: Law and human rights in the wake of technology* (Ringwood, Victoria, Australia and Harmondsworth, Middlesex, England: Penguin Books, 1983).
[33] *Ibid.*, particularly chapter 10.
[34] David Downes, "The 1999 WTO Review of Life Patenting Under TRIPS," Revised Discussion Paper, Center for International Environmental Law, Washington, D.C., September 1998, p. 1.
[35] *Ibid.*, p.1.

Much has been written about the challenges posed by science and technology to human rights and human dignity. In the thirty years since the publication of Jacques Ellul's pioneering work *The Technological Society*,[36] an increasing number of thinkers have called attention to the potential of technology to diminish human dignity and to erode moral values. According to some analysts, Albert Borgmann among them,[37] modern technology encourages us to treat an expanding range of human relationships as well as things as commodities whose utility we measure and consume. Others, such as Ian Barbour, recognize the subtle danger of extending technological attitudes to all of life until human beings and other creatures are treated as objects to be exploited.[38] Barbour points out that technologies frequently bring an inequitable distribution of costs and benefits: one group benefits while other groups bear the brunt of the risks and indirect costs. According to Barbour, technology, which is both a product and an instrument of social power, also tends to reinforce the concentration of wealth and political power in existing social structures.

Human rights law confers broad responsibilities on governments to protect against violations. Like civil and political rights, economic, social and cultural rights impose three different types of obligations on states: the obligations to respect, protect and fulfill. According to the Maastricht Guidelines on Violations of Economic, Social and Cultural Rights,[39] the obligation to respect requires states to refrain from interfering with enjoyment of specific rights. The obligation to protect requires states to prevent violations of such rights by third parties. And the obligation to fulfill requires states to take appropriate legislative, administrative, budgetary and other measures towards the realization of these rights.[40]

The 1975 Declaration on the Use of Scientific and Technological Progress in the Interests of Peace and for the Benefit of Mankind has a number of relevant provisions:

> "All States shall take appropriate measures to prevent the use of scientific and technological developments, particularly by the State organs, to limit or interfere with the enjoyment of the human rights and fundamental freedoms of the individual as enshrined in the Universal Declaration of Human Rights, the International Covenants on Human Rights and other relevant international instruments.[41]
>
> All States shall take measures to extend the benefits of science and technology to all strata of the population and to protect them, both socially and materially, from possible harmful effects of the misuse of scientific and technological developments, including

[36] J. Ellul, *The Technological Society* (New York: Vintage Books, 1964), translated by J. Wikinson.
[37] A. Borgmann, "Communities of Celebration: Technology and Public Life," in Frederick Ferre, Ed., *Research in Philosophy and Technology* 10 (Greenwich, Conn. and London: JAI Press, 1990), 335.
[38] Ian Barbour, *Ethics in an Age of Technology* (San Francisco, Harper Collins Publishers, 1993).
[39] The Maastricht Guidelines were drafted by a group of some thirty experts who met in Maastricht from January 22-26, 1997 at the invitation of the International Commission of Jurists (Geneva, Switzerland), the Urban Morgan Institute on Human Rights (Cincinnati, Ohio, USA) and the Center for Human Rights of the Faculty of Law of Maastricht University (The Netherlands). The objective of this meeting was to develop guidelines on the nature and scope of violations of economic, social and cultural rights and appropriate responses and remedies. This author was among the participants. The meeting did not deal specifically with Article 15 of ICESCR.
[40] Paragraph 6, "The Maastricht Guidelines on Violations of Economic, Social and Cultural Rights," reprinted in International Commission of Jurists, *Economic, Social and Cultural Rights: A Compilation of Essential Documents* (Geneva: ICJ, 1997).
[41] Article 2, Declaration on the Use of Scientific and Technological Progress, *op.cit.*.

their misuse to infringe upon the rights of the individual or of the group, particularly with regard to respect for privacy and the protection of the human personality and its physical and intellectual integrity.[42]

All States shall take effective measures, including legislative measures, to prevent and preclude the utilization of scientific and technological achievements to the detriment of human rights and fundamental freedoms and the dignity of the human person."[43]

(b) Article 15.1 (c): The right of everyone to benefit from the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author.

The language in Article 15.1 (c) imposes an obligation on States Parties to protect the moral and material interests of authors and inventors. However, it accords wide latitude regarding the manner in which a particular government confers intellectual property protection. The perspective in this paper is that a human rights framework imposes conditions on the recognition of intellectual property rights. To be consistent with human rights norms, the subject matter considered to be appropriate for patent protection and the paradigm that is adopted would have to meet the following considerations:

- Intellectual property rights must be consistent with the understanding of human dignity in the various international human rights instruments and the norms defined therein;
- Intellectual property rights related to science must promote scientific progress and access to its benefits;
- Intellectual property regimes must respect the freedom indispensable for scientific research and creative activity;
- Intellectual property regimes must encourage the development of international contacts and cooperation in the scientific and cultural fields.

The European Union provides one potential model relevant to the first point. Article 53(a) of the European Patent Convention specifically stipulates that patents should not be granted for inventions "the publication or exploitation of which would be contrary to '*ordre public*' or morality."[44] Several provisions of a recent Directive of the European Parliament and of the Council on the legal protection of biotechnological inventions reiterate this principle. The Directive also excludes inventions from patentability which offend against human dignity and ethical and moral principles recognized in member states.[45] Do these

[42] *Ibid.* Article 6.
[43] *Ibid.* Article 8.
[44] Quoted in B. A. Brody, "Protecting Human Dignity and the Patenting of Human Genes," paper prepared for the Gene Patenting Dialogue Group, American Association for the Advancement of Science, May 1997, p. 3. A revised version of this paper appears in A. R. Chapman, (Ed)., *Perspectives on Gene Patenting: Science, Religion, Industry, and Law in Dialogue* (Washington, D.C.: American Association for the Advancement of Science, 1999).
[45] "Directive 98/44/EC of the European Parliament and of the Council of July 6, 1998, Paragraphs. 37-40, on the legal protection of biotechnological inventions," *Official Journal of the European Communities*, 30.7.98, L 213/16.

criteria overstep the appropriate role of the state, particularly a liberal state? Philosopher Baruch Brody comments as follows:

> "This European Approach seems perfectly appropriate. Even if the main purpose of the patent system is to promote technological advances, there is no reason why it cannot recognize limitations based upon the need to respect legitimate moral constraints. And even if a liberal state must be neutral and not prohibit behavior merely on the basis of moral constraints, there is no reason why it must promote what it considers to be immoral practices by providing them with intellectual property protection. So neither institutional considerations nor considerations of political policy prohibit the protection of human dignity by the Patent Office."[46]

(iv) Obligations of States Parties

Articles 15.2, 15.3 and 15.4 of the ICESCR impose three sets of obligations on States Parties: to undertake the steps necessary for the conservation, development, and diffusion of science and culture; to respect the freedom indispensable for scientific research and creative activity; and to recognize the benefits to be derived from encouragement and development of international contacts and cooperation in the scientific and cultural fields. To fulfill the first of three mandates, the development and diffusion of science, at the least requires the following:

- Setting priorities for investment in and development of science and technology that weigh both the opportunities for scientific advancement and the potential societal benefits, particularly to poor and disadvantaged groups;
- Developing an adequate process of review to anticipate potential harmful effects of science and technology and inform the public;
- Providing a strong science education program at all levels of the state sponsored school system;
- Offering ongoing public outreach and educational efforts that will better enable individuals to understand the significance of developments and participate in decision-making about priority setting.

Given the enormous influence and impact of science and technology, the responsibility of governments to carefully scrutinize and evaluate science and technology may seem fairly obvious, but it is far from commonplace. Historically, many industrialized countries have allocated research funds through peer review mechanisms that emphasize their potential contribution to scientific knowledge. The assumption that scientific advancement is itself a societal good placed an emphasis on funding pure research without much consideration of its applications. Less developed countries that are primarily recipients, rather than sources of basic scientific research and new technologies, rarely have the infrastructure required to undertake a comprehensive evaluation of incoming products. This is the case whether considering their risks, even when notified by the exporting source of potential problems, or assessing their respective benefits. For this reason, many products that are banned or highly regulated in one country find their way onto the world market, being sold in the very countries

[46] Brody, "Protecting Human Dignity and the Patenting of Human Genes", *op.cit.*

whose lack of an educated and technologically sophisticated population makes them even more dangerous to use. Economic globalization has provided incentives to be more strategic about investments in science and technology. However, decisions made to strengthen a country's competitive position or the market advantage of multinational corporations headquartered there cannot be equated with a human rights approach.

A government can best show respect for the freedom indispensable for scientific research and creative activity by adhering to basic human rights norms recognized in the UDHR and the ICCPR. These include effectively protecting the freedom to express and communicate ideas, to travel within and outside of one's country, to assemble and form professional associations. In addition, the pursuit of science requires an environment that supports the freedom to pursue scientific research in accordance with ethical and professional standards without undue interference. Conversely, the freedom to undertake scientific research and creative activity implies a need for scientific responsibility and self-regulation. Scientific societies in many developed countries have adopted codes of professional ethics in pursuit of these goals. Many of these codes, however, are primarily concerned with the ethics of individual conduct and do not place the scientific enterprise in a broad social context. Moreover, scientific societies, like other professional associations, vary quite considerably in their attitudes toward and capacities for effective self-regulation.

Article 15.4 of the ICESCR mandates that States Parties "recognize the benefits to be derived from the encouragement and development of international contacts and cooperation in the scientific and cultural fields."[47] This requirement should be interpreted in conjunction with other obligations enumerated in the ICESCR, particularly the language of Article 2. This provision directs each State Party to undertake "steps, individually and through international assistance and cooperation, especially economic and technical, to the maximum of its available resources, with a view to achieving progressively the full realization of the rights recognized."[48] Several instruments have tried to spell this out in somewhat greater detail. One section of the 1975 Declaration on the Use of Scientific and Technological Progress in the Interests of Peace and for the Benefit of Mankind states, for example, that "All states shall cooperate in the establishment, strengthening and development of the scientific and technological capacity of developing countries with a view to accelerating the realization of the social and economic rights of the peoples of those countries."[49]

The most appropriate means to fulfill these goals has been a matter of considerable controversy and conflict between countries in the North and the South, particularly with regard to the role of intellectual property regimes. Most long-industrialized countries have maintained that strong intellectual property provisions promote growth and a strong domestic economy. Developing countries, however, generally do not believe that it is in their present economic interests to implement stronger patent laws. Their opposition is based on three factors: (1) the benefits of an intellectual property system tend to be long-term and tenuous; (2) in the short-term, intellectual property protection increases the cost of development, with the patents awarded and resulting payments for the use of these technologies going primarily to foreign multi-national corporations; and (3) few of these countries have the requisite

[47] Article 15. 4, ICESCR.
[48] Article 5, Declaration on the Use of Scientific and Technological Progress in the Interests of Peace and for the Benefit of Mankind, *op.cit.*
[49] *Ibid.* Article 5.

infrastructure to uphold strong patent systems. Thus developing countries sometimes accuse former colonial countries and multinational corporations of seeking to impose "technological colonialism."[50]

3. Gene Patenting: A Case Study

(i) Background

Prior to 1980, some two hundred years of legal doctrine conceptualized life forms as "products of nature" rather than as a human invention and therefore unable to meet the three criteria for patents established by the U.S.A. Congress and many other countries: novelty, utility, and non-obviousness. These legal standards were overturned in a landmark 1980 U.S.A. Supreme Court decision. In *Diamond v.Chakrabarty,* the Court ruled, in a narrow 5-4 decision, that a genetically modified strain of bacteria capable of degrading components of crude oil and thus useful in cleaning up oil spills was patentable as a new and useful manufacture or composition of matter. While the decision affirmed that phenomena of nature in their natural state are not patentable, the Court identified a major exception: goods that have been transformed from their natural state through human intervention. According to the Court, Congress intended that "anything under the sun that is made by man" to be patentable subject matter.[51] In making this decision the Court was apparently motivated by the goal of stimulating the economy through inventive activity and assumed that the refusal to accord patent rights in genetically engineered organisms would slow down the pace of research in this field. After the 1980 Supreme Court decision, the United States Patent and Trade marks Office (USPTO) began to grant new kinds of biotechnology patents. Utility patents on newly developed plant varieties were soon accepted that went well beyond the limited protection that had previously been available.[52] Some of these patents were so broadly conceived that they covered all seeds and plants of a particular species that were genetically engineered in any manner.[53] A 1987 USPTO announcement then extended patent eligibility to "nonnaturally occurring nonhuman multicellular living organisms, including animals."[54] The following year a Harvard University biologist received a patent for a mouse that had been genetically altered so as to be susceptible to breast cancer and thereby able to serve as an animal model for studying human cancers. Between 1988 and 1996, the USPTO granted at least nine additional patents for genetically engineered animals.[55]

The inception of the Human Genome Project (HGP) in 1988, a major international initiative to decode the human genome, accelerated the pace of genetic discoveries and raised anew the issues related to commercialization of biology. It has been described "as the single most important project in biology and the medical sciences – one that will permanently

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[50] A. E. Carroll, "A Review of Recent Decisions of the United States Court of Appeals for the Federal Circuit: Comment: Biotechnology and the Global Impact of U.S. Patent Law: Not Always the Best Medicine:," *The American University Law Review* (1995), pp. 2464-2466.

[51] *Diamond v Chakrabarty* 477 U.S. 303 (1980).

[52] M. Sagoff, "Animals as Inventions: Biotechnology and Intellectual Property Rights," *Philosophy and Public Policy* 16 (Winter 1996), p. 18.

[53] N. Hettinger, "Patenting Life: Biotechnology, Intellectual Property, and Environmental Ethics," *Environmental Affairs* 22 (1995), pp. 269-271, 276.

[54] *Ibid.* p. 269.

[55] Sagoff, "Animals as Inventions," *op.cit.*, p. 15.

change biology and medicine."[56] With funding of $200 million per year, primarily from the U.S. National Human Genome Research Institute at the National Institutes of Health (NIH), the Office of Biological and Environmental Research at the Department of Energy (DOE), and Wellcome Trust in Britain, scientists are attempting to decipher the structure, positions, and functions of the 50,000 to 100,000 genes in human cells and to identify the approximately 5,000 genes whose defects or mutations are assumed to be the cause of genetically based disease. Public funding is predicated on the belief that the human genome sequence "is such a precious scientific resource that it must be made totally and publicly available to all who want to use it."[57] A second justification is that "only the wide availability of this unique resource will maximally stimulate the research that will eventually improve human health."[58]

In June 1991, well before any of the significant issues regarding intellectual property rights and/or applications of the research and discoveries funded through the Human Genome Project were thoroughly debated, let alone resolved, NIH decided to file a patent application on 350 human gene fragments that had been identified by one of its scientists. Despite strong internal opposition to patenting—specifically by James Watson, a Nobel prize laureate then serving as the director of the Human Genome Project—NIH followed with a second patent application in February 1992, this time on an additional 2,375 gene fragments, and it later submitted a third application for another 4,000. The USPTO turned down the initial NIH patent application on the ground that the gene fragments were neither novel nor useful in themselves. It also found NIH's proposed invention obvious.[59] NIH did not appeal the decision and subsequently a new director issued a statement advocating that its grantees desist from seeking patents on human gene sequences.

The controversy over whether parts of genes can be patented resurfaced in early 1997 when the Deputy PTO Commissioner gave a speech in which he announced that the USPTO was prepared to issue patents on expressed sequence tags (EST), which are gene fragments, without requiring a full description of what the gene does. NIH's chief patent attorney and then the NIH director urged the USPTO not to proceed in this direction because it would discourage scientists from sharing sequencing data.[60] Other credible voices responded by calling on the patent office to classify genetic information as public – that is to rule that they do not constitute inventions. Otherwise, it was argued, a patent holder would be able even to block a scientist's publication of results concerning its gene and/or to demand that any researcher wishing to study the gene must license it.[61]

Thus far the Patent Office has not been responsive to these appeals. Writing in *Science* magazine in May 1998, John Doll, the director of the USPTO section that handles biotechnology patents, sought to provide a clarification of its policy on the patenting of DNA. Two of the points he made are particularly important. To respond to criticisms that the PTO accepted patents on discoveries of naturally occurring sequences and organisms, Doll

[56] F. S. Collins, A. Patrinos, E. Jordan, A. Chadravarti, R. Gesteland, L. Walters, and the members of the DOE and NIH planning groups, "New Goals for the U.S. Human Genome Project: 1998-2003," *Science* 282 (October 23, 1998):p. 682.
[57] *Ibid.* p.685.
[58] *Ibid.*
[59] Hettinger, "Patenting Life, Biotechnology, Intellectual property and Environmental Ethics,", *op.cit.* footnote, 24.
[60] "Renewed Fight over Gene Patent Policy," *Science* 276, April 11, 1997, p. 187.
[61] "The Gene Race Quickens," *The Washington Post*, August 22, 1998, A18.

distinguished between naturally occurring DNA sequences and sequences that are isolated and purified. According to Doll, the former still does not qualify for patents under U.S. law. However, if a patent application states that the DNA sequences in question are isolated and purified manufactures or compositions of matter or part of a recombinant molecule or part of a vector, it would meet the requirement of being distinguished from its natural state and constitute patentable subject matter. Doll justified the patenting of DNA fragments on the grounds that, even if these gene fragments do not directly identify genes, they may be extremely useful and thus satisfy the utility requirement.[62] This is a much watered down interpretation of the standard of utility.

Patent agencies around the world have been awarding patents based on DNA, including human genetic material and cell lines, for more than fifteen years. By February 1998, the USPTO reported that it has received more than 5000 patent applications based on whole genes since 1980 and granted more than 1500 of them. A study conducted by a science policy group found that the patent offices of the U.S., Europe, and Japan issued 1175 patents on human DNA sequences (partial rather than whole genes) between 1981 and 1995. In mid 1997, there were at least 350 patent applications, covering more than 500,000 gene sequences, pending at the USPTO.[63]

In May 1998, after a ten-year contentious debate and intensive lobbying from the biotechnology industry, the European Parliament approved a Directive that would permit the patenting of genes and genetically modified animals under specific conditions. The European Directive, part of an initiative to harmonize the laws and practice of member states and to place the European biotechnology industry on a more competitive footing, is more restrictive than current U.S. policy. As noted above, the Directive recognizes the need to condition the patentability of living matter on ethical and moral acceptability. In contrast with the USPTO, the Directive puts forward the view that a DNA sequence without indication of a function does not contain any technical information and is therefore not a patentable invention.[64]

(ii) Impact of Gene Patenting on Scientific Advancement

The scientific community has been divided over whether granting patents for DNA sequences will foster or deter research. Attitudes depend to a considerable extent as to whether scientists are in academic or governmental research institutions or working in the private sector. Initial opposition to human gene patenting reflected two concerns. Because the work on which the patent applications were based did not provide knowledge of the function of the relevant gene sequences, patenting of gene fragments was viewed, at best, as premature. The second source of opposition related to the anticipated negative effects that patenting would have on research and therapeutic applications of the knowledge generated by the Human Genome Project.[65] The 1991 statement on the patenting of DNA sequences issued by the Human Genome Organization (HUGO), the international research consortium coordinating and enhancing efforts in genome research reflects these concerns. According to the statement, HUGO is concerned that the patenting of partial and uncharacterized cDNA

[62] J. J. Doll, "The Patenting of DNA," *Science* 280 (May 1, 1998):pp. 689-690.
[63] E. Marshall "Companies Rush to Patent DNA," *Science* 275 (February 7, 1997), pp. 780-781.
[64] "Directive 98/44/EC of the European Parliament," Paragraph 23.
[65] L. Roberts, "Genome Patent Fight Erupts," *Science* 254 (1991), pp. 184-186.

sequences will reward those who make routine discoveries but penalize those who determine biological function or application. Such an outcome would impede the development of diagnostics and therapeutics, which is clearly not in the public interest. HUGO is also dedicated to the early release of genome information, thus accelerating widespread investigation of functional aspects of genes.[66]

Some scientists, particularly those affiliated with the Council for Responsible Genetics, assert that gene patents work against the tradition of shared knowledge in scientific discovery and do not foster science or help people.[67] Currently one pharmaceutical giant, Merck, Sharpe and Dohme, which is the source of funding for a major genomic database at Washington University in St. Louis, argues that genetic sequences should be placed in the public domain and not be subject to patenting. Others in the biotechnology industry, including SmithKline Beecham, the sponsor and owner of another of the three major gene sequencing databases, are seeking patent protection for their discoveries. And even Merck has filed for series of patents on transgenic animals, screening assays, and complementary DNA sequences that have specific therapeutic applications.[68]

Commercialization of genetic science clearly has discouraged data sharing among scientists. One specialist in biotechnology patenting describes the situation as follows: "You no longer have a clearly bounded territory of open noncommercial science...It's like a lottery of sorts, and no one wants to discover they've just parted with a winning lottery ticket. The result...is that "the world of genomics is becoming a place where people are much more reluctant to share."[69] Research data confirm that this is the case. A recent survey indicates that a substantial fraction of researchers in the life sciences have delayed publication or withheld results and materials from colleagues. Of the 2167 scientists surveyed, 410 said they had delayed publication and 181 admitted not sharing data or materials. The reasons given by the researchers were often linked to commercial stakes: 46 percent said they needed time to prepare patent applications and another 33 percent indicated that they were trying to protect intellectual property in some other way.[70] Unsurprisingly, life science faculty with industry support were at least twice as likely as those without to engage in trade secrecy or withhold research results from colleagues.[71]

A 1998 article in *Science* magazine raises yet another issue, namely that the proliferation of gene patents is creating too many concurrent fragments of intellectual property rights by different owners and is thus likely to create serious problems for future product development.[72] The authors, Michael Heller and Rebecca Eisenberg, both faculty members at the University of Michigan Law School, invert Garrett Hardin's well-known metaphor of the "tragedy of the commons" to claim that privatization of biomedical and genetic research is producing a "tragedy of an anticommons." Some thirty years ago Hardin

[66] The Human Genome Organization, "HUGO Statement on Patenting of DNA Sequences," Bethesda, Maryland, 1995, p. 1.
[67] See, e.g., the special issue of *GENEWATCH*, a bulletin of the Council for Responsible Genetics on "No Patents on Life!" 10 (October 1996).
[68] G. Poste, "The Case for Genomic Patening," *Nature* 378 (December 7, 1995), pp. 535-536.
[69] L. Belkin, "Banking on Genes," *The New York Times Magazine*, August 23, 1998, p.59.
[70] E. Marshall, "Secretiveness Found Widespread in Life Sciences," *op. cit.*, *Science* 276, p.525.
[71] S. Krimsky, "Financial Interests Pervasive in Scientific Publications," *GeneWATCH*, 10 (February 1997), p. 8.
[72] M. A. Heller and R. S. Eisenberg, "Can Patents Deter Innovation? The Anticommons in Biomedical Research," *Science* 280 (May 1, 1998), pp. 698-701.

published an article, also in *Science* magazine, the thesis of which was that people often overuse resources they own in common because they have no incentive to conserve them.[73] Hardin's position subsequently served as the intellectual justification for advocates of privatizing commons property. Heller and Eisenberg argue that privatization will result in the tragedy of the underutilization of scarce resources. According to Heller and Eisenberg, the current fragmentation in ownership will require costly future transactions to bundle licenses together before a firm will have the ability to develop new products. Faced with this situation, they anticipate that many firms will choose to invest resources in less promising projects with fewer licensing obstacles and lower initial start-up costs. Because patents matter more to the pharmaceutical and biotechnology industries, they also foresee that firms in these industries will be less willing to participate in mechanisms like patent pools that can help overcome these problems. Additionally, as they point out, some researchers and developers, universities for example, may be ill equipped to handle multiple transactions for acquiring rights to research tools. They therefore conclude that, far from spurring investment and product development, more intellectual property rights may lead to fewer useful products for improving human health.

This already complicated situation became even more so in 1998 when two companies decided to race the NIH-DOE consortium and complete the mapping and sequencing of the human genome ahead of the public venture. By relying on powerful new sequencing machines and taking various shortcuts much criticized by many in the genetics research community, Celera Genomic Corp., the first of these new ventures, anticipated accomplishing the task by 2001, four years ahead of the NIH-DOE target date. This raised the prospect that the fruits of one of the most significant international research projects might be privatized for commercial benefit and not fully accessible to other research scientists. Celera Genomics Corp., for example, plans to enter much of the sequence into GenBank, the Internet directory, once every three months as compared with NIH's daily updates. Nor will every thing the company discovers be made public. Celera will not, for instance, share its interpretation of the data, particularly related to polymorphisms, the genetic differences among human beings. It will also retain the intellectual property rights to the genes that show particular commercial promise.[74] Spurred by new competition from the private sector and prospects of private control of genetic information, the NIH-DOE consortium decided to accelerate its own schedule. It may have a "working draft" of the human genome as early as 2000 covering about 90 percent of the genome, and a final version by 2002.

(iii) Access to the Benefits of Science

Most of the public support and excitement the Human Genome Project and other genetic research have generated derives from the promise it holds for the diagnosis and eventual development of therapies to treat genetic abnormalities. Human gene therapy has been described as "a symbol of hope in a vast sea of human suffering due to heredity".[75] Thus far the development of gene therapies has been stymied by difficulties in identifying suitable

[73] G. Hardin, "The Tragedy of the Commons," *Science* 162 (1968), p. 1243.

[74] Belkin, "Banking on Genes,"op.cit. pp. 26-31, 58-61.

[75] J. C. Fletcher and W. French Anderson, "Germ-Line Gene Therapy: A New Stage of Debate," *Law, Medicine, and Health Care* 20 (Spring/Summer 1992), p.31.

and effective vectors through which to deliver corrected genes to the right location in the cell, but in the future privatization of control over genes may be an increasingly important factor. Many genetic disorders affect relatively small numbers of people, anywhere from a handful to a few thousand people, hardly an inviting commercial prospect. As one gene therapist noted, "The whole concept of gene therapy for genetic diseases doesn't fit the business model."[76] It is therefore not surprising that the focus of gene therapy has shifted from inherited diseases toward other more common and potentially profitable ailments like cancer, AIDS and heart disease. Of the 244 gene therapy trials authorized by NIH since 1989, only 33 are for diseases caused by a defect in a single gene, and half of those were for cystic fibrosis, the most common inherited disease among Caucasians. The figures for the trials registered since the beginning of 1997 are even more unbalanced – 53 for cancer and 8 for hereditary diseases.[77] Just as science is at the frontier of new approaches to gene therapy with considerable promise, the pharmaceutical companies that increasingly control patents on genes, particularly the ones with the relevant expertise, are losing interest because they are unwilling to investment money on treatments that have limited potential for payback.

(iv) Normative and Ethical Concerns Related to the Patenting of Life

The human rights approach defined in the first section of the paper conditioned intellectual property regimes on their conformity with ethical and human rights principles. It is therefore noteworthy that there has been considerable criticism of patents on life on ethical grounds by a wide range of secular ethicists, scientists, and religious groups. Beginning in 1980, when the General Secretaries of the National Council of Churches, the Synagogue Council of America, and the U.S. Catholic Conference wrote to President Carter shortly after the Chakrabarty decision, many groups within the religious community have expressed concerns about genetic patenting. Rather than expressing an anti-technology position, this opposition reflects a religiously grounded conviction that biological patents constitute a threat to the dignity and sanctity of life.[78] In 1995, the titular leaders of more than 80 religious faiths and denominations in the U.S. - Protestant, Catholic, Jewish, Muslim, Buddhist, and Hindu - held a press conference to announce their opposition to the patenting of genetically engineered animals and human genes, cells, and organs.[79] A similar, albeit not as religious diverse coalition, developed in Europe to present the views of this group of national European Protestant churches on the draft European Community Patenting Directive. The churches, who were organized by the European Ecumenical Commission for Church and Society, made a submission to the European Parliament in 1996 and a presentation to Members of the European Parliament in 1997 to object to the proposed patenting of living organism and genetic material of human origin.

In the period since the 1980 Supreme Court decision much of the debate over the patenting of life has assumed an instrumental frame of reference, but even in a capitalist

[76] A. Pollack, "Gene Therapy's Focus Shifts from Rare Illnesses," *The New York Times*, August 4, 1998, C6.
[77] *Ibid.*
[78] For an analysis of the history and bases of the religious opposition, see A. R. Chapman, *Unprecedented Choices: Religious Ethics at the Frontiers of Science*, chapter four (Fortress Press, forthcoming 1999).
[79] "Joint Appeal Against Human and Animal Patenting," text of the press conference announcement made available by the General Board of Church and Society of the United Methodist Church, Washington, D.C., May 17, 1995.

society there are commodities on which monetary exchanges are blocked, banned, or prohibited. A line of philosophical thinking stresses the moral need to protect certain items from being treated as commodities. Michael Walzer's concept of "blocked exchanges" is useful here. He notes that there are categories of items about which society has determined distribution should be on a noneconomic basis. His list of fourteen such "blocked exchanges" or things which cannot be bought and sold includes human beings; political power and influence; criminal justice; freedom of speech, press, religion, assembly; exemptions from military services, jury duty, or other communally imposed work; political offices; and love and friendship.[80] He does not, however, specifically mention genes, human tissue, or body parts, very likely because the book was published in 1983.

One source of opposition to gene patenting on moral grounds is the intuition that it is not appropriate to grant intellectual property rights over humanity's common heritage. In a 1991 letter to *Science* magazine, Hubert Currien, then the French Minister for Research and Technology, argued that "It would be prejudicial for scientists to adopt a generalized system of patenting knowledge about the human genome. A patent should not be granted for something that is part of our universal heritage."[81] Philosopher Ned Hettinger uses a similar line of reasoning to oppose gene patents. Hettinger claims that proper appreciation for the three and a half billion year story of the development of life on this planet and respect for the processes of evolution and speciation preclude gene patenting. He goes on to observe that:

> "Just as it is presumptuous to patent laws of nature, so too it is presumptuous to patent genes, which are equally fundamental to nature. Ideally, gene-types should be treated as a common heritage to be used by all beings who may benefit from them. As previously existing, nonexclusive objects that may be used beneficially by everyone at once, no one should possess the right to monopolize gene-types with patents or to "lock up" genes through any other property arrangements."[82]

More recently an editorial in *The Washington Post* voiced the opinion that "if ever a class of scientific information seemed fundamental to human knowledge and worthy of general access, the basic architecture of our genes is it." The editorial went on to state that "Granters of patents should tread with great care to keep these building blocks of future progress accessible to as much inquiry as possible."[83] Those who are disturbed by the ability of an individual or corporation to claim intellectual property rights over a resource which belongs to the whole of the human community frequently propose some form of public ownership. Advocates of public ownership point out that government funds have frequently played a major role in sponsoring the research that has led to these discoveries, and it is contrary to the public interest to then turn over the fruits to a single owner.[84] Some argue that the human genes, particularly the human germ-line, should be considered as an asset in the common heritage of humankind and propose that it be placed under the same type of

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[80] M. Walzer, *Spheres of Justice: A Defense of Pluralism and Equality* (New York: Basic Books, Inc., 1983), pp. 100-103.

[81] H. Currien, "The Human Genome Project and Patents," *Science* 254 (1991), p. 710.

[82] Hettinger, "Patenting Life", *op.cit.* p. 286.

[83] "The Gene Race Quickens", *The Washington Post*, August 22, 1998, A18.

[84] A. L. Caplan and J. Merz, "Patenting Gene Sequences: Not in the Best Interests of Science or Society." *British Medical Journal* 312 (April 13, 1996), p. 926.

international stewardship as the planet's sea-bed.[85] Another variant is the claim that some genes are of sufficient potential public benefit that a commercial monopoly should be prohibited. Examples are the recent calls for compulsory licensing of patents for detection of the hepatitis C virus in the blood and the use of the BRCA-1 gene in breast cancer screening.[86]

The UNESCO Declaration on the Protection of the Human Genome and Human Rights adopted by the UN General Assembly in 1998 recognizes the common heritage principle, at least on a symbolic level. It states that: "The human genome underlies the fundamental unity of all members of the human family, as well as the recognition of their inherent dignity and diversity. In a symbolic sense, it is the common heritage of humanity."[87] Another article opposes commercialization of the human genome: "The human genome in its natural state shall not give rise to financial gains."[88] The Declaration also emphasizes that "benefits from advances in biology, genetics and medicine, concerning the genome, shall be made available to all . . . ."[89]

Defenders of gene patenting respond to the common heritage argument by claiming that private ownership of genes is no different than most forms of private ownership of property. According to this line of reasoning, all tangible property has some naturally occurring object as its physical basis. Private ownership of genes can be justified in a like manner to all other naturally occurring objectives. They propose providing an experimental use exemption or other special arrangements to compensate for problems resulting from the creation of intellectual property rights over genes.[90] This utilitarian response, however, does not adequately address the ethical issues raised.

(v) Implication of Patents for Respect for Human Dignity

The concept of the inherent dignity of the human person is well established both in U.S. and international law and provides the foundation for the international human rights instruments. The Thirteenth Amendment to the U.S. Constitution also prohibits owning and selling human beings. Some opponents of patenting assume that these protections should extend to human tissue and body parts as well. A draft discussion document written by the Commission of the European Community, for example, concluded that "in the light of the general principle that the ownership of human beings is prohibited, the human body or parts of the human body *per se* must be excluded from patentability."[91] Proponents of patenting, on the other hand, often distinguish between the status of human material in the body and

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[85] These positions are cited in E. T. Juengst, "A Global Human Resource?" in E. Agius and S. Busuttil, Eds. *Germ-Line Intervention and our Responsibilities to Future Generations* (Great Britain: Kluwer Academic Publishers, 1998): pp. 86-87.

[86] G. Post, "The Case for Genomic Patenting," *Nature* 378 (December 7, 1995), p. 535.

[87] Article 1, UNESCO (International Bioethics Committee), "Universal Declaration on the Human Genome and Human Rights." <http://www.unesco.org/bc/uk/genome/project/index.h>, downloaded on August 25, 1998.

[88] Article 4, UNESCO, "Universal Declaration on the Human Genome and Human Rights."

[89] *Ibid.* Article 12(a).

[90] OTA, *The Human Genome Project*, pp. 4-11 through 4-15.

[91] Commission of the European Communities, Council of the European Union, "Common Position of the Council Directive on the Legal Protection of Biotechnological Inventions", February 7, 1994 cited in OTA, *The Human Genome Project*, pp. 4-16.

outside of it. Even if they recognize a moral basis for excluding patenting of human material, they claim that it does not extend to patenting *ex vivo* DNA sequences.[92] The European Community statement was only meant to cover parts of the human body as found inside the human body. A recent proposal by Louis Guenin to resolve the patenting controversy also differentiates between the moral status of human property claims on substances within and outside of the body.[93]

Some of those who object to patents on the grounds that intellectual property rights impair human dignity do so because of a commitment to preserve human genetic integrity. They anticipate that DNA sequences, once patented, might be altered either to eliminate flaws or to enhance human potential. Here the opposition to eugenics intersects with the debate about patenting. To respond to the need to preserve human dignity against potential eugenic alteration, the European Community Directive prohibits patenting substances and processes for producing human genetic modifications that do not conform to respect for human dignity.[94]

Does protecting human dignity require treating human biological materials as "blocked exchanges," that is something that cannot be commodified and thereby be owned and sold? It is relevant to note that there is a tradition, supported by philosophical and ethical thinking, of moral opposition to the ownership and sale of human parts. Beginning with the collection of blood for transfusions, measures have been taken to protect against the development of a market in human body parts and organs. There is a consensus in the U.S. that human organs required for transplants should be obtained through donation as a gift. It is argued that allowing an organ market to develop would place pressure on poor people to make organs available, as indeed has occurred in some countries, enabling the affluent to exploit poor and vulnerable individuals. Claims are also made that allowing a market to develop in human biological material might undermine social bonds. While individuals are sometimes paid for the collection of blood or semen, such payment, from a legal perspective, is considered to be for services rendered, and not remuneration for the commodity itself.[95]

The question as to whether patenting of human genes is wrong because it diminishes human dignity was the subject of a paper that the philosopher Baruch Brody wrote for the American Association for the Advancement of Science.[96] While Brody acknowledges that it is perfectly appropriate to limit intellectual property rights in human genes when necessary to preserve human dignity, he does not believe that most objections to human gene patenting warrant doing so. After analyzing a variety of concerns that have been put forward, he identifies only two that he considers to offer valid criticisms. Brody recommends that applications to patent an entire set of genes should be rejected, if ever proposed, because of human dignity considerations. He also concludes that protecting against eugenics justifies not allowing the patenting of genetic modifications that are incompatible with human dignity. Otherwise he does not find sound reasons to reject the patenting of a specific human gene on the grounds that it is incompatible with protecting human dignity.

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[92] OTA, *The Human Genome Project. op.cit.*

[93] L. M. Guenin, "Norms for Patenting Life Forms", *Theoretical Medicine* 17 (1996), pp. 279-314.

[94] OTA, *The Human Genome Project, op.cit.* pp. 4-22 and 4-23.

[95] *Ibid.* pp. 4-17 and 4-18.

[96] B. Brody, "Human Dignity and the Patenting of Human Genes," paper written for the American Association for the Advancement of Science Dialogue Group on Genetic Patenting, revised version, May 9, 1997.

Given the commitment to the value of the human person in western religious tradition, the religious community's concern with the implications of patents for human dignity is understandable. Both Christianity and Judaism conceptualize the human person as the *imago Dei,* a representation of a divine creator. The affirmation of humanity as the image of God appears to play a role in the thinking of at least some of the religious opponents of patenting. Nevertheless, it does not in and of itself provide a clear grounding for opposing patenting of altered human tissue or DNA fragments. One of the complexities in discussions of this issue is that conceptions and interpretations of the phrase image of God have differed dramatically through the centuries, often reflecting the most qualities most valued within a culture. Moreover, it is more appropriately understood metaphorically or relationally rather than having a fixed and defined content.

A related theme in the religious critique is that patenting will demean life by turning life into a commodity whose value will be determined by commercial considerations. This concern is widely shared in the religious community among both supporters and critics of the Joint Appeal. How valid is this criticism? Margaret Jane Radin, a legal theorist, has examined the social process by which something comes to be understood as an appropriate subject of free market transactions that was previously valued in a noneconomic manner.[97] She distinguishes between literal or narrow and broad or metaphorical senses of commodification. Commodification in the narrow sense describes events in which material goods and economic services are literally bought and sold. According to Radin, commodification also encompasses a worldview that conceives of human attributes as fungible owned objects even where no money literally changes hands.[98] Much like the religious critics of patenting, Radin believes that the way we conceive of things matters to who we are. She concurs that a commodified view of personhood undermines a Kantian conception of the person as an end-in-itself.[99] Nevertheless, Radin recognizes that commodification is not an all or nothing process. She offers the useful concept of incomplete commodification. It refers to a situation in which only one segment of society accepts a commodified understanding.

The question as to whether human gene patenting will promote commodification is an important one, and two legal scholars who recently addressed the topic disagree. E. Richard Gold argues in his book *Body Parts* that making any commodity, including human biological material, subject to property claims will translate its valuation into a market price. Moreover, he claims that market modes of valuation preempt other, more authentic and meaningful forms of valuation, such as considering human DNA, blood, or tissue to be inherently valuable in themselves and as being instrumentally valuable in aiding human health. He supports this thesis through an analysis of legal decisions related to property rights and the ownership of human biological materials. According to Gold, property discourse—that is, the sum of the assumptions, conceptions, and language used by judges, lawyers, and legislators in allocating rights of control over goods—promotes economic modes of valuation because it assumes that proprietary goods are best allocated through the market. He therefore concludes that safeguarding noneconomic values related to the human body requires that human

[97] M. J. Radin, *Contested Commodities: The Trouble with Trade in Sex, Children, Body Parts and Other Things* (Cambridge, Mass. and London: Harvard University Press, 1996), p. 6
[98] *Ibid,* pp. 12-13.
[99] *Ibid,* p. 92.

biological materials be treated as nonproprietary goods. To this end, he recommends constructing a method of allocating rights of control over these materials that takes both economic and noneconomic modes of valuation into account, but does not offer the specifics of such a scheme.

However, Radin's proposal about incomplete commodification suggests otherwise. She uses the term incomplete commodification to refer to a situation in which only one segment of society accepts a commodified understanding. She also points out that even individuals sometimes hold both commodified and noncommodified understandings about specific things. Given this situation, Radin believes that it is possible for commodified and noncommodified conceptions to coexist without one necessarily overriding the other.[100] Because neither Gold nor Radin draw on extensive empirical data, it is difficult to evaluate their conclusions.

(vi) Impact of Patents on Poor Countries

A 1991 letter from Hubert Currien to *Science* magazine, cited above, anticipated that patenting would have distributive and justice implications because it "would increase costs and penalize low-budget research teams and countries with fragile economies."[101] These concerns mirror the on-going debate on the implications of plant genetic engineering for the South involving questions about life as intellectual property, ownership of seeds, control of plant genomes, and the appropriateness of patenting new plant varieties.[102] In addition to the potential impact of a rigorous system of intellectual property rights in aggravating economic disparities between the North and the South, there are other equity considerations. Organizations like the Canada-based Indigenous People's Biodiversity Network (IPBN) and the Rural Advancement Foundation International (RAFI) have criticized patents as inappropriately conferring benefits on researchers from industrialized countries to the exclusion of the source or owners of the tissue in the Third World. Bioprospecting has been equated with piracy and biocolonialism. These tensions played a role in the decision by NIH to "disclaim" its patent on the human cell line of a Hagahai indigenous person from Papua New Guinea and to discontinue its application on a cell line from an individual from the Solomon Islands.[103] Here the debate on patenting intersects concerns raised by the Human Genome Diversity Project, a proposal to collect and store blood samples from a wide range of ethnic groups to be able to study characteristics of these groups before patterns of migration and intermarriage eliminate differences among them. Public interest groups claim that the Human Genome Diversity Project infringes on the rights and beliefs of many of the targeted groups and by its very nature cannot conform to appropriate procedures for informed consent.[104]

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[100] *Ibid.* p. 120.

[101] OTA, *New Developments in Biotechnology, op. cit.*, 14, pp. 137-143.

[102] See for example C. Juma, *The Gene Hunters: Biotechnology and the Scramble for Seeds* (Princeton: Princeton University Press, 1989) and R. Walgate, *Miracle or Menace: Biotechnology and the Third World* (Budapest, London, Paris, Washington: The Panos Institute, 1990) for two different perspectives.

[103] Rural Advancement Foundation International, "Hagahai Cell Line Patent", *GeneWATCH* 10 (February 1997), p. 6.

[104] C. Benjamin, "Indigenous peoples barred from DNA Sampling Conference," GeneWATCH 10 (February 1997): pp. 5, 18

On the other side, proponents of patenting claim that neither developed nor developing countries will benefit from genetic discoveries unless incentives exist to develop commercial products.[105] Others take refuge in market theory claiming that people in developing countries can decide not to purchase patented products if they consider the cost too high. This argument, however, ignores the substantial constraint that poverty imposes.[106] Yet another approach is to try to assure that the source of the material be granted financial benefit from potential profits arising from research on their genetic endowments.[107]

(vii) Right of Participation

When making its decision in the Chakrabarty case in 1980, the U.S. Supreme Court refused to deal with the central ethical question of whether life should be the subject of patents. Some of the opponents of Chakrabarty's patent claims, specifically the briefs written for the religious and public interest communities, argued that the Supreme Court should examine the effects that patents on life would have on human dignity, human health, and the environment. However, the Court was unwilling to consider noneconomic values, stating that only Congress was competent to consider such factors or matters of "high policy."[108] Despite the significance of these watershed decisions to patent life—described by one ethicist as "brazen forays into unchartered moral, legal, social, and environmental territory"[109]—there has never been a satisfactory public debate in the U.S. about the appropriateness of this policy. The Supreme Court, which was apparently motivated by concerns about economic competitiveness, did not provide a legal, ethical, or philosophical rationale for its decision. Congress has not wanted to deal with the topic. Until 1997 the United States did not have a functioning national bioethics commission that could serve as an alternative venue for a wider review, and as of mid 1998 the National Bioethics Advisory Commission has not taken up this issue. To date therefore, the limited discussion that has taken place has been within narrow academic and professional circles and focussed primarily on legal precedents, not broader ethical considerations.

The policy process has been somewhat more participatory in Europe, possibly because of the broader political influence of environmental and public interest groups, but it still falls far short of human rights requirements. Moreover, it shows the ability of a relatively small number of powerful companies to influence the political process in their favor. The 1997 proposals defining which biotechnology inventions can be patented were the outcome of a nine year effort by the European Commission to streamline and harmonize Europe's biotechnology patent system so as to make it more competitive with the U.S. and Japan. Draft legislation sent to the European Parliament in 1995 evoked strong opposition from groups opposed to patents on life and was rejected by the Parliament. Two years later when revised proposals were submitted to the European Parliament, Europe's biotech industry

[105] B. Healy, "On Gene Patenting", *New England Journal of Medicine* 327 (1992):pp. 664-668.
[106] OTA, *New Developments in Biotechnology, op.cit.* pp. 4-24.
[107] Sagoff, 1996, "Patenting Genetic Resources", *op.cit.*, p. 17.
[108] E. R. Gold, *Body Parts, op.cit.* pp. 82-83.
[109] Hettinger, "Patenting Life, Biotechnology, Intellectual property and Environmental Ethics" *op.cit.* pp. 269.

mounted a fierce lobbying campaign, aided by patient groups. This lobbying blitz is credited with the dramatic shift in parliamentary support between 1995 and 1997.[110]

4. Intellectual Property Protection for Databases: A Case Study

(i) Background

The debate regarding *sui generis* protection of databases provides another example in which narrow economic goals threaten to override less tangible human rights considerations. Databases or "compilations" have been defined as "a work formed by the collection and assembly of preexisting materials or of data . . . "[111] Because databases are usually not novel or non-obvious, but merely sets of data, they are not patentable. Nevertheless, compilations have been protected by copyright in the U.S.A. since 1790 when the first Copyright Act was enacted.[112] A 1991 U.S.A. Supreme Court decision, however, significantly reduced the scope of protection under copyright law. And changing technology has rendered traditional intellectual property regimes less effective in protecting the compilers of computer databases from wholesale copying. In response to these developments, the European Union, the United States, and WIPO have considered various laws and treaties to protect against piracy of databases.[113] Unfortunately, the proposed (and enacted) legislation has put the economic considerations of database producers ahead of the social and cultural rights of the society.

As courts applied copyright law during the nineteenth century, two rationales emerged for protecting compilations. The first, known as "sweat of the brow," focused on the compiler's effort and investment as the justification for copyright protection. The other viewed the creativity and judgment of the compiler in selecting and arranging materials as the basis. Regardless of the theoretical framework adopted to support copyright protection, courts generally gave compilations a broad scope of protection from unauthorized copying. Competitors were required to compile the materials from the original sources.[114] The 1976 U.S.A. Copyright Act tightened the grounds by incorporating a definition of "compilation" that required original selection, coordination or arrangement, but until the 1991 Supreme Court decision courts were divided in their judgments as to the continuing viability of the "sweat of the brow" doctrine.[115]

In 1991, the Supreme Court ruled in *Feist Publication v. Rural Telephone Service Co.* that a telephone directory was not copyrightable. The decision categorically rejected the

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[110] On this process see Nick, Scott Ram, "Biotechnology Patenting in Europe. The Directive on the Legal Protection of Biotechnological Inventions: Is this the beginning or the end" 2 BSLR (1998) pp. 43-45.
[111] 17 U.S.C.§ 101.
[112] Register of Copyrights, *Legal Protection for Databases* (Washington, D.C.: U.S. Copyright Office, 1997), p. 3.
[113] The European Union enacted Directive No. 96/9/EC on the legal protection of databases, 1996 O.J. (L 077) 20 [hereinafter European Directive]; the United States House of Representatives passed the Collections of Information Antipiracy Act (H.R. 2652), May 1998, which then became moot because it was not taken up by the Senate; and the Standing Committee on Copyright and Related Rights of the World Intellectual Property Organization recently decided to defer consideration of *sui generis* protection in order to undertake further work and study on the topic (Standing Committee on Copyright and Related Rights, Draft Report, First Session, Geneva, November 2-10, 1998, SCCR/1/9 Prov. 1
[114] Register of Copyrights, *Report on the Legal Protection of Databases*, pp. 3-5.
[115] *Ibid.* pp. 6-7.

"sweat of the brow" doctrine and determined that a compilation must evince creativity in its selection, coordination or arrangement to be copyrightable. The Court held that while the selection and arrangement of the facts were copyrightable if original, the facts themselves were not.[116] Subsequent cases in the U.S.A. have generally found the compilations at issue to be copyrightable, but have afforded a narrow scope of protection. Wholesale takings from copyrightable compilations have been permitted either because the defendant's compilation differed in major ways from the plaintiff's or because the elements of selection, coordination or arrangement that were copied were not considered to constitute creative authorship.[117]

At the same time computer technology and new telecommunications networks are creating new challenges for database compilers. These technological innovations increase the feasibility of collecting, storing, and disseminating huge amounts of data in databases, making them more valuable. At the same time computerization and electronic dissemination of data aggravate the vulnerability of databases to unauthorized extraction. Electronic databases blur the line between collection and application functions by providing users with tools that enable them to tailor-make extractions from the mass of data in the collection. Once compilations are electronically disseminated in databases available to the public, second comers can easily and cheaply copy or manipulate the contents and then market the resulting products to large numbers of people.[118] With the widespread availability of scanning and other conversion equipment, print compilation can also be readily converted to electronic form and manipulated with electronic information tools.[119]

With substantial time and investment no longer a basis for securing intellectual property claims, compilers are turning to other methods to enhance protection.[120] Producers have sought to alter the structure or content of their databases, hoping that adding copyrightable text or making the database more creative will increase meaningful copyright protection. However, databases are most useful when easy to navigate, which often requires mundane arrangement. Secondly, compilers can increase their reliance on contracts to protect their databases. Under a contractual arrangement consumers would agree to utilize the database only for specified uses, excluding, of course, redistribution of the information for profit. However, these contracts are only enforceable between the two parties. If a third party acquires the information, the compiler is not protected. In addition, database producers may use contracts to provide their products on more restrictive terms than under traditional intellectual property laws.[121] Thirdly, compilers may turn to technological safeguards, such as cryptographic software, to prevent unauthorized use. While these are effective to a limited extent, they are still in developmental stages and can be circumvented.[122]

In response to this problem, legislatures have contemplated new and more stringent forms of protection for databases. Beginning in the late 1980's, member states of the European Union sought to harmonize the copyright laws in their various legal systems. The

[116] *Feist Publications v. Rural Telephone Service Co.* 499 U.S. 340 (1991).
[117] Register of Copyrights, *Report on the Legal Protection of Databases*, pp. 10-18.
[118] J. H. Reichman and P. Samuelson, "Intellectual Property Rights in Data?" *Vanderbilt Law Review*, 50 (January 1997), pp. 105-109.
[119] *Ibid.* p. 108-109.
[120] Register of Copyrights, *Report on Legal Protection for Databases*, pp. iii and 71-86.
[121] *Ibid.* p. 81.
[122] Ibid. p. 86.

process brought greater awareness of the disparities in the level of protection to compilations in their legal system. To harmonize EU copyright laws, the EU adopted a Database Directive requiring all members to provide a *sui generis* form of intellectual property protection for database.[123] The Directive provides that database makers who have invested in their product are protected from unauthorized "extraction" or "reutilization" of all or a substantial part, measured qualitatively or quantitatively.[124] The protection lasts 15 years from completion. Substantial changes, including updates, renew the protection for another 15 years.[125] This renewed protection covers the entire database, not just the new matter, and so may allow for perpetual protection for as long as the database is updated.[126] The European Directive grants users the right to extract insubstantial parts of the database.[127] However, there is no general "fair use" provision as there is in copyright. States may make exceptions for noncommercial "extraction for the purposes of illustration for teaching or scientific research."[128] Beginning in 1998, scientists in Europe are bound by these intellectual property protections.

An antipiracy bill was also passed by the U.S.A. House of Representatives in May 1998, but did not become law because it was not approved by the Senate. The proposed Collections of Information Antipiracy Act would have amended federal law so that a person who extracts a substantial portion of a database for an unauthorized commercial use would face civil liability for damages to the owner of the database and in some circumstances would face criminal penalties. To qualify for protection, the database producer must have invested substantial resources or efforts to gather, organize, or maintain the collection. Although the bill would have exempted not-for-profit- educational, scientific, or research users of the database from liability, the exemption would not cover extraction or use of all or a substantial part of a database in a way that could harm the creator's "actual or potential market."[129] The protection was to last for 15 years, and as in the European Directive, it would have been extended to another 15 years when the database is updated. This would have effectively granted perpetual protection.[130] Partly because it did not contain exemptions for research and academic applications, the scientific community strenuously opposed the proposed Act.[131]

[123] The European Union enacted Directive No. 96/9/EC on the legal protection of databases, 1996 O.J. (L 077) 20 [hereinafter European Directive]; the United State House of Representatives passed the Collections of Information Antipiracy Act (H.R. 2652), May 1998, which has not yet been considered by the Senate; and the World Intellectual Property Organization is considering sui generis protection (CRNR/DC/6, Basic Proposal for the Substantive Provisions of the Treaty on Intellectual Property in Respect of Databases).

[124] European Union, Directive 96/9/EC on the legal protection of databases, 1996 O.J. (L077) 20.

[125] *Ibid.*

[126] Committee on the Issues in the Transborder Flow of Scientific Data, *Bits of Power*, *op.cit.* p. 149.

[127] J. C. Ginsburg, "Copyright, Common Law, and Sui Generis Protection of Databases in the United States and Abroad," *University of Cincinnati Law Review* 66, p. 172.

[128] European Directive, Article 9, quoted in Ginsburg, "Copyright, Common Law, and Sui Generis Protection of Databases", p. 172.

[129] Collections of Information Antipiracy Act, cited in L. R. Raber, "Database Bill Threatens Research", *Chemical & Engineering News* (May 25, 1998) p. 38.

[130] W. Gardner and J. Rosenbaum, "Database Protection and Access to Information," *Science* 281 (1998), pp. 786-787.

[131] Gardner and Rosenbaum, "Database Protection and Access to Information," *op.cit.* p. 786.

WIPO has considered the appropriateness of an international treaty that would provide *sui generis* protection to databases.[132] The EU Database Directive became the basis for an EU proposal for a draft international treaty, and the U.S.A. then submitted an alternative proposal to WIPO. The WIPO Standing Committee on Copyright and Related Rights took up the issue of database protection at its 1998 meeting. At the meeting the Committee decided to defer any initiative on protection of databases due to the lack of agreement on the matter and the seeming inappropriateness of a single solution to bridge the legal gaps. Instead, it recommended that the International Bureau should organize regional consultations and commission a study of the impact of the protection of databases on developing countries.[133]

The primary proponents of increased protection for databases in the United States, which currently holds 75 to 80 percent of the world's database market,[134] are mainly large database producers.[135] They argue as follows: if there is not enough incentive to produce databases, segments of academia and industry that conduct research will suffer, with a net loss to society. In addition, compiling databases is often time and resource intensive, and may merit a recognition of economic rights for the creator. Moreover, while it is expensive to collect and verify large numbers of facts, the evolution of technology with digital and scanning capabilities has made it increasingly simple to copy both online and hard copy databases, and existing law cannot protect against this piracy.[136]

However, others have raised questions as to whether additional legal protection for databases is in fact needed, and even if so, whether the forms of protection that are being proposed are appropriate and cost-effective. Although the traditional theories behind protection for intellectual property may be less compelling in the case of databases, the regimes under consideration are more protective than traditional copyrights and patents. When the U.S.A. Copyright Office held meetings in 1997 with the major groups that had already been vocal in indicating interest, most of the participants from the library and scientific communities, as well as some educational groups, telephone companies and Internet-related businesses, expressed opposition to the proposed U.S.A. legislation. These opponents do not contest the database producers' assertions as to the importance of databases and the changes brought about in their creation, dissemination and use by developments in technology, but they claim that there is not sufficient evidence that a problem exists that requires a legislative solution. Furthermore, they point out that the U.S.A. database industry is thriving under the current legal regime. There is also concern that new protection could result in negative consequences, even if unintended, such as accelerating trends toward the commercialization of data, particularly data produced through government funding.[137]

When the USPTO held a second conference in April 1998, the meeting did not produce consensus on any issues, including the fundamental question of whether or not database

[132] CRNR/DC/6, Basic Proposal for the Substantive Provisions of the Treaty on Intellectual Property in Respect of Databases. The protection of databases is scheduled to be discussed at the 2-10 November 1998 meeting of the Standing Committee on Copyright and Related Rights (1st Sess.).
[133] Standing Committee on Copyright and Related Rights, SCCR/1/9, pp. 20-27, 33.
[134] Raber, "Database Bill Threatens Research," p. 39.
[135] Examples include Lexis-Nexis, McGraw-Hill Cos. Inc, Thomson Corp., and Reed-Elsevier. L. Jacobson, "Dueling Over Data," *National Journal* (January 10, 1998) pp. 64, 67.
[136] Register of Copyrights, *Report on Legal Protection for Databases*, pp. 66-68.
[137] *Ibid.* pp. 68-69.

protection is needed. Nevertheless, the PTO recommended that the administration support a change in the law to provide commercial database developers with protection for their products. It suggested that any database protection regime must carefully define and describe databases and prohibited acts, so as to avoid unintended consequences, including the disruption of non-profit research. Another of the principles the PTO put forward was that databases generated with government funding should not be placed, *de jure* or *de facto*, under the exclusive control of private parties. The report also recommended that any database protection regime should be subject to exceptions largely co-extensive with the fair use provisions of copyright law. The PTO acknowledged that the language that predicated such exemptions on not harming the actual or potential market for the product or service, as in pending legislation, was insufficient, but it did not offer an alternative.[138] Indeed, the report recognized that "there remains at least one place where the interests of database producers and scientists/educators may be in a 'zero sum' conflict: how to handle collections of information specifically prepared and marketed to scientists and educators. . . This is a place where the desire to provide proper incentives for the production of databases runs squarely into the desire to provide as much access to information as possible to researchers and educators."[139] Nevertheless, the PTO still supported consistent application of the incentive rationale and providing commercial firms to have the same protection against educators/researchers as the rest of the market.

(ii) Promoting the Development and Diffusion of Science

Open access to data at an affordable rate is key to the advancement of science. Facts are obviously essential to scientific investigation and have been referred to as the "building blocks of intellectual discourse."[140] Historically, public investments in basic research and development ensured the full and open access to data to the scientific community on favorable economic terms. Federal funding for academic institutions and specialized laboratories in the U.S.A. in response to cold war pressures largely defrayed the costs of collecting and disseminating raw scientific data for much of the past forty years. Analysts have pointed to this strategy as a critical factor in the emergence of the U.S.A. as the world's leading producer of technological goods.[141] Mechanisms for sharing data are even more important in an era in which the investigative model of the solo scientist is increasingly being replaced by the involvement of scientists in large-scale collaborative arrangements.

In recognition of the importance of access to data for research and educational excellence, the scientific community provides strong support for the principle of "full and open exchange of scientific data." This principle, as interpreted within the scientific community, has two requirements. The first is that publicly-generated data be available without charge or for no more than the cost of reproduction and dissemination. The second is

[138] US Patent and Trademark Office (USPTO), "Patent and Trademark Office Report on Recommendations from the April 1998 Conference on Database Protection and Access Issues," July 1998, downloaded from http://www.uspto.gov/web/offices/dcp/olia/dbconf/dbase498.htm.
[139] USPTO, "Patent and Trademark Office Report on Recommendations from the April 1998 Conference", p.16.
[140] Committee on Issues in the Transborder Flow of Scientific Data, *Bits of Power*, *op.cit.* p. 146.
[141] Reichman and Samuelson, "Intellectual Property Rights in Data?", *op.cit.* p. 99.

that data produced or distributed by non-public sources be accessible for research and education purposes on fair and reasonable terms.[142]

Currently much of the knowledge produced by scientists is collected and distributed through databases. By compiling a vast array of scientific information, databases expedite the sharing of information among scientists and thereby facilitate research and help to make discoveries more rapidly available. Shared databases play a particularly important role in large, complex, interdisciplinary collaborative scientific efforts such as the Human Genome Project, global climate modeling, and AIDS research. Databases are also integral to use of the Internet as a major point of access to research data produced by scientists.[143] Widespread international dissemination of data is key to fostering and maintaining linkages within a global scientific community. Access to data via the Internet may also play a particularly important role in enabling scientists in countries without a significant research infrastructure to have access to recent research findings and to collaborate with colleagues in research generating countries.

Allowing the producers of databases a more extensive monopoly than exists under the copyright regime is likely to undermine these goals. Theoretically, under the proposed new database regimes the facts that a database is composed of would not be protected because they could be gathered from their original sources. However, in practice, this may not be possible. In some cases, the protected database would be the only source of the data. Examples where there is a sole source of data include readings taken at a particular time in the past, government data given to a private producer on an exclusive basis, and information generated by the database compiler itself (such as telephone subscriber information and trading data from financial markets).[144] Under these circumstances, the ability to prevent the extraction of data from the database may in effect be tantamount to ownership of the data itself.[145] Rights would vest in the data itself, leaving no public domain, which is especially dangerous because compulsory licensing is not a component of any of the proposed systems.[146]

Therefore it is not surprising that the scientific community has opposed the proposed legislation. The American Association for the Advancement of Science, a federation of 235 science, engineering, and health professional associations, as well as the U.S.A. National Research Council of the National Academy of Sciences, have expressed strong reservations. The statement issued by the Board of Directors of the American Association for the Advancement of Science points out that these new intellectual property protections specifically crafted for databases could impede the sharing of scientific data. It argues that current copyright laws adequately protect databases and contends that the proponents of the new protections have not adequately demonstrated the need for additional restrictions. According to the statement, "Impeding the flow of scientific data would serve neither private

[142] This interpretation appears in American Association for the Advancement of Science, "Statement on Intellectual Property Protection for Databases," adopted by the Board of Directors, October 31, 1997. The American Association for the Advancement of Science is a federation of 235 affiliated science, engineering, and health professional associations and 144,000 members dedicated to improving the effectiveness of science in the promotion of human welfare.

[143] American Association for the Advancement of Science, "Statement on Intellectual Property Protection for Databases."

[144] Register of Copyrights, *Report on Legal Protection for Databases*, p. xvii.

[145] *Ibid.* p. 102.

[146] *Ibid.* p. 89 (also noting that antitrust laws may provide some protection against this outcome).

interests nor the public good. Everyone loses if scientists are prevented from completing promising research because their access to critical data is denied or too expensive. Intellectual property must never become a disincentive to the full and open exchange of ideas and services." [147]

(iii) Other Human Rights Implications

The important goal of advancing creativity through intellectual property is not directly served by the new database protections under consideration. These initiatives would confer a far broader and stronger monopoly on database developers than is needed to rescue database producers from the threat of appropriations by free-riding competitors. The new laws would also violate the justification for grants of intellectual property rights in terms of the advancement of scientific and technical progress and contributions to artistic and cultural creativity. One assessment of the likely effect of these initiatives is as follows: they would jeopardize basic scientific research, lead to relatively high prices for the use of public goods, vest compilers of databases with an absolute and virtually perpetual protection, and undermine principles embodied in the First Amendment of the U.S.A. Constitution.[148]

The proposed database regimes are particularly problematic from a human rights perspective because of their insensitivity to human welfare and the public interest. As two legal analysts comment, a calculus of net social benefits was never a factor of any importance to either the European Union's Council of Ministers who were responsible for the European Union Directive on the legal protection of databases or the drafter of a similar bill in the United States House of Representatives.[149] Nor was there an explicit analysis of the social or public interest costs for the proposed protection of investment. For these reasons they concluded that the database laws "set a new milestone for mischief by virtually abolishing even the concept of a public domain and by abrogating the public interest components of intellectual property policymaking."[150]

Protection of financial investment has taken a back seat in classical copyright and patent regimes which value novelty, originality, non-obviousness, and usefulness above large investments of time and money. "Most intellectual property laws have been formulated under the myth that they do not protect investment as such. Rather, these laws are supposed to implement the goal of encouraging or rewarding some socially important form of creative contribution of achievement."[151] To the extent that database producers have rights under Article 15.1(c), the claims are not as strong as the claims of creators under traditional copyright and patent regimes. The new database regimes would break with this paradigm by shifting the focus of intellectual property law from non-economic considerations, like the promotion of science and creativity, to protecting investment.[152]

[147] American Association for the Advancement of Science, "Statement on Intellectual Property Protection for Databases."
[148] Reichman and Samuelson, "Intellectual Property Rights in Data?" *op. cit.* pp. 55-56.
[149] *Ibid.*p.120.
[150] *Ibid.* p.164.
[151] *Ibid.* p. 163.
[152] Gardner & Rosenbaum, "Database Protection and Access to Information", *op.cit.* p. 787.

The laws under consideration upset the balance that has existed between the individual and society under copyright law in at least four important ways. They shift the major emphasis from providing incentives and rewards to promote innovation in scientific research and publication to protecting investment. They eliminate the idea/expression distinction, which is the concept that facts are not protectable, only the characteristics of the expression.[153] In addition, the concept of fair use for educational and scientific purposes is severely limited in these proposals. Finally, the protection offered by copyright law is traditionally finite but these proposals are open-ended.[154]

The problem is exacerbated by the limited exceptions for "fair use." Under copyright law, the "fair use" doctrine provides limitations on the creator's rights for certain purposes. The exception generally provides for limited copying to promote criticism, reporting, teaching and research.[155] The exceptions provided for in the proposed legislation are insufficient to allow for scientific research. For example, the exceptions that allow for copying "insubstantial" portions are not useful to scientists who conduct research using a database's entire data set.[156] In the European Directive, States do not have to adopt the exception for "extraction for the purposes of illustration for teaching or scientific research."[157] The end result could be that less information is available to scientists, as well as a general chilling effect on the sharing and use of data. One researcher explained, "[i]n fields like Global Climate change, where many different types of global data are relevant and where a scientist might not know the legacy of a lot of the data, avoiding a breach of the [proposed United States law] could be very difficult."[158] The end result is that scientists would have less access to data than under the copyright regime because of the limited scope of fair use.

Similarly, these proposed database instruments would provide more protection than under traditional copyright law because they are potentially protected in perpetuity.[159] Under the legislation as currently proposed, with each substantial update, the database gains renewed protection. Even if only the new portions of the database were protectable, it would be difficult to tell what is protected and what is not within a database that is continuously updated.

The effect of this increased protection could be less availability of data to scientists, and therefore a decrease in everyone's ability to benefit from the advances science can make. The culture among scientists, long based on sharing data, could change as scientists "feel the need to protect their data, either out of a sense of unfairness or simply to have something to trade."[160] Projects that depend on the sharing of data worldwide, such as the Human Genome

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[153] For example, under most laws, the basic idea of star-crossed lovers or the scores of a baseball game are not copyrightable. However, the characters, lines and plots of Shakespeare's Romeo and Juliet, and a sports columnist's accounting of the game would be protectable.

[154] Usually the life of the author plus 50 or 75 years.

[155] 17 U.S.C. § 107-108.

[156] Register of Copyrights, *Report on Legal Protection for Databases, op.cit,* p. 23.

[157] European Directive. Even if this exception is adopted, "illustration" may not encompass all of the traditional rights under the copyright fair use doctrine.

[158] Reichman & Samuelson, "Intellectual Property Rights in Data?", *op.cit.* p. 119 (quoting a letter from Professor S. Alexander).

[159] Gardner and Rosenbaum, "Database Protection and Access to Information", p. 787.

[160] Reichman & Samuelson, "Intellectual Property Rights in Data?", *op.cit.*, p. 113.

Project, could "grind to a halt."[161] Scientists may not be able to pay for data, even when the price is determined by a competitive market. For example, when data from the Landsat satellite was privatized in the United States, the price of a single image went from $400 to $4400. Scientists could not afford the data, and research efforts to monitor terrestrial ecosystems through satellite imaging were terminated.[162]

The effects of any increase in the cost of data would be felt especially by scientists in developing countries, interfering with the right of "everyone" to benefit from science.[163] Article 2.1 of the ICESCR, where States Parties agree to "take steps individually *and through international assistance*, especially economic and technical, to the maximum of its available resources, with a view to achieving the full realization of the rights"[164] underscores the global obligation accepted by the signatories. While the Internet promises easy and less expensive access to the latest scientific developments, charging for scientific data that is now freely accessible at minimal or no cost could once again widen the distance between the developed and developing countries.

The States Party to the ICESCR have undertaken to balance the rights of creators with the rights of the society as a whole in Article 15. More than economic considerations are at stake. The proper balance must provide incentive for scientists to create and for scientific tools such as databases to be developed without stifling research by making data available only to wealthier sectors, thereby failing to promote the right of everyone to benefit from science.

In sum, the current proposals give more weight to the economic interests of investors than under traditional copyright regimes, in spite of the arguably lesser moral interests of database compilers as compared to traditional creators and inventors. In order to adjust the balance, fewer protections should be given to compilers to ensure that scientific research continues to thrive. Fair use protections for scientists, researchers and educators, or providing databases to these groups at the cost of dissemination, as well as finite periods of protection could contribute to fixing the problem.[165] The world's intellectual property lawmakers should strive to fulfill their obligations under the ICESCR by taking human rights as well as economics into consideration.

5. Conclusion

A fundamental thesis of this paper is that a human rights approach to intellectual property takes what is often an implicit balance between the rights of inventors and creators and the interests of the wider society within intellectual property paradigms and makes it far more explicit and exacting. To be consistent with the norms in the ICESCR, a human rights approach requires that the type and level of protection afforded under any intellectual property regime directly facilitate and promote scientific progress and its applications, and do so in a manner that will broadly benefit members of society on an individual, corporate, and

[161] Raber, "Database Bill Threatens Research", *op. cit.*, p. 4.
[162] Reichman & Samuelson, "Intellectual Property Rights in Data?", *op.cit.*, p. 121.
[163] ICESCR, Article 15.1.(b).
[164] ICESCR, (emphasis added).
[165] Ginsburg, " Copyright, Common Law, and Sui Generis Protection of Databases", *op.cit.*, p. 151.

international level. It also implies a right of access to the benefits of science, again on both an individual and collective level. Additional components are a right of protection from potential harmful effects of scientific and technological development, and a right of choice in determining priorities and making major decisions. The two case studies examined in this paper on genetic patenting and database protections underscore the additional difficulties imposed by the dynamics of economic globalization on respecting and fulfilling these principles. In both cases, the traditional goal and rationale of intellectual property regimes to provide incentives and rewards to inventors, researchers, and authors have been replaced by a new emphasis on the protection of investment. Simultaneously, commercialization and privatization, accelerated by globalization, are affecting the very conduct and nature of science. These trends have negative implications for the promotion of scientific progress and access to its benefits.

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EDITED TRANSCRIPT OF THE DISCUSSION

Mr. Dieng, Chairperson

I wish to thank Dr. Chapman for insisting on the inclusion of economic, social and cultural rights in Article 15 of the ICESCR. I also thank her for underscoring the importance of the accessibility of these rights and for highlighting the threats facing them because of globalization and, as we were reminded this morning, this could threaten human rights. You treated it even perhaps more directly than I did, by saying that in many respects globalization is counter to human rights. I would like now to open the discussion on this theme to see to what extent this globalization can also affect intellectual property rights. How these rights of solidarity such as the right to development are threatened because of globalization; and how the right to development can have an impact on intellectual property rights.

Comment/Question

I have a question about the implications of the coming together of human rights and intellectual property discourse that Dr. Drahos this morning identified, I think probably correctly as an inevitable one. My question grows specifically out of a concern for the future of what might be called "recoding rights" in intellectual property, that is to say, the various legally recognized privileges of information users to access and manipulate protected material and to add value to that material. The fair use doctrine in United States copyright law is one of many examples of such recognized recoding rights. I am quite new to the human rights field, but I am satisfied from everything that I have heard today that the vocabulary of human rights provides a very strong persuasive basis for the extension of intellectual property norms, including their extension to new subject matters such as traditional knowledge. I am less clear in my mind from what I have heard today that the vocabulary of human rights adequately recognizes this category of recoding rights to which I just referred. It seems to me that in both Article 27 of the UDHR and Article 15 of the ICESCR the information user or consumer is figured primarily as a passive actor, one who is entitled to share in the ultimate benefits of innovations of others, in the role of an end user. What I am interested to open up as a topic and the question on which I would like to hear from as many of the panelists as might like to address it is: what affirmative basis may exist in the norms of human rights for arguments in favor of strong reuse privileges? Today we have heard generally about a right to culture, a right to health and a right to development. I am interested in your views on the extent to which those emerging human rights norms may serve as the basis for the articulation of a rational for recoding rights. I am particularly interested in your views about the meaning of that freedom indispensable for scientific research and creative activity which is referenced in Article 15 of the ICESCR, in particular, to what extent that language might be the textual basis for arguments in favor of strong recoding rights.

Comment/Question

I would like to thank the entire panel for their extremely valuable and informative interventions, although in most cases I found that useful issues were raised, but they did not necessarily lead us towards solutions. Not that solutions are easy to find on some of these extremely complex issues. Among the conclusions that I find myself reaching is that the links of intellectual property rights with issues like human rights, biodiversity, right to health or even the issue of scientific progress, are extremely complex and perhaps in certain situations even adversarial. The norm-setting work that is rapidly taking place today in new areas of

intellectual property, should necessarily take into account these complexities. What is extremely important is that these norm-setting processes should be participative, in the sense of taking into account the views and the interest of various parties involved. They should be as far as possible consensual to ensure that new norms represent the interests of the various parties involved. I have some concern that, whereas in WIPO the complexity of the issues in intellectual property is recognized and is given due consideration, other organizations which are involved with intellectual property norm-setting activities move much more rapidly and with much less concern for the complexities of the issues involved.

Comment/Question

I would like to direct a question to Ms. Salazar again relating to the related topics of bioprospecting and patent protection for pharmaceuticals. Given your description of, at least what seems to me, the positive effect of patent protection as an incentive for innovation, what types of concrete technical assistance would be useful to ensure that communities contributing these biological products derive benefits from the revenue stream of pharmaceuticals that are ultimately marketed? Are we thinking of something in the realm of assistance in drafting license agreements? Finally, are there arrangements that allow a particular individual or entity to act in the interests of indigenous communities in negotiating any such agreements?

Ms. Salazar

I would like to underscore my position on the role of intellectual property and specifically patents in developing, for example, the pharmaceutical industry. Generally speaking, patents are fundamental to developing the pharmaceutical industry, but one must assess the position in a local context, so that one can determine the real impact of patents on technological and scientific development in each country. In Costa Rica, for example, much has been done internationally in looking at the role of patents in scientific and technological development. When various consultants and advisors, especially from developed countries, come to the country and analyze the situation, they say the local pharmaceutical industry does not do any research and does not develop the industry because there is no patent protection for pharmaceutical products. My question is, why, if there are patents in other fields, for example, in chemistry or in the field of mechanics, do we not have entrepreneurs investing in research? In Costa Rica we do not have any protection for biotechnological research either. Yet in the University of Costa Rica we already have very important research being conducted in biotechnology. I have had to ask myself many questions as to the impact of patents in the development of science and technology. With respect to biotechnological aspects, I do recognize that there are many situations in which opportunities are given to indigenous populations, especially in Peru, to take part in processes in which they are compensated and recognized for their efforts and there is a lot of creativity afoot in this field. There are even some enterprises which have compensated indigenous people not only in cash, but also with, for example, bridges, schools and health centers. With respect to technical assistance, what is most important is to disclose all this information and infuse it among the people. Because many obstacles arise in these developing countries from the fact we do not have enough knowledge available to us.

Comment/Question

On the one hand, some have the legitimate right to protect their innovations and their advancements in science and technology and, on the other hand, we are talking about the improvement of human rights, a right to development and the eradication of poverty. Most countries in the developing world believe that the other part of the world should ease the transfer of technology. The developed part of the world is saying that we have the legitimate right to protect our inventions and scientific advancement. I refer to Article 27 of the UDHR which in, the first paragraph, states that everyone has the right to participate in the cultural life and to enjoy the arts, to share in scientific advancement and its benefits. The second paragraph states that everyone has the right to protect his artistic, literary and scientific productions. I cannot understand which one has the right. The one which has the right of protection or the one which has the right of access to the production? The question of the protection of databases is being considered by WIPO's Standing Committee on Copyright and Related Rights. Developing world countries feel that it is better to have a study conducted by WIPO on the economic impact of the protection of databases. The definition of databases is not clear to me because databases are merely a general term. Can we say that databases which are by their nature meteorological or scientific are the ones that should be protected, or rather the databases which have substantively the characteristics of trade? Which one of these databases should be protected from access by others and how can we identify and distinguish between these two kinds of databases?

Comment/Question

Indeed, I think that the topic that has been touched on is one which is very complexly interlinked with others. These deal with human rights and are linked with the discourse on the development of intellectual property, both in its application and its standard-setting activities. Then this gives rise to a whole series of questions which on many occasions we will find to be controversial. Therefore, I think that it is important for us to focus on striking a good balance between private and general interests. This generally gives rise to a lot of antagonism because I think there is a conviction and a consensus that intellectual property as such is an instrument for development. It is also said that the new multilateral trade system has given intellectual property a strictly commercial dimension. One now neglects to look at the intellectual property system *vis-à-vis* the human aspects and only as a part of an interdependent system under the trade framework. I think that we must deal with those issues which require discussion as to the crisis that may be facing the intellectual property system because it is failing to meet the needs of developing countries. On the other hand, it can even become an obstacle to development. If we look at all that I have said, namely how intellectual property has been developing over the past few years, the trade agenda and the definition of new intellectual property standards, how would Dr. Chapman suggest that discussions in multilateral fora which are looking at intellectual property will result in concrete concepts which allows us to strike an adequate balance which will ensure that intellectual property will not lose its importance as a tool for the development of mankind?

Comment/Question

Let me just begin by thanking Dr. Chapman for her paper. Everyone knows that most industries which market advanced technology and the latest scientific developments are in developed countries. Perhaps the perspective of her analysis means that this issue which is

before us today on intellectual property, science and technology is also focussing from the perspective of developed countries. My concern is that, for example, whenever we look at universal rights such as the economic, social and cultural rights which exclude political rights, we see that States have to ensure that their inhabitants can benefit from development and science and technology. What does this mean for developing countries? We have to think from the perspectives of developing countries. How can they expect to access advanced technology and exercise their rights to development, and through this right develop themselves technological and scientifically, achieve more equitable societies and ensure that all their inhabitants can enjoy human rights? Perhaps strengthening the applicability of intellectual property rights in developing countries could help us to redress this situation, which is facing, in particular, the least developed countries. Developing countries and the poorest countries in the world are trying to exploit scientific developments in more developed countries so that, without violating intellectual property laws, they can also access a type of development which would enable them to enter with more advantages into the global market place.

Mr. Burdekin

I will focus just on the medical and genetic area in relation to human rights. I am responding particularly to the observation that we need to be participating in norm-setting at this point. I very much agree with that. I think that from a human rights perspective we are confronting challenges which, to be honest, were not foreseen when the major human rights instruments were drafted. This does not mean that the instruments are not relevant and it does not mean that they are not adequate. But in my own country (Australia), where we handled many thousands of human rights cases, nothing was as difficult as this. I do not think that from a human rights perspective we will achieve an adequate answer to these extremely difficult questions about genetic engineering and the boundaries of science. We need a very participative, inclusive and eclectic approach. I think we perhaps need to consider new constructs, new paradigms and maybe even new institutional arrangements, because I feel our traditional frames of reference are not adequate. I am not saying that the standards are not universal and I am not saying they need to be changed. The mechanisms which we adopt to deal with this is a very difficult question right at the threshold of our understanding of how we implement human rights. I think this will mean a less traditional approach in terms of the international community, complementing the Secretary General's (of the United Nations) reform agenda trying to mainstream our activities and inform each other better. We need a less traditional approach at the national level, where speaking frankly I think there is a still a relatively compartmentalized approach to legal and scientific questions, and a more cooperative approach with the non-governmental community and other elements of civil society.

Dr. Chapman

It is far easier to analyze the problems than to come up with solutions and I have discovered that the people in the audience are very good at asking perceptive and complex questions. Briefly, when you look at the history of the committees that drafted the various international human rights instruments, there was a tendency to look at each clause in each Article as an entity unto itself. They never considered the fact that the achievement of one part of the instrument might be in conflict with the realization of another. The international human rights community has continued this myth by emphasizing that all human rights are

indivisible and it has not addressed adequately the problems of trade-offs and conflicts. I think that when you look at the question of intellectual property protection as against the benefits of science and technology and the rights of development, there obviously has to be adjustments. Each needs to be conditional on the ability not to interfere with the other and that requires very specific tailor-made responses. The current intellectual property regime is predicated on the assumption that intellectual property promotes science and technology but this is not the case in many instances. There are fundamental disagreements and there is a difficulty of reconciling interests even within a developed society, let alone between developed and developing countries.

I agree that there is a need for new institutions even within individual countries, to discuss science and technology and the questions of the patenting of life forms and databases. There have been no fora for adequate public discussion. I think that the dilemma right now, to be very blunt, is the agenda of transnational corporations, which have become the major thrust behind framing the current intellectual property norms. This is not an adequate basis for making decisions that are going to affect individual countries in the international or economic system for years ahead. There needs to be new institutional mechanisms that adequately consider human rights implications, which are currently being ignored. I think that it is also obvious that you cannot have "cookie cutter" solutions. Each issue that you are dealing with is sufficiently complex in itself, that you have to have tailor-made efforts to design intellectual property protections and their exceptions if they are going to fulfill the need for development, the need to protect the interests of vulnerable communities and the promotion of science and technology. In some cases some very difficult and painful choices are going to have to be made. If I were the Tsar of the system, I would make some in favor of promoting the right to development and precisely because of my own viewpoints I can assure you that I will never be invited into such fora!

Dr. Drahos

I would just like to reply to the very good question on recoding rights. It seems a pity that such a good question should go without a reply. You will remember that he asked about the role of these rights, which he linked to the question of users' interests. He asked about the nature of these rights, and how these rights might be brought to life in international treaties and covenants.

I think the first thing to say is that we ought to be thinking about recognizing recoding rights in some stronger way than we do at present. I say this not just from the perspective of users but from the perspective of the business community. There is an enormous concern in the business community about what happens when a particular company achieves the *de facto* standard in the market place. Very interestingly, businessmen around the table began talking about the need to make sure that certain kinds of fundamental information does not get locked up in proprietary standards. Generalizing from this we might say that there are certain kinds of scientific and technological information so important that it is vital that we allow horizontal flows of information to take place. I say horizontal because this information relates to opportunities in many markets. At the same time, we need to distinguish this horizontal level from a vertical level, a level in which we have particular products. Here intellectual property rights have a much greater and more striking role. Recoding rights is something we should think about at the horizontal level. In terms of bringing such rights into existence, there are both juridical and non-juridical ways to do this. At the juridical level, I think we need to

understand that human rights discourse exists in that twilight zone of normativity known to human rights lawyers and international lawyers as "soft law". This is both a strength and a weakness. The strength is that these norms remain interpretably open and so that we can, as new technologies develop and as the evolution of markets occurs, rethink what these human rights norms mean for users, for members of the business community and for creators.

INTELLECTUAL PROPERTY, NATIONALITY, AND NON-DISCRIMINATION

by

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1. Introduction
2. Natural Law, the Human Right of Non-Discrimination and Intellectual Property Law
   - (i) Natural Law and Intellectual Property Rights
   - (ii) Human Rights and Intellectual Property Rights
     - (a) International Law
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4. Relationship Between Rules on Non-Discrimination under Human Rights and under Intellectual Property Law

5. The so-called Crisis of National Treatment

6. Conclusions

1. Introduction

The principle of non-discrimination is one of the most important human rights. It is rooted in the natural law philosophy. In particular, Pufendorf and Wolff combined the principle of the natural equality with the principle of natural freedom of human beings, both based on human dignity, to form the principle of equal freedom of all human beings. Wolff went on to establish a catalogue of innate human rights, beginning with the phrase "All human beings are equal by nature."[1] This principle was then first legally recognized in the Bill of Rights of the Northern American colonial states and in the French Declarations of Human Rights and Civil Rights of 1789 and 1793. The principles of equality and non-discrimination since then have been incorporated in most national laws and in regional and international law, including in particular the Universal Declaration of Human Rights (the UDHR).

In the field of international intellectual property law, particular rules have been developed to deal with the issue of non-discrimination, known as the principle of "national treatment." Non-discrimination in intellectual property shows a number of differences as compared to non-discrimination under human rights, in particular regarding its justification, historical background and scope. The differences lead to the question of how the two sets of non-discrimination rules relate to each other. This paper will first examine the relevance of the natural law philosophy and the international and regional law on human rights in the area of intellectual property law (Part 2). A presentation of the existing rules on national treatment in a number of international treaties relating to intellectual property rights will follow, completed by a mainly historical analysis of the origins and justifications for national treatment in intellectual property law (Part 3). In Part 4, the relationship between rules on non-discrimination in human rights law and in intellectual property law will be examined. Eventually, new developments and practices regarding national treatment which have provoked, mainly in the 1980's, a discussion on a so-called crisis of national treatment will be mentioned in Part 5, including the respective arguments which may be brought forward in this context. Part 6 will conclude the paper.

2. Natural Law, the Human Right of Non-Discrimination and Intellectual Property Law

(i) Natural Law and Intellectual Property Rights

Although the concept of natural law is not discussed in context with all kinds of intellectual property rights, the natural law quality is argued to be one of the distinctive features of the continental author's rights system (as opposed to the Anglo-American copyright system).

In the context of non-discrimination, the qualification of author's rights *(droit d'auteur)* as a natural law leads to the question why particular rules on non-discrimination, as they exist today in international copyright law, are at all necessary: the qualification as natural law

[1] See Wassermann (Ed.), *Kommentar zum Grundgesetz für die Bundesrepublik Deutschland* (Reihe Alternativkommentare, AK-GG-Stein, Luchterhand, 1984) Article 3 note 1.

implies that every human being who creates a work shall, by nature, enjoy an author's right in his work, "no matter what the nationality of the author may be nor the place where . . . " he publishes his work.[2] However, this does not correspond to positive law. It seems that in most national laws, the logical consequence of the natural law concept, which would be not to discriminate foreign authors, for example by the requirement of first publication in the respective country, has not been taken into account.[3] As has been shown in much detail, national laws on author's rights reveal even more issues in which they are in contradiction to the thesis of a natural right.[4] The only valid conclusion in this respect is that natural law is only one element explaining the recognition of author's rights and that both natural law and a positivist approach have influenced legislation on author's rights.[5]

(ii) Human Rights and Intellectual Property Rights

At first sight, the international recognition of the human right of non-discrimination leads to the same question as discussed in the context of the natural law quality of author's rights, namely why would there be a need to have particular rules on non-discrimination in the field of intellectual property rights, where such rights are covered by specific human rights, such as by Article 27.2 of the UDHR? What is their relation to rules on human rights? The latter question will be addressed in Part III, whereas this sub-part presents the relevant provisions of the law on human rights.

(a) International Law[6]
(aa) Non-discrimination

Nearly all international law treaties on human rights (except the European Social Charter) include special provisions on non-discrimination and add different grounds on which discrimination may not be made, such as race, color, religion, national or social origin, and the like. In addition to the provision on non-discrimination, the right of equality before the law has been granted in most treaties on human rights.

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[2] Montagnon, *Principes de la législation des droits d'auteur* (Lyon, 1883) pp. 17-18, referring to author's rights as a "natural right." He compares the natural law situation to a positive law situation, where the legislator may restrict protection for foreigners to those who publish their works in the country governed by the respective law.

[3] As an exception, Article 47 of the Luxembourg Copyright Act granting unconditional protection for foreign authors, except for the term of protection, may be mentioned. Another exception is § 121(6) of the German Copyright Act, granting unconditional moral rights protection for foreign authors.

[4] Strowel, "Droit d'auteur and Copyright: Between History and Nature" in Sherman and Strowel, *Of Authors and Origins* (Oxford, 1994) pp. 246-247, and Strowel, *Droit d'auteur et Copyright - Divergences et Convergences* (Brussels, 1993) nos. 107 *et seq.*

[5] Strowel in Sherman and Strowel, *op. cit.* pp. 247-248, in relation to French law. In the context of the discussion of "author's rights v. copyright" he states that American legislation, which adheres to the copyright system, has also been marked by a natural law and a positivist logic.

[6] Although most national constitutions also contain provisions on human rights regarding non-discrimination and property, it would go beyond the scope of this paper to include the question - however interesting - of the relationship between human rights based on national law and the status of aliens under national law or under the intellectual property conventions. See, as an example, the decision of the German Constitutional Court of Jan. 23, 1990, GRUR 1990, 438 *et seq.* – "Bob Dylan", stating the compliance of the requirement of material reciprocity with the rights of property and of non-discrimination recognized under the German Constitution.

For example, some of the most important provisions on non-discrimination are Article 2 of the UDHR,[7] Article 2.2 of the International Covenant on Economic, Social and Cultural Rights (the ICESCR), Article 2.1 of the International Covenant on Civil and Political Rights (the ICCPR), Article 14 of the European Convention for the Protection of Human Rights and Fundamental Freedoms,[8] Article 2 of the American Declaration of the Rights and Duties of Man, Article 1.1 of the American Convention on Human Rights and Article 2 of the African Charter on Human and Peoples' Rights.[9] Equality before the law has been laid down as a human right in Article 7 of the UDHR, Articles 14.1 and 26 of the ICCPR, Article 24 of the American Convention on Human Rights, Article 2 of the American Declaration of the Rights and Duties of Man, and Article 3 of the African Charter on Human and Peoples' Rights. The provisions on non-discrimination apply to the rights recognized in the respective treaties and declarations.

(bb) Property rights

Intellectual property rights as such are not explicitly mentioned in these treaties and declarations. However, they may be covered by provisions on the human right of property.[10] Yet, the human right of property has been restricted in these provisions more than other human rights.

(cc) Author's moral and material interests

In addition to the protection by the right of property, even more specific provisions regarding the interests of authors have been included in some of the treaties and declarations. In particular, Article 27.2 of the UDHR states: "Everyone has the right to the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author." This provision is part of a group of articles introduced by one of the cornerstones of the Declaration, namely Article 22, which reads: "Everyone, as a member of society, has the right to social security and is entitled to realization, through national effort and international cooperation and in accordance with the organization and recourses of each State, of the economic, social and cultural rights indispensable for his dignity and the free development of his personality."[11] This provision is particularly important since it is not limited, as opposed to a mere property rights protection, to the economic rights of authors and their works, but covers also their moral rights. The same is true for Article 15.1(c) of the

[7] See on the UDHR, for example, Eide,Alfredsson,Melander, Rehof and Rosas (Eds.), *The Universal Declaration of Human Rights: A Commentary* (Dordrecht, 1992).

[8] See, for example: Jacobs and White, *The European Convention on Human Right,* 2nd ed., (Oxford, 1996) and Frowein and Peukert, *Europäische Menschenrechtskonvention,* 2nd ed., (Kehl *et al.* 1996).

[9] It is also called the "Banjul Charter on Human and Peoples' Rights". See, for example, Ankumah, *The African Commission on Human and Peoples' Rights* (Dordrecht, 1996); Shaw, *International Law* 4th ed. (Cambridge, 1997) pp. 293 *et seq.*

[10] See in particular Article 17 of the UDHR, Article 1 of the first Additional Protocol of the European Convention for the Protection of Human Rights and Fundamental Freedoms (see Frowein and Peukert *op. cit.*, Article 1 additional protocol note 6, on the fact that also intellectual property rights are covered), Article 23 of the American Declaration on the Rights and Duties of Man, Article 21 of the American Convention on Human Rights and Article 14 of the African Charter on Human and Peoples' Rights.

[11] See on the relationship between Articles 22 and 27, *The International Bill of Human Rights* (United Nations, Factsheet No. 2) p. 7.

ICESCR and Article 13.2 of the American Declaration on the Rights and Duties of Man, which lay down the right to the protection of the moral and material interests not only regarding the literary, scientific or artistic works of authors but also regarding inventions made by inventors. As opposed to authors and inventors, other rightholders of intellectual property rights, such as performing artists, are not covered by comparable, specific human rights provisions.

(dd) Minimum standard of human rights under customary international law

Apart from the international recognition of human rights in treaties, a number of human rights are also part of customary international law or general principles of international law.

However, only a certain minimum standard of human rights is thereby covered, as for example, the recognition of human beings as persons before the law, prohibition of torture, genocide and slavery and prohibition of discrimination on religious grounds or on the grounds of race. However, the human rights of property or of protection of moral and material interests in the author's work are not covered.[12]

(b) Supranational Law

The situation under supranational law - the paper will deal here only with Article 6 of the Treaty Establishing the European Community, 1992 (the EC Treaty) - is different from that of international law on human rights. First of all, the EC Treaty is not a human rights treaty,[13] but the basis for the European Community (the EC), which aims not only at the achievement of the internal market - the free movement of goods, persons, services and capital (Article 7(a) of the EC Treaty) - but also at an ever increasing integration within the EC. The European Union may be realized only if the discrimination on the basis of nationality within the EC is abolished.[14] The position of Article 6 of the EC Treaty amongst other fundamental articles, for example those on the aims of the European Community, shows that it is of fundamental importance within the EC Treaty. It is directly applicable. It is considered as part of the general principle of non-discrimination and therefore as a fundamental right.[15] While it is limited to the prohibition of discrimination on grounds of nationality, the general principle of non-discrimination has been recognized several times by

[12] See, for a number of rights considered to be covered by the minimum standard under customary international law or the general principles of international law, Klein, *Menschenrechte: Stille Revolution des Völkerrechts und Auswirkungen auf die innerstaatliche Rechtsanwendung* (Baden-Baden 1997) p. 15, with a reference to: The American Law Institute, *Restatement of the Law: The Foreign Relations Law of the United States*, Vol. 2 (1987), § 702. See also Shaw, *op. cit.* pp. 204, 213, with further references, and Kewenig, *Der Grundsatz der Nichtdiskriminierung im Völkerrecht der internationalen Handelsbeziehungen* (Frankfurt, 1972) p. 43.

[13] See Shaw, *op. cit.*, p. 280 *et seq.* At the same time, fundamental rights have been recognized as general principles of Community law, both by the ECJ and Article F(2) of the Title I of the Treaty on European Union (Maastricht Treaty) 1992, see Shaw, *op.cit.* p. 280 *et seq.*

[14] See von Bogdandy in Grabitz and Hilf, *Kommentar zur Europäischen Union* (Looseleaf, July 1997), Article 6 of the EC Treaty, note 1, in particular with reference to the submission of Advocate General Jacobs regarding *Phil Collins v. Imtrat Handelsgesellschaft mbH* (Case C-92/92) and *Patricia Im- und Export Verwaltungsgesellschaft mbH and Another v. EMI Electrola GmbH* (Case C-326/92), [1993] 3 C.M.L.R. 773.

[15] See von Bogdandy, *op.cit.*, Article 6 of the EC Treaty note 2.

the European Court of Justice; it covers the prohibition of non-discrimination on any ground.[16]

In 1993, the European Court of Justice had to respond, under Article 177 of the Treaty Establishing the European Economic Community, 1957 (the EEC Treaty), to questions regarding the possible discrimination of a British singer, Phil Collins, under German law regarding the status of foreign performers, on the basis of Article 7.1 of the EEC Treaty.[17] The defendant had distributed in Germany a recording of a performance by Collins which had been made in the United States of America (the U.S.A.) without the consent of the singer. Collins claimed protection against the distribution of the compact discs in Germany. Under the relevant German provisions regarding foreign performers, he was, however, not eligible for protection, since the relevant international convention, the International Convention for the Protection of Performers, Producers of Phonograms and Broadcasting Organizations, 1961 (the Rome Convention), was not applicable to the particular circumstances of the case, and since the requirements under German law regarding foreign performers (performance within Germany) were not fulfilled. However, had Collins been a German performer, he would have been eligible for protection in Germany.

The main question to be dealt with by the European Court of Justice related to the scope of application of Article 7.1 of the EEC Treaty. More precisely, the question was whether the protection of performing artists by neighboring rights was covered by the field of application of the EEC Treaty. The European Court of Justice answered this question positively and pointed at the relevance of neighboring rights for the free movement of goods and services as well as for the competition within the EC, as it had already been established by the jurisprudence of the Court. The Court mentioned in particular Articles 30/36, 59/66 of the EEC Treaty and the provisions on competition law (Articles 85/86 of the EEC Treaty). It mentioned also the harmonization of performers' rights on the basis of Articles 57.2, 66 and 100(a) of the EEC Treaty by the EC Directive 92/100/EEC of November 19, 1992 and concluded in general that author's rights and neighboring rights, which are covered by the scope of application of the EEC Treaty mainly because of their effects on the internal market are, by necessity, also covered by the rule of non-discrimination under Article 7 of the EEC Treaty.[18] There is every reason to assume that the arguments and the final result regarding industrial property rights would be the same.

The Court then stated that the discrimination on the basis of the nationality of Collins was not justified on the grounds of differences of national rules of Member States governing the matter, nor on the ground that not yet all Member States have adhered to the Rome Convention.[19] The Court did not even react to the argument brought forward by the defendant, according to which the discrimination of foreign authors and neighboring rights owners has been well accepted from the beginning of history of author's rights and

[16] See, for example, ECJ case 245/81, *Edeka,* R. 1982, 2745, 2754; see also von Bogdandy, *op.cit.*, Article 6 of the EC Treaty note 6 with further references, and note 7 underlining in particular the restrictions of the application of the general principle of non-discrimination as opposed to the rule under Article 6 of the EC Treaty.

[17] Article 7 of the EEC Treaty became, upon the revision by the Treaty of Maastricht, Article 6 of the EC Treaty. See the cases of *Phil Collins, op. cit* and *Patricia Im- und Export, op. cit.*

[18] See in particular §§ 22-28 of the Decision in *Phil Collins, op. cit.*

[19] See § 31 of the Decision in *Phil Collins, op. cit.*

neighboring rights and even well justified, where the international conventions in the field of intellectual property do not apply.[20] Eventually, the Court decided that Collins could base his claim directly on Article 7.1 of the EEC Treaty, in order to obtain the same protection as is granted to national performers.[21]

Accordingly, the European rule on non-discrimination has overridden the long standing, well-accepted provisions of national laws of the EC Member States regarding the status of foreign rightholders in the area of intellectual property rights. This means, for example, that even those cases of discrimination, which are allowed under the existing Conventions (for example under reciprocity rules of the Berne Convention for the Protection of Literary and Artistic Works (the Berne Convention) may no longer be applied to the extent to which this would represent a discrimination under Article 6 of the EC Treaty. This result shows that the European Court of Justice has considered Article 6 of the EC Treaty, together with primary and secondary European law, as a means to realize an ever growing integration within the European Union.

3. The System of Non-Discrimination in International Intellectual Property Law

(i) Analysis of the System

(a) The Classical Treaties: Paris Convention, Berne Convention, Rome Convention[22]

(aa) The principle

As international treaties in general, the above mentioned treaties are based on the principle of formal reciprocity: Every contracting party agrees to assume the treaty obligations because the other contracting parties do the same.[23] At the same time, these treaties, such as most treaties in international intellectual property law, incorporate the principle of national treatment as opposed to the principle of material reciprocity.[24] Differences as regards certain aspects of the scope of application, the extent of protection granted and exceptions to national treatment under the three treaties mentioned will be analyzed.

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[20] See the development of this argument, Loewenheim, "Der Schutz ausübender Künstler aus anderen Mitgliedstaaten der Europäischen Gemeinschaft im deutschen Urheberrecht", (1993) *GRUR Int.*, p. 114 *et seq.* See the arguments in favor of the application of Article 7.1 of the EEC Treaty, Mestmäcker, "Schutz der ausübenden Künstler und EG-Diskriminierungsverbot", (1993) *GRUR Int.* p. 532 *et* seq

[21] See §§ 34, 35 of the Decision in *Phil Collins, op .cit.*

[22] Although the Rome Convention is not relevant in the context of human rights, it is included here in order to underline the importance of national treatment and the differences in its scope of application and extent in various areas of intellectual property.

[23] See on the fundamental role of reciprocity in international treaty making Simma, *Das Reziprozitätselement im Zustandekommen völkerrechtlicher Verträge* (Berlin, 1972), and Verdross/Simma, *Universelles Völkerrecht* 3rd ed. (Berlin, 1984), §§ 63-67.

[24] See an in-depth-analysis of national treatment and its exceptions in Drexl, *Entwicklungsmöglichkeiten des Urheberrechts im Rahmen des GATT* (Munich, 1990), in particular p. 44 *et seq* regarding the Berne Convention.

(bb) Scope of application

(aaa) Paris Convention

Article 2.1 of the Paris Convention for the Protection of Industrial Property (the Paris Convention) determines the personal scope of application on the basis of nationality: Beneficiaries of protection under the Convention are nationals of any other country of the Union.[25] In respect of nationals of other Union countries, no requirement as to domicile or establishment in the country where protection is claimed may be imposed (Article 2.2 of the Paris Convention). Article 3 of the Convention extends national treatment to nationals of countries outside the Union, provided that they are domiciled or have a real and effective industrial establishment in the territory of one of the countries of the Union.[26]

(bbb) Berne Convention

Under the Berne Convention, the personal scope of application has been laid down in Articles 3 and 4.[27] Accordingly, the beneficiaries of national treatment are either nationals of one of the countries of the Berne Union, or those who have their habitual residence in one of these countries, or those who are not nationals of one of these countries, for their works first published in one of those countries (or simultaneously in a country outside the Union and a country of the Union).[28] In respect of cinematographic works and works of architecture, additional possibilities to become eligible for protection are provided for under Article 4 of the Berne Convention: authors of cinematographic works are eligible if the maker of the work has his headquarters or habitual residence in one of the countries of the Union. Eligibility is also stated in respect of authors of works of architecture which are erected in a country of the Union, and for authors of other artistic works which are incorporated in a building or other structure located in a country of the Union.

In sum, the criteria of eligibility are nationality or habitual residence of the author, or different points of attachment regarding the work, namely first publication, nationality of the maker of the cinematographic work and place of a building or other structure. The possibility to obtain the protection by the Berne Convention by first publication of a work in a country of the Union represents a remarkable extension of such possibilities for authors who are not nationals of a country of the Union nor have their habitual residence in such a country. This solution in particular goes far beyond that of the Paris Convention, where nationals from countries outside the Union may obtain protection only if they are domiciled or have their real and effective industrial establishment in the territory of one of the countries of the Union.

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[25] See on the question how to determine nationality in case of legal persons, to which the Paris Convention applies, Bodenhausen, *Guide to the Application of the Paris Convention for the Protection of Industrial Property* (Geneva, 1968), Article 2.1, note (b).

[26] See for an explanation of the notions "domicile" and "real and effective industrial or commercial establishment", Bodenhausen, *op.cit.* Article 3, notes (c) and (d). Beyond national treatment, the right of priority granted to foreigners constitutes an important pillar of the Paris Convention.

[27] See on the criteria for eligibility for protection, for example, Ricketson, *The Berne Convention for the Protection of Literary and Artistic Works: 1886-1986* (Oxford, 1987) notes 5.3 *et seq.*

[28] Article 3.1 and 3.2 of the Berne Convention. According to Article 3.4 of the Berne Convention, the requirement of simultaneous publication is fulfilled if publication in two or more countries occurs within 30 days of its first publication.

Just as the Paris Convention provides protection regarding the international context only,[29] national treatment (as well as minimum rights) under Article 5.1 in connection with Article 5.4 of the Berne Convention may be claimed only in countries of the Union other than the "country of origin." The "country of origin" is defined, for published works, by first publication.[30] In case of unpublished works or those works first published in a country outside the Union without simultaneous publication in a country of the Union, the country of origin is determined by reference to the nationality of the author; for cinematographic works, works of architecture and other artistic works incorporated in a building or other structure, the same criteria as those which are relevant for the eligibility for protection under Article 4 of the Berne Convention have to be fulfilled in addition to nationality in order to determine the country of origin (Article 5.4(c)(i) and (ii) of the Berne Convention).

In countries other than the country of origin, full protection under the Berne Convention may be claimed, whereas in the country of origin, domestic law governs. However, an author who is not a national of the country of origin must not be discriminated against under such domestic law (Article 5.3 of the Berne Convention). Accordingly, he is entitled to the same protection as nationals, but may not benefit from the minimum rights. In fact, however, the minimum rights are usually provided for under national law anyway.[31]

(ccc) Rome Convention

Under the Rome Convention, different points of attachment for the protection of performers, phonogram producers and broadcasting organizations are provided for in Articles 4, 5 and 6 of the Rome Convention.[32] For performers, nationality has not been chosen for practical reasons: very often, performing ensembles such as orchestras, bands or choirs include performers of different nationalities, which would render the application of the point of attachment of nationality too difficult.[33] Instead of the nationality, the place of the performance is a point of attachment, as are the incorporation in a phonogram which is protected under Article 5 of the Rome Convention, and the broadcast of a performance which is not fixed on a phonogram if the broadcast is protected by Article 6 of the Rome Convention (Article 4 of the Rome Convention). Article 5 of the Rome Convention establishes, in respect of phonogram producers, the points of attachment of nationality,[34] of first fixation and first publication; publication in a Contracting State within 30 days of first publication in a non-contracting State fulfills the requirement of first publication (Article 5.2 of the Rome Convention). In respect of broadcasting organizations, the points of attachment are either the

[29] For example, a national of one county of the Union may claim protection only in the other countries of the Union under the Paris Convention; the same is applicable to the other criteria, such as the domicile.

[30] Article 5.4(a) and (b) of the Berne Convention specifies, in the case of simultaneous publication in several countries of the Union, that the country of origin is that providing for the shortest term of protection (a), and for the case of simultaneous publication in a country outside and a country of the Union, the country of the Union to be the country of origin (b).

[31] See on the application of national treatment, for example, Ricketson, *op.cit.* notes 5.64 *et seq*, in particular note 5.65.

[32] See a commentary on these articles in Masouyé, *Guide to the Rome Convention and to the Phonograms Convention* (WIPO Publ. No. 617E, Geneva, 1981) p. 26 *et seq*

[33] Ulmer, "Das Rom-Abkommen über den Schutz der ausübenden Künstler, der Hersteller von Tonträgern und der Sendeunternehmungen", (1961) *GRUR Int.*, pp. 569, 578.

[34] For a definition of nationality in this context see Nordemann, Vinck, Hertin and Meyer, *International Copyright* (Weinheim, 1990) Article 5 of the Rome Convention, note 3.

headquarters of the organization or the transmission of the broadcast from a transmitter situated in another Contracting State.[35]

Accordingly, also the Rome Convention covers only international situations: the relevant criterium must be related to another Contracting State than that in which protection is claimed.

(cc) Extent of protection

Once a person is eligible for national treatment under one of the Conventions, the extent of protection has to be determined. Both under Article 2.1 of the Paris Convention and under Article 5.1 of the Berne Convention, national treatment covers the protection[36] that the respective laws - meaning those governing the relevant subject matter, such as patents - now grant or may hereafter grant to nationals. Accordingly, any future legislative amendment increasing national patent protection, author's rights protection and so on, will be covered automatically by the principle of national treatment. Consequently, the respective protection will have to be granted to those who are eligible under the Conventions.

On the contrary, the extent of protection under the principle of national treatment under the Rome Convention is rather limited. First of all, Article 2.1 of the Rome Convention defines national treatment as the treatment granted to the own nationals, if further conditions are fulfilled, such as the performance, broadcast or first fixation on the territory regarding a performance, or the first fixation or first publication on the territory regarding phonograms. Secondly, under Article 2.2 of the Rome Convention, "national treatment shall be subject to the protection specifically guaranteed, and the limitations specifically provided for, in this Convention". This paragraph is generally understood as covering only the minimum standards of the Rome Convention, as laid down in Articles 7 (for performers), 10 (for producers of phonograms), 12 (for performers and phonogram producers), 13 (for broadcasting organizations) and 14 (term of protection regarding the three protected categories).

The principle of national treatment under the Paris and Berne Conventions are broader insofar as they include the entire national law (and not only the national law up to the limit of minimum rights) existing at the time of accession to the Convention and being introduced thereafter.

(dd) Exceptions to national treatment (material reciprocity)

A number of exceptions to national treatment have been provided for under the Berne Convention: The most important one is the so-called comparison of terms regarding the terms of protection (Article 7.8 of the Berne Convention). The other cases relate to the protection of models and designs under Article 2.7, phrase 2 of the Berne Convention, the resale right (Article 14[ter].2 of the Berne Convention), the possible retorsion against the so-called backdoor

[35] Article 6(1) of the Rome Convention. A Contracting State may notify that it will protect broadcasts only if both criteria are fulfilled, Article 6(2) of the Rome Convention.

[36] "Advantages" in the Paris Convention, meaning the non-discriminatory application of the national law as applied to nationals of the country itself, see Bodenhausen, *op. cit.*, Article 2.1, note (d), and the "rights" under the Berne Convention.

protection (Article 6 of the Berne Convention), the application in time (Article 18 of the Berne Convention) and the reservation of the ten-year-period regarding translations (Article 30.2(b), part 2 of the Berne Convention).[37]

Under the Rome Convention, given the limited extent of national treatment, the room for exceptions to national treatment is much more limited from the outset than under the Berne Convention. Only three cases, which are connected with the application of reservations, exist: Article 16.1(a)(iii) of the Rome Convention, Article 16.1(a)(iv) of the Rome Convention and Article 16.1(b), second half phrase of the Rome Convention. The first two of them relate to the right of remuneration for secondary uses of phonograms for broadcasting and communication to the public under Article 12 of the Rome Convention and the third provision to the communication right for broadcasting organizations under Article 13(d) of the Rome Convention.[38]

(b) Recent Treaties: TRIPS, NAFTA and the WIPO Treaties, 1996

(aa) The TRIPS-Agreement

The inclusion of intellectual property into the system of the General Agreement on Tariffs and Trade, 1947 (the GATT), which became later the World Trade Organization (the WTO), brought about the application of the general principles of GATT, i.e. in particular national treatment and most-favored-nation treatment (Article III and Article I of the GATT). However, the GATT form of national treatment was different in many ways from the national treatment under the intellectual property conventions.[39] In order to avoid any conflicts between different rules of national treatment, the approach of the Agreement on Trade-Related Aspects of Intellectual Property Rights (the TRIPS Agreement) was to follow and integrate the national treatment rules of the relevant intellectual property conventions.[40] The national treatment rules including the exceptions to them as provided under the relevant intellectual property conventions remained in the end untouched even by the most-favored nation clause in Article 4 of the TRIPS Agreement.[41]

The legal technique used is the following: Article 3.1, phrase 1 of the Agreement states the general principle that "each Member shall accord to the nationals of other Members treatment no less favorable than that it accords to its own nationals ...". In order to take account of the fact that nationality is not the only criterium, or even not at all a criterium for eligibility used in the conventions in order determine the beneficiaries of protection, Article 1.3, phrase 2 of the TRIPS Agreement defines the term "nationals" by reference to "those

[37] See for a detailed analysis of these cases, for example, Drexl, *op. cit.*, p. 124 *et seq.* The reasons for the rule on reciprocity will be discussed later in context with the background and intentions behind the whole system of non-discrimination in intellectual property.

[38] Drexl, *op. cit.*, p. 236 *et seq.*

[39] See for the differences Fikentscher, "GATT Principles and Intellectual Property Protection" in: Beier/Schricker (Eds.), *GATT or WIPO? - New Ways in the International Protection of Intellectual Property* (Weinheim, 1989) pp. 99, 119 *et seq* and, on possible conflicts of GATT and the classical Conventions and their avoidance, p. 124 *et seq.*

[40] See on this approach and on national treatment under Article 3 of the TRIPS Agreement, Gervais, *The TRIPS Agreement - Drafting History and Analysis* (London, 1998) notes 2.23 *et seq.*

[41] See in particular Articles 4(b) and (c) of the TRIPS Agreement and the comments thereon in Gervais, *op. cit.*, note 2.30 *et seq*, in particular note 2.31.

natural or legal persons that would meet the criteria for eligibility for protection provided for in . . . " the relevant Conventions, " . . . were all Members of the WTO members of those Conventions." This legal technique made it not necessary to spell out the relevant rules of the Conventions (Articles 2, 3 of the Paris Convention, Articles 3, 4 of the Berne Convention and Articles 4, 5 and 6 of the Rome Convention). In addition, TRIPS took over the exceptions to national treatment already provided in the relevant Conventions, such as the cases of reciprocity under the Berne Convention.[42]

In respect of the neighboring rights covered by the Rome Convention, the TRIPS Agreement chose the same approach of a narrow scope of national treatment, which is limited to the rights provided under the TRIPS Agreement (which are, at the same time, minimum rights).[43]

In addition, the national treatment provisions of the Berne Convention have been included in the compliance clause of Article 9.1, phrase 1 of the TRIPS Agreement. In sum, the TRIPS Agreement has followed the national treatment provisions of the relevant intellectual property conventions.

(bb) NAFTA

The intellectual property provisions in Chapter 17 of the North American Free Trade Agreement (NAFTA) were based on a so-called "TRIPS-Plus-Approach"; hence, in principle, NAFTA followed the TRIPS Agreement in many respects and provided more protective elements. Regarding national treatment, Article 1703 of NAFTA lays down in words similar to those of Article 3.1, phrase 1 of the TRIPS Agreement, the obligation of each Party to accord "to nationals of another Party treatment no less favorable than that it accords to its own nationals . . . "[44] Again, the term "nationals" has been defined by a reference to the persons "who would meet the criteria for eligibility for protection provided for in. . . . " the Paris Convention, Berne Convention, Rome Convention, Geneva Convention for the Protection of Producers of Phonograms, 1971, the UPOV Convention, 1978 and 1991 and the Treaty on Intellectual Property in Respect of Integrated Circuits, 1989, as if each Party were a party to those Conventions, . . . "In respect of intellectual property rights which are not subject of these Conventions, a further definition of "nationals" referring mainly to citizenship or permanent residence has been given (Article 1721.2 of the NAFTA).

(cc) The WIPO Treaties, 1996

Also the WIPO Copyright Treaty, 1996 (the WCT) took over the rules on national treatment of the Berne Convention. A special reason to do so was the fact that the WCT has been qualified as a special agreement within the meaning of Article 20 of the Berne

[42] Article 3.1, phrase 1, second half sentence of the TRIPS Agreement. For the cases of reciprocity see above II.1.a)dd).

[43] See Article 3.1, phrase 2 of the TRIPS Agreement, by which the rule of Article 2.2 of the Rome Convention is laid down in respect of the TRIPS Agreement in even clearer terms.

[44] Although no explicit exceptions to national treatment have been laid down, it has been recognized that exceptions under the WIPO Conventions will be allowed also in the framework of NAFTA. See Government of Canada (Ed.), *NAFTA, What's it all about* (Ottawa, 1993.)

Convention, which requires that the special agreement does not contain any provision contrary to the Berne Convention. Accordingly, Article 3 of the WCT obliges Contracting Parties to apply *mutatis mutandis* the relevant provisions of the Berne Convention dealing with national treatment (Articles 2 - 6 of the Berne Convention). An Agreed Statement explains how to understand certain notions of Articles 2 - 6 of the Berne Convention in applying them to the WCT.

Article 4 of the WIPO Performances and Phonograms Treaty, 1996 (the WPPT) again follows the basic approaches of the Rome Convention and the TRIPS Agreement. Regarding the eligibility for protection, it also, like TRIPS, uses the word "nationals" (of other Contracting Parties) and defines this word by a reference to the criteria for eligibility for protection provided under the Rome Convention, " . . . were all the Contracting Parties to this Treaty Contracting States of that Convention" (Article 3.2, phrase 1 of the WPPT). Accordingly, Articles 4 and 5 of the Rome Convention have to be applied as criteria for eligibility for protection under the WPPT.

Regarding the scope of national treatment, Article 4.1 of the WPPT follows in principle the narrow approach of the Rome Convention and the TRIPS Agreement. It is even clearer than the Rome Convention, since it is limited explicitly to the "exclusive rights specifically granted in this Treaty" (as opposed to the "protection specifically guaranteed and their limitations specifically provided for" in the Rome Convention) and covers, as the only remuneration right, the right for secondary uses under Article 15 of the WPPT. Accordingly, any other remuneration rights, such as those for private copying, are clearly not covered by the national treatment provision of Article 4 of the WPPT. The only provision of material reciprocity is Article 4.2 of the WPPT which corresponds largely to Article 16.1(a)(iv) of the Rome Convention. It allows the application of material reciprocity in a case where another Contracting Party makes use of the reservations permitted by Article 15.3 of the WPPT in relation to the remuneration right for secondary uses of phonograms.

In sum, the more recent treaties dealing with intellectual property rights - and even those which are larger trade treaties - have continued to not only make national treatment one of their main principles, but also to rely on the provisions of the Conventions as far as they relate to the criteria for eligibility for protection, to the scope of national treatment and the exceptions thereto.

(ii) Justifications For, and Intentions Behind, National Treatment in Intellectual Property law[45]

(a) Protection of Foreign Works

One of the best ways to explore the justifications for, and intentions behind, national treatment is to look at its origins, at a time when there was not even any international intellectual property law. The national law provisions, which existed in the 19th century irrespective of any bilateral of even multilateral conventions, had developed on a territorial basis. Therefore, intellectual property rights could come into being and be protected in a particular country only within the territory of the country. As a rule, beneficiaries of the

[45] Examples in this sub-part will be taken only from the area of authors' rights.

national laws were only nationals and/or sometimes also those who first published their works in this country. The arguments brought forward in favor or against national treatment were, at a first stage, related to the question whether foreigners should be protected at all rather than to the question whether they should be protected on the basis of national treatment versus material reciprocity.

(aa) Philosophical and ethical justifications

This situation was not satisfying for those authors whose works were exploited beyond the national borders. One of the reasons which led to the principle of national treatment was the idea, derived from natural law or at least from general feelings of unfairness, that authors by nature should be able to benefit everywhere from their natural property and therefore should be recognized an author's right also in foreign countries.[46] Indeed, the natural law philosophy was at the basis of the school of thought in favor of a universal codification of copyright law rather than a system of different national laws combined with national treatment. The idea of adopting uniform, general laws which would apply to both foreigners and nationals alike showed, however, to be an unrealistic ideal. The only solution which proved to be possible, namely to keep different national laws and to assimilate foreigners to nationals on the basis of national treatment, therefore was considered by the "universalists" as a necessary compromise, only a transitional solution towards the uniform laws.[47] In other words, the ultimate aim was not national treatment, but a uniform protection in all participating countries applicable to foreigners and nationals alike.

(bb) Cultural justifications

Apart from these philosophical or ethical justifications, also cultural and economic reasons were given. The cultural argument was that an author who could not benefit from the exploitation of his work abroad would have less incentives to create new works so that the cultural diversity both in his country and abroad would decline.[48]

Often, economic reasons were behind cultural arguments, as in the following case: in a conflict of interests between England and the U.S.A., the American reprinters argued against the protection of English authors and publishers in the U.S.A. by pointing at the readers' interests: if the English-American Copyright Agreement would come into force, American readers would have to pay more than double the price for the reprinted English books. However, the supply of broad ranges of consumers with cheap books would be endangered.[49]

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[46] See, for example, already Pütter, *Der Büchernachdruck nach ächten Grundsätzen des Rechts* (Göttingen, 1747) p. 3, note 7, stating that, from a point of view of ethics ('morals') it would not matter whether a work of a domestic or a foreign author is exploited (translation by the author). See also Ricketson, *op. cit.*, note 1.22 and note 2.7, referring to the resolutions made by the Founding Congress of ALAI in 1878, according to which in particular: "The right of the author in his work constitutes, not a concession by the law, but one of the forms of property which the legislature must protect"; this makes allusion to the natural law philosophy. Another resolution expressed the principle of national treatment.

[47] Röthlisberger, *Die Berner Übereinkunft zum Schutze von Werken der Literatur und Kunst* (Bern, 1906) p. 4. On the universalist approach, see also Ricketson, *op. cit.*, notes 2.2-2.4.

[48] Ricketson, *op. cit.* note 1.22.

[49] See Boytha, *Fragen der Entstehung des internationalen Urheberrechts, in: Dittrich (ed.), Woher kommt das Urheberrecht und wohin geht es?* (Vienna, 1988) p. 189 *et seq.*

This is an argument, which today would be used in many developing countries.[50] However, a different argument, namely in favor of the protection of English works in the U.S.A. was brought forward by American authors. The free reprints of English books would make the publication of American works more difficult. Only the protection of foreign works in the U.S.A. would be able to give more room to American works and thereby to promote national literature.[51] Again, such arguments may be applied today towards developing countries. In the U.S.A., it took nevertheless about another 50 years to conclude a bilateral copyright agreement with England. It was subject to reciprocity and to the "manufacturing clause" protecting the interests of the American printing industry.[52]

(cc) Economic reasons

However, it seems that economic reasons, particularly the prevention of international piracy in the 19th century, were the main reasons for the development of international copyright protection. The different arguments depended on the situation of the national industry. One should take into account that publishers and printers often had a more important role to play than authors, when political decisions had to be taken. For example, Saxony, which had a strong printing industry dealing with original prints rather than reprints, wanted to protect and reinforce its printing industry by offering protection against unauthorized reprints even for foreign publishers, provided that those would have their books printed in Saxony and that their country would provide reciprocal protection for printed products from Saxony. This decision to grant protection to foreigners at all (even if yet on a reciprocal basis and under the supplementary condition mentioned above) had the intended effect of strengthening the printing industry in the whole book market in Saxony, which in fact resulted even in the fading of the Frankfurt Book Fair, after the Leipzig Book Fair had developed into the leading marketplace for books.[53] Nevertheless, many countries rather had a strong interest in developing their reprinting industry which produced cheap reprints of works from abroad. They had an immediate interest in a blossoming "piracy industry" (as we would call it today, although the reprinting was legal).

The conflict between a country which had a strong interest in the protection of its own works abroad (France) and an adjacent country in which the printing industry had specialized in reprinting French works and in printing those French original works which had been forbidden by censorship (Belgium), was solved in the following way: France employed its general economic superiority by arranging the following package deal: France was ready to sign a general trade agreement, which would bring about advantages for Belgium in other areas of trade than in intellectual property only under the condition that Belgium would agree to reciprocal protection of French literary property. The interests of other Belgian industries prevailed over those of the Belgian reprinting industry. The agreement was signed.[54] Comparable bilateral agreements were concluded with other countries such as Austria, which was not interested in any copyright agreement with France, since Austrian authors were hardly printed in France, whereas French works were distributed broadly in Austria. Amongst other countries which were forced by the economic power of France to conclude an

[50] See also Ricketson, *op. cit.* note 1.22.
[51] See Boytha, *op. cit.* p. 190.
[52] See Boytha, *op. cit.* p. 191.
[53] See on this example of Saxony Boytha, *op. cit.* p. 181, 183 *et seq.*
[54] See Boytha, *op. cit.* p. 186 *et seq.*

agreement about authors' rights was Switzerland which did not even have a Federal Copyright Act until 1883. The agreement contained 34 articles on the protection of French works in Switzerland and 16 articles on the protection of Swiss works in France, while Swiss authors did not enjoy any protection for their works in Switzerland.[55] In these cases, accordingly, the protection of foreigners was imposed by a country which had an economic interest in the protection of its own authors and publishers abroad, upon those countries which had, from an economic point of view, no interest therein because their industries would have had to pay licensing fees for the exploitation of French works.[56]

(b) National Treatment versus Material Reciprocity

Regarding more specifically the background of national treatment versus material reciprocity, one may state from the very the beginning of the bilateral agreements on, which were not without any influence on the later development of the Berne Convention, that material reciprocity was accepted in many instances, in particular regarding the duration of protection.[57] However, the Berne Union adopted a broad principle of national treatment combined with a number of minimum standards to be granted irrespectively of national law provisions. Material reciprocity was only admitted in cases where the legal situation in the Member States was quite diverse and the application of national treatment would have resulted in strong imbalances between countries. This is particularly true for the comparison of terms under Article 7.8 of the Berne Convention; the German proposal at the Berlin Conference of 1908, which would have brought about the application of national treatment instead of reciprocity, was strongly criticized as being intolerable.[58] The same is true for the reciprocity regarding works of applied art,[59] the resale right[60] and, in a similar way, Article 30.2(b), part 2[61] and Article 6.1 of the Berne Convention.[62]

Material reciprocity has always been looked upon as a means to incite countries, which do not provide for a certain, higher level of protection, to increase their level of protection[63] in cases where the diversity of national laws is considerably high. This positive function of reciprocity has been employed also more recently, in the cases of the Semi-Conductor Chip Protection Act in the U.S.A.[64] and the EC Database Directive, 1996,[65] both with concrete

[55] See Boytha, *op. cit.* p. 187.
[56] See for a comparable situation of today von Lewinski, "Copyright in modern international trade law", (1994) 161 *RIDA*, pp. 5, 48 *et seq.*
[57] See Boytha, *op. cit.* p. 193 *et seq*, pointing in particular at the cases of differences in the level of protection in several countries.
[58] See Ricketson, *op. cit.* note 7.9 and, on the aspect of imbalances between different laws, note 7.8.
[59] See Ricketson, *op. cit* in particular notes 6.45 *et seq*, 6.51.
[60] See in particular, Ricketson, *op. cit.* note 8.54.
[61] Reciprocity as an answer to the possible imbalance caused by the use of a reservation.
[62] In this case, the imbalance would consist in the unilateral enjoyment of protection in the Berne Union through backdoor protection by a country which itself does not protect Berne Union works.
[63] See for example Loewenheim, *op. cit.* p. 114 *et seq*; German Constitutional Court in the case *Bob Dylan, op. cit.* p. 442; see in general on the positive function of reciprocity also Verdross/Simma, *op. cit.* §§ 63, 65.
[64] See Dreier, "National Treatment, Reciprocity and Retorsion - The Case of Computer Programs and Integrated Circuits", in: Beier and Schricker (Eds.), *op. cit.* p. 63, 70 *et seq* and Joos and Moufang, "Report on the Second Ringberg-Symposium", in Beier and Schricker (Eds.), *op. cit.* p. 1, 16 *et seq*, 20.
[65] See Article 11 of the EC Directive 96/6, O.J. EC no. L 77/20 of March 27, 1996, and von Lewinski, "Kommentar zur Datenbank-Richtlinie, Article 11", in Walter and von Lewinski, Dreier, Blocher and Dillenz, *Europäisches Urheberrecht* (Wien and New York, 1999.)

consequences: other countries have adopted protection for semi-conductor chips in order to fulfill the reciprocity requirement; in the case of the *sui generis* database protection, in particular the U.S.A. intends to create a database protection which would fulfill the EC reciprocity requirement. Even the harmonization of the general term of protection of author's rights in the European Union at 70 years *p.m.a.* in 1993[66] and the decision to apply the comparison of terms under Article 7.8 of the Berne Convention throughout the European Union has resulted in the U.S.A. in several bills and finally in a Copyright Amendment Act which prolongs the duration under the Copyright Act of the U.S.A. as a rule to 70 years *p.m.a.*[67]

4. Relationship Between Rules on Non-Discrimination under Human Rights and under Intellectual Property Law

Since intellectual property rights are covered by human rights treaties and declarations, the relationship between the non-discrimination rules under international law of human rights, on the one hand, and under international law regarding intellectual property rights, on the other hand, will be analyzed. In particular, the following question arises: where two countries are both members of a relevant human rights treaty and a relevant intellectual property law treaty, would they be obliged, on the basis of the human rights treaty, to grant non-discriminatory intellectual property protection, even if such obligation does not exist, in a particular case, under the intellectual property treaty? For example, would the non-discrimination rule under the law of human rights prevent a Member Country of the Berne Convention from relying on the permitted exceptions from national treatment, such as the comparison of terms under Article 7.8 of the Berne Convention? Would it prevent such country from restricting the protection to those authors who fulfill the criteria of eligibility under the Berne Convention?[68]

It is remarkable that such questions have hardly been dealt with in legal literature or by courts. Extensive writing exists, on the one hand, on non-discrimination under human rights and, on the other hand, on national treatment under intellectual property treaties; as far as experts in authors' rights have written about the human rights context of authors' rights, they usually refer only to the protection of authors' rights as such, for example under Article 27 of the UDHR, rather than to non-discrimination in this context.[69] An exception to this lack of writings is a treatise by Mastroianni which, in part, deals with the relationship of authors' rights and human rights.[70]

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[66] Council Directive 93/98/EEC of October 29, 1993 harmonizing the term of protection of copyright and certain related rights, O.J.EC no. L 290/9 of November 24, 1993, Article 1(1) and, regarding the obligatory application of reciprocity according to Article 7(8) of the Berne Convention, Article 7(1) of the Directive.

[67] See Pub.L. Nr. 105-298, Title I of S. 505, amending in particular Secs. 302(a), (b) of the Copyright Act of the United States of America. Most copyright terms of protection have been prolonged for an additional 20 years.

[68] The same questions arise in respect of a country which is not bound by an intellectual property treaty and which grants, under its domestic law, protection to foreign authors only under specified conditions, such as material reciprocity or the fulfillment of certain criteria of eligibility.

[69] See, as one of the latest collections, the articles in UNESCO *Copyright Bulletin* Vol. XXXII, No. 3 (1998) on the Fiftieth Anniversary of the UDHR, by Brulé, Dietz and Françon, Correa, Bécourt, Blokh and Kéréver; Vivant, "Droit d'auteur - droit de l'homme?" (1997) 174 *RIDA* p. 61.

[70] Mastroianni, *Diritto internazionale e diritto d'autore* (Milano, 1997), in particular pp. 21 *et seq*, arguing in favor of the prevailing of human rights.

Given this situation, particular thanks should be expressed to the World Intellectual Property Organization (WIPO) for drawing attention to this interesting problem, even if the full discussion of this problem might take much more space than that of this paper.

Before the relationship between non-discrimination rules under human rights and under intellectual property law will be looked upon, one will first have to address the question of whether there is an obligation under international law of human rights to grant existing domestic protection also to foreign authors without discrimination, and if so, what would be the contents of such obligation.

To begin with, under most human rights treaties, the provisions on non-discrimination apply only to the rights recognized in the respective treaties. They are considered to be accessory rights. Only Article 26 of the ICCPR has been considered to lay down an independent right against discrimination, which therefore might apply to intellectual property.[71] Apart from this provision, the accessory non-discrimination rules in particular of Article 2 of the UDHR and Article 2.2 of the ICESCR, in connection with Article 27.2of the UDHR and Article 15.1(c) of the ICESCR respectively, may have an effect on non-discrimination in the field of intellectual property.

However, a particular question arises in respect of the UDHR. It has been pointed out that, under international law, it does not represent a binding instrument, because the General Assembly, which adopted the Declaration, was not the competent body to adopt legal norms for its members; what it adopted was rather a Resolution (No. 217 III). In addition, the Declaration itself, in the last paragraph of the Preamble, considers itself only "a common standard of achievement representing a program rather than binding law."[72] However, given a number of developments, in particular the adoption of the Final Act of the International Conference on Human Rights of May 13, 1968 (Teheran), confirmed by the resolution of the General Assembly 2442 (XXIII) of December 19, 1968, and the adoption of the Final Act of the Vienna Conference on Human Rights of 1993, the basic human rights laid down in the UDHR may be considered to be legally binding under international law, irrespective of treaty obligations.[73] Nevertheless, the legal quality of the Declaration remains controversial. Non-discrimination in respect of authors' rights so far has not been understood to constitute binding international law.[74]

Even the human rights laid down in the ICESCR in the beginning were considered only expressions of a program rather than concrete claims; in particular, reference was made to

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[71] This remains controversial. See Nowak, *UNO-Pakt über bürgerliche und politische Rechte und Fakultativprotokoll* (Kehl *et al.*, 1989), notes 12 and 13 to Article 26. See, however, Tomuschat, "Equality and Non-Discrimination under the International Covenant on Civil and Political Rights" in von Münch (Ed.), *Festschrift für Hans-Jürgen Schlochauer zum 75. Geburtstag am 28. März 1981*, (Berlin and New York ,1983) p. 691 *et seq*, 710, who considers Article 26 of the International Covenant on Civil and Political Rights as a procedural safeguard rather than as a general non-discrimination clause.

[72] See, for example, Verdross and Simma, *op. cit.* § 1234 and § 634; Klein, *op. cit.* p. 14; Tretter, "Urheberrecht und Grundrechte", in Dittrich (Ed.), *Die Notwendigkeit des Urheberrechtsschutzes im Lichte seiner Geschichte* (Vienna, 1991) p. 105. See on this question also Shaw, *International Law*, 4th ed., (Cambridge, 1997) p. 207 *et seq*

[73] See in particular Verdross and Simma, *op. cit.* § 1234, with further references.

[74] See above, I.2.(a)(dd).

Article 2.1 of the Covenant which lays down the obligation of parties to the Covenant merely "to take steps, . . . to the maximum of its available resources, with a view to achieving progressively the full realization of the rights recognized in the present Covenant by all appropriate means . . . ".[75] However, to date, it is generally recognized that the two Covenants contain legal rights and impose on the parties legal obligations. Problems are discussed not in respect of their validity but rather of their applicability. [76]

Since the above provisions lay down obligations under international law, their contents should be ascertained. The protection under these provisions is limited to natural persons, who are authors of works or inventors[77] and, accordingly, does not cover any owners of neighboring rights, such as performing artists, phonogram producers, film producers, broadcasting organizations and the like.

These provisions on non-discrimination explicitly only mention "national origin" as a relevant ground for which discrimination must not occur. Although different opinions exist on the meaning of the notion "national origin", the majority of commentators, partly based on an interpretation expressed by countries which are parties to the relevant treaties, exclude "nationality" from the notion "national origin", stating that the non-discrimination rule did not envisage to oblige countries to automatically grant to foreigners the same rights as to their own nationals. Rather, "national origin" relates to ethnic or racial origin of an individual person.[78] Accordingly, the "discrimination" permitted under the Paris and Berne Conventions towards non-Member Countries, or under domestic law on the grounds of nationality is compatible with the non-discrimination rules under the above human rights provisions.[79]

The relevant human rights provisions also prohibit discrimination on the grounds of "other status". The "status" refers to a given position of a person mainly on a social scale; this term was introduced in the context of a discussion on the criteria "birth" and "property."[80] The habitual residence and the first publication in a relevant country, both being additional criteria for eligibility under the Berne Convention and, irrespective of treaty law, under many domestic copyright laws, may not be considered to represent such "status." Therefore, also the "discrimination" permitted under the Berne Convention on the grounds of habitual residence and first publication is compatible with the relevant non-discrimination rules under human rights law.

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[75] See also Verdross and Simma, *op. cit.* § 1247.

[76] See Simma, "Die Internationale Kontrolle des UN-Paktes über wirtschaftliche, soziale and kulturelle Rechte: Neue Entwicklungen", in Beyerlin, Bothe, Hoffman and Petersmann (Eds.), *Rechtzwischen Umbruch und Bewakrung, Festchrift für Rudolf Bernhardt* (Berlin *et al*, 1995) p. 579 *et seq*, in particular p. 589, referring to statements of the Committee on Treaty Violations. See also Scheinin, "Economic and Social Rights as Legal Rights", in Eide, Krause and Rosas (Eds.), *Economic, Social and Cultural Rights* (Dordrecht *et al.*, 1995) p. 41.

[77] There is a controversy regarding inventors, see Béguin, "La Déclaration Universelle des Droits de l'Homme (du 10 décembre 1948) et la protection de la propriété intellectuelle" (1963) *Le Droit d'Auteur*, pp. 317, 319.

[78] See, e.g., regarding Article 2.2 of the International Covenant on Economic, Social and Cultural Rights, Craven, *The International Covenant on Economic, Social and Cultural Rights* (Oxford, 1995), p. 172 *et seq*; on Article 26 of the International Covenant on Civil and Political Rights, Nowak, *op. cit.* note 33 on Article 26; see, however, also Mastroianni, *op. cit.* p. 42 *et seq* who does not consider this narrow interpretation to be convincing.

[79] See however note 83 for a further specification.

[80] See Eide, Alfredsson, Melander, Rehof and Rosas (Eds.), *op.cit.* (note 7) p. 61 *et seq.*

However, even if nationality were considered to be such status for which discrimination must not occur, the non-discrimination rules are construed as prohibiting only unjustified differential treatment, as opposed to differential treatment based on objective and reasonable considerations.[81]

Regarding the criteria for eligibility under the Berne Convention, a justification for different treatment of those who do not fulfil the criteria for eligibility may be seen in the incitement of other countries to provide for a similarly strong protection of authors. History has shown that the establishment of an "exclusive club" in which protection is granted only to those which fulfil the relevant criteria for eligibility has incited other countries to join their international club, thereby accepting, at the same time, a certain minimum standard of protection which itself promotes authors' rights protection on an international level. Most recently, these dynamics have been experienced again in the application of material reciprocity.[82]

According to this interpretation, different treatment on the basis of the criteria laid down in the Paris and Berne Conventions, as well as the cases of material reciprocity permitted therein, do not contravene any obligation under the above-mentioned human rights law. This result is confirmed by the following arguments. First of all, the non-discrimination rules of the UDHR and the ICESCR should be read in context with the rights to protect the moral and material interests of authors (Articles 27.2 and 15.1(c) respectively) and in view of the object and purpose of the latter provisions: if one accepts the aim of these provisions as assuring the best development of authors' and inventors' protection, one will have to take into account the experience of history, which shows that the granting of full national treatment even beyond such "exclusive clubs" as the Paris and Berne Conventions and beyond specified cases of material reciprocity would not lead to the envisaged development and enhancement of authors' and inventors' rights. This is all the more true since the human rights conventions do not include any specific minimum standard of protection which would have to be granted to foreigners or other "discriminated" persons. In other words, the aim of Article 27.2 of the UDHR and Article 15.1 (c) of the ICESCR may be achieved quicker and better by the establishment of the requirements as they are laid down in the Paris and Berne Conventions than by any unrestricted non-differential treatment.

An additional confirmation of this interpretation may be drawn from the state practice exercised after the coming into force of the relevant human rights treaties: for example, the criteria for eligibility and the cases of material reciprocity of the Berne Convention have been confirmed at the Revision Conference of 1971, at the Diplomatic Conference of WIPO in 1996 where the Berne approach has been taken over into the WCT and also regarding the Paris Convention, by the TRIPS Agreement which again took over the traditional systems in this respect. Most lately even, the end of negotiations on a Multilateral Agreement on Investments in the framework of Organization for Economic Cooperation and Development (the OECD), which might have brought about the full application of national treatment in the

[81] See, for example, Craven, *op. cit.* p. 172-174 with further references, and Nowak, *op. cit.* notes 23, 24, to Article 26 and notes 33, 34, to Article 2, also mentioning the "comparable situation" and the proportionality as additional requirements for permitted differential treatment.
[82] See on this above, at part II.2.(b).

area of intellectual property even beyond the conditions of the existing treaties,[83] indicates that countries are not willing to go beyond the established systems in this respect. Even the most-favored-nation clause in Article 4 of the TRIPS Agreement, which might have "endangered" this established system, safeguards the traditional rules (see Article 4(b)-(d) of the TRIPS Agreement).[84] These examples of relevant state practice reflect the corresponding *opinio iuris* that the established system continues to be relevant law.

Accordingly, one cannot draw the conclusion from international human rights provisions, that foreigners, in respect of intellectual property rights, would have to be treated entirely in the same way as nationals; the special rules which have been developed in the context of international intellectual property treaties some of which allow some kind of differential treatment between foreigners and nationals or on other grounds prevail.

5. The so-called Crisis of National Treatment[85]

In more recent times, particularly in the 1980's, discussions about a crisis of national treatment have emerged. Several developments were at the beginning of such discussions. A number of provisions under national law or activities in context with the exercise of rights seemed to envisage the avoidance of any obligation to pay to foreign right owners a remuneration under the principle of national treatment. Such provisions and activities concerned mainly statutory rights of remuneration, be it for public lending or for private copying. The case of public lending is different from that of private copying since its substantive law provisions in some cases are distinct from main characteristics of author's rights so that, in combination with a number of specific other reasons, one may argue that the statutory remuneration right for public lending is not covered by the principle of national treatment under the Berne Convention.[86]

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[83] See on the MAI Project: Ercolani, "The OECD Multilateral Agreement on Investment (MAI) Project: The Possible Consequences of Including Intellectual Property", (1998) Ent.L.R. p. 125 and, on the end of negotiations, Stern, "L'Accord multilatéral sur les investissements officiellement enterré", December 6/7, 1998, *Le Monde* p.4.

[84] Of course, the latter argument can apply only as far as all Member Countries of the relevant human rights treaties are, at the same time, Member Countries of the relevant intellectual property treaties; however, even if this is not the case, the same argument may be supported by the fact that no country seems to have objected to this practice (argument of tacit consent, "acquiescence"). If one does not follow these steps of reasoning and rather assumes that the "discrimination" allowed under the Berne Convention (or under similar domestic law) contradicts the non-discrimination rules under human rights law, one would have to examine whether a conflict of the norms of the relevant human rights treaties and the relevant intellectual property rights treaties exists. This has been denied by Mastroianni, *op. cit.* p. 99, since the Berne Convention leaves open the possibility to grant protection even beyond the criteria of the Berne Convention. If, however, the Berne Convention is considered as a system which aims at securing for Member Countries the possibility to restrict protection to eligible persons and to apply, in specified cases, material reciprocity, a conflict of norms is considered to exist. In this case, further analysis will lead in particular to the hierarchy of such norms, including the rule of *lex specialis* which is likely to apply in favor of the Berne Convention, given in particular the lack of *ius cogens* in this case.

[85] Given the topic of this contribution and the result of Part 4, the so-called crisis of national treatment will not be dealt with in depth at this place. See, for an aspect of this crisis, for example, Melichar, "Deductions Made by Collecting Societies for Social and Cultural Purposes in the Light of International Copyright Law", (1991) *IIC* p. 47.

[86] See in particular von Lewinski, "National treatment, Reciprocity and Retorsion - The Case of Public Lending Right", in Beier and Schricker (Eds.), *op. cit.* p. 53 and 54. One may see a confirmation thereof in the views

(footnote continues on the next page)

The problems in context with the remuneration right for private copying are related to the introduction, in a number of countries, of legal provisions prescribing the deduction of considerable percentages from the income for private copying for social or cultural purposes in favor of domestic authors only. The economic background in these countries is usually that of net-importers: often much more than 50 % out of the entire remuneration would have to be paid to foreign countries - including in particular to those which themselves do not provide for such a remuneration right. Under international law, it is hardly possible to deny the full coverage of the remuneration right for private copying by national treatment. *De facto*, however, such an economic imbalance may, in the long run, incite the respective country not only to try to avoid, at least in part, the application of national treatment, but also to refrain from the introduction of a new right, such as a remuneration right for private copying, if it has not yet done so. Even the abolition of such a right and, possibly, the introduction of a tax or fund system or any other solution which clearly would not fall under national treatment might be possible, *de facto* consequences of an unrestricted obligation to apply national treatment in such cases.[87] Other ways to diminish the economic imbalance which have been applied in particular in the field of broadcasting, include the recommendation or even prescription by public authorities of quota referring to the minimum national content of programs. Another way to reduce such imbalances in certain cases, in particular regarding film distribution, might be the application of strict antitrust laws which might result in more choices for cinema theatres and others.

6. Conclusions

The principle of non-discrimination is one of the basic human rights. At the same time, it has become, as the principle of national treatment, the corner stone of the international treaties in the field of intellectual property. The intellectual property treaties are far more specific regarding the beneficiaries of national treatment and its extent; in particular, specific exceptions from national treatment have been provided. This system has contributed to the promotion and development of intellectual property rights in the world. There is evidence from history that such a result could not have been reached on the basis of a broad, international obligation to grant protection for example of authors' rights under domestic law also to any foreign authors.

Regarding the question whether or not the relevant international law of human rights establishes such an obligation, doubts prevail. A number of different reasons have been established to deny such an obligation. Accordingly, the specific provisions on national treatment and exceptions thereto, in particular under the Berne Convention, may not be considered to have been overruled by any broader obligation under human rights law.

expressed by Member States at sessions of the WIPO Committee of Experts on a Possible Protocol to the Berne Convention.

[87] See above, Part 3 (ii)(b) on the fact that major diversities in the protection of authors' rights lead to specific exceptions from national treatment.

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EDITED TRANSCRIPT OF THE DISCUSSION

Question/Comment

Since this morning the speakers have spoken of the many convergences between human rights and intellectual property rights. I think it would be wrong to silence the differences between the two types of law. We can see that human rights are universal rights which are non-territorial and that intellectual property rights are territorial rights. And, a human right does not have to be subject to a request for protection in either country. Intellectual property rights have a determined duration. I think that we should in our discussions show that there are differences between the two fields.

Question/Comment

Mr. Chairman, my delegation would have liked that during the course of this discussion that we touch a bit more specifically on intellectual property rights and the right to education, because the right to education is made quite explicit in Article 26 of the UDHR. Dr. Chapman is absolutely right in saying that Article 15 of the ICESCR is neglected. Even in the UDHR itself, of the 30 Articles, I think only Articles 22 to 27 relate to economic, social and cultural rights. The first Article right up to about Article 19 relate to civil and political rights and Articles 20 and 21 are with respect to participation of individuals in democracy. The point that I am trying to make is we might discuss things at length with respect to intellectual property rights. Unfortunately, when it comes to the implementation side of it, I am not too optimistic. For instance, in Mr. Burdekin's initial statement, he referred to the intellectual property rights of indigenous peoples, but when it comes to implementation, these things are basically gaveled through and that is all. Dr. Chapman said that the human rights principle that "all peoples have the right to self-determination" mandates a right of choice for members of society to be able to discuss, assess and have a role in determining major, scientific and technological developments. The legal literature on self-determination is indeed very wide and I do not want to delve into it now but it seems to be a broadening of what is usually thought of as the concept of self-determination. We would be grateful if Dr. Chapman could enlighten us in this regard.

Question/Comment

I think Dr. Lewinski's paper dealt squarely with the whole question of when you start transposing the notion of non-discrimination as used in the human rights context and equating it with the principle of national treatment in the intellectual property context. Dr. Lewinski was quiet clear that there is a difference in justification, difference in scope and rationale between these two concepts in their own spheres, but still we are trying to build bridges and to see whether there can be commonalties or not.

Perhaps a case could be made for having non-discriminatory national treatment for certain rights of authors. But why should we do that? The justification provided is that, if there is not a right of national treatment, it would act as a disincentive for certain authors. Now, I have always had a problem with that. Would authors stop writing if they were denied national treatment in some foreign market, or would they stop writing if they were given copyright protection for a shorter term?

If I could revert and just make a small comment on something which Ms. Salazar said If I heard clearly, she said that there is a lack of convincing evidence in favor of or against

strengthened patent regimes in the area of pharmaceuticals. If there is an absence of strong arguments or evidence in favor of stronger intellectual property regimes, should not the presumption then be in favor of maintaining the *status quo?* Should it not be incumbent both on the intellectual property and the human rights communities to argue that those who propose change, and especially change towards strengthening of certain regimes, should then show clear evidence for the need for such change?

Question/Comment

I believe that all of the WIPO treaties relating to copyright and neighboring rights are silent on the issue of access to works by people who have visual or hearing impairments. There is certainly in the more recent treaties some very general wording concerning limitations and exceptions. I think there is a serious question as to whether in future norms relating to access by people with hearing and visual impairments should be addressed. An argument can be made that the current very general limitations and exceptions are completely adequate. However, there are also some people who would argue that certain types of exceptions for people with visual and hearing impairments are in fact contrary to the Berne Convention.

Dr. von Lewinski

Regarding the questions about the right to education and about persons having visual or hearing impairments, the human rights instruments are characterized by such broad and flexible language that it is probably difficult to draw any concrete and detailed conclusions as to whether or not this or that particular activity by which person should be exempted from copyright protection.

As to the question whether authors would stop writing where there is no or insufficient protection, there is certainly no general answer. What I referred to was an argument which had been brought forward at the time by authors themselves. Indeed, it is imaginable that without national treatment they may be less encouraged to write, in particular when they have to live on their writing.

UNIVERSAL DECLARATION OF HUMAN RIGHTS

**Adopted and proclaimed by General Assembly resolution 217 A (III)
of 10 December 1948**

Preamble

Whereas recognition of the inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of freedom, justice and peace in the world,

Whereas disregard and contempt for human rights have resulted in barbarous acts which have outraged the conscience of mankind, and the advent of a world in which human beings shall enjoy freedom of speech and belief and freedom from fear and want has been proclaimed as the highest aspiration of the common people,

Whereas it is essential, if man is not to be compelled to have recourse, as a last resort, to rebellion against tyranny and oppression, that human rights should be protected by the rule of law,

Whereas it is essential to promote the development of friendly relations between nations,

Whereas the peoples of the United Nations have in the Charter reaffirmed their faith in fundamental human rights, in the dignity and worth of the human person and in the equal rights of men and women and have determined to promote social progress and better standards of life in larger freedom,

Whereas Member States have pledged themselves to achieve, in cooperation with the United Nations, the promotion of universal respect for and observance of human rights and fundamental freedoms,

Whereas a common understanding of these rights and freedoms is of the greatest importance for the full realization of this pledge,

Now, therefore,

The General Assembly,

Proclaims this Universal Declaration of Human Rights as a common standard of achievement for all peoples and all nations, to the end that every individual and every organ of society, keeping this Declaration constantly in mind, shall strive by teaching and education to promote respect for these rights and freedoms and by progressive measures, national and international, to secure their universal and effective recognition and observance, both among the peoples of Member States themselves and among the peoples of territories under their jurisdiction.

Article 1

All human beings are born free and equal in dignity and rights. They are endowed with reason and conscience and should act towards one another in a spirit of brotherhood.

Article 2

Everyone is entitled to all the rights and freedoms set forth in this Declaration, without distinction of any kind, such as race, color, sex, language, religion, political or other opinion, national or social origin, property, birth or other status.

Furthermore, no distinction shall be made on the basis of the political, jurisdictional or international status of the country or territory to which a person belongs, whether it be independent, trust, non-self-governing or under any other limitation of sovereignty.

Article 3

Everyone has the right to life, liberty and security of person.

Article 4

No one shall be held in slavery or servitude; slavery and the slave trade shall be prohibited in all their forms.

Article 5

No one shall be subjected to torture or to cruel, inhuman or degrading treatment or punishment.

Article 6

Everyone has the right to recognition everywhere as a person before the law.

Article 7

All are equal before the law and are entitled without any discrimination to equal protection of the law. All are entitled to equal protection against any discrimination in violation of this Declaration and against any incitement to such discrimination.

Article 8

Everyone has the right to an effective remedy by the competent national tribunals for acts violating the fundamental rights granted him by the constitution or by law.

Article 9

No one shall be subjected to arbitrary arrest, detention or exile.

Article 10

Everyone is entitled in full equality to a fair and public hearing by an independent and impartial tribunal, in the determination of his rights and obligations and of any criminal charge against him.

Article 11

Everyone charged with a penal offence has the right to be presumed innocent until proved guilty according to law in a public trial at which he has had all the guarantees necessary for his defence.

No one shall be held guilty of any penal offence on account of any act or omission which did not constitute a penal offence, under national or international law, at the time when it was committed. Nor shall a heavier penalty be imposed than the one that was applicable at the time the penal offence was committed.

Article 12

No one shall be subjected to arbitrary interference with his privacy, family, home or correspondence, nor to attacks upon his honor and reputation. Everyone has the right to the protection of the law against such interference or attacks.

Article 13

Everyone has the right to freedom of movement and residence within the borders of each State.

Everyone has the right to leave any country, including his own, and to return to his country.

Article 14

Everyone has the right to seek and to enjoy in other countries asylum from persecution. This right may not be invoked in the case of prosecutions genuinely arising from non-political crimes or from acts contrary to the purposes and principles of the United Nations.

Article 15

Everyone has the right to a nationality.
No one shall be arbitrarily deprived of his nationality nor denied the right to change his nationality.

Article 16

Men and women of full age, without any limitation due to race, nationality or religion, have the right to marry and to found a family. They are entitled to equal rights as to marriage, during marriage and at its dissolution.
Marriage shall be entered into only with the free and full consent of the intending spouses.
The family is the natural and fundamental group unit of society and is entitled to protection by society and the State.

Article 17

Everyone has the right to own property alone as well as in association with others.
No one shall be arbitrarily deprived of his property.

Article 18

Everyone has the right to freedom of thought, conscience and religion; this right includes freedom to change his religion or belief, and freedom, either alone or in community with others and in public or private, to manifest his religion or belief in teaching, practice, worship and observance.

Article 19

Everyone has the right to freedom of opinion and expression; this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers.

Article 20

Everyone has the right to freedom of peaceful assembly and association.
No one may be compelled to belong to an association.

Article 21

Everyone has the right to take part in the government of his country, directly or through freely chosen representatives.
Everyone has the right to equal access to public service in his country.
The will of the people shall be the basis of the authority of government; this will shall be expressed in periodic and genuine elections which shall be by universal and equal suffrage and shall be held by secret vote or by equivalent free voting procedures.

Article 22

Everyone, as a member of society, has the right to social security and is entitled to realization, through national effort and international co-operation and in accordance with the organization and resources of each State, of the economic, social and cultural rights indispensable for his dignity and the free development of his personality.

Article 23

Everyone has the right to work, to free choice of employment, to just and favorable conditions of work and to protection against unemployment.
Everyone, without any discrimination, has the right to equal pay for equal work.
Everyone who works has the right to just and favorable remuneration ensuring for himself and his family an existence worthy of human dignity, and supplemented, if necessary, by other means of social protection.
Everyone has the right to form and to join trade unions for the protection of his interests.

Article 24

Everyone has the right to rest and leisure, including reasonable limitation of working hours and periodic holidays with pay.

Article 25

Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control.
Motherhood and childhood are entitled to special care and assistance. All children, whether born in or out of wedlock, shall enjoy the same social protection.

Article 26

Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages. Elementary education shall be compulsory. Technical and professional education shall be made generally available and higher education shall be equally accessible to all on the basis of merit.
Education shall be directed to the full development of the human personality and to the strengthening of respect for human rights and fundamental freedoms. It shall promote understanding, tolerance and friendship among all nations, racial or religious groups, and shall further the activities of the United Nations for the maintenance of peace.
Parents have a prior right to choose the kind of education that shall be given to their children.

Article 27

Everyone has the right freely to participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits.
Everyone has the right to the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author.

Article 28

Everyone is entitled to a social and international order in which the rights and freedoms set forth in this Declaration can be fully realized.

Article 29

Everyone has duties to the community in which alone the free and full development of his personality is possible.
In the exercise of his rights and freedoms, everyone shall be subject only to such limitations as are determined by law solely for the purpose of securing due recognition

and respect for the rights and freedoms of others and of meeting the just requirements of morality, public order and the general welfare in a democratic society.
These rights and freedoms may in no case be exercised contrary to the purposes and principles of the United Nations.

Article 30

Nothing in this Declaration may be interpreted as implying for any State, group or person any right to engage in any activity or to perform any act aimed at the destruction of any of the rights and freedoms set forth herein.

BIOGRAPHIES

PETER DRAHOS is a Solicitor and Barrister of the Supreme Court of South Australia. He is the Herchel Smith Senior Research Fellow in Intellectual Property in the Intellectual Property Unit in the Center for Commercial Law Studies, University of London. He holds degrees in law, politics, and philosophy. He has taught in the Department of Politics at the University of Adelaide and in the Law Faculty at the Australian National University. He has been a Research Fellow in the Research School of Social Sciences at the Australian National University. He was an officer of the Australian Commonwealth Attorney-General's Department. He has been a consultant to numerous government departments. He has published in law and social science journals on a variety of topics including contract, legal theory, telecommunications, and intellectual property. He is the author of *A Philosophy of Intellectual Property* (1996) and, with John Braithwaite, *Global Business Regulation* (1999). He has held research grants from the US National Science Foundation, the American Bar Foundation and the Australian Research Council.

CHRISTINE STEINER is a lawyer specializing in Art Law and Intellectual property in Los Angeles, U.S.A. At the time of this panel discussion, she served as Secretary and General Counsel of the J. Paul Getty Trust, where she provided a wide range of counsel and advice on all legal aspects of the Getty operating programs. Prior to her position with the Getty, Ms. Steiner was Assistant General Counsel to the Smithsonian Institute, handling litigation and advice for the Smithsonian's museums and its educational and administrative offices. She earlier served in the Office of the Attorney General of the state of Maryland, representing the colleges and universities, and was subsequently chief attorney for the Maryland public education system and counsel to the State Board of Education. She is an adjunct law professor and is a frequent lecturer in the areas of education, museums, and the arts.

SILVIA SALAZAR is a lawyer from the University of Costa Rica. She is specialized in intellectual property and technology transfer from the Franklin Pierce Law Center, New Hampshire, U.S.A. She has also attended a variety of training courses in this field in Mexico, Argentina, the U.S.A. and South Korea. Her area of expertise is patents and special protection of life forms.

She worked for about ten years as Legal Adviser for the Vice-presidency for Research and the Office of Technology Transfer , both of the University of Costa Rica. She also served as advisor on intellectual property for the Minister of Foreign Trade of Costa Rica, with negotiation responsibilities in the different trade fora Costa Rica has attended.

She now works as a consultant, mainly for international organizations, such as the Central American Economic Integration Secretariat (SIECA), USAID, ISNAR, FAO, etc. and practices law privately.

She has vast experience as a speaker and has published several articles on the topic. Last year she was a member of the CGIAR's Expert Panel on Proprietary Science and Technology.

JOHN MUGABE is Executive Director of the African Center for Technology Studies (ACTS). He holds a doctorate degree in environmental policy from the University of Amsterdam, The Netherlands. He founded and directed the ACTS Biopolicy Institute located at Maastricht, The Netherlands. He is a member of the Board of Directors of the Biofocus Foundation of the World Academy of Arts and Sciences; the African Conservation Center (ACC), Kenya, and of the Board of Biotechnology and Development Monitor of the University of Amsterdam. He has been a Research Fellow at the United Nations University Institute for New Technologies (UNU-INTECH) Maastricht, The Netherlands. Dr. Mugabe is editor of the Biopolicy International Series of the African Center for Technology Studies (ACTS) and the World Resources Institute (WRI). He is on the roster of experts for the Scientific and Technical Advisory Panel (STAP) of the GEF. Dr. Mugabe is the author of many research papers and co-editor of Coming to Life: Biotechnology in Africa's Economic Recovery (with Calestous Juma); Access to Genetic Resources (with Charles Barber et. al.), Managing Biodiversity: National Systems of Conservation and Innovation (with Norman Clark). He is the author of Elusive Change: The Spread of Institutional Monocultures and Decline of Local Ecologies (forthcoming).

His research interests include technology policy and institutional issues related to environmental management in general, and the conservation of biological diversity in particular.

AUDREY CHAPMAN serves as the Director of two programs at the American Association for the Advancement of Science: the Science and Human Rights Program and the Dialogue Between Science and Religion.

She received a doctorate degree in public law and government from Columbia University and graduate theological degrees from New York Theological Seminary and Union Theological Seminary.

She has published a wide range of books and articles dealing with the relationship between science and human rights, health and human rights, human rights methodology, and bioethical issues. She is the author, co-author or editor of fourteen books. The most recent are *Perspectives on Genetic Patenting: Religion, Science and Industry in Dialogue* (AAAS, 1999), *Human Rights and Health: The Legacy of Apartheid* (AAAS, 1998), and *Health Care and Information Ethics: Protecting Fundamental Human Rights* (Sheed and Ward, 1997). Another book, *Unprecedented Decisions: Religious Ethics at the Frontiers of Science,* is scheduled for publication later this year (Fortress Press). She is currently co-editing a book on scientific contributions to truth commissions.

SILKE VON LEWINSKI is Head of Department on International Law and the Particular Problems of Developing Countries at the Max Planck Institute for Foreign and International Patent, Copyright and Competition Law in Munich. She has been an expert consultant to the European Commission, regarding in particular the EC Rental Rights Directive and the WIPO Diplomatic Conference in 1996 where she was a member of the delegation of the European Communities. Dr. von Lewinski is the main legal expert consulting to the governments of several Eastern and Central European and former Soviet Union countries on their copyright legislation in the framework of the PHARE-program

(since January 1995) and the TACIS-program (since 1996), both established and administered by the European Commission.

Numerous publications and lectures worldwide since 1987 focus on topics related to copyright law, primarily international and European copyright law, as well as problems of new technologies. Her publications include a comparative thesis on the public lending right (Munich 1990), a commentary on "The EC Directive on Rental and Lending Rights and on Piracy" (London 1993, together with Dr. J. Reinbothe) and, to be published in 1999, "Europäisches Urheberrecht" (together with Walter, Dreier, Blocher and Dillenz).

Dr. von Lewinski is Adjunct Professor at Johannes Gutenberg University, Mainz (since 1991), at Franklin Pierce Law Center, Concord, New Hampshire, U.S.A (since 1993) and at the Gulf Institute for International Law, Dubai (since 1997). She has been a visiting professor at the Université Laval, Québec, Canada (1993), the Université de Nantes (1996), the Université de Toulouse (1999), as well as Adjunct Professor at McGill University, Montreal (1993) and the first Walter Minton Visiting Scholar at Columbia University, New York (1998).

In 1999, she has been a judge at the German rounds of the International Philip. C. Jessup Moot Court Competition.

Dr. von Lewinski received her university degree in law from the Ludwig Maximilian University, Munich, took her Bar Exam in Munich and received the "Heinrich-Hubmann" award for the best treatise in copyright (1991). She is a member of ALAI and ATRIP. She is on the International Advisory Board of the Gulf Institute for International Law, Dubai and on the International Editorial Board of "Les Cahiers de la Propriété Intellectuelle", Canada.

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